1934.

NEW ZEALAND.

DEPARTMENT OF HEALTH.

ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH.

Presented in pursuance of Section 100 of the Hospitals and Charitable Institutions Act, 1926.

HON. J. A. YOUNG, MINISTER OF HEALTH.

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REPORTS.

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

I HAVE the honour to lay before you the annual report of the Department for the year 1933–34.

PART I.—GENERAL SURVEY.

VITAL STATISTICS.

The state of the public health as judged by the ordinary readily applied standards was well sustained in 1933.

Death-rate.—A further fall was experienced in the death-rate, and the figure for 1933 (7·98 per 1,000 mean population) was the lowest so far recorded in New Zealand.

Infant Mortality.—The infant-mortality rate (31·60 per 1,000 live births) was slightly higher than the record low figure of 31·32 for the preceding year.

Still-births.—The still-birth rate has not shown much tendency to vary since it was first recorded. However, the rate for 1933 (29·7 per 1,000 live births) was slightly lower than that for 1932.

Birth-rate.—The birth-rate (16·59 per 1,000 mean population) shows a further decline even from the previous year's exceptionally low rate. A falling birth-rate is to-day characteristic of many countries. In England and Wales, for example, the rate was 17·8 in 1926 while in 1932 it was 15·3. In the Dominion, however, the position is to some extent compensated for by an exceptionally low death-rate, and New Zealand still ranks comparatively high among the nations as regards the rate of natural increase of population.

Infectious Diseases, etc.

Infectious diseases in 1933 were in the main marked by a relatively low incidence. The total notifications received by the Department were 3,619, or 96 less than in 1932.

Scarlet Fever.—There was a further slight lessening in the incidence and severity of this disease, 783 cases and 4 deaths being reported, as against 829 cases and 6 deaths for 1932.

Diphtheria.—In all, 963 cases and 27 deaths were recorded, as compared with 802 cases and 40 deaths for the preceding year. In other words, the disease was somewhat more prevalent, but decidedly less fatal in 1933 than in 1932.

For some years, earnest, but, it must be admitted, only partially successful, attempts have been made to stimulate public interest in the use of toxin anti-toxin or anatoxin as a means of conferring protection against diphtheria. Dr. D. Cook, Medical Officer of Health, Whangarei, gives an illustration of the value of active immunization as a public-health measure of control for this disease. He writes as follows of a minor epidemic with 31 cases and 3 deaths in his district:—

> "Diphtheria immunization was adopted to control this epidemic; in all, 180 children being so treated at the following schools: Awanui, Motutangi, and Paparoa. It is instructive that since the inoculations one fresh case has occurred at Awanui School in a child whose parent was against inoculation, but he has since changed his mind."

Enteric Fever.—There was a decrease of 89 in the number of notifications received for this group of diseases. Investigations were made by Dr. Ritchie, Medical Officer of Health, Dunedin, into a series of cases of paratyphoid B. fever which were reported from Gore and surrounding districts during 1932 and 1933. There were seven different occurrences in all:—

(1) Public Hospital, Gore, with five cases; February, 1932.
(2) Case nursed in Dunedin, but illness contracted in Gore or vicinity; February, 1932.
(3) Isolated case in Waikaka Valley; July, 1932.
(4) Five cases, of which one, perhaps two, was contracted in a private maternity hospital, Gore; October, 1932.
(5) Waikaia—Three cases in one household; February, 1933.
(6) An isolated case in Waikaka Valley; February, 1933.
(7) Outbreak in a private maternity hospital, Gore, with seven cases; September, 1933.

The investigations proved partially successful as a "carrier" was found and linked up with outbreaks (3), (4), (6), and (7) in the above series.

The hospital outbreaks emphasize the necessity for a high standard of aseptic and antiseptic technique. Experience indicates that bed-pans and chambers should be sterilized every time they are used irrespective of the condition for which the patient is being treated. When nursing technique is based on the assumption that every patient is a potential danger there will be fewer cases of infection occurring in hospital.

Influenza.—An outbreak of influenza in Great Britain culminating in January, 1933, again roused wide public interest in the question whether New Zealand must in due course suffer an invasion of disease from this quarter.

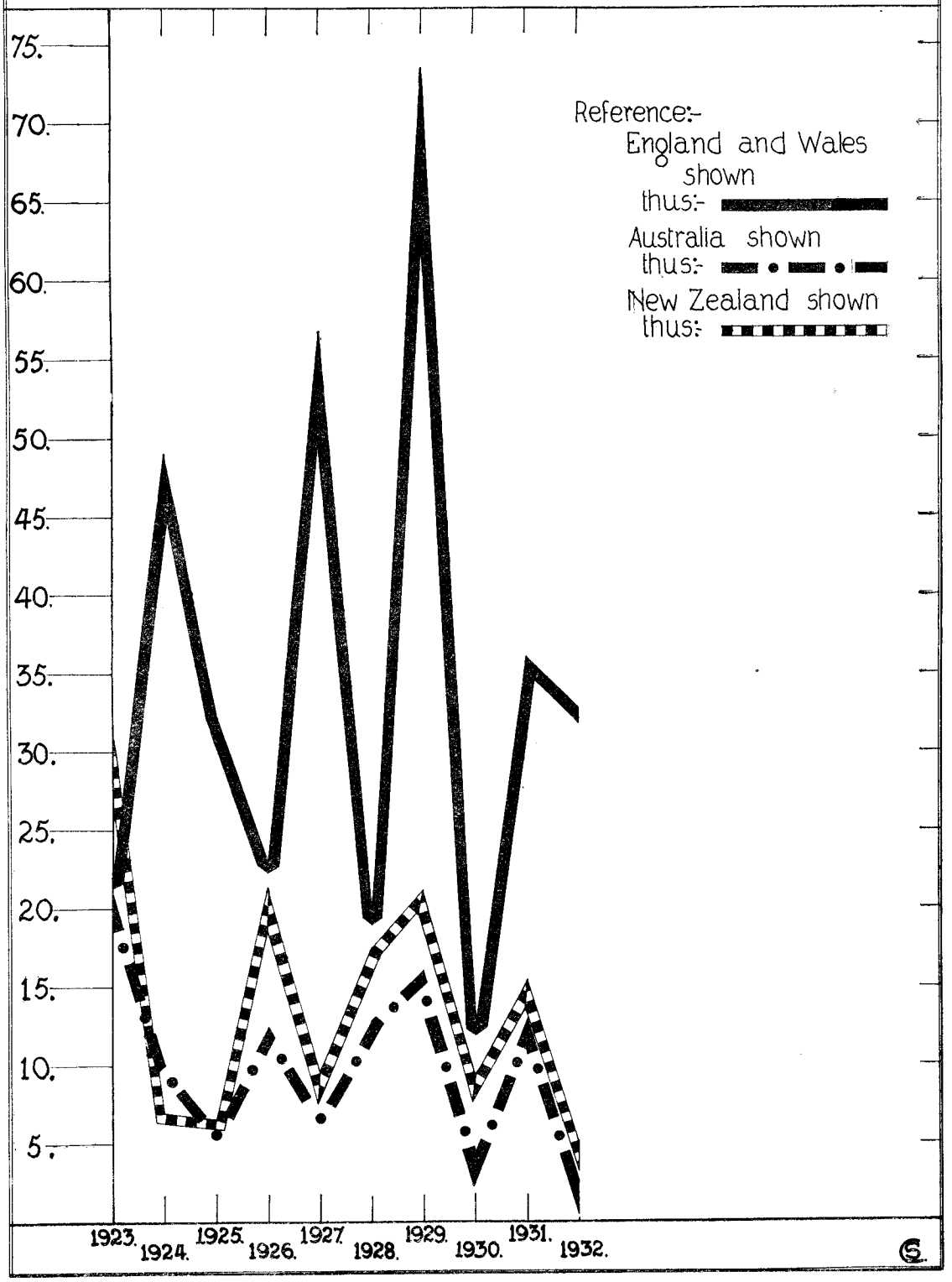
The recent history of influenza is that the world has suffered two great pandemics, those of 1889–92 and 1918–19, and that subsequent to the wisespread diffusion of the virus in this way local epidemics of varying degrees of intensity have tended to occur in the winter months in every quarter of the globe. In New Zealand, for instance, it is usual to experience a so-called "seasonal" outbreak of influenza from June to September, while in Great Britain similar outbreaks occur during the winter and early spring months. The extent to which there is any possible association between these winter epidemics is shown in the graph below, which sets out the death-rate from influenza in England and Wales, in Australia, and in New Zealand for the decade 1923–32.

It will be seen that, while Australia and New Zealand follow one another closely, there is not the same relationship between influenza in Great Britain and in the Antipodes. Indeed, for the period 1923–28 the curve for England and Wales takes a diametrically opposite course to those for Australia and New Zealand. Thus 1924 and 1927, peak years for England and Wales, were marked by a low incidence in Australia and New Zealand, while 1923, 1926, and 1928, with few influenza deaths in England and Wales, proved years with heavy mortality in Australia and New Zealand. Subsequent to 1928 there is a general similarity between the curves, peak years and years of low incidence being the same for all three countries.

The evidence altogether is inconclusive. All that can be said from a study of the graph is that epidemic influenza does not necessarily nor even usually invade New Zealand from Great Britain. The period of time which separates the winter epidemics of the two countries further supports the belief that these seasonal outbreaks are purely local affairs due not to any importations of fresh virus, but to a lighting-up of infection which is ever present, but which smoulders until activated by suitable environmental and biological conditions.

Influenza.

Showing, per 100,000 of respective populations, a comparison between the death rates of England and Wales, Australia and New Zealand.



Influenza of the usual seasonal type became general throughout the Dominion in the winter of 1933. The death-rate 0·71 per 10,000 mean population represents a considerable rise on the comparatively low rate of 0·46 in 1932.

Dysentery.—Dysentery remained comparatively quiescent in 1933, as only 63 cases, principally Maoris, were notified for the year.

Poliomyelitis.—The position so far as poliomyelitis was concerned was relatively satisfactory, as only 43 cases were notified, as compared with 148 for the preceding year.

Lethargic Encephalitis.—Two minor outbreaks of lethargic encephalitis were reported, one in the Taranaki, the other in the North Auckland Health District. Further investigation, however, and the subsequent history of the cases caused the diagnosis to be revised in a considerable proportion of the Taranaki cases, while the North Auckland series of cases were regarded as wholly of influenzal origin.

These outbreaks show the difficulty of establishing a diagnosis in the absence of laboratory aids. The most typical case from clinical point of view in the Taranaki series was a patient who died and who on *post-mortem* examination was found to be suffering from a tumour of the brain. In two other cases in the same series the symptoms were found on *post-mortem* examination to be due to cerebral lesions, non-infective in nature. 1933, as has been stated, was an influenza year, and, in the absence of direct proof to the contrary, it is reasonable to regard these outbreaks as influenzal in origin.

Puerperal Fever.—There were 40 deaths from puerperal fever. Of these, 14 were due to sepsis following child-birth, while 26 were due to sepsis following abortion. As usual, the deaths from puerperal sepsis following abortion were mainly due to induced abortion amongst married women.

Measles.—An epidemic of measles, moderately severe in character, swept over the Dominion and was responsible for 17 deaths from this cause as against none for the previous year. The disease appeared first in epidemic form in the Auckland District in the early part of the year, but gradually extended; by the end of the year it had reached Southland and still lingers in certain more remote areas throughout the Dominion.

The average school attendance was considerably reduced. In accordance with the general policy, school closure was resorted to only in a few special instances. The provision for the exclusion from school of contacts was found to be impracticable, but special emphasis was placed upon the recommendation to teachers that they should be strict in excluding from school all cases where convalescence appeared to be imperfect, and all children who appeared to be sickening for the disease.

Whooping-cough.—Whooping-cough was responsible for less illness than in the previous year, there being 18 deaths as against 44 for 1932.

Information and advice with regard to both measles and whooping-cough were distributed by means of press articles, radio talks, and circulars to Education authorities.

Tuberculosis.—The death-rate from tuberculosis dropped from 4·22 per 10,000 mean population in 1932 to 4·16 per 10,000 mean population in 1933, the lowest figure so far recorded in New Zealand. Important factors in lowering the incidence of tuberculosis in this country have undoubtedly been its healthy climate and favourable living conditions. The tendency towards decline has been definitely accelerated by the direct campaign waged against the disease, including increased facilities for early and expert diagnosis, and more readily available sanatorium and hospital treatment. Popular education in personal and general hygiene has also played an important part. Special consideration has again been given to children who are known to have been exposed to risk of infection in their own homes. The sale of Christmas Seal postage-stamps through the co-operation of the Post and Telegraph Department and the assistance of various voluntary organizations materially helped in the financing of the children's health camps. These camps are exerting a definite beneficial influence in the prevention of tuberculosis.

The National Expenditure Commission recommended the transfer of the sanatoria at Otaki and Pukeora to Hospital Boards. In support of this policy it might be mentioned that in the South Island the sanatoria have always been entirely under Hospital Board control. The Government therefore decided to transfer the Otaki Sanatorium to the Palmerston North Hospital Board and the Pukeora Sanatorium to the Waipawa Hospital Board, and this has been duly carried out.

Venereal Diseases.—The powers for the control of venereal diseases are contained in the Social Hygiene Act, 1917, the Health Act, 1920, and the Social Hygiene Regulations, 1925.

Provisions is made in the last-mentioned for the confidential notification by medical practitioners of all persons suffering from venereal disease in a communicable form who make default for more than fourteen days in attending for treatment. Any person so notified can be called upon to furnish a medical certificate as to the state of his or her health and, if necessary, be detained for treatment.

Provision is also made for free treatment of indigent persons who cannot conveniently obtain treatment at a public hospital or at a clinic.

During the year 1933, 26 notifications of defaulters were received and the necessary action taken, whilst free treatment was approved of in 10 instances.

It is considered that the existing statutory provisions for the control of these diseases are adequate for the purpose of ensuring that infected persons are placed under treatment and much valuable work along these lines has been and is being performed. It is felt, however, that with the co-operation of all members of the medical profession, particularly in the direction of prompt notification of defaulters and the distribution of official warning notices, a still greater amount of valuable work could be done.

Hydatids.—Forty-six cases of hydatids were reported in 1933.

Hydatids is a serious disease, as even when not fatal it usually necessitates a long period of disability, the individuals affected being for the most part young men and women engaged in agricultural and pastoral pursuits.

This disease is due to infection from dogs, and it is hoped the advice given as to its prevention by press articles and by broadcast talks will meet with success.

Goitre.—Dr. R. A. Shore, of this Department, and Mr. R. L. Andrew, of the Dominion Laboratory, Department of Scientific and Industrial Research, carried out a re-survey of the goitre incidence in selected areas of the North Island with a view to discovering some cause for the anomalies disclosed in the previous survey. Their report, which will be published in due course, contains some very interesting features. On the analytical side it was found that the amounts of soil-iodine tallied very closely with those found previously. However, the proportion of iodine found in vegetables obtained from districts which showed divergence in the soil iodine was everywhere practically the same. This has been accounted for by the fact that vegetables were thoroughly washed before analysis and that all adhering soil was removed. The variation in the amount of iodine previously obtained was due to the minute particles of soil which were left adhering to the vegetables. A variation in the amount of iodine was found in the analysis of milk and eggs from various districts, and this again was attributed to the ingestion of soil in the feeding habits of the animals concerned.

No inverse relation between the amount of iodine in the soil and the amount of goitre in the district could be found on this occasion. The district of Taranaki, where the soil has a high iodine content and which was previously practically goitre-free, on this occasion showed an incidence of goitre which is higher than anywhere else in New Zealand. Moreover, of three other areas examined two show an increase in the incidence of goitre and one shows a decrease, albeit the decrease is confined solely to the incipient class.

Cancer.—There was a rise in the mortality from cancer, the number of deaths showing an increase of 152, while the rate rose from 10·11 to 11·07 per 10,000.

The New Zealand Branch of the British Empire Cancer Campaign Society appointed Mr. J. A. Strong, M.Sc., as Travis Radiologist Physicist to the society. Mr. Strong has been detailed to undergo a course of study in Australia, and his specialized knowledge in due course must lead to improvement in the results of radiotherapy in New Zealand. The views of the recent Fifth Australian Cancer Conference that radiotherapy should be restricted to practitioners who have necessary knowledge and experience is in conformity with the decision arrived at some time ago between the Department and the New Zealand Branch of the society, and is important from the point of view of influencing further action in regard to the provision of radium outside of the hospitals in the four main centres.

The work of the New Zealand Branch of the British Empire Cancer Campaign Society is worthy of well-deserved appreciation.

Diabetes.—The number of deaths from diabetes was 229, the same as in 1932. The following table shows the death-rate from diabetes for the quinquennium 1929–1933 :—

Year.	Death Rate per 10,000 Mean Population.	Year.	Death Rate per 10,000 Mean Population.
1929	1·43	1932	1·57
1930	1·57	1933	1·56
1931	1·57		

The Government Statistician, commenting upon this disease in his report upon vital statistics, states :—

> "The benefit conferred upon sufferers by the use of insulin is hidden in a comparison of the death-rates, but the greater increase in the morbidity rate makes it reasonable to suggest that, had it not been for the use of insulin, the death-rate would present a much more serious aspect. The value of insulin treatment, of course, lies in its ability to prolong the life of the sufferer, and the mortality statistics of recent years illustrate this factor by a perceptible transference of the proportion of deaths from the younger to the older ages. The age constitution of persons dying from diabetes has altered considerably over the last ten years, the tendency being for the rates at the earlier ages to diminish at the expense of the older ages, which shows a considerable increase as compared with previous years. This experience does not hold in the incidence of the disease, as far as patients treated in public hospitals are concerned, the figures showing an increase over all-age groups, thus pointing to the assumption that future years will show a further increase in the death-rate for this disease."

Further statistical information and comments on vital statistics will be found in the report of the Director, Division of Public Hygiene.

Economic Depression and the Public Health.

In last year's report reference was made to the fact that on statistical grounds there was no reason so far to believe that the health of the people had in any way been impaired by the economic crisis.

This year's figures still show no signs of any detrimental effect. The following two tables give information additional to what appears in the earlier part of this report :—

In-patients Treated in Hospitals.

Year.	Persons under Treatment.	Proportion per 1,000 of Population.
1928–29	87,888	60·20
1929–30	89,761	60·75
1930–31	89,147	59·52
1931–32	85,562	56·06
1932–33	85,646	56·00

Taking the Dominion as a whole, there is little variation in the percentage of children found to be suffering from sub-normal nutrition, the figures for the year under review being, indeed, slightly lower, as is shown by the following table :—

Subnormal Nutrition amongst School-children.

Year.	Percentage of Total Number of Children examined.
1929	7·06
1930	6·30
1931	6·68
1932	5·81
1933	5·48

This matter is further dealt with in the report of the Director of the Division of School Hygiene.

Milk in its relation to Public Health.

It is an interesting, but none the less desirable, manifestation of the times that keen public interest has recently been aroused in schemes aimed at increasing the consumption of milk and milk-products by the community. For many years the Health Department has drawn attention to the fact that the consumption of milk in New Zealand falls far short of what is desirable, and that the increased use of milk as a food would be of great benefit, particularly in the case of children. Successful demonstrations have been given here as elsewhere of the practicability and value of large-scale methods of distributing milk to children in the school. These demonstrations, which have been carried out under the general supervision and direction of the School Medical Service, have been rendered possible by the activities of organizations such as the Smith Family, the Red Cross, Rotary, &c., to whom the utmost credit is due for their generosity. At the present time, particularly, this supplementary milk ration has proved of great benefit in reducing any tendency towards undernutrition amongst school-children.

Milk is a unique food and occupies a particularly important place in the dietary. This is due alike to the high quality of its proteins, to the presence of vitamin A and D in its generous store of easily assimilable fats, and to the large amount of salts, particularly lime and phosphorus, which it contains. These are the constituents which have earned for milk the name of a " protective food."

Unfortunately, milk is a favourable medium for the growth of micro-organisms pathogenic to man, and outbreaks of disease have occasionally been associated with its use. These outbreaks, it should be made clear, are due to faulty methods of milk-production and milk-handling, and can be obviated by suitable means. New Zealand compares not unfavourably with other countries in respect of the wholesomeness of its milk-supply, and milk-borne diseases do not figure with undue prominence in our health records. Indeed, so far as tuberculosis, perhaps the most dreaded of milk-borne diseases, is concerned, New Zealand appears in a particularly favourable light. In any case, in pasteurization we have a proved and highly effective method of making milk safe.

To sum up, then, it can be said,—

(1) Milk is a most important food, and should occupy an important place in the dietary.
(2) The consumption of milk in New Zealand (rather less than half a pint per head per day) is far below what is desirable. Every child should have at least one pint, and, preferably, one and a half pints daily. Every adult should have at least half a pint and preferably one pint daily.
(3) Raw milk is occasionally infected either from the cow or from human beings with micro-organisms that are pathogenic to man.
(4) Milk may be rendered safe by some form of heat treatment. Of the various forms available low-temperature pasteurization appears to be the most satisfactory as, efficiently carried out, it destroys all pathogenic micro-organisms without any appreciable impairment of the nutritive qualities of the milk.
(5) Pasteurization is not to be regarded as a substitute for cleanliness in the production and handling of milk. The ideal is pasteurization superimposed as an additional precautionary measure on milk which has been produced from a healthy herd by healthy milkers under hygienic conditions.
(6) Where pasteurization is not practicable the householder can make the milk safe by boiling it immediately before use.

ADMINISTRATION.

The low incidence of infectious disease during the past year was of material help in keeping the administration expenses of the Department down to a minimum. There has been, in addition, a continued drive for economic management and internal reorganization by readjustment of duties.

Public Hygiene.—The Division of Public Hygiene has paid considerable attention to problems relating to sewerage systems, water-supplies, and general sanitation.

Dangerous Drugs.—As a signatory to the League of Nations New Zealand must exercise control over narcotic habit-forming drugs included in the Geneva Convention. Steps have been taken more effectively to control dealings in drugs in hospitals, both public and private. There is no evidence to show the presence of drug taking or addiction as a general menace, but it is felt that the administrative machinery should be applied with a view to preventing as far as possible any undesirable development. Dr. T. F. Telford, Medical Officer of Health, Christchurch, reporting on this problem, states,—

> "Systematic inspection has been made of chemists' shops and their records investigated. Hospital records, both public and private, have also been looked into. It is unsatisfactory to report that there still continues to be carelessness shown in regard to the keeping of records and also in the sale of dangerous drugs to people not entitled to obtain them."

A communication was sent to and published by the editor of the *New Zealand Medical Journal* reminding doctors of their responsibilities, referring to the attitude to be taken with certain classes of cases where the supply of drugs is a necessity owing to the nature of the patient's disability, and generally seeking the co-operation of the medical profession from a preventive viewpoint.

Antimony Poisoning: Enamelware.—Following on the receipt of a memorandum issued by the Ministry of Health, London, drawing attention to the danger of antimony poisoning from enamelware of inferior quality, the Department in conjunction with the Dominion Analyst examined a wide variety of enamelware of different brands on the market. It was found in some cases that this ware contained fairly easily soluble antimony compounds. The public were warned of the risks, and the trade was duly advised as to the necessity for ensuring that all enamelware sold must be free from that element.

Vaccine Station.—Dr. P. P. Lynch, Director of the Government Vaccine Station, reports that vaccine lymph sufficient for 20,000 tubes was prepared, and that there is in stock vaccine lymph equal to 50,000 tubes.

Vaccine lymph is being supplied regularly to our District Health Offices and also to the Fijian and Samoan Governments and to the Government of New South Wales.

The vaccine lymph is being maintained at a high titre. This is necessary as we require to keep a sufficiently large supply of vaccine lymph on hand to meet a sudden demand throughout the Dominion.

School Hygiene.—The school medical and nursing services have given special attention to measures for protecting the health of children. There has been a great extension of the children's health-camp movement, and the Department has given assistance, where possible, in providing services of School Medical Officers and nursing staff. Marked benefit has been given to undernourished and delicate children during the year by this means. As already mentioned, the Department has co-operated with educational, municipal, and voluntary organizations in making available a daily ration of milk for school-children, necessitous cases being supplied free of charge.

Nursing.—Among matters to which special attention is drawn by Miss Lambie in her report are the purging of the registers of nurses, midwives, and maternity nurses; improvements in nursing technique in public hospitals; the necessity for preliminary training schools for pupil-nurses; and educational work of district nurses.

Dental Hygiene.—The Director presents a review on current dental problems, and in doing so draws attention to the fact that the resistance of teeth to dental disease is directly influenced by the constitution of the diet. An extensive investigation into the cause of dental diseases was inaugurated, and in this connection the comparative statistics of such diseases among Native and European school-children given in the report are of interest.

The total number of operations performed by the staff was 623,625, an increase of 4,235 on the previous year. There was a decrease of 5,425 in the number of extractions performed.

Among other matters mentioned in the report are the need for keeping the Register of Private Dental Practitioners up to date; more uniform system of dental treatment at out-patient departments in public hospitals, and the excellent co-operation being received from the School Dental Committees.

Hospitals.—Although hospital-maintenance expenditure generally showed an increase, this was in most cases compensated by an increase in the collection of patients' fees, and expenditure for the year was very close to that estimated.

During the past few years considerable reductions in expenditure have been effected and wherever possible maintenance repairs and painting of buildings have been deferred. In a number of cases this expenditure cannot be further postponed without serious depreciation to the buildings.

By a system of quarterly statements the Department now maintains a close watch on the financial position of Boards. This has resulted in much closer budgeting by Boards.

In accordance with the recommendation of the National Expenditure Commission the Department has decided to transfer practically all of its hospitals to the control of Hospital Boards. In pursuance

of this policy the following institutions, other than sanatoria mentioned elsewhere in this report, were transferred to the Hospital Boards named during the past year :—

Name of Institution.	Hospital Board.
King George V Hospital, Rotorua ..	.. Waikato Hospital Board, Hamilton.
St. Helens Hospital, Wanganui ..	.. Wanganui Hospital Board, Wanganui.
St. Helens Hospital, Gisborne ..	.. Cook Hospital Board, Gisborne.

The transfer of control was effected without hitch, and in each case the institution, fully equipped, was handed over to the Hospital Board free of cost.

Full statistical and financial information with regard to hospitals and institutions under the control of Boards will be published as a special Appendix to this report at a later date, when the returns from Boards' Secretaries are all to hand.

Maori Hygiene.—The Medical Research Council of Great Britain awarded Dr. H. B. Turbott, Medical Officer of Health, Gisborne, a Dorothy Temple Cross Fellowship, which enabled him to carry out an investigation into the question of tuberculosis among the Maori people in a selected area of his district. His report, which has been presented to the Medical Research Council, is partly of a clinical nature, but also covers a full investigation into the housing and nutrition of the subjects examined.

It is gratifying to note that there has been this measure of co-operation between New Zealand and Great Britain in regard to medical research, and it is hoped that this may be the forerunner of similar investigations into medical matters of common interest to Great Britain and New Zealand.

The death-rate amongst Maoris for 1933 was 16·22, which represents a slight fall on that recorded for 1932, namely, 17·06. The infantile-mortality rate was 92·61 per 1,000 live births, as compared with 95·45 for the previous year. It is hoped that by the extension of the special educative endeavours and the issue of the pamphlet in English and Maori on maternal and infant welfare this reduction in the infantile-mortality rate will be the forerunner of many more, and so in time bring this high figure more in line with the rate for Europeans. There has been a further increase in the Maori birth-rate, which for 1933 was 41·20 per 1,000 of the Maori population, as against 39·28 for 1932. The excess of births over deaths gives the Maori race the high and very satisfactory natural increase of 2·50 per cent. The death-rate for puerperal causes was 8·14, which represents an increase over the figure for 1932, which was 7·29 per 1,000 live births. The death-rate for all forms of tuberculosis (36·20) showed a reduction on the rate for the previous year (41·65), due entirely to a reduction in the number of deaths from pulmonary tuberculosis.

The number of deaths from typhoid fever and dysentery has not shown any great variation during the past three years, the rates for 1933 per 10,000 of the population being 1·54 and 1·40. During the year 1933, 261 notifications in respect of Maoris suffering from notifiable diseases were received; of these, 115 were pulmonary tuberculosis and 90 enteric fever. Details and comments regarding the notification of diseases amongst Maoris are given in the report of the Director, Division of Public Hygiene.

A statistical summary relating to the work of district nurses is given in the report of the Director, Division of Nursing.

A large number of the Maori Councils still function actively, and in those districts where there is a large Maori population are proving of great assistance to the Medical Officers of Health.

Health Education.—An important part of the Department's responsibility is the instruction of the public in the principles and practice of hygiene. In addition to what was done by personal interviews, lectures were delivered by officers to various organizations, articles contributed to the press, and addresses broadcast through the courtesy of the New Zealand Broadcasting Board. A wide circulation has been given to leaflets relating to maternal and child welfare, infectious diseases, dental hygiene, and the health of school-children, &c. Students of the Medical School, Otago University, largely availed themselves of the services of the Department's officers and library in the preparation of thesis set by the Professor of Public Health and Bacteriology of that University.

Boards associated with the Department.—The various Boards associated with the Department—namely, the Board of Health, Medical Council, Plumbers Board, Opticians Board, Masseurs Board, Nurses and Midwives Registration Board—have continued their work during the year. Reference to the work of the last-mentioned Board will be found in the report of the Director, Division of Nursing. The Department acknowledges its indebtedness to the members of these Boards for their able service.

Staff.—I regret to record the death of Mr. C. S. Allan, a highly esteemed member of the staff. For fourteen years Mr. Allan rendered the Department and Hospital Boards service of great value in connection with hospital construction and hospital engineering. He will be missed by his colleagues and a wide circle of friends throughout the Dominion.

Mr. W. A. MacGregor, Inspector of Health, Masterton, was another highly esteemed and loyal officer, whose death has meant a distinct loss to the Department.

In conclusion, I wish to express thanks for the support rendered me by officers during the year.

M. H. Watt, Director-General of Health.

PART II.—PUBLIC HYGIENE.

I have the honour to submit my annual report for the year ended 31st March, 1934.

SECTION I.—VITAL STATISTICS.

POPULATION.

The mean population of the Dominion for 1933 (exclusive of Maoris) was estimated to be 1,466,930. This total represents an increase over the corresponding figure for the previous year of 10,693, or a percentage increase of population of 0·73.

BIRTHS.

The births of 24,334 living children were registered in the Dominion during 1933, as against 24,884 in 1932. The birth-rate for 1933 was thus 16·59 per 1,000 of mean population. The general course of the birth-rate during the last five years is shown in the following table :—

Births (Number and Rate) in New Zealand, 1929–1933.

Year.	Total Number of Births registered.	Birth-rate per 1,000 of Mean Population.
1929	26,747	19·01
1930	26,797	18·80
1931	26,622	18·42
1932	24,884	17·09
1933	24,334	16·59

The birth-rate steadily declines. There were 24,334 births for a pupulation of 1,466,930, and there were 11,701 deaths, the difference or natural increase being 12,633 persons, or 0·86 per cent. only of the total population.

Loss during the year in the migration balance, accounts for the population increase being only 0·73 per cent.

DEATHS.

The total number of deaths (11,701) registered during the year 1933, as compared with 11,683 in 1932, shows an increase of 18.

Crude Death-rates.

Year.	Crude Death-rate per 1,000 Mean Population.	Year.	Crude Death-rate per 1,000 Mean Population.
1929	8·75	1932	8·02
1930	8·56	1933	7·98
1931	8·34		

New Zealand has a very low general death-rate, but, owing to the steadily reducing birth-rate, her annual natural increase of population is only 0·86 per cent.

STILL-BIRTHS.

Still-births, which are defined by the Births and Deaths Registration Act of 1924 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 1929–1933.

Still-births (Number and Rate) in New Zealand, 1929–1933.

Year.	Total Number of Still-births registered.	Rate of Still-births per 1,000 Live Births.
1929	870	32·5
1930	865	32·3
1931	809	30·4
1932	746	30·0
1933	722	29·7

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

THE PRINCIPAL CAUSES OF DEATH.

The following table gives the main causes of deaths during the year in their order of magnitude and the actual number of deaths therefrom, also the death-rates per 10,000 of mean population for each of the last five years :—

Cause.	1933.		1932.	1931.	1930.	1929.
	Number.	Rate.	Rate.	Rate.	Rate.	Rate.
Heart-disease (all forms)	3,098	21·12	20·15	19·50	20·33	18·00
Cancer	1,624	11·07	10·11	10·33	10·19	10·43
Violence	823	5·61	6·37	8·06	6·86	6·79
Chest-disease (total)	649	4·42	5·23	5·88	7·03	8·57
Pneumonia	242	1·65	1·91	2·26	3·01	3·30
Pneumonia, secondary to influenza, whooping-cough, and measles	50	0·34	0·35	0·96	0·61	1·26
Bronchitis	177	1·21	1·42	1·40	1·88	2·23
Broncho-pneumonia	180	1·23	1·55	1·25	1·53	1·78
Tuberculosis (all forms)	611	4·16	4·22	4·27	4·55	4·56
Kidney or Bright's disease	561	3·82	3·98	4·01	3·98	3·82
Apoplexy or cerebral hæmorrhage	517	3·52	4·20	4·39	4·62	4·51
Diseases of the arteries	411	2·80	3·05	2·91	3·03	3·04
Senility	337	2·30	3·01	2·96	2·93	3·68
Diabetes	229	1·56	1·57	1·57	1·56	1·43
Hernia and intestinal obstruction	111	0·76	0·65	0·58	0·67	0·76
Diseases and accidents of child-birth (maternal mortality)	108	0·74	0·69	0·88	0·95	0·92
Appendicitis	108	0·74	0·69	0·73	0·69	0·71
Diarrhœa and enteritis	60	0·41	0·47	0·51	0·54	0·58
Epilepsy	33	0·22	0·28	0·38	0·39	0·33
Common Infectious Diseases.						
Influenza (all forms, including pneumonia)	103	0·71	0·46	1·53	0·92	2·11
Diphtheria	27	0·18	0·27	0·38	0·41	0·65
Whooping-cough	18	0·12	0·30	0·25	0·23	0·12
Scarlet fever	4	0·03	0·04	0·08	0·11	0·19
Typhoid	5	0·04	0·05	0·06	0·05	0·16
Measles	17	0·12	..	..	0·01	0·01
Infant-mortality.						
Infant deaths under one year, all causes	769	5·24	5·34	5·92	6·48	6·48

The very low general death-rate of 7·98 per 1,000 of mean population is a very gratifying result. The figure is so low as to surprise eminent statisticians. Review of the above quinquennial table of death-rates reveals that in respect of nearly all causes there is either an improving or stationary tendency. Since 1929 the general death-rate has dropped from 8·75 to 7·98 per 1,000 of mean population.

Infectious Disease.—Definitely, review of the above tables show that freedom from virulent attacks of infectious diseases has been the principal factor contributing to the reduction of the Dominion's general death-rate in the last five years. Some of these, such as diphtheria, scarlet fever, measles, and whooping-cough, have a cyclical epidemic tendency at intervals of several years. During the past fifty years, although epidemics of these four diseases have occurred with regular frequency, there has been a remarkable reduction throughout that period in mortality from these causes, and during the past five years that reduction has been maintained.

There has been a similar reduction in mortality from typhoid fever, diarrhœa and enteritis, and pulmonary diseases of an infectious nature, including tuberculosis.

Less can be said concerning influenza if we include the pandemic of 1918–19 as ordinary influenza, or do not attribute its then exalted virulence to world-war factors. Since 1919 we have experienced epidemics of influenza with severe, but not serious, effect. Preparedness at all times to deal with a local outbreak of this disease is, of course, necessary. There has been no serious epidemic of infantile paralysis since 1925, but many mild cases of this disease presenting systemic symptoms, but little actual paralysis, occurred throughout the Dominion in 1932.

During the last five years sporadic examples and a few grouped cases of encephalitis lethargica have occurred, but the incidence rate in general has been low.

Violence (823).—The death-rate from violence reached its peak in 1931. On analysis by the Government Statistician this was found to be mainly attributable to motor-car accidents. In the two succeeding years it has dropped considerably. In 1932, deaths from suicide increased to

240, but last year dropped to 200, which represents an average rate for deaths from this cause. It is understood that motor-car mileage has greatly reduced in the last two years.

Apoplexy and Diseases of the Arteries.—It is of interest to note that last year there was a substantial drop in the death-rate from "apoplexy" and "diseases of the arteries." Whether or not this is attributable to reduced luxury and speed is a matter of speculative interest.

Outstanding exceptions to an otherwise improving table are the increasing death-rates from heart-disease and cancer, particularly the former. The heart-disease rate shows a definite and considerable increase in the five-year period, the cancer rate a slight one. In both instances increasing length of life may be included as a contributing cause. Cancer, owing, perhaps, to its invasive and dread effects, has captured public sentiment in many countries and much thought and money are applied to research into its cause and treatment. Heart-disease, however, is nearly twice as fatal. Certain diseases such as rheumatic fever, diphtheria and other common infectious diseases as well as syphilis, are regarded as predisposing to heart and arterial disease, yet, despite the known reduction in virulence of these diseases in New Zealand, heart-disease continues to take increasing toll of human lives. Statistically, it is a very prominent figure in the death-rate picture, being the cause of 3,098 deaths in a total of 11,701. For the past six years I have tabulated the deaths from heart and arterial diseases and stressed the importance of this feature in our vital statistics. Last year heart-disease, apoplexy, and diseases of the arteries accounted jointly for 4,026 deaths in a grand total of 11,701, or 34 per cent. of the whole. This percentage appears to be increasing year by year as the following table shows:—

Deaths from Heart-disease, Apoplexy, and Diseases of the Arteries shown as Percentage of Total Annual Deaths from all Causes.

Year.	Number of Deaths.	Percentage of Deaths from all Causes.	Year.	Number of Deaths.	Percentage of Deaths from all Causes.
		Per Cent.			Per Cent.
1928	3,352	28	1931.. ..	3,871	32
1929	3,595	29	1932.. ..	3,990	34·1
1930	3,988	32	1933.. ..	4,026	34·4

This is surely an important field for investigation by the Department, medical practitioners, life-insurance companies, and the general public. In New Zealand the average expectation of life at birth is now sixty-two years. Although this constitutes a world's record, probably it can be lengthened and the magnitude of these figures for heart and arterial diseases marks them out as worthy of special attention.

Kidney or Bright's Disease (561).—Since 1900, unlike heart-disease, apoplexy, and diseases of the arteries, the death-rate from which have greatly increased, that from kidney or Bright's disease has shown little variation.

Diabetes (229).—During the past twenty years the death-rate from diabetes has shown a tendency to increase. This may be due partially or entirely to improvement in diagnosis.

Maternal Mortality.—The questions of maternal mortality and diseases and accidents of childbirth are dealt with fully in the report on maternal welfare by my colleague, Dr. Paget.

Chest-diseases (649):—

Pneumonia	242
Pneumonia, secondary to influenza, whooping-cough, and measles ..	50
Broncho-pneumonia	180
Bronchitis	177
	649

There is reason to believe that many of these deaths could be prevented. In some countries the experiment has been tried of making every pneumonia case compulsorily notifiable, and attempting isolation. Apparently the results achieved have not justified the expense and trouble thereby involved, but the fact remains that probably a large proportion of these illnesses are infectious. All associated with epidemics of influenza, measles, whooping-cough, or diphtheria certainly are. Again, when in the absence of a recognized outbreak of such common infectious diseases, groups of pneumonia or broncho-pneumonia cases occur in a community, affecting in considerable measures virile young adults, adolescents, and children, of which it can be said the infecting agent is virulent, then measures can be taken which give promise of considerably reducing the death-rate from these lung-ailments. Such measures are complete case-isolation to be practised by doctor and nurse, and convalescents to be restrained from close contact with other persons, attendance at indoor public gatherings, &c., until they have completely recovered.

Tuberculosis: All Forms (611).—The following table indicates the course of this disease since 1929:—

Year.	Number of Deaths from Tuberculosis.	Death-rate from Tuberculosis per 10,000 of Mean Population.	Year.	Number of Deaths from Tuberculosis.	Death-rate from Tuberculosis per 10,000 of Mean Population.
1929 ..	642	4·56	1932 ..	615	4·22
1930 ..	649	4·55	1933 ..	611	4·16
1931 ..	617	4·27			

New Zealand has the lowest death-rate from tuberculosis in the world. In common with many other countries, including Great Britain, it has steadily reduced in the last half-century. This year's rate is remarkably low. Tuberculosis, however, still takes fifth place as a cause of death in New Zealand, and disables temporarily or permanently many more than it kills.

Of 611 deaths from tuberculosis last year, 476 (= 3·24) were assigned to pulmonary tuberculosis, and 135 to other forms of this disease, comprising tuberculosis, meningitis, and peritonitis, and tuberculosis of the bones, joints, glands, &c.

Other Forms of Tuberculosis.—The 135 deaths last year from other forms of tuberculosis were made up as follows:—

Tuberculosis of meninges and central nervous system	43
Tuberculosis of intestines and peritoneum	12
Tuberculosis of vertebral column	19
Tuberculosis of bones and joints	3
Tuberculosis of skin and subcutaneous cellular tissue	..
Tuberculosis of lymphatic system	1
Tuberculosis of genito-urinary system	20
Tuberculosis of other organs	1
Disseminated tuberculosis	36
	135

A small proportion only of those latter deaths, particularly those of children, are deemed by recognized authorities to be possibly due to infection from the cow, and bacteriological tests of milk-supplies in New Zealand have shown the milk-supply to be remarkably free from bovine tubercle.

SECTION 2.—NOTIFIABLE DISEASES.

Attached are four tables showing the incidence of infectious diseases in New Zealand for the year ended 31st December, 1933,—

Table A, showing distribution by months.
Table B, showing distribution by health districts.
Table C, showing distribution by age and sex.
Table D, showing distribution of Maori cases by health districts.

Tables A, B, and C are exclusive of Maoris.

Unless otherwise stated, the comments deal with Europeans only.

General.

During the year 1933 there was a decrease of 96 in the number of notifications as compared with the previous year. The particular diseases which show a marked reduction on the previous year's figures are scarlet fever, enteric fever, tuberculosis, poliomyelitis, puerperal fever following abortion or miscarriage, food poisoning, and undulant fever. Increases were shown in the notifications for diphtheria, eclampsia, hydatids, influenza, and bacillary dysentery.

Tables and comments regarding certain of the more common infectious diseases are given below.

(*a*) *Scarlet Fever in New Zealand.*

Year.	Number of Notifications.	Deaths.		
		Number.	Rates per 10,000 of Mean Population.	Case-fatality Rate per Cent.
1928 ..	6,127	57	0·40	0·93
1929 ..	4,848	27	0·19	0·56
1930 ..	2,244	16	0·11	0·71
1931 ..	1,304	11	0·08	0·84
1932 ..	829	6	0·04	0·72
1933 ..	783	4	0·03	0·51

During the six years shown in this table there has been a remarkable and gratifying reduction both in the number of notifications and in the death-rate. The year 1928 was a "peak" year for this disease, and approximately one-third of the cases notified were from the Canterbury Health District. The highest recorded number of notifications from this disease prior to 1928 was in 1916, when 4,278 cases were notified.

(*b*) *Diphtheria.*

Year.	Number of Notifications.	Deaths.		
		Number.	Rates per 10,000 of Mean Population.	Case-fatality Rate per Cent.
1929	1,687	92	0·65	5·45
1930	1,440	58	0·41	4·03
1931	1,327	55	0·38	4·14
1932	802	40	0·27	4·99
1933	963	27	0·18	2·80

The actual increase in the number of notifications for this disease as compared with the previous year was 161. The cases were, however, not of virulent type, as is shown by the fact that the case-fatality rate is almost half that of the previous year. As is usual in New Zealand, the months with the greatest number of cases were those of the late autumn and the winter.

(*c*) *Typhoid Fever.*

Year.	Number of Notifications.	Deaths.		
		Number.	Rates per 10,000 of Mean Population.	Case-fatality Rate per Cent.
1929	278	22	0·16	7·91
1930	149	7	0·05	4·70
1931	161	8	0·06	4·97
1932	195	8	0·06	4·10
1933	106	5	0·03	4·72

This disease does not now take its former place as one of paramount importance. During the five-year period 1916 to 1920 the average number of notifications was 550 per annum. It is also of interest to note that the death-rate from typhoid fever in 1875 was 9·00 per 10,000 of population or 300 times greater than the death-rate of 1933.

(*d*) *Pulmonary Tuberculosis.*

Year.	Number of Notifications.	Deaths.	
		Number.	Rates per 10,000 of Mean Population.
1929	1,374	524	3·72
1930	1,244	529	3·71
1931	1,109	501	3·47
1932	904	488	3·35
1933	890	476	3·24

(*e*) *Acute Poliomyelitis.*

Year.	Number of Notifications.	Deaths.		
		Number.	Rates per 10,000 of Mean Population.	Case-fatality Rate per Cent.
1929	35	7	0·05	12·73
1930	12	5	0·04	41·67
1931	25	5	0·03	20·00
1932	148	19	0·13	12·84
1933	43	8	0·06	18·60

The slight outbreak of poliomyelitis which took place in the early part of 1932 did not recur in the summer of 1933. The last big epidemic of this disease occurred in 1925, during which year 1,159 cases and 175 deaths were notified.

(*f*) *Influenza.*

The following table shows the number of deaths from all forms of influenza :—

Year.	Number of Deaths.	Death-rate per 10,000 of Mean Population.
1929	.. 297	2·11
1930	.. 131	0·92
1931	.. 221	1·53
1932	.. 67	0·46
1933	.. 103	0·70

Of the types of influenza, pneumonic influenza is notifiable. The following table shows the number of deaths and the death-rate :—

Year.	Number of Deaths.	Death-rate per 10,000 of Mean Population.
1929	.. 120	0·85
1930	.. 66	0·46
1931	.. 121	0·84
1932	.. 21	0·14
1933	.. 35	0·24

(*g*) *Lethargic Encephalitis.*

During the year two minor outbreaks of suspected lethargic encephalitis occurred, one of which was in the North Auckland District and the other in the Taranaki District. Altogether 33 cases were notified, of whom 7 were Maoris. There was some uncertainty as to final diagnosis.

(*h*) *Bacillary Dysentery.*

During the year 1933 there were 63 notifications of bacillary dysentery, which is slightly in excess of the number for the previous two years—namely 44 and 31 respectively.

One case of amœbic dysentery was also notified. This is the first case of this type recorded since this disease was declared notifiable in 1926. This occurred in a male who was on furlough from the Malay States, and undoubtedly became infected outside New Zealand.

(*i*) *Others.*

One case each of lead poisoning, leprosy, and phosphorus poisoning were notified. The case of lead poisoning was not connected with any trade, but was entirely accidental. The case of leprosy was in a Native of India, and at his own request arrangements have been made for his repatriation to India.

(*j*) *Hydatids.*

An analysis of the number of notifications of hydatids for the past five years presents an interesting feature. For the five years 1929–33 a total of 237 cases of this disease was notified, of whom 110, or 46·8 per cent. of the total, were notified from the Canterbury Health District. The following table shows for the five years 1929–33 the total number of cases of hydatids the number of cases in the Canterbury Health District, and the percentage of the latter to the total notifications

Year.	Total Notifications for Dominion.	Notifications from Canterbury Health District.	Percentage of Notifications from Canterbury District to Total for Dominion.
1929	43	16	37·2
1930	52	24	46·2
1931	59	23	39·0
1932	37	15	40·5
1933	46	32	69·6
Total ..	237	110	46·8

For the year 1933 (detailed figures for 1933 are not yet available) there was a total of 15 deaths from hydatids (hydatid disease of liver, 9 ; and hydatid disease of other organs, 6) of which 7 occurred in the Otago-Southland District and only one in the Canterbury Province. The proportion of notifications in Canterbury compared with the rest of the Dominion appears to bear no relation to the number of deaths. This would lead one to believe that in districts other than Canterbury all cases of hydatids are not being notified.

Infectious Diseases amongst Maoris.

Table D attached gives the number of notifications of infectious disease received for members of the Maori race. These figures are not included in the European figures, as a very large number of cases amongst Maoris are missed, due to the fact that a large proportion of Maoris fail to obtain medical assistance when they become ill. The figures, while very inaccurate, serve their purpose in indicating to what extent the Maori people are attacked by disease. Of the 261 notifications received, 115, or over 44 per cent. of the total, were from pulmonary tuberculosis, a disease to which the Maori is very susceptible. The next disease in order of importance of the number notified is typhoid fever, for which disease 90 cases were notified. Here, again, we have a disease which has a peculiar affinity for the Maori race, due, for the most part, to their lack of sanitation and the ease in which infection can and does spread.

In none of the other diseases notified did the total reach double figures.

SECTION 3.

Infant Mortality, 769.

The infant-mortality rate for 1933 was 31·6 per 1,000 births.

Infant Mortality in New Zealand, 1929–33 (per 1,000 Live Births).

Year.	Under One Month.	One Month and under Twelve Months.	Total under Twelve Months.	Year.	Under One Month.	One Month and under Twelve Months.	Total under Twelve Months.
1929 ..	23·26	10·84	34·10	1932 ..	21·30	9·92	31·22
1930 ..	24·03	10·45	34·48	1933 ..	22·81	8·79	31·60
1931 ..	22·69	9·46	32·15				

It will be seen from the above that there was a substantial reduction last year in the death-rate of infants, and those under one month of age shared in this reduction.

Analysis of Deaths of Infants under One Month of Age, 1933.

The following table gives the causes of these deaths during the year:—

Cause of Death.	Under One Day.	One Day and under One Week.	One Week and under Two Weeks.	Two Weeks and under Three Weeks.	Three Weeks and under One Month.	Total.
Influenza	..	..	..	..	..	..
Syphilis	..	..	..	..	1	1
Meningitis	..	..	1	..	..	1
Convulsions	..	4	1	..	..	5
Broncho-pneumonia	..	3	3	3	4	13
Pneumonia	..	1	..	..	..	1
Diarrhœa and enteritis	..	1	..	..	..	1
Congenital malformations	16	30	13	10	7	76
Congenital debility	7	14	4	..	..	25
Injury at birth	22	43	8	1	..	74
Premature birth	127	91	18	5	6	247
Other diseases	18	42	8	8	4	80
Accidental mechanical suffocation ..	..	1	1	..	1	3
Other causes	3	10	6	4	6	29
Totals, 1933	195	240	64	31	25	555
Totals, 1932	164	245	65	31	25	530

Thus 435 of a total of 555 infant deaths in the first month of life occurred during the first week and may be regarded as mainly due to pre-natal influences. It is also of interest to record that well over half of the infant deaths (in the first twelve months of life) occurred in this first week—*i.e.*, 435 in a total of 769.

TABLE A.—NOTIFIABLE DISEASES IN NEW ZEALAND, 1933, SHOWING DISTRIBUTION BY MONTHS.

Month.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Tuberculosis.	Cerebro-spinal Meningitis.	Poliomyelitis.	Influenza.	Erysipelas.	Puerperal Fever.		Eclampsia.	Tetanus.	Hydatids.	Trachoma.	Ophthalmia Neonatorum.	Lethargic Encephalitis.	Food Poisoning.	Dysentery.		Actinomycosis.	Undulant Fever.	Lead Poisoning	Leprosy.	Phosphorus Poisoning.	Totals, 1933.	Totals, 1932.
									Ordinary.	Following Abortion or Miscarriage.								Bacillary.	Amœbic.							
January	52	38	11	85	1	10	1	21	3	14	8	2	5	..	..	1	..	2	..	..	1	..	..	..	255	309
February	58	42	22	84	2	4	..	14	11	11	6	2	5	1	4	4	2	1	..	..	2	..	..	1	276	322
March	49	96	19	78	..	15	2	13	10	13	3	1	3	1	2	1	6	16	..	1	..	..	..	..	329	375
April	86	134	8	67	..	9	4	23	5	19	6	2	3	1	1	7	2	21	1	..	3	..	..	..	402	333
May	90	137	6	65	..	2	2	23	7	6	6	2	2	1	2	4	..	7	..	1	1	..	..	..	364	323
June	76	147	1	61	..	..	..	18	10	11	11	1	7	1	1	..	..	5	..	..	2	..	..	..	352	332
July	72	121	3	57	3	1	4	19	7	7	4	1	4	..	3	1	..	2	..	..	1	..	1	..	311	313
August	75	73	4	86	2	..	4	28	6	10	6	1	3	..	2	4	..	2	..	..	2	..	..	..	308	277
September	69	60	2	65	1	1	4	22	15	8	8	..	5	..	4	3	20	1	..	2	1	..	..	..	291	279
October	41	43	6	86	3	..	10	17	11	8	8	2	4	3	2	1	..	5	..	..	2	..	..	..	252	276
November	65	41	14	79	..	..	3	17	13	5	8	1	1	..	2	..	..	..	..	..	1	1	..	..	251	277
December	50	31	10	77	..	1	7	11	7	3	10	..	4	..	2	..	12	1	..	..	2	..	..	..	228	299
Total, 1933	783	963	106	890	12	43	41	226	105	115	84	15	46	8	25	26	42	63	1	4	18	1	1	1	3,619	..
Total, 1932	829	802	195	904	16	148	24	233	110	142	62	17	37	4	23	21	72	44	..	7	24	1	..	..	..	3,715

Table B.—Notifications of Cases of Notifiable Diseases for Year ended 31st December, 1933.

Name of Disease.	North Auckland.	Central Auckland.	South Auckland.	Thames-Tauranga.	Taranaki.	East Cape.	Wanganui-Horowhenua.	Wairarapa-Hawke's Bay.	Central Wellington.	Nelson-Marlborough.	Canterbury.	West Coast.	Otago.	Southland.	Totals.
Scarlet fever	6	115	79	13	30	6	41	20	55	3	153	7	178	77	783
Diphtheria	31	213	144	63	130	34	87	133	64	5	23	25	2	9	963
Enteric fever	..	18	35	3	3	3	2	7	1	3	7	..	5	19	106
Tuberculosis	6	191	28	21	40	3	32	39	120	24	177	17	98	94	890
Cerebro-spinal meningitis	..	2	..	2	..	..	1	1	3	..	..	..	..	3	12
Poliomyelitis	..	4	3	1	14	..	2	6	9	2	..	..	2	..	43
Influenza	1	7	..	..	12	..	9	1	1	..	8	1	1	..	41
Erysepelas	1	79	18	6	2	4	6	8	32	3	36	5	18	8	226
Puerperal fever—															
Ordinary	6	16	3	4	5	1	9	6	10	4	22	5	5	9	105
Following abortion or miscarriage	2	62	5	3	1	..	4	4	2	..	28	2	1	1	115
Eclampsia	1	26	2	2	5	1	7	3	9	1	10	3	9	5	84
Tetanus	..	5	1	1	1	..	1	1	2	..	2	..	1	..	15
Hydatids	..	..	..	2	6	1	..	1	2	..	32	..	1	1	46
Trachoma	..	1	5	..	..	1	..	..	1	..	..	..	..	..	8
Ophthalmia neonatorum	..	6	1	..	4	1	2	1	..	..	5	..	4	1	25
Lethargic encephalitis	2	2	3	..	9	1	2	..	..	2	5	..	..	..	26
Food poisoning	..	9	..	10	..	..	..	..	22	..	1	..	..	..	42
Dysentery—															
Bacillary	3	27	8	1	..	3	..	7	..	..	14	..	..	..	63
Amœbic	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Actinomycosis	..	1	..	..	..	..	..	1	..	..	2	..	..	..	4
Undulent fever	..	..	3	2	..	1	3	2	1	..	4	..	2	..	18
Lead poisoning	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Leprosy	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Phosphorus poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Total	59	784	339	134	262	60	208	242	334	47	530	65	327	228	3,619

TABLE C.—NOTIFIABLE DISEASES IN NEW ZEALAND, 1933, 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	1	96	106	134	147	36	84	17	31	9	23	7	28	7	28	5	8	2	9	..	4	..	7	..	..	..	..	..	..	..	..	..	..	..	..	314	469
Diphtheria	3	5	145	148	195	188	50	72	14	35	12	28	8	16	8	8	4	11	2	2	..	3	1	2	..	..	..	..	..	2	1	..	..	..	..	..	443	520
Enteric fever	..	..	4	6	7	8	9	7	9	1	5	7	8	5	6	2	6	3	2	1	1	4	..	1	2	..	1	..	1	..	..	..	..	..	..	..	61	45
Tuberculosis	..	..	1	1	10	12	10	21	38	59	47	114	75	91	46	60	54	28	30	17	36	29	29	13	25	8	12	4	8	5	5	1	1	..	..	..	427	463
Cerebro-spinal meningitis..	1	1	3	3	..	1	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	6	6
Poliomyelitis	1	..	4	5	11	5	8	..	3	3	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	29	14
Influenza	..	..	1	1	3	4	2	1	3	1	3	3	..	4	1	..	2	1	..	..	..	3	..	..	1	2	..	2	..	..	2	..	..	..	..	1	18	23
Erysipelas	2	3	3	7	5	..	6	3	2	4	9	5	8	6	8	10	10	13	12	16	8	14	12	14	4	7	8	7	3	4	2	2	1	3	4	1	107	119
Puerperal fever—																																						
Ordinary	..	..	..	..	..	..	..	..	..	11	..	27	..	33	..	20	..	11	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	105
Following abortion or miscarriage	..	..	..	..	..	..	..	..	..	9	..	35	..	35	..	18	..	14	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	115
Eclampsia	..	..	..	..	..	..	..	..	..	11	..	26	..	19	..	16	..	8	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	84
Tetanus	..	..	..	1	3	2	2	..	1	1	1	..	1	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	9	6
Hydatids	..	..	1	..	3	..	3	2	3	1	4	1	2	1	3	3	2	1	4	3	2	2	1	..	3	..	..	..	..	..	..	..	..	1	..	..	31	15
Trachoma	..	..	..	..	..	..	..	1	1	..	..	1	..	1	2	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	5	3
Ophthalmia neonatorum ..	11	13	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	14
Lethargic encephalitis ..	..	..	1	2	1	2	1	1	1	1	3	1	4	..	..	1	1	..	..	..	..	..	1	2	..	3	..	..	..	..	..	..	..	..	..	..	17	9
Food poisoning	..	..	2	..	1	..	2	1	..	3	..	2	..	..	..	1	8	2	8	1	4	..	4	1	..	..	..	..	1	..	1	..	..	..	..	..	31	11
Dysentery—																																						
Bacillary	..	..	10	2	8	2	1	3	2	1	4	..	4	1	1	1	..	1	..	5	3	1	1	1	4	..	1	..	1	1	1	..	..	2	1	..	42	21
Amœbic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Actinomycosis	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
Undulant fever	..	..	..	..	1	1	1	..	..	..	..	..	1	1	..	..	5	..	3	..	1	..	2	1	..	..	1	..	..	..	..	..	..	..	..	..	15	3
Lead poisoning	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Phosphorus poisoning ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Total	19	23	271	283	382	372	131	197	94	173	97	274	122	242	84	161	97	101	67	64	55	63	53	41	42	18	24	13	14	12	12	3	2	6	5	2	1,571	2,048

TABLE D.—MAORIS: NOTIFICATIONS OF CASES OF NOTIFIABLE DISEASES FOR YEAR ENDED 31ST DECEMBER, 1933.

—	North Auckland.	Central Auckland.	South Auckland.	Thames–Tauranga.	Taranaki.	East Cape.	Wanganui–Horowhenua.	Wairarapa–Hawke's Bay.	Central Wellington.	Nelson–Marlborough.	Rest of South Island.	Total.
Diphtheria	..	3	1	..	..	1	..	3	..	..	..	8
Enteric fever	3	4	36	1	..	10	6	8	1	21	..	90
Tuberculosis	21	11	15	10	14	20	11	9	..	4	..	115
Poliomyelitis	2	..	..	..	..	..	..	..	..	..	..	2
Influenza	..	..	1	..	1	..	..	..	..	..	..	2
Erysipelas	..	..	2	..	..	2	..	..	..	..	..	4
Puerperal fever—												
Ordinary	3	1	..	..	..	3	2	..	..	..	..	9
Following abortion or miscarriage	1	..	..	..	..	1	1	..	..	..	..	3
Tetanus	..	..	..	..	..	1	..	..	..	..	..	1
Hydatids	..	..	..	..	3	1	1	..	..	..	..	5
Trachoma	..	..	3	..	..	..	..	..	..	..	..	3
Ophthalmia neonatorum	..	..	..	1	1	2	..	..	..	..	..	4
Lethargic encephalitis	5	..	..	..	..	..	..	2	..	..	..	7
Bacillary	2	3	..	..	..	1	2	..	..	..	..	8
Total	37	22	58	12	19	42	23	22	1	25	..	261

TABLE E.—VENEREAL-DISEASES CLINICS.—CASES TREATED DURING THE YEAR ENDED 31ST DECEMBER, 1933.

—	Auckland.		Wellington.		Christchurch.		Dunedin.		Totals.	
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	95	72	38	58	18	8	11	4	162	142
Soft sore	1	..	1	..	8	..	..	..	10	..
Gonorrhœa	483	145	232	68	358	140	81	49	1,154	402
No venereal disease	113	47	43	59	36	14	8	..	200	120
Total attendance of all persons at the out-patient clinics who were suffering from—										
Syphilis	2,011	2,250	2,628	1,214	1,456	602	558	603	6,653	4,669
Soft sore	6	..	2	..	52	..	..	..	60	..
Gonorrhœa	16,128	2,226	14,687	3,852	11,963	6,276	5,110	3,424	47,888	15,778
Number of persons suffering from—										
Syphilis	756	737	661	653	490	198	155	158	2,062	1,746
Gonorrhœa	1,247	708	1,043	387	2,117	1,325	598	562	5,005	2,982

SECTION 4.—NUMBER OF VESSELS INSPECTED DURING THE YEAR ENDED 31ST DECEMBER, 1933.

Port.	Number of Vessels inspected.	Prohibited Immigrants.			
		Infectious-disease Cases.	V.D. Cases.	Infirm Cases.	Mental Cases.
North Auckland Health District—					
Opua	4	..	1	..	..
Combined Auckland Health District—					
Auckland	300	26	24	116	7
Taranaki Health District—					
New Plymouth	18	..	..	..	..
East Cape Health District—					
Gisborne	2	..	..	..	..
Combined Wellington Health District—					
Wanganui	4	..	..	..	..
Napier	6	..	..	..	..
Wellington	125	13	5	32	3
Picton	2	..	..	..	..
Nelson	..	..	..	..	..
Combined Canterbury Health District—					
Lyttelton	37	..	..	..	..
Timaru	5	..	..	..	..
Westport	2	..	..	..	..
Combined Otago Health District—					
Oamaru	2	..	..	..	..
Port Chalmers	16	..	..	..	..
Bluff	45	..	..	..	..
Totals	568	39	30	148	10

SECTION 5.—WORKING OF THE SALE OF FOOD AND DRUGS ACT.

TABLE 1.—SHOWING SAMPLES RESPECTIVELY OF MILK AND OTHER FOODSTUFFS TAKEN AND DEALT WITH DURING THE YEAR ENDED 31ST DECEMBER, 1933.

Health District.	Number of Samples taken.		Number of Vendors.		Samples not complying.					
					Number of Samples.		Number of Warnings issued.		Number of Prosecutions recommended.	
	Milk.	Other.	Milk.	Other.	Milk.	Other.	Milk.	Other.	Milk.	Other.
North Auckland ..	38	18	38	18	3	5	3	9	..	..
Central Auckland ..	1,603	280	1,594	278	159	37	130	13	21	7
South Auckland ..	231	8	231	8	6	1	6	1	..	..
Thames-Tauranga ..	36	..	36	..	3	..	3	..	..	..
Taranaki	45	22	40	21	2	6	1	6	1	..
East Cape	307	31	307	31	..	2	..	2	..	..
Wanganui-Horowhenua	199	36	198	36	4	20	..	16	3	3
Wairarapa-Hawke's Bay	225	21	225	21	1	9	..	6	..	3
Central Wellington ..	1,778	46	1,735	41	26	12	5	5	19	4
Nelson-Marlborough	138	40	136	40	3	8	1	6	2	2
Canterbury ..	1,871	138	1,730	130	115	22	91	22	24	..
West Coast ..	146	45	134	45	16	8	14	8	2	..
Otago	974	529	557	157	90	20	41	7	16	3
Southland	102	44	48	21	6	6	5	..	..	..
Totals ..	7,693	1,258	7,009	847	434	156	300	101	88	22

TABLE 2.—SHOWING INSPECTION OF PREMISES ENGAGED IN SELLING OR MANUFACTURING FOODSTUFFS DURING THE YEAR ENDED 31ST DECEMBER, 1933.

Health District.	Number of Premises inspected engaged in the Selling or Manufacture of Foodstuffs.	Number of such Premises found to have Defects.	Number of Instances Goods were "seized" or "destroyed."
North Auckland	1,095	184	2
Central Auckland	1,332	256	34
South Auckland	2,906	296	8
Thames-Tauranga	257	23	2
Taranaki	208	39	9
East Cape	801	193	..
Wanganui-Horowhenua	459	49	65
Wairarapa-Hawke's Bay	257	30	9
Central Wellington	461	27	18
Nelson-Marlborough	1,164	107	4
Canterbury	1,036	3	7
West Coast	729	35	4
Otago	1,960	200	9
Southland	736	30	3
Totals	13,401	1,472	174

TABLE 3.—LEGAL PROCEEDINGS FOR YEAR 1933.

	Number of Prosecutions.	Amount of Fines and Costs. £ s. d.
Milk below standard	40	107 18 0
Milk, added water	33	164 13 3
Milk, stale	6	12 12 0
Bottling milk on street	1	0 18 0
Carrying water on milk-cart	1	1 0 0
Butter, excess moisture	1	1 1 7
Lime-water below standard	8	12 18 4
Malt-extract below standard	1	3 0 6
Oil of eucalyptus below standard	1	1 2 0
Camphorated-oil below standard	1	1 13 1
Improper labelling	1	3 11 0
Spirits not true to label	3	70 4 8
Private Hospital Regulations	2	4 11 6
Dangerous Drugs Regulations	3	10 10 0
Unlicensed hairdresser's shop	1	1 10 0
Food premises (Regulation H.–125)	1	9 11 6
Draining and Plumbing Regulations	1	6 2 0
Obstructing and Inspector	1	6 11 0
Section 26 (2) (*b*), Health Act	1	2 15 6
Totals	107	£422 5 1

SECTION 6.—ADMINISTRATION.

Staff Changes.—During the year no changes have occurred in the Medical Officer of Health Staff.

Inspectors.—To fill the vacancy in inspectorial staff at Masterton created by the sudden death of Mr. W. A. McGregor, transfers occurred of Mr. J. M. Swain from Taihape to Masterton, Mr. R. McCrone, Westport to Taihape, and Mr. P. A. Wallwork was appointed to Westport, Mr. M. E. Bettell was transferred from Greymouth to Christchurch, and he was replaced by Mr. T. E. Schou.

Economy Measures.—My thanks are again due to officers for necessary economy in travelling and other administrative expenses.

Sanitary Administration.—Reports received from the various Medical Officers of Health appear to show that, despite the times we live in, the sanitary services of local authorities are being satisfactorily maintained. In general, both public and private building remains at a low level. Drainage schemes at Eastbourne and Blenheim are nearing completion. Dunedin City carried a loan proposal to bring in a greatly increased water-supply from the "Deep-Stream" source. A proposal to install a high-pressure water-supply for Kaikoura is still under consideration.

Food and Drugs.—During the year several amendments of the regulations were passed. A greatly extended schedule of coal-tar dyes for colouring foodstuffs was adopted. A regulation was passed to prevent the sale of any substance as a preservative for any food if the regulations prohibit the use of such preservatives in such food. The reason for this was that there was found on the market a line described as suitable for preserving milk, &c. Provision has also been made for the display of notices where reconstituted cream is sold particularly in dairies where fresh cream is also sold. Provision has been made for the use of a small amount of sodium benzoate in fruit pulp sold uncooked usually for the purposes of dessert flavouring or dressing. An extension of the regulation in relation to culinary essences allows for the use of ethylene glycol or isopropyl alcohol in addition to ethyl alcohol as solvents. It was decided to adopt the standard in the 1932 edition of the British Pharmacopœia for liquor cresolin saponatus as the standard for lysol.

A fair amount of attention has been given to sampling the commoner British Pharmacopœa drugs. Unfortunately it has been found that the existing regulations did not automatically adopt the new British Pharmacopœa as was supposed, and in consequence a new regulation will have to be gazetted, the effect of which is that existing stocks of 1914 British Pharmacopœa preparations can be marketed for a further period of twelve months.

Routine sampling of milk, butter, and other foodstuffs has also received systematic attention.

Thanks are again due to the Comptroller of Customs and to the Dominion Analyst and their officers for valuable assistance and advice.

I desire to again express my appreciation of the loyal and able co-operation of the Medical Officers of Health and their staffs.

T. McKIBBIN,
Director, Division of Public Hygiene.

PART III.—SCHOOL HYGIENE.

I have the honour to report on the work of the Division of School Hygiene for the year ended 31st March, 1934.

Staff.

There has been no recent alteration in the personnel of the school medical and nursing staff, which consists of a Director, ten School Medical Officers, and twenty-five school nurses. In the East Cape, North Auckland, and Taranaki districts, Doctors Turbott, Cook, and Champtaloup respectively continue to act as both Medical Officer of Health and School Medical Officer for the district.

The work of the school nursing staff has been carried out with interest and capability.

It was found impracticable to continue in Taranaki the arrangement with the Red Cross Society, by which Miss Corkill (Red Cross nurse) and Miss Small (school nurse) carried out combined duty as Red Cross and school nurses. Public confidence in these officers resulted in an excessive demand upon their services, so that reorganization became necessary and arrangements were made for Miss Small to carry on duty as school nurse in North Taranaki, Miss Corkill relinquishing her school nursing duties, and Miss Jewiss being appointed district nurse with headquarters at Opunake; Miss Small and Miss Jewiss now work under the direction of the Health Department only.

The arrangement by which district nurses now act as school nurses has resulted in better supervision and care of the health of children in outlying districts. The district nurse may be appealed to for assistance in all local health problems, and is able to deal with them directly and to utilize without delay all available facilities for prevention and cure.

Arrangements have been made for Miss Hodges, who has been acting as school nurse, Wellington, to be transferred to the position of district nurse and school nurse in the Wairarapa, with headquarters at Masterton, with the object of giving closer attention not only to the school nursing work of the district but also to the various Maori communities scattered throughout that area.

Figures relating to Work accomplished in 1933.

The following summary serves to indicate the extent of work accomplished during the school period February to December, 1933:—

Schools inspected—		
Of roll under 100	817	
Of roll 100 to 500	385	
Of roll over 500	120	
		1,322
Children examined—		
Complete examinations	57,566	
Partial examinations	51,876	
		109,442
Number of notifications sent to parents		37,543
Number of addresses to school-children		575
Number of parents interviewed		9,355
Number of lectures or addresses to parents		54

The figures for the work of the school nurses are as follows:—

Number of days assisted Medical Officer in schools		1,704½
Number of children examined for medical schedule (H. Sch. 14)		90,858
Number of days engaged wholly in clerical work		1,036½
Number of children re-examined after Medical Officer's inspection		39,001
Number of children examined by special request		12,096
Number of visits to homes in—		
Large towns	7,580	
Small country towns	2,871	
Scattered districts	1,569	
		12,020
Number of children taken personally to hospital, &c.		981
Number of children taken personally to dental clinic		419
Number of health talks given		961

SUMMARY OF COMPLETE EXAMINATIONS.

	European.	Maori.
Number of children examined	51,582	1,865
Percentage found to have defects	71·36	70·19
Percentage with defects other than dental	53·04	53·51
Percentage of children showing evidence of—		
Subnormal nutrition	5·48	3·27
Pediculosis	0·97	6·22
Uncleanliness	1·23	1·45
Skin—		
Impetigo	1·06	4·72
Scabies	1·23	19·79
Ringworm	0·17	0·21
Other skin-diseases	1·52	0·91
Non-vaccination	96·51	99·68
Heart—		
Organic disease	0·82	0·91
Functional disturbance	1·14	3·00
Respiratory disease	0·87	2·52
Total deformities of trunk and chest	14·37	8·14
Mouth—		
Deformities of jaw or palate, including irregularity	2·12	0·59
Dental caries	35·67	43·16
Extractions of permanent teeth	8·01	2·63
Fillings	50·66	22·14
Perfect sets of teeth	2·51	14·36
Nose and throat—		
Nasal obstruction	2·80	2·09
Enlarged tonsils	12·06	7·13
Enlarged glands	6·22	3·69
Goitre—		
All degrees	17·55	5·09
Incipient	15·01	4·18
Small	2·24	0·86
Medium	0·25	0·05
Large	0·05	..
Eye—		
External eye-disease	1·52	1·13
Total defective vision	4·36	1·29
Corrected	2·37	..
Uncorrected	1·99	1·29
Ear—		
Otorrhœa	0·19	0·54
Defective hearing	0·40	0·32
Defective speech	0·58	0·05
Mental—		
Feeble-mindedness	0·25	0·43
Epilepsy	0·04	0·05
Other nervous defects	0·48	0·05
Tuberculosis—		
Total	0·07	0·97
Pulmonary	0·02	0·54
Other tissues	0·05	0·43

Though owing to necessity for economy it has not been found practicable to carry out special investigations, routine work has been fairly well maintained, 109,442 children being examined (of whom 57,566 were completely examined and the rest partially). This means that approximately one-half of the primary-school population has received attention—an achievement that must under present staffing conditions be considered as very satisfactory.

As indicating our efforts to secure contact with parents and to maintain their interest and co-operation, it should be noted that 9,355 parents were personally interviewed by School Medical Officers in the course of routine examinations. This figure would without doubt be increased if it included all those parents who personally appeal for the School Medical Officer's advice upon the health problems of their children. In connection with the work of supervision of tuberculosis contacts or for the purpose of arranging treatment for children found suffering from defect, school nurses have paid over twelve thousand visits to homes in country and town. It is to be seen that 981 children were personally conducted by school nurses to hospital. The number of health talks given by nurses

has considerably increased (961 as against 661 last year), no doubt partly owing to the widened scope of work of the district nurses.

Much of the work of School Medical Officers or school nurses cannot, however, be tabulated, since its object is preventive and its result is not immediately obvious, but rather found to be in a growing improvement in personal and general hygiene, in wider health education, and ultimately in a lessened incidence of defect. During the last few years of stress and difficulty much practical assistance has been given by School Medical Officers and Nurses to schemes for amelioration, such as distribution of milk at school and organization of health camps, in co-operation with various philanthropic and relief agencies, official and unofficial. These efforts were undoubtedly of great value in assisting in the maintenance of a higher level of nutrition and well-being.

The percentage of various defects shows very little variation from that of the previous year, there being with regard to most items a slightly decreased incidence.

Malnutrition.

Serious consideration has been given to the question of malnutrition among school-children throughout the Dominion, with the object of obtaining knowledge as to its extent and in order to suggest and assist in the promotion of any methods of amelioration found necessary.

The percentage of subnormal nutrition noted in the routine examination of school-children during the years 1928 to 1933 inclusive is given below :—

Year.	Primers.		Standard II.		Standard VI.		Whole School.		Total.	
	Number examined.	Per-centage.	Number examined.	Per-centage.	Number examined.	Per-centage.	Number examined.	Per-centage.	Number examined.	Per-centage.
1928	17,325	8·67	12,130	7·30	7,783	3·10	14,252	6·24	51,490	6·84
1929	24,129	8·24	18,399	8·35	10,425	4·96	14,496	4·98	67,389	7·06
1930	21,417	8·01	17,296	7·56	9,240	3·80	17,302	4·42	66,596	6·30
1931	20,007	7·45	17,241	7·59	10,462	5·27	15,371	6·17	69,173	6·68
1932	18,540	8·26	17,046	5·74	9,753	3·57	16,144	4·53	62,222	5·81
1933	11,164	7·28	16,547	6·13	8,398	4·44	13,783	3·99	51,582	5·48

Consideration should be given to the fact that for 1933 owing to the raising of the school entrance age, the percentage of malnutrition noted for primer classes refers to a slightly older age group and is not strictly comparable with the figure for 1932. It is improbable, however, even if this were not so, that the result (though possibly slightly higher) would be altered to any striking degree. A similar conclusion must be reached to that of last year—namely, that, taking the Dominion as a whole, there is no evident increase in the percentage of school-children suffering from malnutrition. As might be expected, the percentage of primer children with faulty nutrition is slightly higher than that of older children. Nevertheless, 7·28 primer children were found to be suffering from malnutrition in 1933, as against 8·26 in 1932.

The percentage of children suffering from malnutrition in country districts is less than in cities. The returns for " whole schools " noted above applies in general to country children of all school ages, since the remote schools, though more rarely visited, are examined throughout.

Parallel evidence is offered by the annual report of the Chief Medical Officer of the Board of Education, England, for the year 1932, wherein is stated, " Both general and special inquiries made during the year show that no noticeable change has taken place in the condition of the children, and that in London there has certainly not been any perceptible decline in the children's nutrition."

The Fourth Annual Report for the Department of Health, Scotland, for the year 1932 gives similar evidence. The percentage of children found with nutrition " below average " shows a steady slight decline from 7·9 in 1923 to 5·3 in 1932 ; the figures for those showing " very bad " nutrition were 0·3 in 1923 and 0·2 in 1932.

It is to be emphasized that the above returns for New Zealand schools give the average for the whole Dominion and not information with regard to special cities or districts. The children living in crowded city areas, as would be expected, show a percentage of malnutrition higher than the average. It is difficult to make a dogmatic statement about the result of an investigation into any particular district. Other factors than the amount of food received by a child are of vital importance ; housing conditions, lack of parental control, as shown by irregular hours of sleep, play a large part in producing certain ill effects. The self-denial and intelligence of parents in many instances work wonders in making a little go a long way. Though many deserve the greatest credit for their domestic management, it must be realized that to adequately provide for a family with the facilities available is to set an almost impossible task for many women. In well-to-do homes insufficient sleep and over-stimulation, apart even from school work, predisposes to malnutrition. Children's choirs, dancing, elocution, music lessons (all admirable in moderation) fill their hours after school to such an extent that

adequate rest is impossible. "It would appear," states one School Medical Officer, "almost impossible in these times for children to have adequate sound restful sleep."

During the present difficult times special measures for safeguarding the health and welfare of children have received serious consideration, supplementary feeding at school, especially by means of an extra milk ration, being one of the most generally adopted. Owing to its importance from the economic standpoint, milk has been the subject of wide discussion throughout the Dominion.

It has been part of the policy of the Health Department for many years to advocate an increased consumption of milk by the public in general and by children in particular. Various methods of propaganda have been employed, such as Health reports, newspaper articles, wireless talks, Health exhibits, distribution of Health pamphlets, and personal advice given to parents by officers of the School Medical Service.

Arrangements for supplying selected groups of children with milk at certain schools have been carried out in some areas for many years past. "Nutrition classes" have been in existence since 1922, and Dr. Elizabeth Gunn established a "milk class" in Wanganui as far back as 1926. During the last two or three years good work has been done in many of the larger towns by making an extra milk ration (½ pint per day) available for necessitous children. This has been possible by private philanthropy, by the Parent-Teacher and School Committees Associations, or by the effort of some humanitarian organization as, for instance, the Smith Family, Red Cross, &c. This is a sound procedure since milk is the best single food, is not only of great body-building and repairing value, but protects against any deficiencies in the diet, increasing the resistance to disease.

The highest authorities agree that the average consumption of milk is far below what is desirable. Statements issued by the British Ministry of Health, also by the United States of America health authorities, emphasize the value of a liberal supply of milk in the dietary owing to its richness in calcium and phosphates, the high biological value of its proteins, and the ability to supply infection-resisting and calcifying vitamins. It is to be noted that on account of its mineral and vitamin content, skimmed milk where obtainable is valuable as a cheap protective food.

The consumption of milk in New Zealand is far below what is desirable, being probably rather less than ½ pint per day per person. It is hoped by constant talking to children, parents, and teachers to encourage larger consumption of milk and milk-products, fresh vegetables, and fruit. In the farming communities the children appear to dislike milk, and in the cities parents frequently say they cannot afford enough. In one investigation by Dr. Henderson, School Medical Officer, Auckland, a few years ago, it was shown that 10 per cent. of share milkers' children do not drink milk. Where provision has been made for extra milk feeding of special groups of children at school or in health camps results have shown decided benefit. The allowance of milk at health camps is on the basis of 1½ pints per day per child.

A fairly conservative estimate, therefore, as to the amount of milk to be consumed in New Zealand would be an average of one pint a day per person, it being recognized that as a rule the adult members of the family do not consume a ½ pint each per day, so that the children's share would be increased accordingly. Every child, with few exceptions, should have from 1 pint to 1½ pints of milk daily, either as a drink or cooked in the food; part of this may be taken as a milk ration at school.

Space forbids detailed account of the many efforts for supplying children at school with a milk ration, but the movement is growing steadily and every month fresh areas are reported to have adopted the scheme. Nearly all schools provide hot cocoa (or, more rarely, soup) for children taking lunch to school. As far as possible this is paid for by the children themselves, but poorer ones, as a rule, are supplied free through local generosity.

It may be added that School Medical Officers have been advised that all schemes for distribution of milk at school should be submitted for approval to the Medical Officer of Health in order to ensure that the milk is clean and safe. The use of pasteurized milk, when practicable, is advocated.

Health Camps.

In combating malnutrition among school-children, valuable assistance has been given by various health-camp organizations. Public confidence in this work is becoming steadily more firmly established owing to the obvious benefit received by the now numerous children who have been inmates of health camps for any lengthy period.

The excellent work of the various health-camp organizations have been referred to in detail in previous reports. During the past year successful health camps were conducted under the auspices of the following associations: The Community Sunshine Association, Auckland (at Motuihi Island and at Waiheke, Ostend); the Wellington Children's Health Camp Association (at Otaki); the Sunlight League of New Zealand, Christchurch (at Okain's Bay, in charge of Miss Cora Wilding); for Dunedin children at Waikouaiti, Otago (in charge of Mrs. Marshall Macdonald); the Southland Children's Health Camp Association, Invercargill (at Pounawea). The Bryant Home at Raglan is still unostentatiously and efficiently giving assistance to delicate and undernourished children. In nearly all cases the selection of children for admission to camp was made by School Medical Officers and practical assistance was given by school nurses in residence. The holding of these camps was made possible by the enthusiasm and generosity of many voluntary helpers and individual citizens.

Dr. Bakewell reports with regard to Wellington :—

"The health camp at Otaki has been open throughout the year, except for a period of six weeks during October and November when the building was closed, partly for cleaning purposes, partly on account of an outbreak of mumps and measles. An average of sixty to seventy children has been maintained, the number being increased to ninety-odd during the Christmas holidays. Cases have been admitted from Taranaki, Gisborne, Napier, Dannevirke, Wanganui, Palmerston North, Masterton, and Otaki, as well as from Wellington and suburbs. More cases are being recommended by general practitioners and hospital doctors, which is more satisfactory, and helps to prevent people taking unfair advantage of the institution. The Smith Family and Returned Soldiers' Association also nominate and pay for cases known to their organizations.

"The weight chart is still taken as a gauge of general improvement in health, and is probably as good a guide as any, though this does not record improvement in behaviour and mental alertness. Improvement is often dramatic, especially in cases of wrong and under feeding with no organic complications ; such a child can put on 7 lb. or more in a fortnight. When the malnutrition is severe and chronic so as to cause definite ill-health, improvement is considerably delayed. Albert, aged twelve years, recently took thirteen weeks to gain $\frac{1}{4}$ lb., then, for no apparent reason, put on 4 lb. in a month. It was unfortunate that in order to make room for others he had to be discharged just at this point. Another four months under the same regime was apparently necessary, and would have made an interesting clinical study.

"A preliminary drop in weight for the first week or so occurs in many cases, due presumably to necessity for adjustment and sometimes nostalgia. Annie, aged twelve years, lost 1 lb. the first week then gained 11 lb. in a month. Cases of malnutrition and wrong feeding do best ; asthmatical cases continue to do surprisingly well, but are chiefly those in which the neurotic element is uppermost as a causative agent, and removal from the home environment is probably the main factor. Children suffering from chorea do better than they did at first, but are difficult as behaviour problems and tend to cause disturbances among the other children. A number of cases admitted suffering from debility after measles or mumps, or both, did very well, and to have established satisfactory convalescence and return to health in a child after such infective diseases is, one feels, of great value and importance. The same daily routine has been adhered to. Regulated sunbathing has been instituted ; the children respond well and there is less trouble with severe sunburn.

"The minimum period for residence in camp is still fixed at six weeks, and, unless in exceptional circumstances, this has been observed for all cases. More often than not this period has had to be extended up to three and even four months before improvement takes place. I am sorry that a systematic 'after care' investigation has not been possible to ascertain as to the permanency of the improvement produced."

Tuberculosis Contacts.

An effort has been made to continue the work of supervision of tuberculosis contacts, as to the value of which there is ample evidence especially from the preventive aspect. To do so ensures that the general nutrition of most of the children is satisfactorily maintained, and, by earlier diagnosis and timely treatment, those who develop definite signs of tuberculosis are placed under conditions which greatly facilitate their recovery. Apart from the humanitarian aspect of the work, on the lower basis of economy its value is easily seen, since a larger percentage of these children without this care would certainly develop the disease and become a charge on the public funds.

Reports have been forwarded from various districts with reference to groups of tuberculosis contacts.

Dr. Henderson reports upon 236 children contacts in the Auckland District, of whom 134 are in the Waikato area, and states that approximately some 184 homes were visited by the school or district nurse. In the Gisborne area Dr. Turbott reports on twenty-seven children who are kept under constant supervision. In Taranaki Dr. Champtaloup states that there are on her roll 109 contacts of school age. Dr. Stevenson gives information with regard to 455 contacts under supervision in Otago. Dr. Abbott gives the following details with regard to 259 children, of whom 104 are in Invercargill : "During the year fifteen contact children have shown definite signs of tuberculosis ; four have gone to sanatorium, one has died, the others receiving treatment at the Southland Hospital or being treated at home. Two are now back at school."

Dr. Bakewell's report summarizes the amount of work done in the Wellington District. The same association with the Tuberculosis Clinic under Dr. Short at the Wellington Hospital has been maintained and specialist treatment of various types arranged when necessary. Of twelve cases who after examination and X-ray were considered by Dr. Short to show some signs of tubercular infection, six were sent by him to sanatoria, where they are still patients, six were treated at home by tuberculin and general measures, and three (non-infectious) have been sent to the health camp. Twenty-six orphanage children with unfavourable family history are being kept under observation with the co-operation of the local medical practitioner. Special supervision is being carried out with regard to Maori children living in the pa, the visiting school nurse reporting that unfavourable influences are overcrowding, deficiency in diet, especially with regard to vegetables, gross dental caries is common, and there is considerable difficulty in arranging for adequate treatment.

Tuberculosis Contacts, Wellington District: Summary from 21st February, 1933, to 20th February, 1934.

Number of schools visited—	
Three monthly	72
Six monthly	5
Once during the year	9
Approximate number of families on list	318
Approximate number of children on list	620
Number of homes visited (home visits)	700
Number of children—	
Examined by Dr. Short	355
X-rayed	23
Showing evidence of T.B.	12
To Dr. Russell (Psychological Clinic)	1
To Dr. Gillies (Orthopædic cases)	8
To eye, ear, nose, and throat specialist (approximately fifty-one visits)	33
Treated at out-patients, in hospital, or by private practitioner (for some general disability)	21
To office for weight or examination by School Medical Officer	61
To Otaki Health Camp	13
To Otaki Rest-home	4
Who received dental treatment at hospital or dental clinic	190

Open-air Schools for Delicate Children.

The Sunshine School, Auckland (conducted by the Community Sunshine Association) and the Kew School, Dunedin, continue to do good work.

Miss Wright, school nurse, in her report on the Sunshine School, states that thirty-nine children were admitted during the year, the reasons for admission being: Rheumatism and heart abnormalities, T.B. contacts, asthma, spinal, malnutrition and nervous, muscular infirmities, sinus infection, anæmia, bad posture, osteomyelitis. A considerable amount of specialist treatment for certain defects was carried out. Sunbathing was utilized on all suitable days. A generous midday dinner was supplied in addition to a daily milk ration. The response to this regime was easily seen in the improved condition of the children.

Kew School, Dunedin: Twenty-seven children have attended the school this year. During the year 6 children left the school, 5 being well enough to go back to the ordinary school routine and 1 child moving to live in the country; 18 of the children were under weight, irrespective of other physical ailments, 8 of them being 10 lb. or more under-weight. Attending the school were children suffering from cardiac lesions, chest conditions, general debility, chronic deformities, tuberculosis contacts, children from poor environment, and so on. During the year an Open-air School Committee was formed in connection with the school, the main object being to provide a hot midday meal for the children, thus making possible a satisfactory health regime. Creditable progress has been made in response to these efforts, and the voluntary workers responsible for improving the amenities at the school have reason for congratulation.

Kindergartens.

In most centres throughout the Dominion School Medical Officers conduct regular medical examinations of kindergartens.

During the year 608 kindergarten children were examined; the result of the examination is shown as follows: Number of children examined, 608. Percentage found to have defects, 67·60. Percentage with defects other than dental, 54·11. Percentage of children showing evidence of—Subnormal nutrition, 3·45; pediculosis, 0·33; uncleanliness, 0·99. Skin—Impetigo, 1·64; scabies, 0·33; ringworm, 0·16; other skin-diseases, 1·97. Non-vaccination, 93·42. Heart—Organic disease, 0·16; respiratory disease, 1·81. Total deformities of trunk and chest, 15·96. Mouth—Deformity of jaw or palate, including irregularity, 0·33; dental caries, 38·49; fillings, 10·03; perfect sets of teeth, 26·97. Nasal obstruction, 4·44. Enlarged tonsils, 12·66. Enlarged glands, 17·43. Goitre—All degrees, 4·60. Eye—Total defective vision, 1·32; corrected, 0·66; uncorrected, 0·66. Ear—Otorrhœa, 0·49; defective hearing, 0·16. Defective speech, 1·48. Notifications to parents, 27·80.

Little difference in the incidence of defect found in kindergarten and entrant children in the primary school is to be noted, except that the incidence of malnutrition is greater among children attending the primary school. Kindergarten children show much greater percentage with perfect teeth, 26·97 as against 4·43.

All reports make favourable reference to the keen interest evidenced by the teachers and parents in the welfare of the children and the wholesome atmosphere of the kindergarten centres. A satisfactory feature is the large percentage of parents who show interest in the welfare of their children by attending the medical examination. Closer co-operation and better understanding are by these means obtained between the child, parent, teacher, School Medical Officer, and nurse.

Native Schools.

Since the establishment of the East Cape and North Auckland districts, the examination of Native schools has been greatly extended, and each year an increasing amount of knowledge is available regarding the physical condition of the Maori. The arrangement by which the district nurse acts as school nurse in these areas is excellent and has resulted in more intensive attack on the many minor school health problems.

A comparative summary of defects found in routine examination of pakeha and Maori children is given above. The Native school returns, as compared with European, show in the Maori a much higher incidence of verminous conditions and skin-disease, especially scabies. The incidence of respiratory disease in the Maori is shown as 2·52 per cent. as against 0·87 per cent. in the European school-children. The Maori shows a less incidence of deformities of the trunk and chest and of enlarged tonsils; also a markedly lower goitre incidence—5·09 per cent. Maoris with goitre against 17·55 per cent. Europeans. The tuberculosis percentage is as follows:—

Tuberculosis—	European.	Maori.
Total	0·07	0·97
Pulmonary	0·02	0·54
Other tissues	0·05	0·43

Dr. Cook, North Auckland, notes an unexpectedly large occurrence of functional heart murmurs, which he considers apparently due to lack of muscular tone, and to indicate a "temporary generalized impairment of functional health."

Dr. Turbott, East Cape, compares the health of the Maori pre-school and school child:—

"This analysis of Maori children's health in pre-school and school sections is interesting as showing where preventive effort needs reinforcing in the pre-school years. The pre-school Maori child is seen to suffer more from skin-diseases and bronchitis, and these are readily preventable. Other things begin to affect health more in school years as revealed in the comparative tables. The results of the careful examination in the homes of 506 pre-school children (0–5 years inclusive), and of 617 school-children (6–15 years inclusive) are given below:—

Defect.	Pre-school.		School.	
	Number.	Percentage.	Number.	Percentage.
Malnutrition	22	4·34	27	4·37
Diseases of the skin—				
Impetigo	105	20·75	26	4·21
Scabies	114	22·52	114	18·47
Eczema	5	0·98	3	0·48
Acne vulgaris	..	..	4	0·64
Other skin conditions	..	..	4	0·64
Total skin-diseases	224	44·26	151	24·47
Bony deformities—				
Marked defect, trunk and chest	5	0·98	3	0·48
Limb deformities (talipes)	..	..	7	1·13
Dental disease—				
Dental caries, Primary	79	15·61	72	11·66
Secondary	..	..	66	10·69
Perfect sets, Primary	168	33·20	15	2·43
Secondary	..	..	61	9·88
Pyorrhœa	..	..	12	1·94
Nasopharyngeal disease—				
Adenoids	9	1·77	61	9·88
Enlarged tonsils	35	6·91	149	24·14
Enlarged cervical glands	117	23·12	201	32·57
Goitre (only incipient found)	6	1·18	82	13·29
Cardiac disease	2	0·39	20	3·24
1. Non-tuberculous—				
Bronchitis	47	9·28	18	2·91
Bronchiectasis	..	..	1	0·16
Pulmonary fibrosis	1	0·19	1	0·16
Asthma	1	0·19	..	..
2. Tuberculous lung disease	3	0·59	10	1·62
Non-pulmonary tuberculous disease	1	0·19	5	0·81
Rheumatic fever	..	..	7	1·13
Eye and ear troubles—				
Conjunctivitis	2	0·39	3	0·48
Squints	3	0·59	5	0·81
Otorrhœa	1	0·19	5	0·81
Epilepsy	1	0·19	2	0·32
Paresis following infantile paralysis	1	0·19	2	0·32"

Skin-disease.

The amount of skin-disease of various types found in the European children is approximately the same as last year.

Though the total incidence of ringworm noted throughout the Dominion last year was 0·17 per cent., as against 0·18 per cent. the previous year, considerable difficulty has been caused in certain centres by minor epidemics of the disease, especially ringworm of the head. Complication is added by the fact that bacteriological examination for doubtful cases is not always available or utilized when available. A notice was published in the *Education Gazette* as follows:—

> "The attention of teachers is drawn to the prevalence in many parts of the Dominion of ringworm, affecting either the scalp or the body.
>
> "In view of the prejudice to the child's health and the disorganization of his school career which may result from infection, it is necessary that every precaution be taken to prevent spread of the disease. (For information see the Health Department's (School Hygiene Division) leaflets: H. Sch. 6 and H. Sch. 10; also H.I.D. 33—Regulations governing exclusion from school of children suffering from infectious disease.) Where it is not practicable to insist upon a certificate from a private medical practitioner in order to determine whether a sufferer should be readmitted to school, teachers are advised to refer the question for decision to the Medical Officer of Health or the School Medical Officer for the district."

Special attention has been given by School Medical Officers and school nurses to schools from which cases of ringworm have been reported. It is to be emphasized that there are other avenues of infection than the school, as the condition is spread by such agencies as domestic pets, careless methods of hair-cutting, &c. It is often very difficult to arrange satisfactory treatment for ringworm of the head, especially for obstinate cases where special methods are indicated. Dr. Turbott reports that a ringworm clinic was continued through the year at the local Health Office, Gisborne, on Saturday mornings for children of poor people, through lotions and ointments, X-rays being unavailable. He states, "The most successful treatment this year was Whitfield's ointment thoroughly applied after a spirit wash, but three months' application is needed to attain the desired cure. Twenty-seven cases were treated in 1933."

The incidence of scabies or *hakihaki* among Natives is much greater than among European children —19·79 per cent. as against 1·23 per cent. Dr. Turbott continues to report very favourably of the effect of the Danish treatment with hydrogen sulphide ointment. Further information with regard to this is being published in the *Education Gazette*.

Goitre.

The amount of all degrees of goitre found in routine examination this year was 17·55 per cent., indicating little variation in incidence from the previous year. Some School Medical Officers have made observations to determine the influence of the use of iodized salt in regard to goitre, but the evidence obtained is, on the whole, inconclusive.

Dr. Stevenson has forwarded returns with reference to 1,766 children classified as to whether the salt is used "not at all," "irregularly," and "regularly." She concludes that "though prophylactic measures have a value, there is some more complex factor complicating the incidence suggesting hereditary influences."

In Canterbury Dr. Phillips, in a school of 452 pupils, found that there was a definite lower incidence of goitre in pupils using iodized salt. His returns and Dr. Stevenson's both indicate that though the total incidence of goitre in the group using iodized salt is less, the advantage is mainly in the "incipient" class, the percentage of "small" and "medium" goitre found being as great in the group using iodized salt.

The following is an extract from Dr. Champtaloup's report:—

> "Knowing that my predecessor, Dr. Mecredy, had conducted an investigation into the incidence of goitre, I have kept a careful record throughout the year. It is interesting to find that in the main my observations confirm his findings.
>
> "Enlargement of the thyroid has been classified as—
>
> "* Palpable but not visible. This corresponds to Shore's Class A and Mecredy's incipient.
>
> "† Palpable and also visible. Slight, and confirmed on deglutition.
>
> "‡ Larger. Includes the medium and large groups of the school medical classification.
>
> "I examined 2,738 children and found—

		Per Cent.		
"528	Normal ..	22·2		
"853	* ..	35·8	Palpable ..	Total, 77·8 per cent.
"950	† ..	39·95	42 per cent. visible	
"49	‡ ..	2·05		

"This compares with Mecredy's figures for 1932 as follows:—

	Palpable.	Visible.	Total Number enlarged.
	Per Cent.	Per Cent.	Per Cent.
"Dr. Mecredy	29·2	65·0	76·8
"Dr. Champtaloup	35·8	42·0	77·8

"It is to be noted that Mecredy's figure, 76·8 per cent., is not so quoted himself, as he gives figures separately for three terms in 1932 in an ascending order from 59 per cent. to 94 per cent. Taking his figures over the whole year, as my own were, the average is 76·8 per cent.

"It is also to be noted that though the total showing enlargement is approximately equal, my own findings place a larger proportion in the palpable group. This may possibly be due to a variation in standard between two observers.

"My observations have confirmed my opinion that not only is thyroid enlargement more common in girls than in boys, but also that it is present to a more marked degree.

"Boys—

	Per Cent.	Per Cent.	
"*	39·0	39·0 palpable	77·0 per cent.
"†	36·2	38·0 visible	
"‡	1·2		

"Girls—

"*	33·0	33·0 palpable	81·8 per cent.
"†	45·0	48·8 visible	
"‡	3·8		

"The tendency appears to be towards progressive enlargement. Of these previously examined and recorded in this respect,—

"23·1 per cent. had the same degree of enlargement.

"4·9 per cent. had decreased to a lower grade.

"72·0 per cent. had increased to a higher grade.

"Thus the great majority had shown an increase in size since the previous examination."

Treatment Returns.

All School Medical Officers and nurses have devoted considerable time to the special problems arising out of the depression, and especially to measures for the prevention of malnutrition. Much advice has been given to parents, and a larger number of minor treatments for school-children carried out by nurses or by the parent under supervision of the nurse.

School Medical Officers refer to the difficulty of obtaining adequate dental attention for children in need of it. Economy measures have made dental treatment, especially conservative dentistry, less available at public hospitals, and an increasing number of parents are unable to pay dental fees.

Dr. Turbott, East Cape, reports: "Eye, ear, nose, and throat clinics were held twice during the year, in May and in November, during which fifty-eight children of poor parents were referred to Dr. Scoullar, of Napier, who attended by arrangement with the Cook Hospital Board. These children at ordinary school examinations were found with defects requiring specialist treatment. The Hospital Board aids the acquirement of any glasses ordered in necessitous cases."

The problem of securing expert examination and treatment for many children, especially country children, is still great, though many Hospital Boards co-operate more than before in arranging special examinations, and subsequently carrying out any special recommendations—*e.g.*, the supplying of spectacles.

Infectious Disease.

School attendance has been largely affected by an epidemic of measles which in the early part of the year appeared in the Auckland District, progressing slowly and comprehensively to the limits of the South Island, where it was active in December.

There have been extensive outbreaks of influenza in certain areas, of which Palmerston North was one; several hundreds of school-children were affected with violent sickness and high temperature, the onset being so sudden and so general as to suggest possible food poisoning. Further clinical history and general features of the illness, however, established the diagnosis of influenza.

As seven cases of encephalitis were reported last year from North Auckland and ten from New Plymouth, the situation was closely watched. Dr. Cook (North Auckland) reported as follows:—

> "*Influenza and Encephalitis.*—Schools were closed for the last week in the middle term in the Bay of Islands and Hokianga districts on account of the encephalitis cases which had been notified. The number of children exhibiting encephalitic symptoms were not numerous, but few appeared to escape the influenzal-like condition associated with this outbreak. I feel that the catarrhal conditions following the measles epidemic had left many children with lowered defences, so that they fell easy victims to another similar disease."

Epidemics of diphtheria, whooping-cough, and mumps, of lesser magnitude have also been experienced.

Schools and School Buildings.

School Medical Officers continue to report on school sanitation and the condition of school buildings. Generally speaking, there is little to add to what has been stated in previous years.

Dr. Stevenson has forwarded an interesting detailed report regarding environmental conditions of a large number of the main schools in Otago. She draws attention to the necessity for a sufficiency of washing facilities, for adequate cloakroom accommodation, for provision for the drying of children's clothes, for a high standard of cleanliness of schools and outbuildings, and for adequate dry playing-areas.

There is no doubt but that increasing attention is given by teachers and School Committees to the school environment and maintenance, but economies in recent years have necessarily crippled effort.

It has not been possible to make special investigations with regard to open-air schools in general, but reference to the good work carried out at the Sunshine School, Auckland, and the Kew School, Dunedin, has already been made.

Examination of Secondary-school Pupils.

No arrangements had to be made this year for the medical examination of applicants for entrance into the teaching profession, since no fresh appointments were made by the Education Department. There were thus comparatively few medical examinations of secondary-school pupils, but School Medical Officers have on request examined several secondary schools. The reports stress the importance of the routine permitting adequate rest.

Dr. Anderson, Napier, states: "Reiterating my statements of last year, it is evident to any observer that loss of weight, or inability to gain weight in the majority of cases, does not result only from insufficient income of energy in the form of food, but also from excessive expenditure, the result of over-activity and too little sleep."

The closing of the training colleges has placed further limitations upon co-operation with physical instructors of the Education Department.

Children requiring Special Provision.

A considerable amount of work has been carried out throughout the year in association with the Education and Mental Hospitals Departments in arranging for the expert examination of various groups of problem children (feeble-minded, delinquent, &c.), and in recommending the provision, institutional or otherwise, suitable for their needs. The development of this work has been greatly hindered by lack of finance.

A good deal of attention has also been devoted to the special speech classes for children who are hard of hearing or suffering from speech-defect.

The Division of School Hygiene wishes to express appreciation to the Mental Hospitals Department, Education Department, various Education Boards, School Committees, and teachers for valuable co-operation.

A. G. Paterson,
Director, Division of School Hygiene.

PART IV.—HOSPITALS.

I have the honour to submit my report for the year 1933–34.

No further progress has been made during the last year with the leasing of small hospitals, although, from the information at our disposal, the venture has proved successful where it has been tried.

(1) Transfer of Mangonui Hospital.

One notable event was the decision after much local discussion to remove the General Hospital at Mangonui to Kaitaia. Since this hospital was first established the density of population in the Board's district has definitely increased in the western area, so that the hospital was not in the best situation to meet the needs of the bulk of the population. For some years there has been a maternity hospital at Kaitaia.

The situation was thoroughly investigated before any recommendation was made, the determining factors being that the proposed new site of the hospital would be more accessible to a larger population and that maintenance costs could be reduced if the two institutions were combined into one unit.

Accordingly, a contract was let to take down, remove to, and re-erect the Mangonui Hospital at Kaitaia. By careful planning it has been possible to shift the different buildings without materially interferring with normal hospital activities. The buildings are now all placed in position on the new site at Kaitaia and within a few weeks the hospital should be operating as a complete unit. The opportunity was taken at the same time to alter the design of the buildings to make the hospital more convenient and better equipped.

Through the generosity of a local resident a new X-ray unit will be installed.

(2) Building Operations.

Southland.—The main building activity during the year was the completion of the plans and specifications of the new hospital for Southland at Kew. The various sections of the hospital are being tendered for separately, and a commencement has now been made with the main ward block. The administration section, including kitchen and the Nurses' Home, should be commenced in the near future. The negotiations on this hospital have extended over many years, and when the hospital is completed it will be in accord with modern requirements.

Here, as in the new hospital at Napier, there is a large proportion of small wards, and the large wards contain only twelve beds. In the latter, instead of being arranged at right angles to the length of the ward, the beds will be placed parallel to the main walls. This is a new departure for New Zealand.

New Plymouth.—The operating theatre has been redesigned in order to cope with increasing work. The new block will be much more convenient, and should meet the requirements of the hospital for some years. Further building operations are contemplated at the hospital, including the reorganization and extension of the kitchen block, accommodation for chronic tuberculosis patients, and extensions to the Nurses' Home.

Dunedin.—Plans and specifications for the new administration block at Dunedin Hospital have been finalized, and a contract let for the work. This will involve demolition of the present central block, which was part of the original Dunedin Exhibition Buildings. The cost of this work is being met from building fund established by the Board over a period of some years.

Coromandel Hospital.—A new Nurses' Home has been erected at the hospital.

Other building activities were: Additions to shelters for chronic pulmonary tuberculosis at Whangarei; modernizing the heating and hot-water system at Te Kopuru Hospital, strengthening of the wards at Gisborne; increasing the veranda space at Taumarunui; new block of shelters for male patients at Waipiata.

(3) Transfer of Departmental Institutions to Hospital Boards.

With the exception of Queen Mary Hospital at Hanmer, the only institutions still under control of the Department are the St. Helens Hospitals at Invercargill, Dunedin, Christchurch, Wellington, and Auckland. The King George V Hospital at Rotorua has been transferred to the Waikato Hospital Board, which has been given financial assistance to enable necessary alterations to the buildings to be effected. The transfer of Pukeora Sanatorium to the Waipawa Hospital Board was also completed.

(4) Accommodation for Patients suffering from Chronic Pulmonary Tuberculosis.

In some of our hospitals there is no special accommodation for this type of case, with the result that much of the available veranda and balcony space of the general hospitals is occupied by these patients. In view of the comparatively high incidence of pulmonary tuberculosis amongst the nurses of general hospitals, this position is most unsatisfactory. As the ancillary services and conveniences of a general ward are not designed to cope with these additional infective cases, the difficulties of carrying out a proper nursing technique are very great, and it reflects great credit on those in control that the technique reaches a high standard. The extra work and strain, however, devolving on the nursing staff is considerable.

Where necessary, therefore, the Hospital Board is urged to provide or combine with adjacent Boards to provide special accommodation for these patients. The Boards generally realize the importance and urgency of the matter, and some already have excellent housing, whilst others have the necessary building schemes under consideration.

In addition, there are in our hospitals many cases of surgical tuberculosis who have long periods without active surgical treatment and during these periods require only absolute rest, food, and sunshine, all of which are essential to their treatment. In the absence of other accommodation these patients must remain as inmates of the hospital.

(5) Overcrowding of Hospital Wards.

In some of our hospitals in order to cope with the increased demand for accommodation the authorities have put beds in wards additional to the normal capacity and also brought into permanent occupation the verandas and balconies.

In order to give the patients reasonable comfort verandas have gradually been glassed in; thus interfering not only with the normal natural ventilation of the wards, but in a large measure preventing the patients from the wards being placed on the verandas on suitable days.

There is an instance where a ward designed for twenty-four beds had as many as forty beds in occupation. As none of our wards are artificially ventilated, whereby the amount of air entering can be varied according to demand, the amount of fresh air entering a ward is, therefore, when gross overcrowding occurs, not always up to accepted standards.

During inspections information is always obtained *re* the number of patients whose indiviudal days' stay exceeds two months. While many of these require further hospital treatment, others could be discharged, but for the fact that in a large majority of the cases no arrangement can be made for the necessary supervision outside the general hospital.

It is therefore seen that there are at least two factors contributing to overcrowding of some hospital wards :—

(1) The demand for hospital accommodation for those requiring immediate medical or surgical treatment.

(2) The need to retain for long periods other patients who from a variety of causes cannot be discharged.

In some instances the overcrowding is so marked that the Hospital Board is faced with the necessity of providing additional accommodation.

Some of our hospitals have special accommodation for these and similar cases, but in most instances these patients are kept for months in the ordinary hospital wards.

(6) Hospital Inspection.

The routine and, where required, special inspection of hospitals have been carried out by the various officers.

In order to obtain more detailed information a standardized system of inspection has been adopted, the same being also used by the officers of the Division of Nursing during their visits.

The administrative officers of the hospitals have been most helpful during our inspections, and appreciate a discussion on the various points that arise.

(7) Dangerous Drugs.

The control of the issue and use of dangerous drugs in our hospitals is now much more effective. Routine checking of the amounts issued with amount prescribed is now general, with the result that discrepancies are rarely discovered.

(8) Queen Mary Hospital (Medical Superintendent, Dr. Chisholm).

Appended are some extracts from the annual report of the Medical Superintendent :—

"*Annual Statistics of the Queen Mary Hospital, Hanmer Springs, 1st April, 1933, to 31st March, 1934.*

——	Service.	Civilian.	Female.	Total.
Number of patients in hospital at commencement of year	8	18	44	70
Patients admitted during year	18	141	174	333
Patients treated during year	26	159	218	403
Patients discharged, recovered	7	55	65	127
Patients discharged, relieved	11	67	79	157
Patients discharged, unrelieved	2	17	20	39
Patients died	..	..	1	1
Total patients discharged	20	139	165	324
Patients remaining, 31st March, 1934	6	20	53	79
Average number of occupied beds per day .. Per cent.	8·8	19·3	47·1	75·4
Average individual days' stay .. Per cent.	124·4	44·4	79·01	68·29
Collective days' stay of patients	3,233	7,063	17,225	27,521
Patients transferred to other institutions	..	14	15	29
Number of deaths within twenty-four hours of admission	..	..	..	..
Rate of mortality per cent. over total cases under treatment	..	..	..	0·24

"Out-patients treatment—	Male.	Female.
"Patients treated during year	231	99
"Total number of attendances	619	519

"The number of patients admitted for treatment during the past year has remained comparatively steady, and the type of patients seeking admission is as follows :—

	Per Cent.
"Neurasthenia, hysteria, insomnia, debility, post-operatives, anorexia, nervosa	52
"Psychosis, psychasthenia, primary dementia	17
"Rheumatoid arthritis, rheumatism	10
"Miscellaneous (accidents, influenza, &c.)	21

"The male hospital is now quite inadequate and unsatisfactory for the work which we set out to do, and it is becoming increasingly difficult to get patients to accept accommodation in the large circular wards. I have referred to this matter in the annual report for some years now, and there is no need for me to draw attention to the unsuitability of the wards in both type and structure—it is quite impossible to remodel or reconstruct them. I feel that the most urgent need at present, if the hospital is to progress, or even maintain itself, is the establishment of a new male hospital.

"The female section has been fully occupied, and it is very rarely that there is a vacant bed. The conditions in the women's hospital are satisfactory, and work can be carried out with comparative ease. The installation of a frigidaire in this particular section has solved the problem of preserving food during the hot weather, and the addition has proved most useful.

"*Dental Service.*—The dental work at the hospital has been attended to by the honorary dental surgeon, Mr. Arthur Suckling, who continues to visit the hospital at intervals, and his assistance in this direction is very much appreciated.

"*Electric Light Supply.*—There is a continued demand for supply of electric power, and, in spite of recent improvements to the power-house, there is no doubt that we are again reaching a phase where further extension of power becomes almost impossible.

"*Water Service.*—This service is still giving great trouble, and is a continual source of anxiety. The amount of time that is demanded from the staff for this service is sadly out of proportion to the amount of income derived from water rates. Owing to the type of reservoir in use, and the river from which the water is taken, there can be no solution to this difficulty, excepting by the expenditure of a very considerable sum of money.

"*Bath-houses and Swimming-pools.*—The new bath-house remains in good condition, but the old bath-house is in a very bad state of repair. There is no question that this bath-house will eventually have to be dismantled, and the other section of the new building completed. The swimming-pools also require to be altered and improved."

"*Red Cross.*—The Health Department has increased its grant towards the Red Cross Society in Hanmer Springs, thus enabling the Society to continue its activities at the hospital, by maintaining the recreation rooms for the male patients. This is an essential service to the institution, as there are no other recreation-rooms available for the patients."

R. A. SHORE,
Director, Division of Hospitals.

PART V.—DENTAL HYGIENE.

I have the honour to submit my report on the work of the Dental Division for the year ending 31st March, 1934.

SECTION I.—A BRIEF REVIEW OF CURRENT DENTAL PROBLEMS.

It is an accepted fact that dental disease is the most prevalent disease that affects civilized communities in our time, and, unfortunately, New Zealand is no exception. Indeed, notwithstanding the many natural advantages enjoyed by this Dominion, there is good reason to believe that it ranks at least as high as, if not considerably higher than, other civilized countries in regard to the incidence of dental disease. While much of scientific and practical interest is already known concerning the cause of this alarmingly prevalent disease, there is still a great deal to be learned, and probably never before have so many research workers in various countries been as actively engaged on this problem as at the present time. Local environmental conditions in the mouth itself have long been accepted as accounting for the actual destruction of the dental tissues, and the efforts of investigators are now directed towards ascertaining what association exists between general constitutional conditions and the liability to dental defects. In other words, a solution is being sought of the problem of why immunity to dental disease has been lost, and how it may be restored. Everything points to deficiencies in our modern diet as being responsible for the present-day lack of immunity to dental disease, and it is on this basis that investigations are being conducted. In this connection it is interesting to observe that the Maori, who was once noted for his perfect teeth, has lost his immunity, and is now practically as suspectible to dental disease as the pakeha. This is strikingly demonstrated by the figures compiled by Mr. Luke Rangi, Dental Officer to Native Schools, and published with this report. It will be seen from these statistics that the Native and the white children show very little difference in the incidence of dental disease—both are almost equally bad, but it is significant, although not surprising, that the teeth are in better condition in the Native schools that are more remote from the "white" centres of population. Mr. Rangi's observations clearly indicate that the more inaccessible the locality, and the more the community is thrown on its own resources in regard to food, the more immune it is to dental disease. The Dominion-wide investigation which was recently commenced by this Department, will, it is hoped, be the means of throwing further light on this problem.

DIVISION OF DENTAL HYGIENE, DEPARTMENT OF HEALTH, NEW ZEALAND.

TABLE SHOWING DENTAL CONDITION OF NATIVE SCHOOLS WHAKATANE GROUP, INCLUDING A COMPARISON BETWEEN MAORI AND PAKEHA (WHITE) CHILDREN.

(The important columns are tabulated A, B, C, D, and E.)

No. and Name of School.	Date of Initial Examination.	A. Number of Children examined.			B. Number of Children with Clean Teeth.	Ages.		C. Percentage of Children with Caries.		Dental Examination Results.						Number of Teeth examined.		Percentages.								D. Percentage of Carious Teeth.		E. School Statistics up to Date, September, 1933.		
										Deciduous Teeth.			Permanent Teeth.					Deciduous Teeth.				Permanent Teeth.								
																		In each Race.		School as Whole.		In each Race.		School as Whole.						
			—	—	Total.	Oldest.	Youngest.	In each Race.	School as Whole.	Sound.	Savable.	Unsavable.	Sound.	Savable.	Unsavable.	Totals.	Grand Totals.	Savable.	Unsavable.	Savable.	Unsavable.	Savable.	Unsavable.	Savable.	Unsavable.	In each Race.	School as Whole.	School Roll.	Number of Children treated.	Ultimate Number to be treated.
I. Te Paroa-Totara	2/2/30	Maori ..	87	123	5	14	5	94·25	93·49	406	231	84	1,170	221	13	2,125	..	10·71	3·95	12·36	3·88	10·40	0·61	11·05	0·86	25·83	28·15	125	72	100
		Pakeha	36	..	3	14	5	91·66	..	199	129	29	318	101	12	788	2,913	16·37	3·68	..	..	12·82	1·52	..	..	34·39	..	..	..	..
II. Poroporo ..	6/6/30	Maori ..	55	68	8	14	5	85·45	85·29	146	113	82	853	175	13	1,382	..	8·17	5·93	10·71	6·19	12·66	0·94	12·86	0·77	27·71	30·54	70	45	56
		Pakeha	13	..	2	12	5	84·62	..	35	67	22	133	41	..	298	1,680	22·48	7·38	..	..	13·76	..	..	..	43·62	..	..	11*	..
III. Ruatoki North ..	12/8/30	Maori ..	85	85	..	10	5	..	..	411	450	163	901	83	..	2,008†	2,008	22·41	8·12	..	..	4·13	..	..	..	34·66	..	135	101	108
		Pakeha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
IV. Te Teko ..	1/3/31	Maori ..	117	143	14	14	5	88·03	86·014	376	347	188	1,702	173	35	2,821	..	12·30	6·66	12·06	6·46	6·13	1·24	6·46	1·23	21·71	26·21	134	107	108
		Pakeha	26	..	5	14	5	80·77	..	101	66	33	346	48	7	601	3,422	10·98	5·49	..	..	7·98	1·16	..	..	25·29	..	..	..	..
V. Matata Convent..	22/10/31	Maori ..	51	54	2	14	5	96·08	96·29	209	206	126	642	43	11	1,237	..	16·65	10·18	15·301	8·95	3·48	0·89	3·84	1·17	31·204	30·82	55	48	44
		Pakeha	3	..	..	13	6	100·00	..	10	9	1	48	5	4	77	1,314	11·69	1·29	..	..	6·49	5·19	..	..	24·68	..	..	..	..
VI. Matata Native ..	12/10/31	Maori ..	27	63	2	14	5	92·59	82·54	86	63	46	433	41	6	675	..	9·33	6·80	10·73	6·11	6·07	0·88	6·79	1·02	23·11	24·66	50	38	40
		Pakeha	36	..	9	13	5	75·00	..	168	95	44	422	59	9	797	1,472	11·92	5·52	..	..	7·403	1·13	..	..	25·97	..	..	..	..
VII. Tawera ..	9/11/32	Maori ..	29	29	4	10	5	86·21	..	229	107	58	302	13	..	709‡	709	15·09	8·18	..	..	1·83	..	..	..	25·11	..	68	48	52
		Pakeha	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
VIII. Waiohau§ ..	5/6/33	Maori ..	17	18	7	14	5	58·80	61·10	53	42	20	302	8	1	426	..	9·86	4·70	10·86	4·88	1·87	0·23	1·77	0·22	16·66	17·74	18	11	13
		Pakeha	1	..	..	..	6	..	..	3	7	2	13	..	..	25	451	28·00	8·00	..	..	..	..	..	..	36·00	..	..	..	..
IX. Pukehina‖ ..	2/7/33	Maori ..	30	44	8	14	3	73·00	79·55	124	64	28	494	36	4	750	..	8·53	3·73	8·43	3·79	4·80	0·53	7·58	1·04	17·60	20·83	48	29	38
		Pakeha	14	..	1	14	5	92·86	..	52	25	12	166	44	7	306	1,056	8·17	3·92	..	..	14·38	2·26	..	..	28·76	..	..	..	..
X. Te Matai¶ ..	4/8/33	Maori ..	74	77	22	14	5	70·27	71·43	152	144	109	1,378	100	17	1,900	..	7·58	5·73	7·53	5·69	5·26	0·89	5·65	1·107	19·47	19·89	77	34	62
		Pakeha	3	..	..	14	5	..	..	16	4	3	28	11	3	65	1,965	6·16	4·62	..	..	16·92	4·62	..	..	32·31	..	..	..	..
XI. Maketu ..	4/9/33	Maori ..	59	90	8	14	3	86·44	85·56	191	175	77	913	117	18	1,491	..	11·74	5·16	10·16	5·21	7·85	1·21	9·89	1·35	25·95	26·61	93	46	74
		Pakeha	31	..	5	13	5	83·87	..	100	51	39	429	103	2	734	2,225	6·95	5·31	..	..	14·03	1·63	..	..	27·93	..	..	..	..
Statistics of the Whakatane Group—																														
Maori	..	..	631	..	80	..	..	87·32	..	2,383	1,942	981	9,090	1,010	118	15,524	..	12·51	6·32	12·46	6·07	6·51	0·76	7·4	0·89	26·09	..	..	..	..
Pakeha	..	..	163	..	25	..	..	84·66	86·79	684	453	185	1,903	412	54	3,691	..	12·27	5·012	..	..	11·16	1·46	..	..	29·91	26·83	..	..	..
Totals ..	..	..	..	..	794	105	..	..	..	3,067	2,395	1,166	10,993	1,422	172	19,215	19,215	..	..	..	..	..	..	..	..	..	..	873	590	695

* Convent transfers. † Total number of children examined constitutes the primer classes only of Ruatoki North Native School. ‡ Total constitutes primer classes only of Tawera Native School, and not including nineteen transfers from Ruatoki North who had already been treated. § Isolated; no shop within ten miles. Main diet wild pigs, kumara, potatoes, and milk. ‖ Middle farming area. No stores within twelve miles. ¶ Three miles from Te Puke Town, but no shops in or near village.

Having indicated what is being attempted in the realm of reducing the liability of civilized man to dental disease, it will be appropriate to consider the facilities that exist in New Zealand for the treatment of dental disease, as it is found to-day among the population. In this field there are the private dental practitioners, the dental hospitals, and the school dental service.

Private Dental Practitioners.—The legislation governing dental practice in New Zealand provides that a person who wishes to practice dentistry must be duly qualified and registered. There appears to be no provision, however, for keeping the Dentists' Register up to date. The Dentists' Register, 1934, contains 929 names, but as far as can be ascertained, the number of dentists practising in New Zealand is in the vicinity of 670. That such a wide discrepancy can exist indicates the need for a controlling authority with adequate machinery for keeping the register up to date.

Taking the actual number of dentists as 670, which is believed to be approximately correct, the ratio is one dentist per 2,311 of the population.

Dental Hospitals.—Of the forty-five Hospital Boards in the Dominion, only four have established dental departments, three of these being in main centres. In Dunedin the dental hospital is conducted by the Otago University authorities as part of the dental school, and it is assisted financially by the Otago Hospital Board. It is understood that in the case of some of the other Boards, arrangements exist whereby local dental practitioners give treatment in approved cases. However, the principle of having sound dental advice and efficient treatment available for in-patients, apart from the question of the treatment of out-patients, is a recognized part of modern hospital practice, and is to be commended.

In connection with the dental treatment of out-patients, it is found that there is a wide diversity in the policies followed by the various Hospital Boards, more especially in regard to the admission of patients. For instance, judging by the financial returns, some Boards must make very strict inquiries as to whether applicants can or cannot pay for private treatment, whereas in others, where the fees collected nearly equal the total cost of the department, it would almost appear that inquiries are not so stringent. It would seem, therefore, that if only those patients who could not afford private treatment were accepted, either the personnel of the departments could be reduced, or else a larger proportion of the poorer classes could be treated—a class which obviously has the first claim on a Board's services.

School Dental Service.—The work of the school dental service is confined to primary-school children up to Standard IV, and to pre-school-age children. No child who is in a higher class than the primers is accepted for initial treatment. After the initial treatment has been performed, and the teeth rendered healthy, children are re-examined, and such further treatment as may be necessary is given, at six-monthly intervals, until they pass out of the Fourth Standard. While treatment necessarily occupies a large place in the activities of the service, the work is fundamentally educational. Each child experiences the benefits of a clean and healthy mouth, and, in addition, is taught to care for and preserve its teeth. The activities of the School Dental Service are dealt with in detail in the sections of this report that follow.

So far, there has been no development in this country of industrial dental clinics. This is a field of activity in which the economic value of dental treatment has been amply proved in other countries, where many industrial and other concerns arrange for regular dental treatment for their employees.

SECTION II.—STAFF OF THE DENTAL DIVISION.

On the 31st March, 1934, the staff, disposed as under, numbered eleven dental officers, 190 dental nurses, and one attendant:—

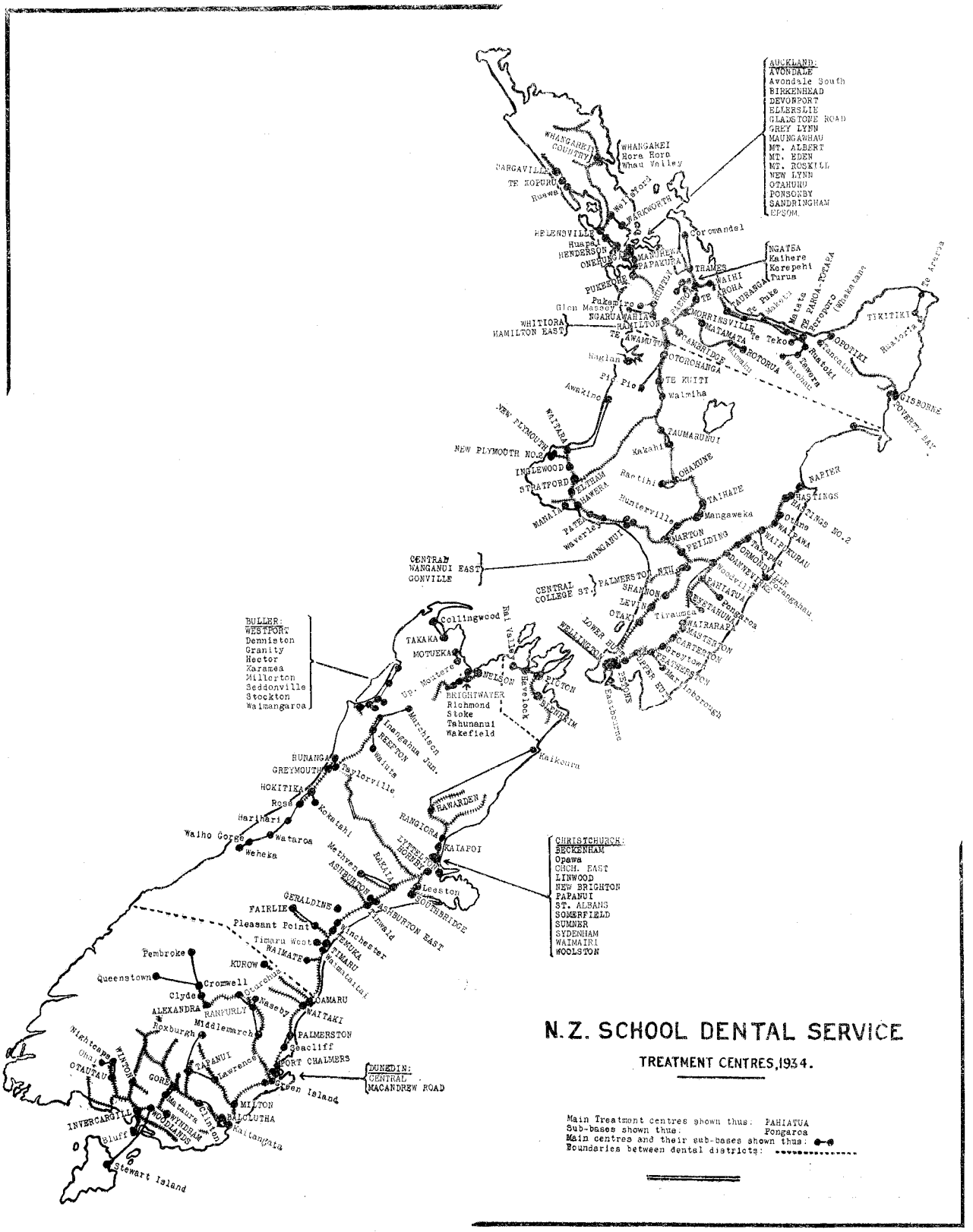
	Dental Officers.	School Dental Nurses.	Dental Attendant.
Director	1	..	..
District Dental Superintendents	4*	..	..
Administrative and training staff, Wellington Clinic	3	2	..
Staff of school dental clinics—			
Auckland District	3†	44	..
Wellington District	..	49	..
Canterbury District	..	37	..
Otago District	..	22	1
Reserve group (Wellington)	..	14‡	..
In training	..	22	..
	11	190	1

The Government has authorized the appointment of twenty-five additional dental nurses, and these will commence training at an early date.

* The Dental Superintendent of the Otago District is also in charge of the Central Clinic, Dunedin.
† Includes two Native Dental Officers working among Native schools in Bay of Plenty and East Coast districts.
‡ This number will be reduced by transfers to the field during the next few weeks.

SECTION III.—TREATMENT CENTRES, SCHOOL DENTAL SERVICE.

At the end of the period under review (31st March, 1934) the School Dental Service was in operation at 237 centres. Of these, 141 were main-treatment centres and 96 were sub-bases. The service has been extended to only two fresh districts during the year—viz., Epsom (Auckland) and Hawarden (North Canterbury)—but local extension in districts where the service was already operating



has been effected by the establishment of sub-base clinics at the following centres: Awakino, Bluff, Eastbourne, Glen Massey, Horahora, Inangahua Junction, Maketu, Ohai, Oturehua, Pukemiro, Pukehina, Porangahau, Raglan, Raetihi, Taylorville, Taneatua, Te Kauwhata, Tiraumea, Waiohau, Whangarei (additional centre), Whau Valley, Waimiha. The Mount Albert Clinic, which was formerly a main-treatment centre, is now operated as a sub-base.

SECTION IV.—STATISTICS.

Operations performed in the field and in the training school from the 1st January to the 31st December, 1933 :—

Fillings—		
In permanent teeth	160,137	
In "first" teeth	237,300	
		397,437
Extractions—		
In permanent teeth	2,383	
In "first" teeth	66,825	
		69,208
Other operations		156,980
Total operations		623,625

The following figures illustrate the progress of the Service during the last five years :—

Year.	Number of Schools under Systematic Treatment.	Number of Children receiving Systematic Treatment.	Total Number of Operations.
1929	775	62,100	370,074
1930	930	67,652	463,204
1931	1,118	68,995	562,759
1932	1,297	72,584	619,390
1933	1,430	78,391	623,625

Total operations since inception of service : 3,938,027.

SECTION V.—TRAINING OF DENTAL NURSES.

At the commencement of the year under review (1st April, 1933) 42 probationer dental nurses were in training, and 8 who had recently completed their training were being retained as a reserve group. The latter were transferred early in the year to various stations in New Zealand. Of the 19 in their second year, all completed training, 7 of this number being transferred during the latter part of the year to various parts of the Dominion to staff School Dental Clinics ; 1 is absent on extended sick-leave, and 11 still remain in Wellington, carrying out the treatment of Wellington patients until this work is taken over by the present first-year trainees. Of the 23 in their first year, 22 have now passed into their second year of training, and 1 has retired. Up to the present no new probationer dental nurses have been appointed this year, but it is expected that a number of additional appointments will be made at an early date.

Dr. Ada Paterson and Dr. F. S. Maclean were examiners for the primary examination (anatomy and physiology) held on the 26th and 27th September, 1933. Of the 22 candidates who presented for examination all were successful in passing.

A special final examination held on the 1st and 3rd July, for those dental nurses in the senior division who did not sit the usual final examination in March, 1932, was conducted by Mr. Millen Paulin, B.D.S., and the Superintendent of the training school. Of the four candidates sitting this examination all succeeded in passing.

SECTION VI.—WELLINGTON DENTAL CLINIC.

The Superintendent, Mr. J. B. Bibby, reports as follows :—

Attendances and Operations.—Attendances and operations performed in the Dental Clinic, Wellington, for the year ended 31st March, 1934, are shown below, with 1932–33 figures in brackets :—

Attendances.	Fillings.	Extractions.	Other Operations.
35,430	28,703	2,530	18,833
(49,922)	(31,539)	(3,046)	(27,546)

Total attendances and operations performed since the opening of the Wellington Clinic to the 31st March, 1934, are :—

Attendances.	Fillings.	Extractions.	Other Operations.
369,760	250,383	64,407	194,729

Although the volume of work for the past year has shown a heavy decline, it is to be remembered that the average number of nurses operating during this period was only nineteen. These operators individually have carried out more work than in any previous year ; but this, of course, is accounted

for by the fact that they were retained in the clinic for a year after they had completed training. Also certain assistance was given by nurses from the field, twelve in all, who for various reasons were brought into the Wellington Clinic for short periods.

The number of extractions per one hundred fillings for the past year (Wellington Clinic only) is 8·8. This is shown below in comparison with the average of past years :—

1921–34	.. .. ..	25·7 extractions per one hundred fillings.
1930–34	.. .. ..	9·5 extractions per one hundred fillings.
1933–34	.. .. ..	8·8 extractions per one hundred fillings.

New Patients.—The number of new patients who have attended the clinic for initial examination during the twelve months 1st April, 1933, to 31st March, 1934, is 399, a very large decrease on the previous year, when 1,660 were admitted. This decrease is wholly due to the inability of the reduced staff to do more than maintain the treatment of those patients already attending the clinic.

The average age of the new patients accepted was 4·7 years. This figure does not allow that the names of all these patients had been placed on the waiting-list some months before being called up for treatment.

At the 31st March, 1933, the number of patients under treatment was 6,781, and at the 31st March, 1934, 5,907.

Annual Registration Fee.—Registrations during the twelve months ending 31st March, 1934, totalled 3,435, compared with 4,155 for the previous year. Exemptions granted were 693, or 20·2 per cent. of the total of those paying the registration, last year's figures being 684 and 16·5 per cent. respectively. Thus the year shows a decrease in registrations and an increase in percentage of exemptions.

As stated in previous reports, the introduction of the annual registration fee has considerably reduced the number of new patients applying for treatment. The average number of new patients treated per year over a period of thirteen years ending 31st March, 1932, was 1,874, whereas applications for treatment since the charge was introduced two years and a half ago have totalled 1,660 per year. In 1933–34, the period under review, only 1,417 were received. The position, however, with reduction in the number of trainees has righted itself and moved to the other extreme—*i.e.*, more applications received than can be accepted for treatment.

At present the list of children waiting admittance to the clinic for examination and treatment stands at 1,457. Many of these names were placed on the waiting list in 1933.

Orphanages.—Treatment is still being extended to groups of children from various city orphanages. There is an attendance of eighty-nine children from the Presbyterian Boys' and Girls' Orphanages, the Levin Memorial Home, and St. Mary's Girls' Orphanages. T.B. contacts, referred to the clinic by officers of the School Medical Division, also receive regular treatment; these, however, only number twenty-five, as compared with ninety-five in 1932.

SECTION VII.—THE WORK OF THE DENTAL CLINIC COMMITTEES.

One of the pleasing features of the work of the School Dental service is the able and willing manner in which the great majority of dental clinic committees undertake the responsibility of the local administration of clinics, and so co-operate with the Department in the interests of the children of their district. Undoubtedly their chief responsibility is to raise the necessary funds to meet both their obligations to the Department and also the expenses incurred locally in conducting a clinic. Experience has shown that the most successful committees are those that decentralize, and work through School Committees. Under this system, a Dental Clinic Committee estimates its financial requirements for the year, and then debits each School Committee in the dental group with a proportion of the sum required, according to the roll number. (Note.—Each School Committee in a group is entitled to representation on the Dental Clinic Committee.) The responsibility then devolves on the various School Committees to find the sum debited against them by the central body, the Dental Clinic Committee. Schools that fail to meet their obligations are liable to be excluded from the service, as also are individuals who fail to pay the charge that Committees are authorized to make. The only exception to the latter is in the case of children whose parents are genuinely unable to pay the charge. School Committees are usually in the best position to judge of such cases, but they mostly require applications for exemption to be made in writing. Generally speaking, those committees that have adopted a firm business-like attitude in their local administration have been the most successful. Although frequently the tightening-up process has been accompanied at first by a drop in the number of patients, this has invariably been made good later with the added advantage that the local organization has been established on a sound basis.

The amount paid to the Department by Dental Clinic Committees during the past year was £4,779 3s. 9d. In addition, the sum of £428 19s. 4d. was received from the Wellington Clinic, making the total receipts £5,208 3s. 1d. Additional to the sum mentioned are the local disbursements by Dental Clinic Committees. These sums also have to be raised locally, and are approximately equal to the amount that the Committees pay to the Department.

SECTION VIII.—GENERAL.

Ratio of Extractions to Fillings.—In my last annual report attention was drawn to the steady decrease in the number of teeth extracted in the School Dental Service as compared with those saved. It is satisfactory to be able to report a still further decrease. The progress in this direction since the inception of the service is shown in the following table:—

	Fillings.	Extractions.	Ratio: Extractions per Hundred Fillings.
1921–22	13,047	14,939	114·5
1922–23	24,603	25,436	103·3
1923–24	47,610	37,978	79·7
1924–25	59,322	43,181	72·6
1925–26	61,506	41,339	67·2
1926–27	84,723	53,232	62·8
1927–28	116,916	66,523	56·8
1928–29	146,354	76,555	52·3
1929–30	190,934	71,128	37·2
1930–31	258,546	75,973	25·5
1931–32	334,827	80,389	24·0
1932–33	382,289	74,633	19·5
1933–34	397,437	69,208	17·4

Dental Health Education.—This matter continues to receive attention. During the year officers of the School Dental Service have been encouraged to do more in the matter of addressing classes in the schools, meetings of mothers, and other organizations, and altogether 268 such talks and addresses have been delivered. In addition to these more formal activities, officers constantly engage in chair-side talks, surprise dental inspections, distribution of pamphlets, &c. In fact, these may be regarded as matters of daily routine.

Treatment of Pre-school-age Children.—There has been a slow but steady increase in the number of pre-school-age children admitted for treatment at the various School Dental Clinics, and the total number is now, in round figures, five thousand. Generally speaking, parents are slow to recognize the advantages of regular dental supervision at an early age, and in this department of the work attendance at a clinic is not a matter of school routine as with the older children, but it is entirely dependent on the good will, enthusiasm, and understanding of the parents. In this connection, Mr. Bibby reports that at the Wellington Clinic, where attendance is voluntary and not a matter of school routine, the average age of the patients admitted during the year was 4·7 years. This, however, does not allow for the fact that all these patients were enrolled on the waiting list several months before they were admitted for treatment.

Inspection and Supervision.—The district organization which was introduced at the beginning of 1932, continues to operate satisfactorily, the District Dental Superintendents maintaining a close personal touch with the work of the Service and with the local Dental Clinic Committees. With the steady growth of the service, however, through the opening of fresh centres and the linking-up of new schools, the Superintendents of the larger districts are now experiencing difficulty in maintaining that constant personal contact with Committees and with the work in the field that is so necessary. Assistance in this direction is fast becoming essential.

In conclusion, I wish to acknowledge the assistance and co-operation that have been forthcoming during the year from Dental Clinic Committees, teachers, and Education Boards and their staffs. The loyal support given by all officers of the Division also calls for the warmest acknowledgment.

J. Ll. Saunders,
Director, Division of Dental Hygiene.

PART VI.—DIVISION OF NURSING.

I have the honour to present the annual report of the Division of Nursing for the year ended 31st March, 1934. It has been a particularly busy year, partly owing to the fact that several of the institutions formerly controlled by the Department have been transferred to the control of local Hospital Boards, which has entailed special visits to arrange for transfer of staffs; also during the months of September and October I visited Western Samoa to make a detailed report on the nursing services in these islands as well as the Island of Niue.

Nurses and Midwives Registration Board.

The Nurses and Midwives Registration Board has met four times during the year. The personnel of the Board remains the same, as Miss Muir and Mr. Wallace were appointed for a further period of three years.

Reports of inspection of the majority of the training schools for pupil-nurses, maternity nurses, and midwives were received during the year. Arising out of these reports, various matters were dealt with, including the necessity for the improvement of teaching-equipment and libraries, and questions

Showing (per 100 occupied beds) Particulars of Nursing Staff Employed at Training Schools as at 31st. December 1933.
1. Total Nursing Staff shown thus:-
2. Number of Pupil Nurses shown thus:-
3. Number of Trained Staff shown thus:-
4. Number of Trained Ward and Theatre Staff shown thus:-
Dominion Average.
Auckland
Wellington
Christchurch
Dunedin
Hamilton.
Palmerston North
New Plymouth
Timaru
Invercargill
Greymouth
Wanganui
Gisborne
Nelson
Masterton
Whangarei
Oamaru
Waipukurau
Ashburton
Blenheim
Thames
Dannevirke
Hawera
Hokitika
Balclutha
Westport
Taumarunui
Stratford
Patea
Daily Average Occupied Beds.
60.
50.
40.
30.
20.
10.

concerning the hours of duty of pupil-nurses and provisions for staffing. Two hospitals were cancelled as training schools for nurses; two were regraded from A grade to B grade, necessitating affiliation with an A grade hospital; and a third was warned that directly additional accommodation was provided at an A grade hospital adjoining, it would also be regraded as a B class institution.

Napier Hospital was again approved as a training school for nurses, as the new hospital is now fully functioning. The number of hospitals approved as training schools for pupil nurses is twenty-eight, twenty-three being A grade and five B grade.

The following table supplies the Dominion average nursing staff per one hundred occupied beds for the last three years. A tendency is evidenced to slightly reduce the number of trained staff, as compared with the number of pupil-nurses, which is probably the result of economy enforced on Hospital Boards during the last two years. This is a matter which requires to be watched, as it is neither fair to the patients nor to the nursing staff.

Dominion Average Nursing Staff per One Hundred Occupied Beds.

	1931.	1932.	1933.
Total nursing staff	45·4	45·26	46·97
Total trained staff	14·1	12·95	12·69
Total trained staff engaged in wards and theatre work	..	9·84	10·62
Total pupil-nurses	31·3	32·31	34·28

The position for the year just concluded is diagrammatically shown on page 41. The figures for occupied beds represent the average for calendar year and are inclusive of all departments in the hospitals where pupil-nurses are employed. The numbers of the staff are calculated at the 31st December, 1933.

Based on these figures, Hospital Boards have been advised that where pupil-nurses have a day off a week in addition to the eight-hour day the nursing staff requires to be one for two occupied beds, and where the pupil-nurses have two days off a month one for 2·5 occupied beds. The proportion of trained to untrained nurses should be not less than 1 to 2.

During the year other important matters dealt with include:—

(1) A detailed study of the educational standard of entrants both to pupil-nurse and maternity-nurse training schools, as a result of which definite recommendations were made to the Hospital Boards concerned; also an effort was made to interest the educational authorities controlling girls' secondary schools in a special course which might be taken by girls intending to take up nursing.

(2) A return was obtained covering the provisions made in the various hospitals for the care of the health of pupil-nurses, and consideration of this resulted in definite recommendations being made to certain Hospital Boards.

(3) Regulations governing the training of nurses in subsidiary institutions to the base hospital were laid down, and the necessity was emphasized for submitting to the Registration Board the facts concerning a nurse's training where it has been suspended for a long period due to any cause, so that a decision might be given as to how much of the period of training already undergone may be allowed to count towards the full period of training required by the Nurses and Midwives Registration Board.

(4) Owing to the fact that it has been found that many training schools held very incomplete records, after consultation with various matrons certain records were made mandatory in all hospitals, and others concerning the personal history of the nurse were strongly recommended to the Hospital Boards to be put into effect gradually.

(5) The payment to Examiners was reviewed owing to the fact that there has been a large increase of work. The fee paid to Medical Examiners is now in accordance with the fee paid to Examiners for the Matriculation Examination.

The Registers.

For a long time it has been evident that it was necessary to purge the Registers of Nurses, Midwives, and Maternity-nurses if a working register was to be published. Legislative authority has now been obtained to undertake this. A large amount of work will be entailed owing to the necessity for a great deal of correspondence in tracing the whereabouts of registered persons, alterations in names owing to marriage, and necessary deletions on account of death. When complete it is proposed to publish the registers in slightly different form, limiting the information to those in the actual practice of their profession and showing their registration number, date of registration, full names, permanent address, training schools, and certificates held.

To keep these registers up to date it will be necessary for nurses to regularly advise the Registrar of the Nurses and Midwives Registration Board of changes of address, as required by law, and of name through marriage. Failure to do this will only nullify the efficiency of the present law and necessitate the consideration again of a practising certificate as now issued annually to medical practitioners and masseuses.

State Examinations.

The forms used for the State examinations have been recast to avoid duplication of work and to prevent mistakes. Instructions have been issued as a guide to supervisors and a suggested standard of marking to oral examiners, with the result that the system of marking is now much more uniform. An attempt was made to assist the Hospital Boards during the financial depression by increasing the number of examination centres, but this has proved too expensive, and the number will have again to be restricted.

The following is a table giving the number of candidates who sat for the State examinations during the current year and particulars of the result:—

	Number sitting.	Number failed.	Percentage of Failures.	
			1932.	1933.
State Examination for—				
Nurses	448	110	28·56	24·46
Midwives	60	7	15·00	11·66
Maternity nurses	198	15	7·43	7·57

Hospital Inspections.

Following on a conference of departmental officers who are concerned with hospital inspections, an attempt has been made to have inspections carried out in more detail so that when the reports made by various officers have been combined there will be available a complete record concerning the various sections of hospital administration in each hospital visited.

Medical Officers of Health have been asked to notify Head Office where any member of the nursing or domestic staff of a hospital have been notified as suffering from tuberculosis, or any infectious disease, so that a careful investigation may be made to determine whether any weakness in nursing technique exists.

During the year special investigations into various aspects of nursing technique were made by issuing questionnaires to all training schools. As a result, a very definite weakness in the use of disinfectants was made evident. This was further checked during visits of inspection. To assist the teaching of pupil-nurses in this subject, and to lay down a standard which could be used as a basis of comparison, a table of disinfectants and their strengths for different purposes was drawn up by Medical Officers of the Department. This has been circulated to the matrons of all hospitals, and has been published in the *New Zealand Nursing Journal*. The Nursing Division of the Department was assisted by a committee of the New Zealand Registered Nurses' Association in carrying out this investigation.

Obstetrical Nursing.

For many years there was constant complaint regarding the hours of duty in obstetrical hospitals which were training schools. Gradually the hours have been made uniform throughout the Dominion to suit obstetrical nursing conditions. In addition, all of these hospitals provide for regular days off per month, so that the conditions generally are satisfactory.

With very few exceptions, practically all the maternity nurse training schools are maternity annexes under the matron of the general hospital. It is obvious that the sisters-in-charge of these annexes carry more responsibility than the sister of a general ward, and that, owing to the nature of their work, their hours of duty are more fluctuating. If, then, women of the right type are to be attracted to this special branch of nursing, the matrons must be prepared to give these sisters at least the status of a sub-matron with a certain amount of freedom to arrange the duties of their staff according to their work.

The present syllabus for the instruction of midwives has now become stabilized, and it has been found possible to include not only post graduate teaching in ante-natal care, but also in infant care. In view of the increased attention being paid to this subject in nurse and maternity nurse training schools, the midwife of the future should have a good foundation on which to base her practice.

Tropical Services.

I have appreciated very much the opportunity given to me of spending six weeks actually in the Apia Hospital, Western Samoa, as it has given me a better appreciation of tropical conditions.

As a result of my visit it has been decided in future to staff the hospital with a matron and sisters who are definitely on exchange from the service of the Department or one of the Hospital Boards, and to arrange for a senior nursing officer from the Department to relieve the matron for her furlough so as to keep in closer touch with this service.

The training of the Samoan nurses was revised with the idea of preparing them to undertake public health nursing duties in the islands under supervision of the Central Hospital.

The Nursing Staff.

Owing to the transfer of Otaki and Pukeora Sanatoria, Wanganui and Gisborne St. Helens Hospitals, and King George V Hospital, Rotorua, to the control of Hospital Boards in whose locality these institutions were situated, the Department has lost the services of a large number of nursing officers who have given the Department faithful service in the past. In nearly all instances the staff were taken over by the Boards concerned, so very few have suffered financially.

Other changes which have taken place are the transfer of Miss Arnold from Invercargill to Wellington St. Helens Hospital as matron, and the appointment of Miss Sparkes, late sub-matron of St. Helens Hospital, Wellington, as matron of Invercargill St. Helens Hospital.

Miss H. Comrie, who was appointed relieving Nurse Inspector in place of Miss Lea, who has been granted a year's leave of absence, to act as matron of the Wairau Hospital, has been appointed an additional Nurse Inspector to the Auckland District, as it was found there was too much work in this area for one officer.

Miss Wise, who was Nurse Inspector at Whangarei, resigned owing to her approaching marriage, and was replaced by Miss R. A. Knight, who had been sister-in-charge of the Ante-natal Clinic at Christchurch St. Helens Hospital.

District Nursing.

There have been some changes in this staff during the year. Money has been provided in one instance by the Maori Purposes Fund, and in another by the Taranaki Maori Trust Fund, to appoint district nurses to areas which have not been served before; further, a nurse has been transferred and stationed at Masterton to provide nursing attention to the Maoris in the Wairarapa.

Gradually the system is being extended that every district nurse is not only responsible for the Maori health work in her area but also for all the school work, both European and Maori. Some of the districts, especially those in the South Auckland area, are too large for effective work, and there are still some areas where there is no organized service available, particularly in the North of Auckland and the Wanganui districts. With an extension of these nurses' duties the monthly report form was revised so that all the necessary information could be given on one form to avoid unnecessary duplication of clerical work.

The nurses are being called on more and more frequently to give talks and demonstrations to groups of women such as Women's Institutes and to older girls at school and out of school-hours. This involves preparation of teaching material, posters, &c., which very few nurses have time for. An endeavour has been made to bring new material before the staff by means of magazines, but something more is required and in time it will require the full-time service of an officer to prepare material of this kind and to organize refresher meetings for the staff.

The following return supplies an actual summary of the amount of work covered by nurses in the departmental service during the past year. It must be recognized that the districts served are all large, and that the distances to be covered often amount to fifty miles. Under these conditions I consider the amount of work accomplished is a great credit to the staff of twenty-three district nurses.

Total number of treatments: European, 1,132; Maori, 36,978. Number of ante-natal visits paid, 1,644; Number of post-natal visits paid, 2,458.

Maternity cases: Maori—number of confinements, 200; number visited during puerperium but not for confinement, 384; European—number of confinements, 21. Number of infant welfare visits paid,* 3,698; Number of school visits*: Board school—With doctor, 102; without doctor, 468; Native school*—With doctor, 19; without doctor, 769.

Post-graduate Course.

This year, for the first time, none of the students attending the course are receiving assistance in the form of bursaries, &c. The class is a larger one than for some time past, there being eight nurses taking the administration and sister tutor course, and six nurses the public health nursing.

Unemployment.

On the whole, the position regarding unemployment amongst nurses is more satisfactory than it was a year ago. There are still a number of nurses who, owing to age or some disability, have found it very difficult to make a living. The Women's Unemployment Committee in Wellington have commenced a scheme for visiting nursing in the homes of relief workers, which has been a definite assistance to both patients and nurses. The patients are referred to this Committee by the various organizations working in the city. The nurses so employed must register as unemployed and be referred to the Committee by the Nurse Inspector of the Health Department for the district. They are paid on the same basis as the Relief Scheme for unemployed teachers, and must be willing to do light housework as well as nursing duties. If heavy cleaning or washing has to be undertaken a domestic assistant is sent from the bureau to work under the nurse's direction. This scheme might well be extended to other centres.

Future Developments.

Preliminary Training Schools.—In my annual report of last year I stressed the very great need there is in New Zealand for more and better preliminary training schools for pupil-nurses. All the larger hospitals now give their pupil-nurses a short period of preliminary training of from three to four weeks on which is based their future course of instruction. At the completion of this period the pupils enter a class and for the remainder of their training their lectures are given in definite class groups. But in the smaller hospitals the usual procedure is for nurses to be admitted to training as vacancies occur. This system means that a nurse, for instance, entering half-way through a course of anatomy and physiology lectures, begins at whatever stage the course has reached, and thus does not receive the necessary instruction which forms the basis on which a course must be built up. This method can never produce satisfactory instruction.

To meet the needs of this group of hospitals, I suggested last year that their applicants for training might receive their preliminary training at the base hospitals. It would, of course, be only fair that

* These figures are for six months only.

these base hospitals should be reimbursed for giving this training, and to avoid small hospitals being put at a disadvantage in this matter it could be overcome if all applicants for training as pupil-nurses paid for this preliminary training. As these girls do no ward duty during this period, but are receiving instruction which is going to be of value to them even should they not continue with their hospital training, it would not appear a hardship to ask for a fee, provided it is not excessive.

There is a second consideration which also requires to be studied, and that is the period of this preliminary course. At present, as already stated, with the exception of one hospital—Christchurch—which has recently extended the period to three months, the instruction covers three to four weeks. This is far too short a period if the necessary syllabus is to be given. For instance, modern medical practice is to a large extent based on bacteriology, and if nursing procedures are to be carried out in an efficient manner so that the health of both patients and staff are safeguarded, it is essential that the young nurse should also have a good foundation in this subject. This cannot possibly be given in three weeks. Further, it is necessary for her to understand the principles of general and personal hygiene, and to be familiar with simple nursing procedures and simple cooking duties which she will be required to perform directly she enters the ward. If this pupil has also been given some knowledge of elementary anatomy and physiology, she will take a much more intelligent interest in her patients and their condition. Then, last, but not least, she must be given some instruction in the ethics of her profession so that she will not make mistakes in dealing with the many personal situations she will be faced with.

If this period of training is extended to three months, as has already been done in Christchurch, it would be possible to give the nurse of the future a much sounder foundation on which to base her future instruction and her adaptation to her ward duties, and it would give the authorities more opportunity for carefully selecting candidates, but it is questionable if Hospital Boards would be justified in giving this instruction without a fee being paid. In suggesting such a scheme, I am only quoting what is already in operation in the majority of hospitals of Great Britain.

Nursing Technique.

In visiting hospitals the necessity for more detailed care in our nursing technique is very noticeable This cannot be brought about unless the sister in charge of the ward is a carefully selected and well-prepared nurse with ability to teach and supervise. Further, this sister must be left long enough in one ward to become a specialist in the nursing of the particular type of patient cared for in that ward, and she must have adequate trained assistance in the form of staff nurses so that she can be free to supervise.

Recently in visiting one of our large hospitals I was surprised by the fact that in only one instance was the same sister in charge of a ward as had been on my last visit a year previously. When this fact is further aggravated by senior pupil-nurses never being left in one ward longer than two months and juniors one month, it is quite understandable why the detailed nursing care suffers in that no one has that stability of effort which only time and constant repetition can give. Sisters should have at least five years in one ward, staff nurses four to six months and pupil-nurses at least three months. Days off can be provided for by giving each ward a relieving nurse as part of the routine staff or where only two days off a month are given a relieving nurse between two wards. The opposite extreme to the previous instance I have mentioned is where sisters remain indefinitely in one ward for many years. This again has its disadvantages in that this sister in time sees all nursing procedures in terms of her own ward and no other, while it also limits the experience of other sisters.

Ideal staffing is not easy to arrange. The problem of giving pupil-nurses varied experience, sick-leave, &c., all make for difficulties, but there cannot be good nursing without more stability among ward staffs than there is at present.

Recreation.

Many of the most eminent educational authorities frequently stress the importance of planned leisure. Leisure is essential for every one, and nurses as much, if not more than the average member of the community, need mental and physical refreshment if they are to bring freshness of mind and body to their work. Some Hospital Boards have been very generous in providing recreational facilities such as tennis-courts, &c., but these will be far more appreciated if there is a definite tennis club formed with competitions. Again, the nurses in other hospitals have been very active in getting up entertainments of various kinds for charitable purposes. Any effort of this kind is to be highly commended as it broadens the interests of the staff, develops an *espirit de corps*, and, above all, is itself a training in responsibility which cannot but react successfully on the work of the hospital. Every Nurses' Home requires some recreational activity, even if it is of the simplest, which should be controlled and organized by the nurses themselves.

Exchange.

I hope the time is not far distant when a definite system of interchange will be established not only between the senior members of our own hospitals nursing staff, but also with overseas nursing services. New Zealand is an isolated community and lacks the stimulus that the older lands enjoy where it is possible to visit other countries easily and cheaply, therefore if our nurses are to remain in the van of their profession it is important for them to have a broader personal contact.

In conclusion, again I would like to express my appreciation of the assistance given to me not only by the other members of the departmental staff, but also by the staffs of the Hospital Boards and the voluntary nursing organizations. In addition, the New Zealand Registered Nurses' Association has worked in close co-operation with the Nursing Division.

M. I. Lambie,
Director, Division of Nursing.

PART VII.—MATERNAL WELFARE.

REPORT OF INSPECTOR OF MATERNITY AND PRIVATE HOSPITALS.

T. L. Paget, L.R.C.P. (Lond.), M.R.C.S. (Eng.).

I have the honour to present my annual report for the year ending 31st March, 1934.

Maternal Mortality.

The decline in the maternal-mortality rate, which, except for a rise due to septic abortion in 1930, had been continuous since 1927, has received a check due to an increase in the total number of deaths together with a drop in the birth-rate. It should be noted that part of the apparent increase in the number of deaths under the heading of "Toxæmia, Albuminuria, and Eclampsia" is due to the transfer of cases of deaths from hyperemesis gravidarum from the "Accidents of Pregnancy" to this group, in accordance with the alteration in the method adopted in 1930, for international classification. The number of deaths from sepsis following abortion or miscarriage remained the same—namely, 26—and again 24 of those occurred in married women. The total maternal death-rate, including septic abortion and maternal deaths associated with non-puerperal causes, has risen from 4·06 to 4·44, and the maternal death-rate, excluding septic abortion, from 3·02 to 3·37. The group under the heading "Hæmorrhages, Accidents of Labour, Thrombosis, Phlegmasia, Embolism, and following Child-birth not otherwise defined" includes seven deaths which may be attributed partly to child-birth and partly to associated causes. They are as follows:—

Two cases of pneumonia following or accompanying child-birth;
One case of pneumonia with ophthalmic goitre;
One œdema of the lungs with myocarditis; and
Three of myocardial degeneration.

How many of these deaths can be ascribed mainly to non-puerperal causes and how many to shock or other puerperal causes I have in most instances insufficient information to determine with any reasonable degree of accuracy. I wish to point out that this lack of information is mainly due to the inaccuracy or incompleteness of the certificates of cause of death, and for this the practitioners filling up the certificates are responsible. Wherever the information is so lacking that classification is impossible or that information in our possession shows that the death certificates are obviously faulty, inquiries have to be made by the Registrar-General or the Government Statistician, with the co-operation of the Health Department, to ensure accuracy as far as possible. The work entailed in this is very considerable, and much of it could be saved by greater care in certification.

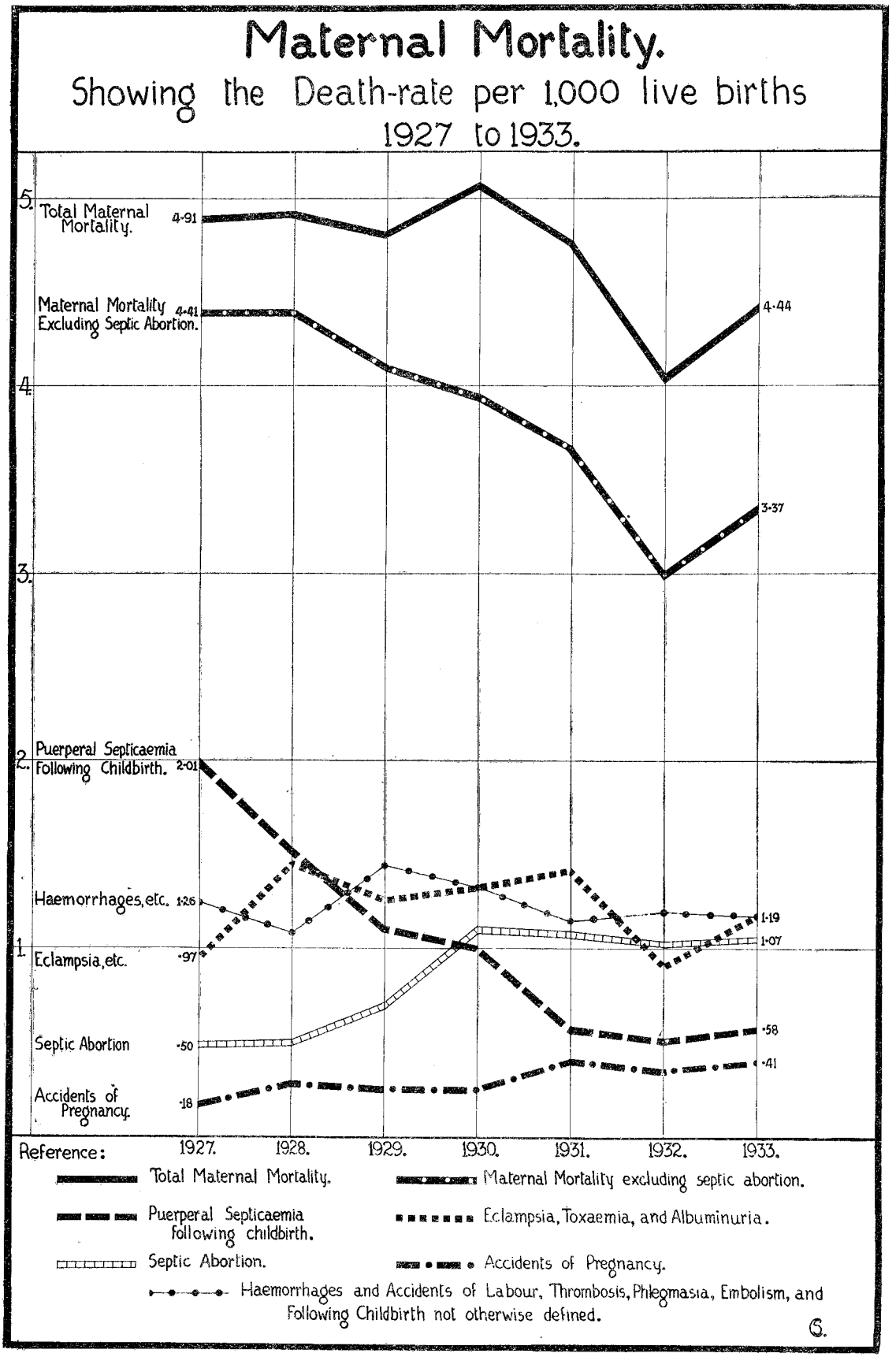
The gross figures referred to above are shown in Table I and the rate per 1,000 live births is again shown in the form of a graph, Table II.

DETAILED STATISTICAL RETURNS FOR NEW ZEALAND.

Table I.—Showing the Number of Deaths from all Puerperal Causes, 1927–33.

——	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Puerperal sepsis following childbirth	56	42	30	27	18	13	14
Hæmorrhages, accidents of labour, thrombosis, phlegmasia, embolism, and following childbirth not otherwise defined	35	30	39	36	31	30	29
Toxæmia, albuminuria, and eclampsia	27	40	34	36	38	23	29
Puerperal sepsis following abortion or miscarriage	14	14	19	30	29	26	26
Accidents of pregnancy (mainly non-septic abortions)	5	8	7	7	11	9	10
Total	137	134	129	136	127	101	108
Total maternal deaths, excluding septic abortion	123	120	110	106	98	75	82

Table II.


Maternal Mortality.
Showing the Death-rate per 1,000 live births
1927 to 1933.
5.
4.
3.
2.
1.
Total Maternal Mortality.
4·91
Maternal Mortality Excluding Septic Abortion.
4·41
4·44
3·37
Puerperal Septicaemia Following Childbirth.
2·01
Haemorrhages, etc.
1·26
1·19
1·07
Eclampsia, etc.
·97
Septic Abortion
·50
·58
·41
Accidents of Pregnancy.
·18
Reference:
1927.
1928.
1929.
1930.
1931.
1932.
1933.
Total Maternal Mortality.
Maternal Mortality excluding septic abortion.
Puerperal Septicaemia following childbirth.
Eclampsia, Toxaemia, and Albuminuria.
Septic Abortion.
Accidents of Pregnancy.
Haemorrhages and Accidents of Labour, Thrombosis, Phlegmasia, Embolism, and Following Childbirth not otherwise defined.
6.

A certain number of deaths from eclampsia were due to the neglect of the patient to obtain or follow advice. A considerable proportion of the cases of eclampsia reported showed that there was either no ante-natal care given to the patient owing to her failure to obtain it or that ante-natal care was instituted too late or was deficient in many respects. It will doubtless take many years before it becomes the rule, and not the exception, for women to regard good ante-natal care during pregnancy as essential to their well-being as the provision for adequate attendance during labour. In spite of the lack of satisfactory results up to the present from the increased provisions for ante-natal care, I am confident that eventually it will demonstrate its value as the majority of the medical profession are giving greater attention to this side of obstetrics.

Puerperal Sepsis.

One hundred and fourteen cases were notified during the year, including 9 occurring among the Maoris; 107 cases were investigated more or less fully, mostly by means of questionnaires to the medical men attending and the midwife or nurse, these questionnaires being reported upon by the Medical Officer of Health for the district in which the case occurred. It is obvious that a considerable number of the cases reported were of a very mild nature. The following facts are worthy of note: Sixty-seven, representing 62·6 per cent., were delivered in hospitals and 40, representing 37·4 per cent., in private houses. As the proportion of confinements conducted in hospitals to private houses was 70·95 to 29·05, the incidence of puerperal sepsis in the hospitals was lower than that in private houses. I have no doubt from my own investigations that this is a correct reflection of the conditions occurring, as the facilities for carrying out asepsis in hospitals are very much better than those in most private houses, even of the better class.

Of the recorded cases 65·7 per cent. had normal deliveries of both infant and placenta, 34·3 artificial delivery of either infant or placenta or both. It is to be regretted that it has not been found possible to carry out fuller bacteriological investigations with regard to these cases. Such an investigation would be of great interest. However, this would be impossible to arrange in the majority of cases owing to facilities not being available as is the case in large obstetric units.

Caesarian Section.

One hundred and nine patients were delivered by Caesarian section, a rate of 4·4 per 1,000 total confinements. Comparative figures of other countries are not available except those pertaining to lying-in hospitals, and so comment is withheld.

Deaths from Septic Abortion.

I can only repeat what I have said before with regard to deaths from sepsis following abortion—namely, that in nearly all cases they are due to induced abortion and that the underlying causes are mainly economic and social; these are not easily remedied, and it is noteworthy that the increase in this cause of death is remarked upon by nearly every writer on maternal welfare in the majority of civilized countries. The only useful remark I can make from the medical point of view is with regard to the enormous risk to every woman who has illegal abortion procured or induces abortion herself.

ANTE-NATAL CLINICS.

Table III.—Ante-natal Clinics.

Year.	Number of Clinics.	New Cases.	Total Attendances.	Average Number of Attendances by each Patient.	Outfits sterilized.
1925	16	2,289	7,816	3·0	..
1926	20	3,238	12,554	3·8	401
1927	20	3,919	15,406	4·5	515
1928	21	5,050	20,740	4·11	728
1929	24	5,177	17,555	3·39	924
1930	25	6,027	22,078	3·66	1,106
1931	28	6,306	22,869	3·63	1,221
1932	31	5,882	22,594	3·84	986
1933	33	5,978	23,794	3·98	914

Table III shows the gradual increase in the number of Ante-natal Clinics since the more extensive service established in 1925, when the number was sixteen. These clinics were established for free service to expectant mothers. The majority of them are conducted by the Plunket Society, which is gradually extending its activities in this branch of maternal and infant-welfare work. All the public clinics are in charge of registered midwives, most of whom have had special training to fit them for this responsible task. The necessity of obtaining medical advice in any case of suspected abnormalities and for all patients at least once, in the case of primiparæ early in pregnancy, and in all cases if possible during the last fortnight, is impressed upon the nurses conducting the clinics. Everything possible is done to promote co-operation between the nurse conducting the clinic and the medical man or midwife who is to attend the patient during delivery. The clinics established in connection with public maternity hospitals have at all times medical men available for those patients attending the clinic who are going to enter the hospital. The others are referred to their own medical man, and printed circular letters are available for the use of all nurses when sending on copies of the charts. In the majority of cases I believe that it is possible to obtain helpful co-operation between both doctor and nurse. Where this exists the work of these clinics is undoubtedly of great value. Where it does not exist it is equally certain that the work is incomplete. There have been and always will be difficulties in individual cases in gaining the necessary co-operation, but a little forbearance and good will on both sides should make this possible to the advantage of all concerned, particularly the patient. In view of the fact which I have stated in a previous paragraph, I am still hopeful that our high death-rate from the various manifestations of toxæmias of pregnancy will ultimately be reduced. There is no doubt that at present the return is much higher than would be the case if the proper co-operation could be obtained of patient, doctor, and nurse—all interested in this work.

MATERNITY HOSPITALS.

At the end of the financial year the hospitals of New Zealand mainly providing maternity accommodation consisted of 5 State (St. Helens) maternity hospitals, providing 98 beds, 70 maternity hospitals under the control of various Hospital Boards providing approximately 502 beds, and 190 private hospitals providing 915 maternity beds, a total of 1,515 maternity beds, or an average of approximately one bed to every thousand of population. These hospitals, many of which provide only from three to four beds, are fairly evenly distributed over the country, and provide a valuable and essential means of giving a good maternity service in all but the most remote and thinly populated districts of New Zealand. Their even distribution avoid any marked disparity in the risks to the rural and urban population of New Zealand; approximately 70 per cent. of the confinements were conducted in them. Details with regard to these hospitals are set out in Tables IV and IVA. There is now but little difference in the death-rate of the different groups of hospitals. Variation from year to year during the period 1929–33 is shown in Table IVA. It is particularly gratifying to note that the death-rate of the mixed hospitals (Group IV), which in most cases are primarily maternity hospitals, but also admit medical and surgical cases, has shown a very marked reduction since 1929. In that year it was established that the death-rate for this group of hospitals, comprising 71 hospitals, was 8·23 per 1,000, and that this excessive death-rate was due to puerperal sepsis. It could only be concluded that the prevalence of puerperal sepsis in these hospitals was due to the transfer of infection from the medical or surgical cases admitted thereto. The conditions under which each hospital was being run were considered, and where the nursing staff or the facilities in the hospital were insufficient to ensure safety to the maternity patients from the above-mentioned risk, septic surgical cases were excluded. This applied to approximately 66 per cent. of the hospitals, and the remaining one-third of the hospitals were still allowed to receive such cases providing it was found possible with proper care to eliminate the risks to maternity patients. It would have been easier to have excluded all such cases from these hospitals, but such a course, while definitely avoiding the risk to maternity patients, would have derived patients requiring medical and surgical treatment from the benefits to which they were entitled. The less drastic precautions taken have proved the soundness of the policy adopted, inasmuch as while the death-rate as pointed out above was 8·23 per 1,000 in 1929 it has fallen by successive steps and in 1933, as is shown in the table, was 2·97 per 1,000. I must point out that the death-rate for all maternity hospitals as shown in these tables is not comparable with the general maternal death-rate for the country inasmuch as the calculation is per 1,000 confinements and deaths from abortion and ectopic gestation are not included as such cases are not admitted to maternity hospitals.

STATISTICS OF MATERNITY HOSPITALS.

Table IV.—Summary of Maternity Cases in all Hospitals, 1933.

—	Number of Hospitals.	Patients admitted.	Confined at Full Term.	Number of Patients confined Seventh Month and Full Term.	Total Confinements.	Number of Abortions—*i.e.*, Delivery before the Seventh Month.	Number of Operations.							Hæmorrhages.			Eclampsia.	Number of Deaths of Mothers.	Number of Deaths of Infants who were born alive.	Number of Infants born dead.		Number of Patients transferred to other Hospitals.		Deaths of Transferred Adult Patients.	Maternal Mortality		
							Instrumental Delivery.	Version.		Dilatation of Cervix.	Manual Removal of Placenta.	Cæsarian Section.	Craniotomy, &c.	Accidental Hæmorrhage.	Unavoidable Hæmorrhage (Placenta prævia).	Post-partum Hæmorrhage.				Probably before Labour.	Probably during Labour.	Before Delivery.	After Delivery (Mothers only).		Puerperal Causes.	Non-puerperal Causes.	Total Maternal Mortality.
								External.	Internal.																		
(*a*) *Maternity Hospitals—i.e.*, admitting maternity cases and urgent miscarriage cases only—																											
Group I: 1–100 cases per annum—																											
Totals	163	6,614	6,229	322	6,551	40	628	14	32	25	54	1	2	19	20	93	38	12	120	113	74	28	65	7	17	2	19
Percentages to total confinements	..	..	..	..	..	..	9·59	0·21	0·49	0·38	0·82	0·02	0·03	0·29	0·31	1·42	0·58	0·183	1·83	1·72	1·13	0·43	0·99	0·106	0·260	0·031	0·290
Group II: Over 100 cases per annum—																											
Totals	41	6,618	6,128	294	6,422	38	656	43	24	43	57	11	4	21	39	95	22	7	105	111	68	30	131	8	12	3	15
Percentages to total confinements	..	..	..	..	..	..	10·21	0·67	0·37	0·67	0·89	0·17	0·06	0·33	0·61	1·48	0·34	0·109	1·64	1·73	1·06	0·47	2·04	0·125	0·187	0·047	0·234
Group III: St. Helens Hospitals—																											
Totals	7	2,440	2,146	92	2,238	10	131	14	17	18	20	7	5	21	7	48	14	3	44	43	26	15	25	3	5	1	6
Percentages to total confinements	..	..	..	..	..	..	5·85	0·63	0·76	0·80	0·89	0·31	0·22	0·94	0·31	2·14	0·63	0·134	1·97	1·92	1·16	0·67	1·12	0·134	0·223	0·045	0·268
Totals, Groups I, II, and III—																											
Totals	211	15,672	14,503	708	15,211	88	1,415	71	73	86	131	19	11	61	66	236	74	22	269	267	168	73	221	18	34	6	40
Percentages to total confinements	..	..	..	..	..	..	9·30	0·47	0·48	0·57	0·86	0·12	0·07	0·40	0·43	1·55	0·49	0·145	1·77	1·76	1·10	0·48	1·45	0·118	0·224	0·039	0·263
(*b*) *Mixed Hospitals—i.e.*, admitting maternity and medical and surgical cases—																											
Group IV: Mixed Hospitals—																											
Totals	64	2,477	2,255	101	2,356	52	219	2	9	12	18	9	..	10	6	47	7	3	50	48	20	8	15	4	3	4	7
Percentages to total confinements	..	..	..	..	..	..	9·30	0·08	0·38	0·51	0·76	0·38	..	0·42	0·25	1·99	0·30	0·127	2·12	2·04	0·85	0·34	0·64	0·170	0·127	0·170	0·297
(*c*) *All Hospitals*—																											
Totals	275	18,149	16,758	809	17,567	130	1,634	73	82	98	149	28	11	71	72	283	81	25	319	315	188	81	236	22	37	10	47
Percentages to total confinements	..	..	..	..	..	..	9·30	0·42	0·47	0·56	0·85	0·16	0·06	0·40	0·41	1·61	0·46	0·142	1·82	1·79	1·07	0·46	134	0·125	0·211	0·057	0·268
(*d*) *Cases confined in Private Houses and/or General Wards of Public Hospitals* -																											
Totals	..	..	..	..	7,193	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25
Percentages to total confinements	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·348

Table IVA.—Maternity Hospitals, 1929–1933.

Class of Hospital.	Number of Hospitals.					Number of Confinements.					Maternal Deaths.									
											Total Number.					Rate per 1,000 Confinements.				
	1929.	1930.	1931.	1932.	1933.	1929.	1930.	1931.	1932.	1933.	1929.	1930.	1931.	1932.	1933.	1929.	1930.	1931.	1932.	1933.
Group I, admitting 1–100 cases per annum (maternity cases only)	149	143	146	159	163	6,869	6,453	6,624	6,548	6,551	23	21	15	12	19	3·35	3·25	2·26	1·83	2·90
Group II, admitting over 100 cases per annum (maternity cases only)	42	44	43	40	41	6,263	6,905	6,714	6,482	6,422	19	14	19	21	15	3·03	2·03	2·83	3·24	2·34
Group III, St. Helens Hospitals	7	7	7	7	7	2,403	2,472	2,262	2,184	2,238	5	9	6	3	6	2·08	3·64	2·65	1·37	2·68
Greoup IV, mixed hospitals—*i.e.*, hospitals admitting medical and surgical patients as well as maternity cases	71	76	73	67	64	2,310	2,770	2,691	2,334	2,356	19	12	12	8	7	8·23	4·33	4·46	3·43	2·98

CASES NOT ATTENDED IN MATERNITY HOSPITALS.

Section D of Table IV shows the comparative death-rate of 7,193 confinements conducted either wholly in private houses or partly therein and partly in the general wards of public hospitals, to which a considerable number of complicated cases are transferred. These figures have been made comparable with the death-rate in the maternity hospitals by the exclusion of cases of abortion and ectopic gestation which are not admitted to the latter. The number of patients attended in the general wards of public hospitals prior to delivery was 193. An analysis of these cases shows that only 7 were admitted for normal labour; the remaining were admitted suffering from more or less severe complications, and included 43 cases of obstructed labour, 2 failed forceps, and 19 ante-partum hæmorrhages. The severity of these complications may be measured by the high maternal mortality—namely, 8·28 per cent. This maternal mortality for these complicated cases has been gradually dropping, and is considerably lower than it was last year. Though it would be an advantage to the patients in most cases if they could be admitted to special obstetric hospitals, so far as it has not been found possible to arrange this in all places. The position has been met by the efforts of the Medical Superintendents and Staffs to provide better facilities for dealing with these cases. It is therefore gratifying to be able to record that the death-rate of this group has shown a decline during the past few years, no doubt largely due to the interest taken in this problem by the surgeons and physicians concerned and in some cases to the appointment of obstetrical specialists to the honorary staffs, thus relieving the Medical Superintendent and general staff of a responsibility that should not be imposed upon them.

In addition to the 193 cases above mentioned, there were 202 cases admitted to the general wards of public hospitals after delivery of which 4 were for eclampsia, 4 for post-partum hæmorrhage, and 79 for puerperal septicæmia, the remainder being for other conditions. All the deaths of patients transferred from maternity hospitals but occurring in the general wards of public hospitals are recorded in Table IV, as though they had actually died in the hospital in which they were originally attended.

Table V gives the detailed results of the seven St. Helens Hospitals which was the number under the control of the Department at the beginning of the year. During the year the Gisborne and Wanganui Hospitals were passed over to the Hospital Boards. As, however, they have remained under the same management for this year, I have included the whole of their returns in Tables IV and V. The main difference between the procedure in the conduct of the St. Helens Hospitals is that all uncomplicated labour cases are attended by midwives only, though medical assistance is always obtained for complicated labour cases, and all patients attending the ante-natal clinic and all patients during the puerperium receive adequate medical supervision.

It will be noted (Table IV) that the percentage of instrumental deliveries under these conditions in St. Helens Hospitals is 5·85 per cent., as against 9·3 to 10·21 for other hospitals.

Table V.—St. Helens Hospitals, General Statistics, 1933.

—	Auckland.	Christchurch.	Dunedin.	Gisborne.	Invercargill.	Wanganui.	Wellington.	Total.	Percentage to Total Confinements.
A.—Intern Department.									
Total deliveries	638	322	149	131	278	190	530	2,238	..
Primiparæ	214	76	33	30	79	54	125	611	27·30
Multiparæ	424	246	116	101	199	136	405	1,627	72·70
Presentations—									
Vertex normal rotation	609	303	132	125	247	179	488	2,083	93·07
Occipito posterior (persistent)	17	9	13	2	18	9	19	87	3·89
Face	1	1	..	2	..	1	4	9	0·40
Brow	2	..	..	..	1	..	..	3	0·13
Breech	26	9	4	2	13	5	14	73	3·26
Transverse	..	1	..	..	..	..	2	3	0·13
Twins (sets)	14	4	..	..	1	2	4	25	1·18
Complications of pregnancy—									
Hyperemesis	..	..	6	..	..	..	1	7	0·31
Hydramnios	5	6	10	..	3	4	1	29	1·30
Pre-eclamptic toxæmia	29	11	6	1	12	8	19	86	3·84
Eclampsia	6	1	..	..	..	2	5	14	0·63
Nephritic toxæmia	3	11	..	..	1	..	2	17	0·76
Hæmorrhages—									
Unavoidable	2	..	..	1	3	1	1	8	0·37
Accidental, external	4	7	4	1	..	2	1	19	0·85
Accidental, internal	..	..	..	..	..	1	1	2	0·09
Post-partum, atonic	23	1	13	4	4	..	2	57	2·55
Post-partum, traumatic	..	..	..	..	..	..	1	1	0·04
Lacerations of genital tract—									
Perinæum	87	29	12	20	20	24	73	265	11·84
Cervix	1	1	..	..	..	..	..	2	0·09
Uterus	..	..	..	..	..	..	..	..	..
Contracted pelvis, inlet	8	4	1	6	..	2	..	21	0·94
Contracted pelvis, outlet	2	4	..	..	1	2	..	9	0·40
Prolapse of cord	4	..	..	..	..	..	..	4	0·18
Complications of puerperium—									
Sepsis, local	1	1	..	..	4	4	2	12	0·54
Sepsis, general	1	..	..	1	..	1	..	3	0·13
Pulmonary embolism	..	..	..	..	..	..	..	..	..
Insanity	1	..	..	..	..	..	..	1	0·04
Crural phlegmasia, venous	..	..	..	..	..	..	..	..	..
Crural phlegmasia, lymphatic	..	..	1	..	..	..	2	3	0·13
Mastitis	3	..	..	..	..	1	6	10	0·45
Operations—									
Internal pelvimetry	..	..	..	..	..	..	..	..	..
Induction of labour	21	27	12	13	5	..	2	80	3·59
Episiotomy	..	..	1	..	..	..	12	13	0·59
Impacted shoulders	..	..	1	..	..	1	..	2	0·09
Suture of perinæal lacerations—									
Complete	1	..	..	..	..	..	..	1	0·04
Incomplete	86	29	12	20	20	24	73	264	11·80
Suture of cervical lacerations	1	1	..	..	..	..	..	2	0·09
Forceps	41	12	9	3	22	9	35	131	5·85
Version, external	1	3	..	..	3	1	4	12	0·54
Version, internal	2	11	..	..	3	1	1	18	0·80
Version, combined	..	..	..	..	..	1	..	1	0·04
Manual removal of placenta	5	2	1	2	..	5	3	18	0·80
Cæsarean section—									
Abdominal, conservative	7	..	..	..	..	..	..	7	0·31
Abdominal, radical	..	..	..	..	..	..	..	..	..
Pubiotomy	..	..	..	..	..	..	..	..	..
Craniotomy	1	1	..	..	..	1	2	5	0·22
Cleidiotomy	..	..	..	..	..	..	..	..	..
Decapitation	..	..	..	..	..	..	..	..	..
Morbidity	19	9	4	2	13	18	24	89	3·98
Mortality	1	2	..	..	1	1	1	6	0·27

Table V.—St. Helens Hospitals.—General Statistics, 1933—continued.

—	Auckland.	Christchurch.	Dunedin.	Gisborne.	Invercargill.	Wanganui.	Wellington.	Total.	Percentage to Total Confinements.
A.—Intern Departments—*continued.*									
Infant statistics—									
Total births	655	327	149	131	278	194	537	2,271	101·47
Premature—									
Alive	12	16	8	6	4	9	23	78	3·49
Dead—									
Recent	4	6	1	..	1	..	6	18	0·80
Macerated	6	..	2	..	..	2	5	15	0·67
Putrid	..	..	..	..	..	..	..	..	..
Full term—									
Alive	624	301	138	124	266	177	499	2,129	95·13
Dead—									
Recent	4	6	..	1	6	3	8	28	1·25
Macerated	5	..	..	..	1	..	..	6	0·27
Putrid	..	..	..	..	..	2	..	2	0·09
Children born alive who died in hospital	13	7	1	2	6	2	13	44	1·97
Total born dead or died in hospital	32	19	4	3	14	9	32	113	5·05
B.—Extern Department.									
Total attendance	135	81	..	..	1	..	43	260	..
Primiparæ	..	2	..	..	..	..	..	2	0·77
Multiparæ	135	79	..	..	1	..	43	25	99·23
Forceps application	2	4	..	..	..	..	4	10	3·85
Morbidity	6	5	..	..	..	..	..	11	4·23
Mortality	..	..	..	..	..	..	1	1	0·38
C.—Ante-natal Clinics.									
First visits—									
Primiparæ	229	104	40	29	71	34	119	626	..
Multiparæ	576	339	123	64	204	83	486	1,875	..
Return visits	2,690	2,335	490	280	711	329	2,736	9,571	..
Outside visits	189	251	5	..	..	..	304	749	..
Outfits sterilized	168	120	37	..	15	10	53	403	..

PRIVATE MEDICAL AND SURGICAL HOSPITALS.

There are 101 private hospitals licensed for medical and surgical cases only, which, together with 35 mixed private maternity hospitals, which are also permitted to take in medical and surgical cases, provide 1,434 medical and surgical beds. Although some of these hospitals are quite small, all of them are efficiently equipped for the class of work for which they are designed, some of the larger hospitals are well equipped units with X-ray and bacteriological departments and compare favourably in that direction with the public hospitals.

MAORI MATERNAL MORTALITY.

Table VI.

Cause of Death.	Number of Deaths.	Death Rate per 1,000 Live Births.
Septic abortion	2	0·68
Puerperal hæmorrhage	6	2·04
Puerperal septicæmia following childbirth	7	2·37
Puerperal albuminuria	1	0·34
Puerperal embolism	1	0·34
Other accidents of childbirth	6	2·04
Other or unspecified conditions of the puerperal state	1	0·34
	24	8·14

The above table gives details of maternal deaths among the Maoris for 1933. Unlike the position in the case of the European race, deaths from septic abortion and toxæmias of pregnancy do not play such an important part. The two major causes of death are, as shown, puerperal hæmorrhage and puerperal septicæmia following childbirth, and it is proving a very difficult problem to make any material reduction in the number of deaths from these two causes. The main difficulties are due to the tendency of the uneducated Maoris to cling to dangerous ancient customs, the neglect to seek skilled assistance until matters are desperate, and the refusal to follow advice when it is given by a qualified person. The total Maori maternal mortality (8·14) can be regarded as approximately accurate. The seven deaths attributed to such vague conditions as "other accidents of childbirth" and "unspecified conditions of the puerperal state" are due to lack of accurate information, which is unavoidable in cases attended by untrained attendants. Efforts are being made to ensure fuller information and more accurate classification in such important matters.

In conclusion, I wish to express my sincere thanks to the many members of both medical and nursing professions and to all societies or bodies interested in the subject of maternal welfare, particularly the officers of the New Zealand Obstetrical Society, and, through it, the *New Zealand Medical Journal*, for their co-operation and helpful assistance given during the year.

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