1910.

NEW ZEALAND

PUBLIC HEALTH DEPARTMENT

(ANNUAL REPORT OF THE).

Presented to both Houses of the General Assembly by Command of His Excellency.

CONTENTS.

REPORT.

Department of Public Health,
Minister's Office, Wellington, 1st November, 1910.

My Lord,—

I have the honour to transmit herewith, for Your Excellency's information, the report of the Department of Public Health for the year ending the 31st March, 1910.

I have, &c.,

D. BUDDO,
Minister of Public Health.

The Right Hon. John Poynder Dickson-Poynder, Baron Islington,
Governor of the Dominion of New Zealand, Wellington.

The Chief Health Officer to the Minister of Public Health.

Sir,— Department of Public Health, Wellington, 21st October, 1910.

I have the honour to lay before you the report of the Department of Public Health for the year ending 31st March, 1910.

The general health of the Dominion has been good.

There has been a slight increase in the notifications of enteric fever—635, as against 561 last year. This increase is almost entirely due to a smart outbreak of the disease in the Wellington District during the early months of this year, where the notifications were 278, as against 222 during the previous year. Of this number, 65 cases were notified in Wellington and suburbs.

The District Health Officer could assign no special cause for this outbreak, but with good grounds suspicion fell on certain consignments of oysters.

The notifications of scarlet fever were less by 917—1,266 as against 2,183; and of diphtheria by 46—578 to 624 in 1908–9.

Section 83, Hospitals Act.

It is to be hoped that local authorities will take advantage of section 83 of the Hospitals Act, and delegate to the Hospital Boards their powers and responsibilities under the Public Health Act, notably with regard to the control of infectious diseases.

Such an arrangement would make for efficiency and economy, especially as the Hospitals and Health Departments are now combined under one head. It can hardly be gainsaid that the authority responsible for the care and treatment of the sick should be also conversant with those influences that are likely to cause sickness. As matters now stand, the Hospital Boards, though responsible for the accommodation and treatment of persons with infectious diseases, have no official knowledge as to how these diseases are contracted or spread; and, even if they have information as to the cause or causes that are filling their infectious wards, they are powerless to take any action that may be considered necessary.

As the law now stands, notifications of infectious diseases have to be forwarded to the local authority in whose district the infectious case occurs, and also to the District Health Officer. In many instances the local authority has neither the machinery nor the staff to carry out the provisions of the Act, and the District Health Officer may be two hundred miles from the scene of the outbreak. Again, if one local authority has the machinery to take the necessary precautions, in all probability the local authority of the district adjoining has none; consequently there is no uniformity of action on the part of local authorities either as regards sanitation or the control of infectious diseases, and this lack of uniformity is naturally more obvious when there are several local authorities in a district—and, speaking generally, their name is Legion.

The country local authorities might very well waive all their responsibilities under the Public Health Act, and the larger boroughs those relating to the control of infectious diseases, in favour of the Hospital Board of the district. By this means the efficient and economical administration of the public-health laws would be assured, and the central Department, instead of having to deal with 380 local bodies, as is now the case, would only have to deal with thirty-six. The mutual advantages of such a system are surely obvious.

Tubercular Diseases.

There were 800 deaths from tubercular diseases—viz., pulmonary consumption, 588; other forms of tubercular disease, 212.

A gradual decline is noticeable during the last twenty years in the mortality-rate from these diseases, the most noticeable "drop" being in the rate from consumption for the quinquennium subsequent to the initiation in 1903 of an anti-tuberculosis campaign.

Mean Death-rate per 100,000.

	Phthisis.	Other Tubercular Diseases.
1890–94	.. 82·2	24·7
1895–99	.. 79·3	25·1
1900–4	.. 73·9	23·4
1905–9	.. 62·0	24·0

So far, this is satisfactory, but a great deal remains to be done before it can be said that the campaign against this, the most prevalent of all diseases, is being efficiently conducted.

The Hospital Boards have loyally helped the Department. During the past six years four sanatoria have been opened, and annexes have been erected in connection with some of the principal hospitals, which, with the Government Sanatorium at Te Waikato, provide a total of 160 beds for the open-air treatment of the disease.

Name.	Opened.	Controlling Authority.	Beds.
Te Waikato Sanatorium ..	1903	Public Health Department ..	60
Otaki	1906	Wellington Hospital Board ..	35
North Canterbury	1909	North Canterbury Hospital Board	35
Pleasant Valley	1910	Otago Hospital Board	30

In addition to the above, special annexes, providing in the aggregate accommodation for some 100 patients, have been erected at various hospitals—notably, Wellington, New Plymouth, Nelson, and Palmerston—in fact, there are few hospitals where special provision has not been made for patients in the early stages, but little or no provision has been made for those in the later stages of this disease. This lack of proper provision for the chronic and "incurable" patient is the blot on what might otherwise be regarded as a satisfactory initial campaign.

A working camp has also been established near Rotorua, where patients in whom the disease has been arrested, but who are not fit to resume their ordinary occupation, are engaged in tree-planting. During the past year the patients at the camp have practically supported themselves by wages paid them by the Lands Department for work done.

The time is now ripe to press the campaign. The public is better informed as to the need for precautionary measures, and members of the medical profession are less reluctant to notify cases of the disease, than was the case in the early days of the Department. Moreover, with the new Hospitals Act it is possible for Boards, with the aid of the combined Departments (Hospitals and Health)—especially if the Boards assume the responsibilities of local authorities under the Health Act—to put into operation measures of a more far-reaching nature than was possible under the old law and the old organization, where Hospital, Health, and Charitable Aid matters were controlled by separate authorities.

Briefly, the extended plan of campaign is as follows :—

(1.) Rigorous enforcement of notification by the medical profession of all forms of tubercular disease. Though there were 800 deaths, there were only 556 notifications last year.

(2.) A wider dissemination of literature as to the causes of the disease, and its prevention.

(3.) Whole-hearted attempts to encourage the "early" case, and also those who had been in contact with consumptives, to seek treatment by means of—

(*a.*) Extension of the out-patient departments of our general hospitals, with a special branch devoted to the diagnosis and treatment of chest-complaints. From such a department the patient could be drafted for treatment to an institution suitable for his case. This department should also keep under supervision patients who have returned from sanatoria.

(*b.*) District nurses, who will keep in touch with the patients treated in the out-patient department, and see that they conform to the rules of life laid down by the medical attendant, arrange for the examination of suspected cases or "contacts," and keep the out-patient department informed of those who have returned from sanatoria.

(*c.*) Medical inspection of school-children : A report on this subject is now before the Government. If put into operation it should prove of great value in detecting early cases among school-children.

(4.) Extension of "sanatorium" accommodation for the educative treatment of suitable cases. The smaller Hospital Boards should combine for the purposes of erecting and maintaining such.

(5.) Provision by all Hospital Boards of suitable accommodation for patients in the chronic and "incurable" stages of the disease, special wards being needed for these classes.

(6.) Establishment of a "working" sanatorium, where patients could be taught outdoor occupations—farming, bee-culture, forestry, the planting of fruit-farms, &c.

(7.) By co-operation between public and private philanthropic agencies, whereby a nursing system could be developed at a maximum of efficiency with a minimum of cost ; and also a system of relief, whereby the dependants on those isolated would be well cared for during the absence of the breadwinner.

(8.) By co-operation with the Agricultural Department, as heretofore, in matters relating to the control of dairies and dairy herds, and the storage, conveyance, and distribution of milk ; nor must be forgotten the need for better supervision of the slaughtering and inspection of pigs.

There is every reason for believing that Hospital Boards will gladly work in the direction outlined, and that the contributory authorities will cheerfully grant the money needed.

But there is one special danger, which was commented on by the Medical Superintendent of the Wellington Hospital in his report on the Otaki Sanatorium: "There is a tendency when treating patients in New Zealand to attempt to kill the germ of consumption by cultivating the germ of laziness and sluggishness." Dr. Hardwick-Smith then goes on to say that it is questionable whether it is better for a patient to survive the disease than "lose his moral fibre."

In these remarks I heartily concur, and it should be the aim of all responsible to counteract the tendency referred to, especially if the early cases come forward, as it is hoped they will, for sanatorium treatment. If such patients do not do all they can to assist the Boards in an efficient and economical management of the institutions, they will not only act against their own interests, but against the interests of those who come after them. The public will not stand the expense that additional sanatorium accommodation will entail unless they feel that they are getting a measure of return for the expenditure, not only in the shape of persons cured of the disease, but of persons ready and willing to resume the battle of life.

We know that the statistics of sanatoria where graduated labour under medical supervision is one of the features of treatment compare very favourably with those of institutions where the patients remain in more or less enforced idleness.

In health, want of occupation is sure to lead to moral and physical degeneracy, and the same applies to the consumptive patient whose day is passed in discussing symptoms with his fellow-patients, or in criticizing the management of the various institutions in which he has been an inmate.

Whether in the early or late stages of the disease, we should do everything in our power to improve the lot of the consumptive. For those who are fatally stricken let us provide the very best accommodation and treatment possible, and in this we must not be influenced entirely by the cost; but for those who are able, but unwilling, to make a dogged effort to keep themselves in a condition to resume the struggle of life, let no false sentiment be allowed to deter us from doing our duty.

Te Waikato Sanatorium.

Staff.

When I took over the control of this institution in June last there were forty-five patients under treatment, with a staff composed as follows: Medical—A non-resident Medical Superintendent, who attended the institution from Cambridge; nursing—a Matron, six trained nurses, and eight probationers; domestic—two cooks, an assistant cook, two laundresses, six housemaids, five porters, a gardener, an engineer, and a carpenter; clerical—a clerk and assistant clerk. Thus the true institutional staff consisted of thirty-seven persons. In addition to the above, there were employed on the farm a manager, two labourers, and a man in charge of the horses—a total staff of forty-one persons.

In the conduct of this institution I have ever before me the example set by Dr. Patterson, of the Frimley Sanatorium, with regard to the employment of consumptive patients who are medically fit to undertake some of the lighter duties connected with the domestic and outdoor work of such institutions. The results of Dr. Patterson's work are widely known, and graduated exercise and work under medical supervision are now recognized by the profession and a large section of the public as essential concomitants to the open-air treatment of consumption. Having had personal experience of Dr. Patterson's methods when Home in 1906, and having seen and read what his results are—how he sends out a very large proportion of his patients fit to resume the battle of life, and, what is also of importance, *confident of their powers to do so*—I should be signally failing in my duty, and unworthy of the trust reposed in me by virtue of my office, if I did not use every effort in my power to follow Dr. Patterson's splendid example. My duty is clear, and, brutal as it may seem, I have no hesitation in saying that sanatorium treatment is of little avail if it is only to result in turning out the lifelong invalid. Is it wrong to aim at turning out the sanatorium patient as a whole man, ready to do his duty by his family and the State?

The reduction of the nursing staff may appear to need explanation. As it is now, there is one nurse for every 3·5 occupied beds—a very high average for such an institution, where the demands on the nurses' services are not to be compared with those in an ordinary hospital. Also, it will be seen that by a more careful selection of the patients—referred to in another part of this report—and the admission of patients in the earlier stages of the disease, there is no need for such a large nursing staff.

Admissions.

One hundred and five patients were admitted during the year 1908–9. From the representations of the Medical Superintendent it was clear that many patients were being admitted in such an advanced stage of the disease that they were not likely to derive permanent benefit from sanatorium treatment, and that they occupied beds to the exclusion of those who were likely to benefit by such treatment.

Hitherto, practically any patient who was the possessor of a certificate from a doctor to the effect that he was likely to benefit by treatment was admitted. This practice was neither fair to the patients nor to the institution. The forms for admission were altered accordingly, making it clear that only those patients would be admitted who, in the opinion of the Medical Superintendent *alone*, were likely to derive benefit from treatment, and that they would only be admitted for a period of three months, so that they might be educated as to how to look after themselves. The latter stipulation was necessary, as in the past some patients had remained in the institution for months, if not for years, to the exclusion of those in the early stages of the disease to whom the educative methods of sanatorium treatment would have been of the utmost value.

The Medical Superintendent very rightly pointed out that to be of any value the institution should be immediately available for early cases for educative rather than curative treatment, and with that end in view the institution is now conducted. Under existing conditions a patient can be admitted to the institution at once, provided that in the opinion of the Medical Superintendent he is a fit case for admission.

Another defect as regards the admissions was due to the fact that many Hospital and Charitable Aid Boards sent their consumptives to the sanatorium, where they were admitted free of cost. That was scarcely fair to those Hospital Boards who had faced their responsibilities with regard to the consumptives of their district, and had at considerable cost erected sanatoria for their treatment; consequently, it was intimated that no indigent case would be admitted unless the Hospital Board responsible would guarantee the patient's fee of £1 per week.

Economics.

For the year ending 31st March, 1910, the cost of this institution was £7,269 (*vide* table in appendix). Of this amount £5,337 was contributed by the Government, £1,604 by payments made on account of patients, and £328 by the sale of produce, &c.

The total cost per bed was £164 8s. 8d.—viz.,—

	£	s.	d.
Provisions	49	19	11
Surgery and dispensary	5	18	0
Domestic and establishment	43	18	9
Salaries and wages	56	17	2
Administration	7	14	10
	£164	8	8

We hope to do better next year. Considerable economies have been effected, but none that will militate against the efficiency of the institution or the comfort of the patients.

From Dr. Roberts's report will be seen the return the country is getting for this expenditure. It will be noted that, of 105 patients admitted, some 50 were discharged in a condition to obtain their own livelihood. So far this is satisfactory, but that we can do better yet is my sincere belief.

During the year the institution has lost the services of Miss Rochfort, who, as Matron, has devoted six years of her life to the services of the institution. In the exercise of her duties she was severely handicapped by the fact that there was no resident medical man to help her in her work; but she did all that could possibly be done to enhance the comfort and general content of the patients and staff committed to her care.

After four years' service Dr. Roberts is also relinquishing his post—not only on account of the demands of an increasing practice, but also from the fact that he recognizes to the fullest extent the need for a resident medical officer if the administration of the sanatorium is to be conducted on duly recognized methods.

It is hoped that his services as a consulting medical officer may still be retained.

Inspection of School-children.

The necessity for the above has been referred to in previous reports, and every year becomes more apparent.

A scheme has been submitted, and only awaits the approval of the Government, as practically no special legislation is required to put it into force.

Vaccination.

The events that transpired subsequent to the arrival at Melbourne of the s.s. "Otway" with a case of small-pox on board should be a sufficient warning as to the need for a more vigorous enforcement of the laws governing vaccination.

Though some 26,000 infants are born every year in the Dominion, only about 5 per cent. are vaccinated. The majority of parents do not even trouble to apply for exemption.

I cannot advise a repeal of the present law, but I would most strongly urge that, if it be decided that the law is not to be more vigorously administered than heretofore, it would be better to repeal the law, and, in the event of an outbreak, provide by Order in Council that all persons within a certain area be vaccinated unless they can show satisfactory evidence of recent vaccination.

During the year the Department has lost the services of Dr. Purdy, who has been appointed Chief Health Officer for Tasmania, and Dr. Ogston, who had been District Health Officer for Otago since the initiation of the Department.

The latter has been succeeded by Dr. Champtaloup, of Edinburgh University, who combines the duties of District Health Officer and Lecturer on Public Health and Bacteriology at the Otago University.

The vacancy in Auckland has been filled by Dr. Makgill, who, in addition to his work as Government Pathologist, undertakes the duties of District Health Officer in that district.

I have, &c.,

T. H. A. VALINTINE, Chief Health Officer for New Zealand.

The Hon. the Minister of Public Health.

APPENDICES.

APPENDIX I.—GENERAL STATISTICS FOR THE YEAR 1909-10.

PART 1.—VITAL STATISTICS.

For the following statistics relating to birth, death-rates, infant mortality, and causes of death, the Department is indebted to the returns of the Registrar-General. They relate to the year 1909.

Births.

The number of births registered during 1909 was 26,524, or 27·29 in every 1,000 persons living. The number is 584 in excess of that for the year 1908, an increase of 2·25 per cent., but the rate lower by 0·16 per thousand. From 1882 until the year 1899 there was a regular fall in the rate. The births registered in a year numbered 19,846 in 1884, and, after falling to 17,876 in 1892, have risen to the number first stated above.

The number of male children born during 1909 was 13,502, and of female children 13,022.

The following table shows the number registered, the birth-rate calculated on the total population, and comparison with the average rate for 1882–86 taken as 100. Indications of a gradual increase are apparent, the improvement since 1899 being 8·64 per cent. on the rate per 1,000 in that year.

Births, Number and Rate.

Year.	Total Number of Births registered.	Birth-rate.		Year.	Total Number of Births registered.	Birth-rate.	
		Per 1,000 of Population.	Compared with Rate in 1882–86 taken as 100.			Per 1,000 of Population.	Compared with Rate in 1882–86 taken as 100.
1882–86	19,410	35·40	100	1898	18,955	25·74	73
				1899	18,835	25·12	71
1887	19,135	32·09	91	1900	19,546	25·60	72
1888	18,902	31·22	88	1901	20,491	26·34	74
1889	18,457	30·07	85	1902	20,655	25·89	73
1890	18,278	29·44	83	1903	21,829	26·61	75
1891	18,273	29·01	82	1904	22,766	26·94	76
1892	17,876	27·83	79	1905	23,682	27·22	77
1893	18,187	27·50	78	1906	24,252	27·08	76
1894	18,528	27·28	77	1907	25,094	27·30	77
1895	18,546	26·78	76	1908	25,940	27·45	77
1896	18,612	26·33	74	1909	26,524	27·29	77
1897	18,737	25·96	73				

The average number of children to a marriage may be ascertained by comparing the number of legitimate births for a series of years with the marriages, but commencing with the marriages in the year preceding that for which the first number of births is taken. Calculating in this way the figures for the twenty-year period 1890–1909 show a decline from 4·87 to 3·13 as below :—

Year.	Marriages.	Legitimate Births.	Proportion of Births to every Marriage solemnized in the Preceding Year.
1889	3,632	...	...
1890	3,797	17,675	4·87
1891	3,805	17,635	4·64
1892	4,002	17,283	4·54
1893	4,115	17,514	4·37
1894	4,178	17,824	4·33
1895	4,110	17,711	4·24
1896	4,843	17,778	4·32
1897	4,928	17,911	3·70
1898	5,091	18,154	3·68
1899	...	18,066	3·54
1899	5,461	...	...
1900	5,860	18,640	3·41
1901	6,095	19,554	3·34
1902	6,394	19,734	3·23
1903	6,748	20,835	3·26
1904	6,983	21,737	3·22
1905	7,200	22,600	3·24
1906	7,592	23,120	3 21
1907	8,192	23,937	3·15
1908	8,094	24,835	3·03
1909	...	25,301	3·13

If the average result be taken out for the ten years 1890–99, it will be found to represent 4·22 births to a marriage. Dealing similarly with the figures for 1900–9 the result is an average of 3·22, so that regarded annually or decennially there is a decided fall to be observed.

New Zealand had in 1880 the highest birth-rate in Australasia (40·78); in 1900 the case was reversed; but in 1909 the New Zealand rate was higher than that of New South Wales, Victoria, and South Australia.

Although New Zealand had in 1900 the lowest birth-rate in Australasia, the rate for 1909 was higher than the average for the Commonwealth, 26·40 per 1,000 of population.

The movement over ten years is calculated as under :—

Birth-rates per 1,000 of Population.

Country.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
Queensland	30·21	28·53	27·89	24·62	27·13	25·92	26·31	26·98	26·99	27·52
New South Wales ...	27·43	27·78	27·20	25·41	26·81	26·79	27·12	27·22	26·86	27·26
Victoria	25·82	25·77	25·23	24·46	24·65	24·83	25·14	25·16	24·71	24·55
South Australia ...	25·78	25·39	24·85	23·43	24·70	23·82	23·54	23·82	24·59	24·57
Western Australia ...	31·46	30·34	30·27	30·26	30·33	30·29	30·01	29·40	29·25	28·06
Tasmania	28·25	28·60	29·23	28·62	29·60	29·33	29·82	29·50	30·90	29·86
New Zealand	25·60	26·34	25·89	26·61	26·94	27·22	27·08	27·30	27·45	27·29

Sexes of Children born.

The figures show that during each year there has been a preponderance of births of male children. It would appear, however, that this excess of male births is not sufficient to compensate for the heavier mortality which occurs among that sex. Of the total population in 1871 there were 70·52 females to every 100 males, but in 1909 the proportion of the females to 100 males had risen to 88·89.

Year.	Number of Births of		Proportion of Births of Males to every 100 Females.
	Males.	Females.	
1888	9,641	9,261	104·1
1889	9,514	8,943	106·4
1890	9,293	8,985	103·4
1891	9,377	8,896	105·4
1892	9,101	8,775	103·7
1893	9,310	8,877	104·9
1894	9,472	9,056	104·6
1895	9,493	9,053	104·9
1896	9,511	9,101	104·5
1897	9,600	9,137	105·1
1898	9,615	9,340	102·9
1899	9,724	9,111	106·7
1900	10,107	9,439	107·1
1901	10,471	10,020	104·5
1902	10,653	10,002	106·5
1903	11,217	10,612	105·7
1904	11,762	11,004	106·9
1905	12,109	11,573	104·6
1906	12,397	11,855	104·6
1907	12,835	12,259	104·7
1908	13,369	12,571	106·3
1909	13,502	13,022	103·7

Twin Births.

There were 265 cases of twin births (530 children) and 1 case of triplets registered in 1909. The number of children born was 26,524; the number of mothers was 26,257: thus, on an average, one mother in every 99 gave birth to twins, against 90 in 1908, 102 in 1907, 114 in 1906, and 97 in 1905.

The proportion of plural births per 1,000 of all births during the past five years, was :—

Year.	All Births.	Plural Births.	Plural Births per 1,000 of all Births.
1905	23,682	245	10·35
1906	24,252	215	8·87
1907	25,094	244	9·72
1908	25,940	286	11·03
1909	26,524	266	10·03

Illegitimacy.

The births of 1,223 children were illegitimate: thus 46 in every 1,000 children born were born out of wedlock, against 43 in 1908.

Proportion of Illegitimate Births in every 100 Births.

Year.	Queensland.	New South Wales.	Victoria.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1899	5·97	7·15	5·49	3·95	4·91	6·08	4·40
1900	6·40	7·01	5·91	4·24	4·82	5·43	4·63
1901	5·93	7·16	5·58	3·98	3·88	5·94	4·57
1902	6·04	6·60	5·51	4·36	3·96	5·36	4·46
1903	6·76	6·71	5·73	4·18	4·69	5·61	4·55
1904	6·89	7·12	5·74	4·01	4·36	5·82	4·52
1905	7·00	7·37	5·61	4·37	4·19	5·52	4·57
1906	7·68	7·04	5·58	4·00	4·78	5·78	4·67
1907	7·31	7·04	5·62	4·10	3·89	5·86	4·61
1908	7·45	6·89	5·76	4·33	4·35	4·97	4·26

These figures show the proportion of illegitimate births to every 100 births for New Zealand to be fairly steady during the period 1899–1908.

Births and Birth-rates in the Four Chief Cities.

The total number of births registered as occurring in the four chief centres and suburbs in 1909 was 7,463, as against 7,276 for the previous year. The birth-rates last year were :—

	Birth-rates per 1,000 of Mean Population.	
Auckland City	29·73	
" and seven suburban boroughs		27·46
Wellington City	26·62	
" and three suburban boroughs		26·42
Christchurch City	28·55	
" and three suburban boroughs		27·65
Dunedin City	28·34	
" and six suburban boroughs		26·26

By the inclusion of the suburbs the rate is lowered in each case. Excluding suburbs, Auckland has the highest rate, Christchurch next highest, Dunedin and Wellington following. The birth-rate for the Dominion last year was 27·29 per thousand. Auckland, Christchurch, and Dunedin are thus over the average, and Wellington below it.

The birth-rates for two of the central boroughs last year show a fall when compared with 1908. In Auckland the rate fell from 30·56 to 29·73, in Wellington from 27·60 to 26·62, but rose in Christchurch from 28·43 to 28·55, in Dunedin from 25·48 to 28·34. The rates for five years, 1905 to 1909, are :—

	Births per 1,000 of Population.				
	1905.	1906.	1907.	1908.	1909.
Auckland (without suburbs) ...	30·06	29·96	29·63	30·56	29·73
Wellington " ...	29·72	27·85	27·53	27·60	26·62
Christchurch " ...	29·70	28·19	30·47	28·43	28·55
Dunedin " ...	23·90	28·96	25·69	25·48	28·34

MARRIAGES.

The marriages for 1909 show a decrease on the number for the previous year. The number was 8,094, or 245 less than in 1908. The rate per 1,000 of the population was 8·33 as against 8·82 in 1908. It is shown by the table following that there has been considerable increase in the marriage-rate, which has been above the standard during each of the last fourteen years :—

Marriages, Number and Rate.

Year.	Total Number of Marriages registered.	Marriage-rate.		Year.	Total Number of Marriages registered.	Marriage-rate.	
		Per 1,000 of Population.	Compared with Rate in 1882–86 taken as 100.			Per 1,000 of Population.	Compared with Rate in 1882–86 taken as 100.
1882–86	3,663	6·68	100	1898	5,091	6·91	103
				1899	5,461	7·28	109
1887	3,563	5·97	89	1900	5,860	7·67	115
1888	3,617	5·97	89	1901	6,095	7·83	117
1889	3,632	5·93	89	1902	6,394	8·01	120
1890	3,797	6·12	92	1903	6,748	8·23	123
1891	3,805	6·04	90	1904	6,983	8·26	124
1892	4,002	6·23	93	1905	7,200	8·28	124
1893	4,115	6·22	93	1906	7,592	8·48	127
1894	4,178	6·15	92	1907	8,192	8·91	133
1895	4,110	5·94	89	1908	8,339	8·82	132
1896	4,843	6·85	103	1909	8,094	8·33	125
1897	4,928	6·83	102				

The marriage-rate, measured by the total population, does not show the true position when, as in the case of New Zealand, the age-constitution of the people fluctuates considerably. A more satisfactory standard is found in the number of persons of marriageable age, defined as meaning the unmarried and widowed of males aged 20 years and upwards and of females aged 15 years and upwards. The rates are given for four census years :—

Year of Census.	Proportion of Unmarried per 1,000 of Total.		Proportion of Marriages per 1,000 of the			
	Males.	Females.	Marriageable Men.	Marriageable Women.	Marriageable Persons.	Total Population.
1891	246·2	267·8	46·22	48·10	47·14	6·04
1896	264·2	308·3	49·11	47·09	48·08	6·85
1901	278·3	330·6	53·56	49·96	51·69	7·83
1906	295·8	326·9	54·09	55·15	54·62	8·48

The total number of marriages solemnized does not include marriages where both parties are of the aboriginal Native race, such persons being exempted from the necessity of complying with the provisions of the Marriage Act, although at liberty to take advantage thereof. Twenty-five marriages in which both parties were Maoris were contracted in 1909 in terms of the Act: 12 by Registrars, 5 by clergymen of the Church of England, 1 by a Presbyterian minister, 2 by Roman Catholic ministers, and 5 by ministers of the Church of the Latter-day Saints.

Ages of Persons Married.

Of the persons married in 1909, 143 bridegrooms and 1,309 brides were under 21 years of age. Of the bridegrooms, two were between 16 and 18, and six between 18 and 19. Of the brides, nine were between 15 and 16, and thirty-seven were between 16 and 17 years of age. The proportion of men married is greatest at the ages of 25 to 30, and of women at from 21 to 25 years.

Deaths.

The deaths in 1909 numbered 8,959, a rate of 9·22 in every 1,000 persons living, as against 9·57 in 1908. This is below the average of the previous ten years, 9·90 per 1,000.

The following table shows the number of deaths, and the death-rate per 1,000 of the living population; also a comparison with the average rate for 1882–86 :—

Year.	Total Number of Deaths.	Death-rate.		Year.	Total Number of Deaths.	Death-rate.	
		Per 1,000 of Population.	Compared with Rate in 1882–86 taken as 100.			Per 1,000 of Population.	Compared with rate in 1882–86 taken as 100.
1882–86	5,944	10·84	100	1898	7,244	9·84	91
				1899	7,680	10·24	94
1887	6,137	10·29	95	1900	7,200	9·43	87
1888	5,708	9·43	87	1901	7,634	9·81	90
1889	5,772	9·44	87	1902	8,375	10·50	97
1890	5,994	9·66	89	1903	8,528	10·40	96
1891	6,518	10·35	95	1904	8,087	9·57	88
1892	6,459	10·06	93	1905	8,061	9·27	86
1893	6,767	10·23	94	1906	8,339	9·31	86
1894	6,918	10·19	94	1907	10,066	10·95	101
1895	6,863	9·91	91	1908	9,043	9·57	88
1896	6,432	9·10	84	1909	8,959	9·22	85
1897	6,595	9·14	84				

The death-rates of males and females for the last ten years are shown separately in the next table, and also the number of male deaths to every 100 female deaths :—

Year.	Deaths per 1,000 of the Total Population.			Deaths of Males to every 100 Females.
	Males.	Females.	Total.	
1900	10·33	8·43	9·43	123
1901	10·80	8·71	9·81	124
1902	11·64	9·23	10·50	126
1903	11·43	9·24	10·40	124
1904	10·64	8·37	9·57	127
1905	10·18	8·24	9·27	124
1906	10·40	8·08	9·31	129
1907	11·81	9·98	10·95	118
1908	10·62	8·38	9·57	127
1909	10·18	8·14	9·22	125

Males of tender years are more delicate than females, and, later in life, more liable to accident. These disadvantages are partly compensated by the preponderance of male births, but the tendency of the natural increase is towards an equalization in the numbers of the sexes.

For the purpose of considering the mortality in New Zealand more closely than can be done by means of crude death-rates, it is desirable to ascertain the rates at different age-periods of the population. The abnormally high rate in 1907, due to prevalence of epidemic diseases, is strikingly illustrated by comparison with the average for the previous five years.

Death-rates per 1,000 living at Various Age-periods.

Ages.	Average, 1902–6.	1907.	1908.	1909.	Decrease per Cent. in 1909, compared with 1902–6.
Under 5 years	21·75	27·14	20·38	18·77	13·70
5 years and under 10 years ..	2·07	2·15	1·76	1·96	5·31
10 ,, 15 ,, ..	1·64	1·84	1·64	1·35	17·68
15 ,, 20 ,, ..	2·64	2·85	2·03	2·23	15·53
20 ,, 25 ,, ..	3·69	3·80	3·42	3·08	16·53
25 ,, 35 ,, ..	4·55	4·73	4·37	4·43	2·64
35 ,, 45 ,, ..	6·30	6·22	6·24	6·71	+ 6·51
45 ,, 55 ,, ..	10·35	10·41	10·47	9·73	5·99
55 ,, 65 ,, ..	20·26	20·17	18·06	17·97	11·30
65 ,, 75 ,, ..	47·06	47·93	44·75	42·62	9·43
75 and upwards	124·65	145·45	132·36	125·91	+ 1·01
All ages	9·81	10·95	9·57	9·22	6·01

Besides advantages of climate, New Zealand possesses a population younger in age-constitution than that of most other countries—conditions favourable to a low rate of mortality. Another table is given comparing death-rates at twelve age-periods for 1908 with those of England and Wales. Here the extremely low rate of mortality among children under five years of age is remarkable, and the difference at some of the groups at the more advanced ages is considerable. The New Zealand rate for males is higher than that for females at all groups excepting 10–15, 25–35, and 85 and upwards, while for England and Wales the female rate equals that for males at 5–10 and 10–15 years, and is lower in every other instance.

Death-rate per 1,000 Persons living, according to Sex, for the Year 1908, compared with England and Wales.

Ages.	Deaths per 1,000 Persons living.			
	New Zealand.		England and Wales.	
	Males.	Females.	Males.	Females.
Under 5 years	22·6	18·1	44·5	36·6
5 years and under 10 years	1·9	1·6	3·2	3·2
10 ,, 15 ,, ...	1·6	1·7	1·9	1·9
15 ,, 20 ,, ...	2·2	1·8	2·7	2·5
20 ,, 25 ,, ...	3·5	3·3	3·7	3·1
25 ,, 35 ,, ...	4·2	4·5	5·4	4·5
35 ,, 45 ,, ...	6·9	5·5	9·1	7·4
45 ,, 55 ,, ...	11·7	8·9	16·4	12·8
55 ,, 65 ,, ...	18·5	17·5	33·0	25·0
65 ,, 75 ,, ...	48·1	39·5	70·3	57·7
75 ,, 85 ,, ...	123·4	108·3	137·8	124·3
85 and upwards	240·9	246·2	303·7	286·4
All ages	10·6	8·4	15·7	13·7

Index of Mortality in New Zealand for 1909.

Ages.	Estimated Mean Population, 1909.	Number of Deaths, 1909.	Death-rate per 1,000, 1909.	Percentage of Population of Sweden, 1890 (Standard).	Index of Mortality in New Zealand per 1,000.
Under 1 year	24,392	1,634	66·99	2·55	1·71
1 and under 20 years	357,422	1,011	2·83	39·80	1·13
20 and under 40 years ...	367,431	1,538	4·18	26·96	1·13
40 and under 60 years ...	153,931	1,544	10·03	19·23	1·93
60 years and upwards	68,608	3,232	47·11	11·46	5·40
Totals	971,784	8,959	9·22	100·00	11·30

A similar calculation for the States of the Australian Commonwealth has been made for 1908. The results when compared with the actual rates, exhibit to what degree the age-constitution of the population affects the death-rate. The figures for New Zealand are also given.

	Year 1908.	
	Index.	Actual.
New South Wales	13·88	10·16
Victoria	15·24	12·53
Queensland	14·56	10·34
South Australia	13·15	9·84
Western Australia	15·80	10·86
Tasmania	15·34	11·71
New Zealand	11·67	9·57

Comparative Death-rate for the Period 1899 to 1909.

Country.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.
New Zealand ...	10·24	9·43	9·81	10·50	10·40	9·57	9·27	9·31	10·95	9·57	9.22
Queensland ...	12·07	11·73	11·88	12·08	12·38	10·11	10·47	9·56	10·35	10·34	9·79
New South Wales	11·82	11·16	11·75	11·97	11·65	10·65	10·16	9·92	10·58	10·16	9·84
Victoria ...	14·28	12·75	13·22	13·40	12·90	11·92	12·10	12·42	11·66	12·53	11·24
South Australia*	12·14	10·64	11·11	11·79	10·71	10·22	10·14	10·34	9·72	9·84	9·37
Western Australia	13·76	12·92	13·36	13·63	12·60	11·91	10·83	11·87	11·17	10·86	9·98
Tasmania ...	12·25	11·05	10·52	11·00	11·92	11·04	10·29	11·24	11·14	11·71	10·00
England and Wales	18·2	18·2	16·9	16·2	15·4	16·2	15·2	15·4	15·0	14·7	...
Scotland ...	18·1	18·5	17·9	17·2	16·6	16·9	15·9	16·0	16·2	16·1	...
Ireland ...	17·7	19·6	17·8	17·5	17·5	18·1	17·1	17·0	17·7	17·6	...
Denmark ...	17·3	16·8	15·8	14·6	14·7	14·1	15·0	13·5	14·2	14·5	...
Norway ...	16·7	15·8	14·9	13·8	14·8	14·3	14·8	13 7	14·2	14·3	...
Sweden ...	17·7	16·8	16·1	15·4	15·1	15·3	15·6	14·4	14·6	14·9	...
Austria ...	25·6	25·3	24·0	24·7	23·8	23·7	25·0	22·5	...	...	...
Hungary ...	27·2	26·9	25·4	27·0	26·1	24·8	27·8	24·8	25·2	24·8	...
Switzerland ...	17·7	19·3	18·0	17·2	17·6	17·8	17·9	17·0	...	...	...
German Empire ...	21·5	22·1	20·7	19·5	20·0	19·6	19·8	18·2	...	...	...
Netherlands ...	17·1	17·8	17·2	16·3	15·6	15·9	15·3	14·8	14·6	15·3	...
France ...	21·1	21·9	20·1	19·5	19·2	19·4	19·6	19·9	20·2	19·0	...
Italy	21·9	23·8	22·0	22·2	22·4	21·1	21·9	20·8	20·8	22·6	...

* Excluding the Northern Territory.

Considering the range of this statement New Zealand is conspicuous as showing the lowest death-rate. The rates for the principal Australian States are a little higher, but, generally speaking, far below those for the United Kingdom or the European Continental States mentioned in the table.

Ages at Death.

The deaths occurring during 1909 are tabulated below in single years up to five years, and from thence in groups, showing males and females separately :—

Ages.	Males.	Females.	Total.
Under 1 month	469	325	794
1 month and under 3 months	160	125	285
3 months „ 6 „	151	107	258
6 „ „ 12 „	172	125	297
Total under 1 year	952	682	1,634

Ages.	Males.	Females.	Total.
1 year	126	116	242
2 years	56	59	115
3 „	39	36	75
4 „	19	25	44
Total under 5 years	1,192	918	2,110
5 years and under 10 years	96	98	194
10 „ 15 „	63	65	128
15 „ 20 „	130	83	213
20 „ 25 „	173	146	319
25 „ 30 „	201	193	394
30 „ 35 „	221	175	396
35 „ 40 „	222	207	429
40 „ 45 „	187	159	346
45 „ 50 „	210	139	349
50 „ 55 „	240	160	400
55 „ 60 „	271	178	449
60 „ 65 „	295	178	473
65 „ 70 „	436	286	722
70 „ 75 „	468	272	740
75 „ 80 „	461	217	678
80 „ 85 „	234	128	362
85 „ 90 „	94	76	170
90 „ 95 „	40	27	67
95 „ 100 „	11	7	18
100 years	..	1	1
105 „	1	..	1
Totals	5,246	3,713	8,959

The average age at death of persons of either sex, in each of the ten years 1900–9, was as follows :—

	Males.	Females.		Males.	Females.
1900	40·31 years.	36·14 years.	1905	43·03 years.	39·13 years.
1901	41·64 „	37·68 „	1906	44·39 „	39·35 „
1902	41·07 „	34·88 „	1907	40·43 „	36·66 „
1903	39·56 „	35·43 „	1908	42·50 „	39·14 „
1904	41·47 „	38·44 „	1909	42·76 „	38·78 „

Deaths and Death-rates of the Four Principal Cities and their Suburbs.

The total number of deaths registered for the four centres in 1909 was 2,603—viz., 2,123 in the cities, and 480 in the suburbs.

By including the suburbs the death-rate for last year is lowered at all of the four centres. The rates for the year are :—

	Death-rates per 1,000 of Mean Population.
Auckland City	11·25
„ and seven suburban boroughs	9·30
Wellington City	9·35
„ and three suburban boroughs	9·11
Christchurch City	9·48
„ and three suburban boroughs	9·33
Dunedin City	11·55
„ and six suburban boroughs	9·95

If the deaths for the cities, including suburban boroughs, be compared for five years, it will be observed that the rates for 1909 are substantially lower than those for 1905.

	Deaths per 1,000 of Population.				
	1905.	1906.	1907.	1908.	1909.
Auckland (including suburbs)	10·52	9·90	11·43	10·41	9·30
Wellington „	10·21	9·19	11·28	9·10	9·11
Christchurch „	10·89	11·25	14·37	9·52	9·33
Dunedin „	10·12	11·35	12·02	10·50	9·95

If the number of deaths of infants under one year be excluded the mortality above that age is found to have been for 1908 and 1909 in the following ratio to the 1,000 living :—

	1908.	1909.
Auckland (including suburbs)	8·07	7·60
Wellington „	6·83	6·89
Christchurch „	7·66	7·60
Dunedin „	8·66	8·67

Infantile Mortality.

Subjoined is a classified statement of the deaths of infants under one year during 1909, with the ratio of the deaths in each class to the 1,000 births during the year :—

Year.	Sex.	Under 1 Month.	1 and under 3 Months.	3 and under 6 Months.	6 and under 12 Months.	Total under 12 Months.
		Number of Deaths.				
1909 ...	Male	469	160	151	172	952
	Female	325	125	107	125	682
		Deaths to the 1,000 Births.				
1909 ...	Male	34·74	11·85	11·18	12·74	70·51
	Female	24·96	9·60	8·21	9·60	52·37

Seventy-one out of every thousand of male children born, and fifty-two of every thousand females, are found to have died before attaining the age of one year. The mortality was thus one in fourteen of male children and one in nineteen of females in New Zealand, where conditions are far more favourable to infant life than in Australia, at least as far as relates to the cities.

It will also be seen from the figures that the chances of living during the first year of age are greater for female than for male infants. Thus, during the year 1909 there were—

100 deaths of males to 72 deaths of females under 1 month of age ;
100 ,, 81 ,, from 1 to 3 months of age ;
100 ,, 73 ,, from 3 to 6 months of age ;
100 ,, 75 ,, from 6 to 12 months of age ;
100 ,, 74 ,, under 12 months of age.

Dealing with the results for ten years, the deaths of infants under one year are in the large proportion of three-fourths of the total deaths under five, as might be expected, the first year being the tenderest period. (See notes to tables.)

Deaths of Infants under One Year, and Proportion to Births.

Year.	Deaths of Infants under 1 Year of Age. (Totals for each Year, and Means of 10 Years.)					Total Births registered in each Year, and Mean of 10 Years.	Proportion of Deaths of Infants under 1 Year to every 1,000 Births.
	Under 1 Month.	1 Month and under 3 Months.	3 Months and under 6 Months.	6 Months and under 12 Months.	Total under 12 Months.		
1900	607	288	293	281	1,469	19,546	75·2
1901	610	272	292	289	1,463	20,491	71·4
1902	665	344	313	390	1,712	20,655	82·9
1903	692	346	367	365	1,770	21,829	81·1
1904	669	260	356	331	1,616	22,766	71·0
1905	714	285	290	310	1,599	23,682	67·5
1906	717	247	244	298	1,506	24,252	62·1
1907	763	446	500	519	2,228	25,094	88·8
1908	810	242	347	362	1,761	25,940	67·9
1909	794	285	258	297	1,634	26,524	61·6
Means of ten years ...	704	301	326	344	1,675	23,080	72·6

Note.—The total number of deaths of infants for the period included in the table is 16,758.

Deaths of Children under One Year to 1,000 *Births.*

Country.	Deaths per 1,000 Births.	Country.	Deaths per 1,000 Births.
Chili	.. 320	Scotland (1907) ..	.. 110
Hungary	.. 199	Denmark (1907) ..	.. 106
Ceylon	.. 183	Ireland	.. 97
Jamaica	.. 175	Victoria	.. 86
Prussia	.. 173	Western Australia ..	.. 85
Servia	.. 158	Sweden (1907)	.. 77
Italy (1907)	.. 155	New South Wales ..	.. 76
Japan (1907)	.. 151	Tasmania	.. 75
Belgium (1907)	.. 132	Queensland	.. 70
Netherlands	.. 125	South Australia ..	.. 70
Switzerland (1907) ..	.. 121	New Zealand	.. 68
England and Wales ..	.. 120	Norway (1907)	.. 67
Finland (1907)	.. 112		

Here, of European countries, Prussia, which has a birth-rate of 33 to 37 per 1,000 of population, shows an infantile mortality of 173 per 1,000 births; while New Zealand, with a birth-rate of 27 per 1,000 of population, loses only 68 infants per 1,000 births. So that, whatever may be the faults of ignorance or wilfulness in this country, from a statistical point of view it would appear that far better conditions obtain than elsewhere.

The principal causes of mortality in children under one year for New Zealand are given, with the numbers of deaths for five years from such causes. Premature birth stands first in order of importance, diarrhœa and enteritis next, followed by marasmus or debility. Here it is seen how much mortality is attributed to these causes according to the medical certificates.

Causes of Deaths of Children under One Year.—1905–9.

Causes.	Number of Deaths from each Cause.					Percentage of Total.				
	1905.	1906.	1907.	1908.	1909.	1905.	1906.	1907.	1908.	1909.
Whooping-cough ..	2	17	207	31	28	0·13	1·13	9·29	1·76	1·71
Convulsions	96	90	84	76	107	6·00	5·98	3·77	4·32	6·55
Bronchitis and pneumonia	207	170	269	148	168	12·95	11·29	12·08	8·40	10·28
Diarrhœa and enteritis	285	232	557	418	249	17·82	15·40	25·00	23·74	15·24
Premature birth ..	360	337	359	388	347	22·51	22·38	16·11	22·03	21·24
Marasmus, &c. ..	258	267	303	264	256	16·14	17·73	13·60	14·99	15·67
Other causes ..	391	393	449	436	479	24·45	26·09	20·15	24·76	29·31
Totals	1,599	1,506	2,228	1,761	1,634	100·00	100·00	100·00	100·00	100·00

The proportions of deaths of children under one year of age to every 100 births for 1908 and 1909 at the chief centres are,—

	1908.	1909.
Auckland (including suburbs)	8·19	6·18
Wellington "	8·17	8·42
Christchurch "	6·78	6·28
Dunedin "	7·45	4·86

The percentage of deaths of children under 5 to the total number of deaths is—in Dunedin, 18·18; in Christchurch, 22·35; in Auckland, 23·71; in Wellington, 29·53.

CAUSES OF DEATH.

A comparison of the causes of deaths in 1908 and 1909 arranged according to an abridged classification, the percentage of each group to the total deaths, and the proportion per 10,000 persons living, is given in the following table :—

Class.	Number of Deaths.		Proportion to Total Deaths.		Proportion per 10,000 living.	
	1908.	1909.	1908.	1909.	1908.	1909.
	Total.	Total.	Per Cent.	Per Cent.		
I. General diseases	2,206	2,187	24·40	24·41	23·34	22·50
II. Diseases of the nervous system and of the organs of special sense	930	920	10·28	10·27	9·84	9·47
III. Diseases of the circulatory system ..	1,251	1,369	13·83	15·28	13·24	14·09
IV. Diseases of the respiratory system ..	830	784	9·18	8·75	8·78	8·07
V. Diseases of the digestive system ..	1,042	843	11·52	9·41	11·03	8·67
VI. Diseases of the genito-urinary system and adnexa	387	407	4·28	4·54	4·09	4·19
VII. Puerperal condition	119	135	1·32	1·51	1·26	1·39
VIII. Diseases of the skin and of the cellular tissue	37	50	0·41	0·56	0·39	0·51
IX. Diseases of the organs of locomotion ..	38	25	0·42	0·28	0·40	0·26
X. Malformations	47	64	0·52	0·71	0·50	0·66
XI. Infancy	716	676	7·92	7·55	7·58	6·96
XII. Old-age	586	556	6·48	6·21	6·20	5·72
XIII. Violence	673	778	7·44	8·68	7·12	8·00
XIV. Ill-defined causes	181	165	2·00	1·84	1·91	1·70
Totals	9,043	8,959	100·00	100·00	95·68	92·19

The next table shows the number of deaths from each principal cause for the five years 1905–9, and the proportion per 10,000 of the population.

Cause.	Number of Deaths.					Proportion of 10,000 of Mean Population.				
	1905.	1906.	1907.	1908.	1909.	1905.	1906.	1907.	1908.	1909.
Typhoid fever	45	48	53	90	55	0·52	0·54	0·58	0·95	0·57
Measles	8	12	101	19	26	0·09	0·13	1·10	0·20	0·27
Scarlet fever	10	18	25	60	26	0·11	0·20	0·27	0·63	0·27
Whooping-cough	3	26	307	42	41	0·03	0·29	3·34	0·44	0·42
Influenza	70	132	223	64	47	0·80	1·47	2·43	0·68	0·48
Tuberculosis of the lungs ..	496	556	612	607	588	5·70	6·21	6·66	6·42	6·05
Other forms of tuberculosis	182	164	244	232	212	2·10	1·83	2·65	2·45	2·18
Cancer	566	623	674	657	711	6·51	6·96	7·33	6·95	7·32
Diabetes	79	104	87	100	104	0·91	1·16	0·95	1·06	1·07
Simple meningitis ..	119	138	130	136	131	1·37	1·54	1·41	1·44	1·35
Convulsions of children under 5 years of age	116	106	104	96	131	1·33	1·18	1·13	1·02	1·35
Apoplexy	299	272	330	341	316	3·44	3·04	3·59	3·61	3·25
Pneumonia	425	444	572	453	458	4·89	4·96	6·22	4·80	4·71
Gastritis and enteritis ..	379	335	518	478	362	4·36	3·74	5·64	5·06	3·73
Diarrhœal diseases ..	128	97	314	198	102	1·47	1·08	3·42	2·20	1·05
Cirrhosis of liver	40	44	42	52	47	0·46	0·49	0·46	0·55	0·48
Appendicitis	53	69	86	81	66	0·61	0·77	0·93	0·86	0·68
Bright's disease and acute nephritis	242	241	268	263	261	2·79	2·69	2·92	2·78	2·69
Violence, suicide	89	83	102	103	118	1·02	0·93	1·11	1·09	1·21
,, accident ..	525	575	611	570	660	6·03	6·42	6·65	6·03	6·79
Other causes	4,187	4,252	4,663	4,401	4,497	..	..	..	..	..
Totals	8,061	8,339	10,066	9,043	8,959	92·66	93·11	109·52	95·69	92·19

Typhoid Fever.

Deaths from this cause numbered 55 in 1909, against 90 in the previous year, the average for five years being 58.

Measles.

There was an outbreak of this complaint in 1907, causing 101 deaths. In 1909 only 26 deaths were recorded.

Scarlet Fever.

The number of deaths from scarlet fever in 1909 was 26. The average annual mortality for the ten years 1900–9 was 35.

Whooping-cough.

There were 41 deaths in 1909, 42 in 1908, 307 in 1907, and 26 in 1906.

Influenza.

This was less prevalent in 1909 than in any other year of the period shown, only 47 deaths being recorded.

Tuberculosis.

Deaths from phthisis numbered 588 or 6·05 per 10,000 of the population, against 607 deaths or 6·42 per 10,000 in 1908, and 612 deaths or 6·66 per 10,000 in 1907. The average for the past ten years was 582, or 6·8 per 10,000.

Year.	Deaths from Phthisis.	Rate per 10,000.	Year.	Deaths from Phthisis.	Rate per 10,000.
1900	577	7·56	1905	496	5·70
1901	596	7·66	1906	556	6·21
1902	617	7·73	1907	612	6·66
1903	570	6·95	1908	607	6·42
1904	598	7·08	1909	588	6·05

Reference to the following table will show that 340 persons known to have been born in the Dominion died during 1909 from phthisis, a proportion of 5·58 per 10,000 of the estimated native-born white population, and 163 persons resident for fifteen years or over succumbed to the disease.

Deaths from Phthisis, 1909.

Length of Residence in New Zealand.	Age at Death.										
	Under 5 Years.	5 to 10.	10 to 15.	15 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 to 75.	75 and upwards.	Total.
Males.											
Under 1 month	...	...	...	...	2	...	...	...	...	...	2
1 to 6 months	...	...	...	1	3	1	1	...	...	...	6
6 to 12 months	...	...	...	1	1	1	...	...	...	...	3
1 to 2 years	...	...	...	2	4	1	...	1	..	...	8
2 to 3 years	...	...	...	...	2	2	1	...	...	...	5
3 to 4 years	...	..	...	1	7	1	...	...	...	...	9
4 to 5 years	...	...	...	1	3	...	...	...	...	...	4
5 to 10 years	...	...	...	...	8	2	2	1	...	...	13
10 to 15 years	...	...	...	1	5	3	1	...	...	...	10
15 to 20 years	...	...	...	...	...	3	2	1	...	...	6
20 to 25 years	...	...	...	1	2	3	...	1	...	...	7
25 years and upwards ...	...	...	...	...	4	8	16	15	12	4	59
Not known	...	...	...	...	6	6	4	8	2	...	26
Born in Dominion	4	2	...	49	61	34	8	2	2	...	162
Totals	4	2	...	57	108	65	35	29	16	4	320
Females.											
Under 1 month	...	...	...	...	...	...	...	...	...	...	...
1 to 6 months	...	...	...	...	...	2	...	...	..	...	2
6 to 12 months	...	...	...	...	1	...	...	...	...	...	1
1 to 2 years	...	...	...	...	1	...	...	...	...	...	1
2 to 3 years	...	...	...	...	...	...	...	...	...	...	...
3 to 4 years	...	...	...	...	1	...	...	...	...	...	1
4 to 5 years	...	...	...	1	...	2	...	...	...	...	3
5 to 10 years	...	...	...	...	4	4	1	...	...	...	9
10 to 15 years	...	...	1	2	2	2	...	1	...	...	8
15 to 20 years	...	...	...	3	...	...	...	...	...	...	3
20 to 25 years	...	...	...	...	2	1	3	...	...	...	6
25 years and upwards ..	...	...	...	...	6	7	11	9	9	...	42
Not known	...	...	...	3	4	1	2	1	3	...	14
Born in Dominion	1	1	7	48	76	38	4	2	1	...	178
Totals	1	1	8	57	97	57	21	13	13	...	268
Totals of both sexes ...	5	3	8	114	205	122	56	42	29	4	588

The mortality from all forms of tuberculosis for the past ten years has ranged from 7·79 to 10·05 per 10,000 of the population, and the percentage of total deaths from all causes has fluctuated during the same period between 8·41 and 10·44.

Deaths and Death-rates from Tuberculosis, and Percentage of Total Deaths, 1900-9.

Year.	Mean Population.	Number of Deaths from Tubercular Diseases.	Rate per 10,000.	Percentage of Total Deaths from all Causes.
1900	763,594	752	9·85	10·44
1901	777,968	775	9·96	10·15
1902	797,793	802	10·05	9·58
1903	820,217	769	9·38	9·02
1904	845,022	799	9·46	9·88
1905	870,000	678	7·79	8·41
1906	895,594	720	8·04	8·63
1907	919,105	856	9·31	8·50
1908	945,063	839	8·87	9·28
1909	971,784	800	8·23	8·93

Ages of Persons who died from Tubercular Diseases, 1909.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 5 years	40	31	71	50 years and under 55	24	10	34
5 years and under 10 ..	10	11	21	55 ,, 60	25	6	31
10 ,, 15 ..	5	11	16	60 ,, 65	9	8	17
15 ,, 20 ..	30	32	62	65 ,, 70	15	10	25
20 ,, 25 ..	48	45	93	70 ,, 75	5	4	9
25 ,, 30 ..	58	65	123	75 ,, 80	4	1	5
30 ,, 35 ..	63	48	111	80 upwards ..	1	..	1
35 ,, 40 ..	44	37	81				
40 ,, 45 ..	36	29	65	Total deaths ..	436	364	800
45 ,, 50 ..	19	16	35				

In comparison with England and Wales and the States of the Australian Commonwealth the deaths from tuberculosis per 1,000 of the population was lower in Queensland and New South Wales than in New Zealand.

Death-rates from Tuberculosis, and Percentage of Total Deaths, 1908.

	Deate-rates (per 1,000) from Tuberculosis.	Percentage of Total Deaths.
England and Wales	1·58	10·80
New South Wales	0·81	7·96
Victoria	1·14	9·13
Queensland	0·73	7·02
South Australia	1·06	10·80
Western Australia	0·95	8·75
Tasmania	0·96	8·17
New Zealand	0·89	9·28

Cancer.

There were 711 deaths assigned to this cause in 1909, a proportion of 7·32 per 10,000 persons, the average number and rate for the five years 1905–9 being 646 and 7·01 respectively. Deaths of males numbered 383, and of females 328. The death-rate from cancer is not so great as that from tubercular diseases, but its increasing tendency is a matter of grave concern.

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

Year.	Deaths from Cancer.	Total Deaths, all Causes.	Deaths from Cancer per 10,000 of Living Persons.	Percentage of Total Deaths due to Cancer.
1900	430	7,200	5·63	5·97
1901	515	7,634	6·62	6·75
1902	536	8,375	6·72	6·40
1903	582	8,528	7·10	6·82
1904	571	8,087	6·76	7·06
1905	566	8,061	6·51	7·02
1906	623	8,339	6·96	7·47
1907	674	10,066	7·33	6·70
1098	657	9,043	6·95	7·27
1909	711	8,959	7·32	7·94

The part of the body mostly affected among males is the stomach, and among females the generative and mammary organs.

Cancer: Seat of Disease.

Seat of Disease.	Males.	Females.	Total.
Mouth, lip, tongue, throat, neck	81	18	99
Stomach	110	38	148
Intestines, rectum	90	67	157
Kidneys, bladder, urethra, &c.	23	3	26
Liver	45	45	90
Female genital organs	..	72	72
Breast	..	46	46
Other organs	34	39	73
	383	328	711

Ninety-five per cent. of the deaths were at the ages 35 years and upwards, and 57 per cent. at the ages 60 years and upwards.

Ages of Persons who died from Cancer, 1909.

Ages.	Males.	Females.	Total.	Ages.	Males.	Females.	Total.
Under 5 years	3	1	4	45 years and under 50	23	29	52
5 years and under 10 ..	1	1	2	50 ,, 55	42	40	82
10 ,, 15 ..	1	..	1	55 ,, 60	44	34	78
15 ,, 20 ..	1	..	1	60 ,, 65	52	35	87
20 ,, 25 ..	2	2	4	65 ,, 70	66	49	115
25 ,, 30 ..	2	5	7	70 ,, 75	72	37	109
30 ,, 35 ..	4	9	13	75 ,, 80	45	25	70
35 ,, 40 ..	5	22	27	80 years and upwards	14	12	26
40 ,, 45 ..	6	27	33	Totals ..	383	328	711

The proportion of deaths from cancer to the 1,000 persons living in some of the principal European countries as shown below leads to the conclusion that there is a general tendency to increase.

Cancer Death-rates per 1,000 *living in some Principal European Countries.*

Country.	Average 1901–5.	Years		
		1906.	1907.	1908.
Switzerland	1·30	1·32	1·25	..
The Netherlands	0·97	1·01	1·02	1·03
England and Wales	0·86	0·92	0·91	0·92
Scotland	0·84	0·94	0·96	..
Victoria	0·74	0·75	0·80	0·79
Ireland	0·69	0·79	0·76	0·76
New Zealand	0·67	0·70	0·73	0·70
South Australia	0·67	0·74	0·70	0·68
Prussia	0·65	0·70	0·73	0·74
New South Wales	0·64	0·68	0·70	0·67
Queensland	0·57	0·55	0·65	0·51
Tasmania	0·56	0·52	0·63	0·67
Italy	0·55	0·62	0·61	0·64
Spain	0·44	0·48	0·47	0·50
Western Australia	0·45	0·59	0·50	0·52
Hungary	0·39	0·40	0·42	0·43

Diabetes.

There were 104 deaths in 1909, a rate of 1·07 per 10,000, the average for the five years being 95 and 1·03 respectively.

Simple Meningitis.

This disease caused 131 deaths in 1909, equal to the average of the past five years.

Convulsions of Children.

It would appear that the mortality from this cause shows a decreasing tendency, although the rate, measured by the total population, was exceptionally high in 1909. The proportion of deaths per 10,000 children living under 5 years of age was 11·52 in 1905 and 11·65 in 1909.

Apoplexy.

The average number of deaths from this cause during the past five years was 312, and the rate per 10,000, 3·39. Last year the number of deaths was 316, and the rate 3·25 per 10,000.

Pneumonia.

There were 458 deaths in 1909, against 453 in 1908, and 425 in 1905. Excepting occasional fluctuations due to exceptional climatic conditions, the rate per 10,000 remains fairly constant at about 4·9.

Gastritis and Enteritis and Diarrhœal Diseases.

Although shown separately in the table, it may be advisable to consider these causes together. The number of deaths recorded in 1909 was 464, a rate of 4·78 per 10,000, as compared with an average of 582 and 6·35 respectively for the past five years.

Cirrhosis of Liver.

There were 47 deaths in 1909, as compared with an average of 45 for the five years 1905–9.

Appendicitis.

There were 66 deaths ascribed to this cause in 1909, the average number for five years being 71.

Bright's Disease and Nephritis.

Of the 261 deaths last year 209 were certified as Bright's disease and 52 as acute nephritis. The rate per 10,000 living for 1909 was 2·69, against an average of 2·77 for the last five years.

Puerperal Diseases.

In 1909 the deaths certified to these causes number 135. Included in the number were: Accidents of pregnancy, 31; puerperal septicæmia, 33; other accidents of childbirth, 71. The number of deaths to every 1,000 confinements for each of ten years is show.

Year.	Deaths of Mothers to every 1,000 Confinements.	Year.	Deaths of Mothers to every 1,000 Confinements.
1900	3·84	1905	4·22
1901	4·39	1906	3·91
1902	5·33	1907	4·62
1903	5·86	1908	4·64
1904	4·66	1909	5·14

Violence.

The deaths from external violence, apart from suicide, numbered 660 in 1909—males 528, females 132. The rate per 10,000 living was 6·03 in 1905, 6·42 in 1906, 6·65 in 1907, 6·03 in 1908, and 6·79 in 1909. Drowning caused 35 per cent. of the total, and 36 per cent. of the male deaths by accident. The various forms of accidental deaths in 1909 are shown in the following table:—

Accidental Deaths, 1909.

Cause of Death.	Males.	Females.	Total.
Fractures	25	8	33
Shooting	19	1	20
Other accidental injuries	208	15	223
Burns, scalds	30	25	55
Insolation	1	1	2
Electric shock	1	..	1
Accidental drowning	189	45	234
Inanition	1	1	2
Inhalation of noxious gases	14	3	17
Other accidental poisoning	10	10	20
Other external violence	30	23	53
Total deaths	528	132	660

Suicide.

The suicidal deaths in 1909 were 118—males 96, and females 22. The rate per 10,000 living was 1·21 in 1909, against an average of 1·07 for the past five years.

LOCAL VITAL STATISTICS.

[From the Reports of the District Health Officers.]

Auckland District.

The statistics, as they relate to births and deaths, including those of infants, are taken from the returns of the Registrar-General, and deal only with the City of Auckland and the surrounding boroughs, Birkenhead, Devonport, Newmarket, Grey Lynn, Parnell, Mount Eden, and Northcote, and cover, as in previous years, the period from the 1st January to the 31st December.

Population.

The mean population for the year 1909 in the above-mentioned boroughs, upon which statistics referred to are based, is—

Auckland City	43,021
Suburban boroughs	34,075
	77,096

The inclusion of other contiguous boroughs and road districts—Arch Hill, Eden Terrace, Epsom, Mount Albert, Mount Roskill, One-tree Hill, Point Chevalier, Remuera, Ellerslie, Onehunga, and the Hospital Reserve—all of which are to be regarded as comprised in the area which may be known as "Greater Auckland," with the addition of 18·07 per 1,000 per annum (the natural increase during 1909) upon

the population of those districts at the census of 1906, thus adding 22,133 to the foregoing figures, produces a total of 99,229. But, as it is very well known that several of the suburban districts have extended in a manner altogether beyond what can be accounted for by natural increase, the Town of Auckland has probably now considerably over one hundred thousand souls.

[NOTE.—The figures relating to Onehunga, though that borough is practically within a Greater Auckland area, are not brought into the statistics which follow.]

Birth-rate.

The average birth-rates per 1,000 of the population for ten years 1900–9 are,—

Auckland City	30·28
Auckland and suburban boroughs	28·28

Death-rate.

The average death-rates per 1,000 of the population for ten years 1900–9 are,—

Auckland City	12·97
Auckland and suburban boroughs	11·28

Natural Increase of Population.

	Births.	Deaths.	Natural Increase.	Ditto per 1,000 of Mean Population.
Auckland City	1,279	484	795	18·48
Suburban boroughs	839	233	606	17·78
Auckland and suburban boroughs	2,118	717	1,401	18·28

Both the death and birth rates are lowered in 1909; still, as compared with 1908, when the natural increase was 2·04 in excess of the previous year, 1909 shows an improvement. This improvement is only maintained by effecting reduction in the death-rate, and the due effect upon the population is almost neutralized by the continued fall in the birth-rate.

Infant Mortality.

In Auckland and suburban boroughs,—

Deaths of infants under 1 year were	131
Between 1 year and 5 years	39
	170

Deaths of children under 1 year per 100 births,—	Auckland City.	Auckland and Suburban Boroughs.
Mean for 5 years 1900–4	12·09	11·18
Mean for 5 years 1905–9	9·34	8·37
Mean for ten years	10·71	9·77

Mean for the whole Dominion for 10 years 1899–1908 = 7·59.

It will be noted from the above table that there is a satisfactory decrease in the infant-mortality rate in the Auckland District during the past ten years. The present year is the lowest in that period.

In 1909 the deaths in the suburban boroughs were 35 only, and these are only 4·05 per 100 births —a very low percentage.

Causes of Deaths.

Zymotic Diseases.

Deaths in Auckland and suburban boroughs 74

For the last five years :—	Deaths.		Deaths.
1905	45	1908	139
1906	42	1909	74
1907	103		

These 74 deaths were from,—

Diarrhœal diseases	48
Influenza	2
Typhoid fever	5
Diphtheria	6
Whooping-cough	5
Croup	2
Other zymotic diseases	6
	74

Cancer.

Deaths in Auckland and suburban boroughs 76

For the last five years,—	Deaths.		Deaths.
1905	35	1908	55
1906	49	1909	76
1907	50		

Phthisis and other Tubercular Diseases.

Deaths in Auckland and suburban boroughs 58

For the last five years,—	Deaths.		Deaths.
1905	.. 49	1908	.. 52
1906	.. 52	1909	.. 58
1907	.. 66		

There seems to be evidence that tubercular diseases are, at any rate, not on the increase. The notifications for the departmental year are fewer; while, having regard to the increase of population, deaths are apparently stationary.

Wellington District.

The statistics of births and deaths are taken from the records of the Registrar-General, and deal only with the population of Wellington and the boroughs of Karori, Onslow, and Miramar.

Population.

The mean population for the year 1909 in the before-named boroughs, comprising Greater Wellington, was,—

Wellington City	70,455
Karori Borough	1,345
Onslow Borough	1,558
Miramar Borough	1,685
	75,043

Birth-rate.

The average birth-rates per 1,000 of the population for ten years, 1900–9, are,—

Wellington City	27·27
Wellington and suburban boroughs	27·15

Death-rate.

The average death rates per 1,000 of the population for ten years, 1900–9, are,—

Wellington City	10·44
Wellington and suburban boroughs	10·16

Infant Mortality.

In Wellington and suburban boroughs,—

Deaths of infants under 1 year in 1909 were	167
Between 1 and 5 years	35
	202

Year.	Wellington City.	Wellington and Suburbs.
1905	10·02	9·62
1906	7·11	7·19
1907	11·85	11·78
1908	8·24	8·17
1909	8·48	8·42
	9·14	9·03

Natural Increase of Population.

	Births.	Deaths.	Natural Increase.	Increase per 1,000 of Population.
Wellington City	1,876	659	1,217	17·27
Suburban boroughs	107	25	82	17·87
Wellington and suburban boroughs ..	1,983	684	1,299	17·31

The birth-rate is lower by 0·98 per 1,000 than in 1908, and the death-rate is 0·17 higher.

Causes of Death.

Zymotic Diseases.

Deaths in Wellington and suburban boroughs 78

For the last five years,—	Deaths.		Deaths.
1905	.. 65	1908	.. 124
1906	.. 55	1909	.. 78
1907	.. 164		

These 78 deaths were from,—

Diarrhœal diseases	48
Influenza	2
Typhoid fever	7
Scarlet fever	3
Diphtheria	6
Whooping-cough	3
Other zymotic diseases	9
	78

Cancer.

Deaths in Wellington and suburban boroughs .. 59

For the last five years,—	Deaths.		Deaths.
1905	47	1908	48
1906	53	1909	59
1907	50		

Phthisis and other Tubercular Diseases.

Deaths in Wellington and suburban boroughs .. 81

For the last five years,—	Deaths.		Deaths.
1905	41	1908	73
1906	60	1909	81
1907	68		

CHRISTCHURCH DISTRICT.

The statistics of births and deaths are taken from the returns of the Registrar-General, and deal only with the population of Christchurch and the boroughs of Woolston, New Brighton, and Sumner.

Population.

Christchurch City	56,210
Woolston Borough	3,388
New Brighton Borough	1,571
Sumner	1,606
	62,775

Birth-rate.

The average birth-rates for ten years, 1900–9, are,—

Christchurch City	27·09
Christchurch and suburban boroughs	27·40

Death-rate.

The average death-rates for ten years, 1900–9, are,—

Christchurch City	11·36
Christchurch and suburban boroughs	11·28

Infant Mortality.

In Christchurch and suburban boroughs,—

Deaths of infants under 1 year in 1909 were	109
Between 1 year and 5 years	22
	131

	Christchurch and Suburban Boroughs.
Mean for 5 years 1900–4	11·50
„ 5 „ 1905–9	8·30
„ 10 „	9·90

Natural Increase of Population.

	Births.	Deaths.	Natural Increase.	Increase per 1000 of Population.
Christchurch City	1,605	533	1,072	19·07
Suburban boroughs	131	53	78	11·88
Christchurch and suburban boroughs	1,736	586	1,150	18·32

Causes of Deaths.

Zymotic Diseases.

Deaths in Christchurch and suburban boroughs .. 35

For the last five years,—	Deaths.		Deaths.
1905	42	1908	52
1906	47	1909	35
1907	155		

These 35 deaths were from,—

Diarrhœal diseases	19
Influenza	4
Typhoid fever	1
Whooping-cough	4
Other zymotic diseases	7
	35

Cancer.

Deaths in Christchurch and suburban boroughs 51

For the last five years,—	Deaths.		Deaths
1905	49	1908	42
1906	60	1909	51
1907	76		

Phthisis and other Tubercular Diseases.

Deaths in Christchurch and suburban boroughs 46

For the last five years,—	Deaths.		Deaths.
1905	54	1908	66
1906	41	1909	46
1907	73		

Dunedin District.

The statistics of births and deaths are taken from the returns of the Registrar-General, and deal only with the population of Dunedin and the boroughs of Maori Hill, Mornington, North-east Valley, Roslyn, St. Kilda, and West Harbour.

Population.

Dunedin City	38,702
Suburban boroughs	23,227
	61,929

Birth-rate.

The average birth-rates for ten years, 1900–9, are,—

Dunedin City	23·83
Dunedin and suburban boroughs	24·33

Death-rate.

The average death-rates for ten years, 1900–9, are,—

Dunedin City	10·44
Dunedin and suburban boroughs	10·16

Infant Mortality.

In Dunedin and suburban boroughs,—

Deaths of infants under 1 year in 1909 were	79
Between 1 and 5 years	33
	112

	Dunedin and Suburban Boroughs.
Mean for 5 years 1900–4	8·41
„ 5 „ 1905–9	7·36
„ 10 „	7·88

Natural Increase of Population.

	Births.	Deaths.	Natural Increase.	Increase per 1,000 of Population.
Dunedin City	1,097	447	650	16·79
Suburban boroughs	529	169	360	15·18
Dunedin and suburban boroughs	1,626	616	1,010	16·31

Causes of Deaths.

Zymotic Diseases.

Deaths in Dunedin and suburban boroughs 33

For the last five years,—	Deaths.		Deaths.
1905	55	1908	62
1906	26	1909	33
1907	101		

These 33 deaths were from,—

Diarrhœal diseases	17
Influenza	2
Typhoid fever	2
Scarlet fever	2
Diphtheria	4
Whooping-cough	3
Other zymotic diseases	3
	33

Cancer.

Deaths in Dunedin and suburban boroughs 62

For the last five years,—	Deaths.		Deaths.
1905	60	1908	53
1906	55	1909	62
1907	59		

Phthisis and other Tubercular Diseases.

Deaths in Dunedin and suburban boroughs 47

For the last five years,—	Deaths.		Deaths.
1905	66	1908	69
1906	78	1909	47
1907	77		

PART 2—INFECTIOUS DISEASE.

RETURN SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASE REPORTED TO THE PUBLIC HEALTH DEPARTMENT THROUGHOUT THE DOMINION DURING THE YEAR ENDING 31ST MARCH, 1910.

Summary for Whole Dominion.

Nature of Disease.	Health Districts.					Total.
	Auckland.	Wellington, Hawke's Bay, and Marlborough.	Westland.	Canterbury.	Otago.	
Scarlet fever	189	495	36	179	367	1,266
Diphtheria	153	249	5	76	75	578
Enteric fever	226	278	5	55	71	635
Tuberculosis	107	230	7	78	134	556
Blood-poisoning	56	69	1	3	14	143
Hydatids	..	8	..	..	..	8
Totals	731	1,329	54	391	681	3,186

The following tables and remarks relating to the incidence of infectious disease in the Dominion during the year are taken from the annual reports of the Health Officers of the various districts :—

AUCKLAND DISTRICT.

Cases of Infectious Diseases notified.

The cases of infectious disease occurring in the Public Health district during the departmental year exhibit no very special feature. The total number of notifications is 73.

For five years,—			
1905–6	616	1908–9	737
1906–7	642	1909–10	731
1907–8	1,071		

Comparing last year's notifications with those of the previous year, we find,—

	Increase.	Decrease.
Scarlet fever	47	..
Diphtheria	51	..
Enteric fever	..	13
Tuberculosis	..	69
Blood-poisoning	..	22
	98	104
		98
Net decrease		6

The only variation to note is the considerable decrease in the notification of tuberculosis, which follows upon a decrease of 30 during the previous year.

The following table exhibits the distribution of the cases ;—

Summary of Notifications of Infectious Disease from 1st April, 1909, to 31st March, 1910.

Locality.	Scarlet Fever or Scarlatina.												Diphtheria.												Enteric or Typhoid Fever.												Tuberculosis.												Blood-poisoning.											
	1909.									1910.			1909.								1910.				1909.								1910.				1909.								1910.				1909.								1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Auckland City	..	3	2	4	6	1	..	..	1	..	2	11	1	3	1	..	1	2	3	1	1	..	4	5	3	7	1	1	1	1	4	16	6	7	12	1	1	..	1	1	1	2	3	1	2	3	2	..	1	2	4	3	1	2	1	2	1	1	..
Birkenhead Borough	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Devonport Borough	..	..	..	..	..	2	1	1	..	..	2	..	..	..	..	..	1	..	..	..	1	2	..	..	2	..	..	..	..	..	1	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..
Grey Lynn Borough	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	1	..	1	..	2	..	1	1	..	1	..	1	..	1	7	10	1	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..
Mount Eden Borough	..	1	..	..	1	1	..	1	..	..	1	3	..	..	..	..	..	..	1	..	1	1	1	..	1	1	1	..	..	..	..	..	1	..	..	..	1	..	..	..	2	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..
Newmarket Borough	..	..	1	..	..	..	..	1	..	..	1	1	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Northcote Borough	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Onehunga Borough	..	..	1	..	..	..	..	..	..	1	7	..	..	..	..	2	1	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	2	..
Parnell Borough	..	..	..	1	1	..	..	..	3	1	3	..	..	..	1	1	1	..	..	..	1	1	..	..	1	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arch Hill Road District	..	..	..	..	1	..	..	..	..	1	..	3	..	..	..	2	1	..	..	..	..	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Avondale Road District	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	3	..	1	..	1	..	2	..	..	..	..	..	..	3	1	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Ellerslie Town District	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Eden Terrace Road District	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epsom Road District	..	..	3	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Albert Road District	1	1	..	..	..	..	..	..	..	1	3	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	2	2	2	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..
Mount Roskill District	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Wellington District	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
One-tree Hill	..	..	1	5	5	1	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..
Otahuhu District	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Point Chevalier District	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Remuera District	..	2	6	4	2	1	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	1	..	1	1	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Tamaki West District	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Bay of Islands County	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1
Coromandel County	..	5	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hobson County	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hokianga County	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..
Manukau County	..	..	..	..	..	..	..	1	..	..	1	4	2	..	2	..	..	1	..	..	..	..	1	14	..	..	2	..	..	..	..	..	..	..	..	..	..	..	3	1	2	..	..	..	1	2	1	..	1	..	..	..	..	..	..	..	..
Mangonui County	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Opotiki County	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ohinemuri County	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	1	..	..	1	4	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	1	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Otamatea County	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Piako County	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	1	..	..	..	2	..	..	..	1	..	..	..	..
Rodney County	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rotorua County	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	3	..	2	1	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
Raglan County	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..
Taupo County	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tauranga County	..	1	1	..	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	1	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Thames County	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	1	..	..	3	1	..	..	2	1	2	1	1	..	2	..	3	1	2	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..

Waikato County	..	..	..	..	..	..	..	..	..	1	..	1
Waipa County	..	..	..	1	..	..	..	..	..	..	..	3
Waitemata County	..	..	1	..	..	..	..	..	..	..	..	..
Waitomo County	..	..	1	..	..	..	1	..	..	..	..	..
Whakatane County	..	..	..	3	2	1	1	1	1	..	..	..
Whangarei County	..	..	..	..	1	..	..	..	..	..	..	..
Cambridge Borough	..	..	..	..	..	..	..	..	..	..	2	2
Hamilton Borough	..	..	2	..	..	..	..	..	..	..	..	..
Thames Borough	..	..	..	..	..	..	1	..	..	..	..	..
Waihi Borough	..	..	..	..	..	..	..	..	..	1	1	8
Te Aroha Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hospital	..	..	..	..	..	..	..	..	..	..	..	..
Mental Hospital	..	..	..	..	..	..	..	..	..	..	..	..
Shipping	2	..	..	..	..	..	..	..	..	..	..	..
Totals	11	12	18	19	22	9	9	7	2	8	10	62
	189											

Waikato County	..	..	1	..	..	..	..	..	1	..	..	..
Waipa County	..	..	..	..	..	..	..	1	..	..	..	..
Waitemata County	..	1	..	..	..	..	..	..	..	..	..	1
Waitomo County	..	..	..	..	..	..	..	..	..	..	..	..
Whakatane County	..	..	..	..	..	..	..	..	1	3	..	..
Whangarei County	..	1	3	6	5	2	..	1	..	..	..	..
Cambridge Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hamilton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Thames Borough	..	..	..	..	..	..	5	3	5	..	2	..
Waihi Borough	2	..	..	..	..	..	..	..	..	..	..	..
Te Aroha Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hospital	..	..	..	..	..	..	..	..	..	..	..	..
Mental Hospital	..	..	..	..	..	..	..	..	..	..	..	..
Shipping	..	..	..	..	..	..	..	..	..	..	..	..
Totals	5	6	13	13	14	10	11	11	17	10	16	27
	153											

Waikato County	1	..	..	..	..	..	..	..	..	1	1	1
Waipa County	2	..	..	..	..	..	..	..	..	1	2	..
Waitemata County	..	..	1	..	..	1	..	..	..	1	..	1
Waitomo County	..	..	5	1	2	..	2	..	..	..	..	..
Whakatane County	..	..	1	..	1	..	..	..	1	..	2	..
Whangarei County	..	..	1	..	..	..	..	..	..	..	..	..
Cambridge Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hamilton Borough	3	..	..	..	..	..	..	..	..	..	..	..
Thames Borough	1	..	..	..	..	..	..	..	..	2	..	..
Waihi Borough	..	4	1	..	..	..	..	..	..	2	..	6
Te Aroha Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hospital	2	..	..	..	..	..	..	..	..	..	..	..
Mental Hospital	..	..	..	..	..	..	..	..	..	3	2	..
Shipping	..	1	..	..	..	..	..	..	..	..	..	..
Totals	21	22	21	4	13	3	7	16	35	29	25	30
	226											

Waikato County	1	1	..	..	..	..	..	..	..	..	..	1
Waipa County	..	1	..	..	2	..	..	..	..	..	..	..
Waitemata County	..	2	..	..	..	..	..	..	..	..	..	..
Waitomo County	..	..	..	1	..	..	2	..	..	..	..	..
Whakatane County	..	..	..	..	..	..	..	..	..	..	..	..
Whangarei County	..	..	1	..	..	..	..	3	1	..	..	..
Cambridge Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hamilton Borough	..	..	1	..	..	1	..	..	..	..	..	..
Thames Borough	..	..	1	1	..	..	1	..	..	1	..	..
Waihi Borough	..	..	..	..	..	..	..	..	..	..	..	..
Te Aroha Borough	..	..	..	..	..	1	..	..	..	..	..	..
Hospital	..	..	..	..	..	..	..	..	..	..	..	..
Mental Hospital	1	..	..	..	..	..	..	..	..	..	..	..
Shipping	..	..	..	..	..	..	..	..	..	..	..	..
Totals	9	8	5	12	11	9	13	14	4	8	7	7
	107											

Waikato County	..	..	..	..	..	..	..	..	..	..	..	1
Waipa County	..	..	..	..	..	..	1	..	..	..	..	..
Waitemata County	..	..	..	..	..	..	..	..	..	..	..	..
Waitomo County	..	..	2	..	..	..	..	..	..	..	..	..
Whakatane County	..	..	1	..	..	..	..	..	..	..	..	..
Whangarei County	..	..	..	..	..	..	..	..	..	..	..	..
Cambridge Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hamilton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Thames Borough	..	..	..	..	..	..	..	..	..	..	..	..
Waihi Borough	..	..	..	..	..	1	..	..	..	..	..	..
Te Aroha Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hospital	..	..	..	..	..	..	..	..	..	..	..	..
Mental Hospital	..	..	..	..	..	..	..	..	..	..	..	..
Shipping	..	..	..	..	..	..	..	..	..	..	..	..
Totals	4	7	7	7	6	4	5	3	3	3	3	4
	56											

Summary of Cases as to Locality.

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Tuberculosis.	Blood-poisoning.	Total.
City of Auckland	30	22	60	18	18	148
Suburban boroughs	37	24	43	14	9	127
Suburban road districts	56	23	24	16	8	127
Country districts	64	84	91	58	21	318
Auckland Hospital	..	..	2	..	..	2
Mental Hospital	..	..	5	1	..	6
Shipping	2	..	1	..	..	3
Totals	189	153	226	107	56	731

The following cases were sent to the General Hospital by order of the Department :—

Enteric fever	84
Scarlet fever	41
Diphtheria	29
Measles	1
Blood-poisoning	7
	162

Rainfall and Temperature, 1909-10—*Auckland Museum Observation.*

	Rainfall.		Temperature.	
	1909–10.	Average Previous Years.	1900–10.	Average Previous Years.
1909.	In.	In.	Deg.	Deg.
April	1·20	3·15	60·4	61·6
May	4·72	4·21	58·6	57·2
June	3·24	4·79	55·7	53·8
July	5·46	4·86	53·8	52·0
August	7·13	4·33	53·0	52·2
September	3·53	3·39	55·4	54·8
October	3·68	3·34	56·9	57·0
November	3·44	3·23	61·5	60·4
December	0·79	2·78	66·1	64·4
1910.				
January	4·52	2·65	68·6	67·1
February	6·05	3·66	70·7	67·4
March	7·61	2·42	67·1	64·3
Totals and means ..	51·37	42·81	60·6	59·3

Scarlet Fever.

The cases notified from the health district during the last five years are,—

1905–6	240	1908–9	142
1906–7	268	1909–10	189
1907–8	277		

A very general outbreak of scarlet fever occurred during the last month of the departmental year' Onehunga and Waihi being so far specially visited. (Subsequently this outbreak assumed considerable importance, as will appear in the report covering the departmental year 1910–11.)

Diphtheria.

The cases of diphtheria recorded throughout the health district for the last five years are,—

1905–6	97	1908–9	101
1906–7	103	1909–10	153
1907–8	165		

Enteric Fever.

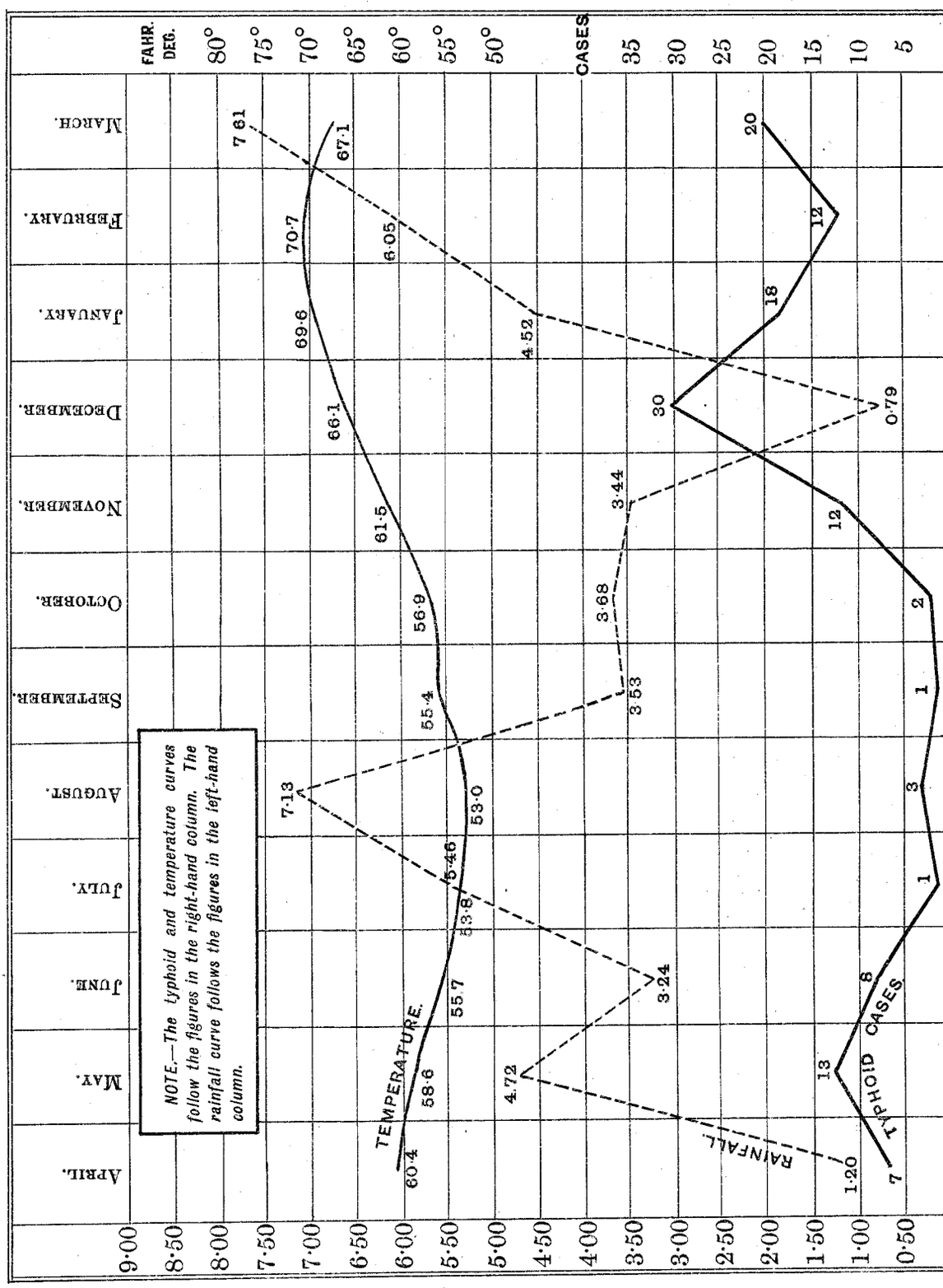
The cases of enteric fever recorded throughout the health district for the past five years are,—

1905–6	172	1908–9	241
1906–7	153	1909–10	226
1907–8	353		

TYPHOID FEVER.

AUCKLAND AND SUBURBAN BOROUGHS.

CASES 1909-10.



TYPHOID, TEMPERATURE, AND RAINFALL CURVES,

APRIL, 1909, TO MARCH, 1910.

1800-11.10.858.

As shown in the accompanying chart, the dry, warm weather in December does not appear to have been followed by any notable increase in typhoid. On the other hand, the earlier spring months, which showed a slightly higher rainfall and temperature than the average, were followed by an unusually high number of cases in November and December.

Tuberculosis.

The cases notified from the health district in the last five years are,—

1905–6	86	1908–9	176
1906–7	96	1909–10	107
1907–8	198		

Blood-poisoning.

The cases notified during the last five years are,—

1905–6	21	1908–9	77
1906–7	19	1909–10	56
1907–8	76		

During the same period the notifications of cases of puerperal septicæmia have been respectively 3, 3, 23, 29, and 23.

The 56 cases last year were—23 puerperal septicæmia, 25 erysipelas, 8 unclassified: total, 56.

WELLINGTON DISTRICT.

Cases of Infectious Diseases notified.

Wellington (including Hawke's Bay and Marlborough):—

1905–6	982	1908–9	1,812
1906–7*	1,127	1909–10	1,329
1907–8	1,880		

Comparing last year's notifications with those of the previous year and with the previous five years, we find,—

	Compared with Previous Years.		Compared with Average of Five Years.	
Scarlet fever	Decrease	454	Decrease	212
Diphtheria	,,	52	,,	14
Enteric fever	Increase	54	Increase	82
Tuberculosis	Decrease	28	Decrease	17
Blood-poisoning	,,	5	Increase	17
Hydatids	Increase	2	,,	2

Summary of Cases as to Locality.

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Tubercu-losis.	Blood-Poisoning.	Hydatids.	Total.
Wellington City	110	70	54	71	18	2	325
Other boroughs	254	116	130	82	42	3	627
Country districts	131	63	94	77	9	3	377
	495	249	278	230	69	8	1,329

Out of the 1,329 cases notified, 419 were treated in hospitals.

Incidence per Thousand (Population), Boroughs.

	Cases.	Deaths.	Removed to Hospital.	Rates.
Scarlet fever	364	1	118	2·1
Diphtheria	186	9	96	1·1
Enteric fever	184	5	82	1·0
Tuberculosis	153	59	42	0·9
Blood-poisoning	60	10	7	0·3

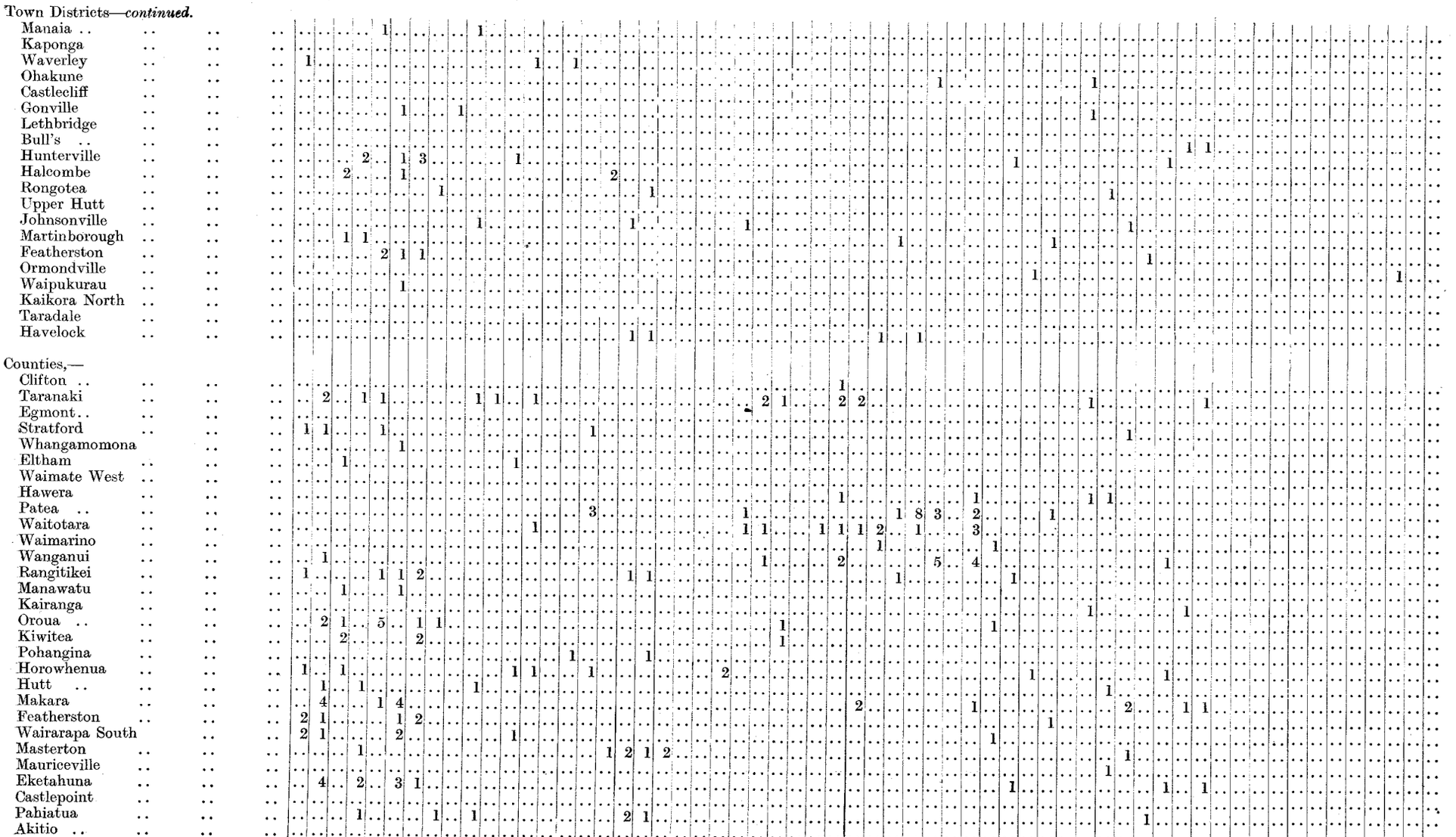
The following tables give details of the infectious diseases notified. In the case of the figures for that portion of the district formerly comprised in Hawke's Bay Health District, the figures relating to deaths cannot be taken as reliable, as in some cases the result of the disease was not noted. As regards tuberculosis, moreover, compulsory notification of this disease is not insisted upon, and the only information in many cases that we receive is the notice of death from the Registrar of Deaths. The number of deaths therefore in regard to tuberculosis must not be taken in relation to the number of cases.

Another difficulty that has occurred in the past is that only a rough intimation of the locality has been given, and in cases in which the name of a borough and county is synonymous it has been difficult to determine under which locality the disease should be placed.

* No returns from Marlborough.

Infectious Diseases.—Returns per Month for Year 1st April, 1909, to 31st March, 1910, Wellington District, including Marlborough and Hawke's Bay.

Locality.	Scarlet Fever or Scarlatina.												Diphtheria.												Enteric or Typhoid Fever.												Tuberculosis.												Blood-poisoning.											
	1909.									1910.			1909.								1910.				1909.							1910.				1909.							1910.				1909.							1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Boroughs,—																																																							
New Plymouth	1	3	..	..	1	2	..	..	..	1	..	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	2	1	..	..	..	1	1	..	2	..	..	..	3	..	..	..	..	..	..	1	..	..	..	..
Inglewood	..	1	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Waitara	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stratford	2	1	3	2	..	..	..	3	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2	1	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2	..	..	..	1	..
Hawera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	1	1	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Eltham	..	..	..	..	1	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Patea	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wanganui	3	..	4	2	2	..	1	1	1	1	2	1	..	..	..	2	..	2	1	..	2	1	..	..	5	..	..	..	..	..	2	15	1	2	3	7	..	4	5	2	..	..	2	3	1	1	2	..	1	..	1	1	1	..	1	1	..	1	..	1
Marton	..	..	..	3	1	..	1	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..
Taihape	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Feilding	1	..	..	..	4	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Foxton	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	1	..	..	..	..	..	3	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Palmerston North	1	..	3	..	2	1	1	1	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1	..	3	..	1	..	1	1	..	..	1	2	..	..	..	..	..	..	..	..	1	..	..	..
Levin	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	4	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Wellington	8	21	10	14	19	8	5	4	11	6	2	2	4	1	7	6	9	12	3	4	7	..	9	8	1	2	3	..	14	7	2	8	3	3	..	11	6	4	2	3	7	7	8	4	8	9	4	9	1	1	3	5	..	2	2	..	1	1	1	1
Onslow	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..
Karori	2	3	1	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Petone	2	2	1	4	1	..	1	..	1	3	1	1	..	2	..	..	5	..	1	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	3	1	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..
Lower Hutt	..	..	..	1	2	..	2	..	..	..	..	..	1	..	1	..	1	..	1	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Miramar	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eastbourne	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pahiatua	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eketahuna	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Masterton	1	4	7	4	1	..	..	2	..	1	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	2	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..
Carterton	..	..	6	1	..	..	..	1	..	..	..	..	..	..	..	3	..	2	3	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Greytown	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Waipawa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dannevirke	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..
Woodville	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hastings	..	2	..	..	..	1	..	1	..	..	..	..	1	..	1	1	..	1	..	2	..	..	1	..	..	1	..	1	..	1	1	..	..	..	..	1	1	..	1	..	1	..	..	..	3	1	..	..	..	..	..	..	..	2	..	..	..
Napier	6	4	12	3	40	14	3	4	..	..	..	..	2	1	..	2	..	2	..	1	..	..	..	..	..	1	..	1	..	1	1	..	..	..	..	3	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	..	1	4	1	..	..	2
Gisborne	1	1	..	1	2	..	3	2	3	2	..	1	1	..	..	..	..	..	..	..	..	..	..	..	11	3	..	..	..	..	1	8	4	5	3	..	1	..	2	..	..	4	..	..	..	1	..	..	..	1	..	..	1	..	..	1	3	..
Wairoa	..	..	..	..	..	..	2	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	3	..	..	..	..	..	..	1	..	..	5	3	2	..	1	1	3	2	..	4	2	2	..	1	..	..	..	1	..	2	..	..	..
Blenheim	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	5	4	3	4	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Picton	..	..	..	..	..	..	..	..	..	1	..	5	..	..	..	..	..	1	2	1	2	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..
Town Districts,—																																																							
Fitzroy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Opunake	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Normanby	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..



Injectious Diseases.—Returns per Month for Year 1st April, 1909, to 31st March, 1910, Wellington District, including Marlborough and Hawke's Bay—continued.

Locality.	Scarlet Fever or Scarlatina.													Diphtheria.												Enteric or Typhoid Fever.												Tuberculosis.												Blood-poisoning.											
	1909.												1910.	1909.											1910.	1909.											1919.	1909.											1910.	1909.											1910.
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.		April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Counties—*continued.*																																																														
Woodville																																2																														
Weber																																																													
Dannevirke																																																												
Patangata																																																												
Waipukurau																																																												
Waipawa							1							4																																																		
Wairoa															1																								3	1				1					1	1										1		
Hawke's Bay	1	1	3	2		4	1	4						1	1	1	1		2	3						1	1				3	3	2				2									1		2									1		2		1			1	1
Waiapu					1																															3																												
Waikohu			1																																																											
Cook County	1		1	4																			1	1		3	1	2		2	2				1	2																										
Sounds County																							1																																								
Wairau										1									3		1		1	2	2																																								
Totals	41	60	64	54	85	53	36	31	17	25	11	18		16	13	14	26	20	40	23	21	18	9	21	28	26	18	10	7	22	21	19	42	23	23	16	51	20	20	21	12	12	21	30	19	14	22	12	27	2	2	4	9	5	7	5	8	3	7	10	7
	495													249												278												230												69											

The Incidence and Mortality (both actual and at per 1,000 living) of the More Prevalent Notifiable Infectious Diseases in the Health Districts and in the Chief Centres of Population.—Returns for Period 1st April, 1909, to 31st March, 1910.

City or Borough.	Population.	Scarlet Fever or Scarlatina.				Diphtheria.				Enteric or Typhoid Fever.				Tuberculosis.				Blood-poisoning.			
		Cases.	Deaths.	Removed to Hospital.	Rates per 1,000 living.	Cases.	Deaths.	Removed to Hospital.	Rates per 1,000 living.	Cases.	Deaths.	Removed to Hospital.	Rates per 1,000 living.	Cases.	Deaths.	Removed to Hospital.	Rates per 1,000 living.	Cases.	Deaths.	Removed to Hospital.	Rates per 1,000 living.
New Plymouth ..	5,414	8	..	6	1·5	3	..	2	0·6	4	..	3	0·7	8	4	4	1·5	1	..	1	0·2
Inglewood	1,160	4	..	..	3·4	2	..	1	1·7	..	..	..	..	1	..	1	0·9	..	..	..	..
Waitara	1,220	1	..	..	0·8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stratford	2,300	11	..	..	4·8	2	1	2	0·8	3	..	2	1·3	2	1	..	0·8	3	..	..	1·3
Hawera	2,300	..	..	..	..	..	..	..	..	4	1	1	..	3	..	..	..	2	..	..	..
Eltham	1,500	4	..	3	2·7	..	..	..	..	1	..	1	0·7	1	..	1	0·7	..	..	..	..
Patea	900	..	..	..	..	..	..	..	..	3	..	3	3·3	1	..	1	1·1	..	..	..	..
Wanganui	8,857	18	..	15	2·0	8	..	6	0·9	35	2	14	3·9	20	6	6	2·2	8	5	2	0·9
Marton	1,500	6	..	..	4·0	1	..	..	0·7	1	..	..	0·7	..	..	..	..	2	..	..	1·3
Taihape	1,600	1	..	..	0·6	1	..	..	0·6	3	..	2	1·9	..	..	..	..	..	..	..	..
Feilding	3,300	5	..	..	1·5	3	..	..	0·9	1	..	1	0·3	1	1	..	0·3	..	..	..	..
Foxton	1,450	1	..	..	0·7	6	2	1	4·1	2	..	1	1·4	1	..	..	0·7	..	..	..	..
Palmerston North ..	12,000	9	..	6	0·7	3	1	1	0·2	6	..	6	0·5	6	4	2	0·5	1	..	..	0·1
Levin	1,500	2	..	..	1·3	1	..	..	0·7	6	..	1	4·0	1	..	..	0·7	..	..	..	..
Wellington	71,553	110	1	23	1·5	70	4	39	0·9	54	1	29	0·7	71	34	24	1·0	18	5	6	0·2
Onslow	1,715	2	..	1	1·1	1	..	..	0·6	3	..	..	1·7	1	..	..	0·6	..	..	..	..
Karori	1,374	9	..	3	6·6	..	..	..	..	..	..	..	..	4	3	..	2·9	..	..	..	..
Petone	7,313	17	..	5	2·3	10	1	4	1·4	4	..	1	0·5	4	2	1	0·5	..	..	..	..
Lower Hutt ..	4,000	5	..	1	1·3	5	..	4	1·3	2	1	..	0·5	3	1	1	0·8	..	..	..	..
Miramar	1,748	1	..	..	0·6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eastbourne	750	..	..	..	..	..	..	..	..	2	..	..	2·7	..	..	..	..	..	..	..	..
Pahiatua	1,360	2	..	..	1·4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eketahuna	800	2	..	1	2·5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Masterton	5,500	22	..	15	4·0	1	..	..	0·2	1	..	1	0·2	5	1	..	0·9	1	..	1	0·2
Carterton	1,407	8	..	5	5·6	11	..	4	7·8	..	..	..	..	1	1	..	0·7	..	..	..	..
Greytown	1,200	2	..	1	1·6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Waipawa	1,050	..	..	..	..	1	..	..	1·0	1	..	..	1·0	1	..	..	1·0	..	..	..	..
Dannevirke	3,500	1	..	..	0·3	..	..	..	..	1	..	1	0·3	2	..	1	0·6	1	..	..	0·3
Woodville	1,215	..	..	..	..	8	..	..	6·6	..	..	..	..	2	..	..	1·6	..	..	..	..
Hastings	5,000	4	..	1	0·8	7	..	4	1·4	5	..	..	1·0	4	1	..	0·8	2	..	..	0·4
Napier	10,788	86	..	32	8·0	8	..	6	0·7	7	..	5	0·7	1	..	..	0·1	10	..	6	0·9
Gisborne	7,000	16	..	..	2·3	..	..	..	..	35	..	..	5·0	8	..	..	1·1	6	..	..	0·9
Blenheim	3,520	1	..	..	0·3	23	..	14	6·5	..	..	..	..	1	..	..	0·3	2	..	1	0·6
Picton	995	6	..	..	6·0	10	..	8	10·1	..	..	..	..	..	..	..	..	2	..	..	2·0
	176,789	364	1	118	2·1	186	9	96	1·1	184	5	82	1·0	153	59	42	0·9	60	10	7	0·3

Case-fatality, per cent.—Scarlet fever .. .. 0·27; Diphtheria .. .. 4·84; Enteric fever .. .. 2·62; Tuberculosis .. .. 33·2; Blood-poisoning .. .. 15·62

Mortality-rate per 1,000 of population—Scarlet fever .. .. .. 0·0057; Diphtheria .. .. .. 0·0509; Enteric fever .. .. .. 0·0282; Tuberculosis .. .. .. 0·3; Blood-poisoning .. .. 0·0565

Notifications of Infectious Diseases from 1st April, 1909, to 31st March, 1910.

Canterbury District.

Local Authority's District.	Scarlet Fever or Scarlatina.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Amuri County	..	..	..	..	..	..	..	..	1	..	1	..
Ashley County	3	4	..	3	4	1	1	..	..	..	1	..
Rangiora Borough	..	..	..	..	..	..	..	..	1	..	..	..
Kaiapoi Borough	16	7	..	1	..	..	1	..	..	..	..	1
Selwyn County	..	2	..	..	..	..	..	..	..	1	..	..
Christchurch Suburbs	3	7	2	3	3	2	1	2	3	..	2	7
Lyttelton Borough	..	..	..	..	..	1	..	..	1	1	2	1
Ashburton County	3	3	1	1	..	3	1	3	3	1	..	..
Ashburton Borough	..	2	2	1	1	..	..	2	..	..	..	..
Geraldine County	..	..	..	..	..	..	..	..	..	..	..	..
Geraldine Borough	..	1	1	..	..	..	..	..	..	..	..	..
Temuka Borough	..	..	1	..	1	..	2	..	..	..	..	2
Levels County	..	..	..	..	..	..	..	..	1	..	1	2
Timaru Borough	..	3	2	1	3	..	6	..	..	..	..	2
Mackenzie County	..	..	..	..	..	..	..	..	1	..	..	..
Waimate County	..	3	1	1	1	1	..	..	1	2	..	1
Waimate Borough	2	1	2	3	1	1	2	..	..	..	1	2
Waitaki County	..	..	..	..	..	..	..	..	..	..	..	1
Oamaru Borough	..	..	1	1	..	2	..	1	..	..	..	..
Totals	27	33	13	15	4	11	14	8	12	5	8	19
	179											

Local Authority's District.	Diphtheria.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Amuri County	..	..	..	..	..	..	..	..	..	..	..	..
Ashley County	..	1	..	..	..	1	..	..	1	3	..	..
Rangiora Borough	..	1	..	1	..	..	..	..	..	..	..	1
Kaiapoi Borough	..	..	..	..	..	..	..	..	..	..	..	..
Selwyn County	..	2	..	..	..	..	..	..	1	..	1	..
Christchurch Suburbs	3	2	3	2	4	4	..	2	..	..	2	2
Lyttelton Borough	..	2	..	8	6	1	1	..	2	2	..	2
Ashburton County	..	..	2	..	..	1	..	..	..	..	..	..
Ashburton Borough	..	..	..	..	..	..	1	..	..	..	..	..
Geraldine County	..	..	..	..	..	..	..	..	..	..	..	..
Geraldine Borough	..	..	..	..	..	1	..	..	..	..	..	..
Temuka Borough	..	..	..	..	..	..	..	..	..	..	..	..
Levels County	..	..	..	..	..	..	..	..	..	..	..	..
Timaru Borough	..	1	1	1	..	..	..	..	..	..	1	1
Mackenzie County	..	..	..	..	..	..	..	..	..	..	..	..
Waimate County	..	..	..	..	..	..	..	..	..	2	..	1
Waimate Borough	..	..	..	..	..	..	..	..	..	..	1	..
Waitaki County	1	..	..	..	..	..	..	..	..	..	..	..
Oamaru Borough	..	..	..	..	..	..	..	..	..	..	..	..
Totals	4	9	6	12	10	8	2	2	4	7	5	7
	76											

Local Authority's District.	Enteric or Typhoid Fever.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Amuri County	..	..	..	..	..	..	..	..	..	..	..	..
Ashley County	..	..	..	..	..	..	..	..	..	..	..	..
Rangiora Borough	..	..	..	..	..	..	..	..	..	..	..	..
Kaiapoi Borough	..	..	..	..	..	..	..	..	..	..	..	..
Selwyn County	..	..	..	..	..	..	..	..	..	..	..	..
Christchurch Suburbs	1	1	1	1	..	1	1	1	2	2	1	15
Lyttelton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Ashburton County	..	..	..	..	..	..	..	..	..	1	2	..
Ashburton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Geraldine County	..	..	..	..	..	..	..	..	..	..	..	1
Geraldine Borough	..	..	..	..	..	..	..	..	..	..	..	..
Temuka Borough	1	..	1	..	1	..	..	..	1	1	..	..
Levels County	..	..	..	..	..	..	..	..	..	..	..	..
Timaru Borough	..	..	..	..	..	..	..	..	..	..	2	3
Mackenzie County	..	..	..	..	..	..	..	..	..	..	1	1
Waimate County	..	..	..	..	..	..	..	..	1	..	..	1
Waimate Borough	..	..	..	..	..	..	..	..	2	..	..	..
Waitaki County	..	..	1	..	..	..	1	..	..	..	..	2
Oamaru Borough	..	..	..	..	..	..	..	..	..	..	..	4
Totals	2	1	3	1	1	1	2	1	6	4	6	27
	55											

Local Authority's District.	Tuberculosis.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Amuri County	..	..	..	..	..	..	..	..	..	..	..	..
Ashley County	..	..	1	..	..	..	..	..	..	..	..	..
Rangiora Borough	..	..	..	..	..	..	..	..	..	..	1	..
Kaiapoi Borough	..	..	..	..	..	..	..	..	..	..	..	..
Selwyn County	..	2	2	1	..	..	..	..	1	2	1	1
Christchurch Suburbs	2	7	5	3	1	1	1	4	5	..	1	2
Lyttelton Borough	..	..	..	2	1	5	1	1	1	1	..	1
Ashburton County	..	..	2	2	..	..	..	..	..	2	..	..
Ashburton Borough	1	..	2	1	..	..	1	..	..	2	..	2
Geraldine County	..	..	..	..	..	..	..	..	..	..	..	..
Geraldine Borough	1	..	1	..	..	..	..	..	..	..	..	..
Temuka Borough	..	..	..	..	..	..	..	1	..	..	..	..
Levels County	..	..	..	..	..	..	..	..	..	..	..	..
Timaru Borough	..	..	..	..	..	..	..	..	..	..	..	1
Mackenzie County	..	..	..	..	..	..	..	..	..	..	..	..
Waimate County	..	..	..	..	..	..	..	..	..	..	..	..
Waimate Borough	..	..	..	..	..	..	..	..	..	..	..	..
Waitaki County	..	..	..	..	..	..	..	..	..	..	..	..
Oamaru Borough	..	..	..	..	..	..	..	..	2	..	..	..
Totals	4	9	13	9	2	6	3	6	9	7	3	7
	78											

Local Authority's District.	Blood-poisoning.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Amuri County	..	..	..	..	..	..	..	..	..	..	..	..
Ashley County	..	..	..	..	..	..	..	..	..	..	..	..
Rangiora Borough	..	..	..	..	..	..	..	..	..	..	..	..
Kaiapoi Borough	..	..	..	..	..	..	..	..	..	..	..	..
Selwyn County	..	..	..	..	..	..	..	..	..	..	..	..
Christchurch Suburbs	..	..	..	1	..	..	..	..	..	..	..	..
Lyttelton Borough	..	1	..	..	..	..	..	..	..	..	..	..
Ashburton County	..	..	..	..	..	..	..	..	..	..	..	..
Ashburton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Geraldine County	..	..	..	..	..	..	..	..	..	..	..	..
Geraldine Borough	..	..	..	..	..	..	..	..	..	..	..	..
Temuka Borough	..	..	..	..	..	..	..	..	..	..	..	..
Levels County	..	..	..	..	..	..	..	..	..	..	..	..
Timaru Borough	..	..	..	..	..	..	..	..	..	..	..	1
Mackenzie County	..	..	..	..	..	..	..	..	..	..	..	..
Waimate County	..	..	..	..	..	..	..	..	..	..	..	..
Waimate Borough	..	..	..	..	..	..	..	..	..	..	..	..
Waitaki County	..	..	..	..	..	..	..	..	..	..	..	..
Oamaru Borough	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	1	..	1	..	..	..	..	..	..	..	1
	3											

Westland District.

Local Authority's District.	Scarlet Fever or Scarlatina.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Westland County	3	..	3	..	..	..	..	..	..	..	..	..
Inangahua County	1	6	1	1	1	..	3	..	..	..	..	..
Grey County	..	1	1	..	..	..	1	..	..	1	..	..
Greymouth Borough	..	..	..	..	..	..	..	..	..	..	..	1
Kumara Borough	..	..	2	1	..	..	1	..	..	..	..	..
Hokitika Borough	..	..	..	..	..	..	..	..	..	..	..	..
Brunnerton Borough	..	..	..	..	..	1	..	..	2	..	1	..
Ross Borough	..	..	..	..	..	..	..	..	..	..	..	..
Totals	4	7	7	2	1	1	5	..	2	1	1	1
	36											

Local Authority's District.	Diphtheria.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Westland County	..	..	..	..	..	..	..	..	..	..	..	..
Inangahua County	..	..	1	..	..	..	1	..	..	..	..	..
Grey County	..	..	..	..	..	..	..	..	..	..	..	..
Greymouth Borough	..	..	1	..	..	..	..	..	..	..	..	..
Kumara Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hokitika Borough	..	1	1	..	..	..	..	..	..	..	..	..
Brunnerton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Ross Borough	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	1	3	..	..	..	1	..	..	..	..	..
	5											

Local Authority's District.	Enteric or Typhoid Fever.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Westland County	..	..	..	..	..	..	..	..	..	..	..	..
Inangahua County	1	..	..	..	..	..	..	..	..	..	..	1
Grey County	..	3	..	..	..	..	..	..	..	..	..	..
Greymouth Borough	..	..	..	..	..	..	..	..	..	..	..	..
Kumara Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hokitika Borough	..	..	..	..	..	..	..	..	..	..	..	..
Brunnerton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Ross Borough	..	..	..	..	..	..	..	..	..	..	..	..
Totals	1	3	..	..	..	..	..	..	..	..	..	1
	5											

Local Authority's District.	Tuberculosis.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Westland County	..	..	..	..	..	..	..	..	..	..	..	..
Inangahua County	3	..	..	..	..	..	1	..	..	..	..	1
Grey County	..	..	..	..	..	..	..	..	..	..	..	..
Greymouth Borough	..	2	..	..	..	..	..	..	..	..	..	..
Kumara Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hokitika Borough	..	..	..	..	..	..	..	..	..	..	..	..
Brunnerton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Ross Borough	..	..	..	..	..	..	..	..	..	..	..	..
Totals	3	2	..	..	..	..	1	..	..	..	..	1
	7											

Local Authority's District.	Blood-poisoning.											
	1909.									1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Westland County	..	..	..	..	..	..	..	..	..	..	..	..
Inangahua County	..	..	..	..	..	..	..	..	..	..	..	..
Grey County	..	..	..	..	..	..	..	..	..	..	..	..
Greymouth Borough	..	..	..	..	..	..	..	..	..	..	..	1
Kumara Borough	..	..	..	..	..	..	..	..	..	..	..	..
Hokitika Borough	..	..	..	..	..	..	..	..	..	..	..	..
Brunnerton Borough	..	..	..	..	..	..	..	..	..	..	..	..
Ross Borough	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	..	..	..	..	..	..	..	..	..	..	1
	1											

Canterbury and Westland District.

Cases of Infectious Diseases Notified.

For five years,—

1905–6	385	1908–9	693
1906–7	406	1909–10	391
1907–8	536		

Comparing last year's notifications with those of the previous year, we find,—

	Increase.	Decrease.
Scarlet fever	..	207
Diphtheria	..	23
Enteric fever	4	..
Tuberculosis	..	8
Blood-poisoning	..	68
	4	306
		4
Net decrease		302

Blood-poisoning other than puerperal not recorded in the latter year.

The table on the opposite page shows the distribution as to locality.

Scarlet Fever.

The number of cases notified in Christchurch and suburbs is the same as last year. In the Canterbury District there were 179 cases, as compared with 282 cases last year, which shows a considerable decrease.

Diphtheria.

There have been 24 cases in Christchurch and suburbs, as compared with 38 last year; and 76 cases in Canterbury, as compared with 96 last year.

Enteric Fever.

There were 27 cases in Christchurch, as compared with 15 last year; there being 55 in Canterbury District, as compared with 50 last year. There was a sudden outbreak in March in Christchurch, 15 cases being notified. This is the largest number of cases that have occurred in Christchurch for a good many years. The cases were not confined to any particular part of Christchurch, there being a good many in the outside suburbs. No common source of infection could be found, and it is almost certain that it was not water-borne or milk-borne. In two of the cases there was a history of oysters having been eaten at about the period of the infection having occurred, but in the rest of the cases there was no history of oysters having been eaten.

Tuberculosis.

Thirty-two cases were notified in Christchurch and suburbs, as compared with 46 last year. Seventy cases were notified in the Canterbury District, as compared with 86 last year. There were 58 deaths in Christchurch, as compared with 77 last year, and notices of 107 deaths were received from the Registrars in the whole district.

Accommodation for Infectious Diseases.

North Canterbury Sanatorium.—The Sanatorium was opened in the beginning of March, under the control of Dr. Blackmore, who was specially appointed by the Hospital Board as having had previous experience in the sanatorium treatment of consumptives. There is accommodation provided for 18 males and 13 females in the shelters, and 4 beds for special cases in the main building.

Otago and Southland District.

Cases of Infectious Diseases Notified.

For five years,—

1905–6	311	1908–9	932
1906–7	350	1909–10	681
1907–8	525		

Comparing last year's notifications with those of the previous year, we find,—

	Increase.	Decrease.
Scarlet fever	..	239
Diphtheria	70	..
Enteric fever	..	99
Tuberculosis	49	..
Blood-poisoning	..	34
	119	372
		119
Net decrease		253

The following table shows the distribution as to locality:

Notifications of Infectious Diseases from 1st April, 1909, to 31st March, 1910.

Local Authority's District.	Scarlet Fever or Scarlatina.												Diphtheria.												Enteric or Typhoid Fever.												Tuberculosis.												Blood-poisoning.											
	1909.									1910.			1909.								1910.				1909.								1910.				1909.								1910.				1909.								1910.		
	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Waihemo County								1																																1				3											
Waikouaiti County								1	1																															1				1	2		1								
Port Chalmers Borough			1															1																							2	1			2	1								
Dunedin and Suburbs	17	15	21	8	14	8	9	10	1	4	7	7	4	2	3	2	2			1		1		5	2		1					1			7	1	5	5	5	3	7	3	3	6	3	7	6			2					1				
Taieri County				2	1	5		1				6		2			1	3									1										2	4	2	2	7	3	3	3	8	1								
Mosgiel Borough			1	1		1											2																							1				1									
Bruce County																	1						1																	1				1									
Milton Borough				4	3	1	1																																	1				1									
Kaitangata Borough	1												4	1	4	4																									1													
Clutha County							6	1	4	2		1													1																1	1	1						1		1	4	1			
Balclutha Borough													1																																								
Tuapeka County	10	4		4	3	1			3			1														1															1													
Lawrence Borough																																																				
Maniototo County															2		1									2						1																					
Vincent County	2	1	2	1	2	1					1	2			1		1	1	1	2	2				2	1			1					3	3	2				1												
Alexandra Borough														2	1						1				1	13	3																									
Southland County	12	12	12	5	1	2			2	3	5	5	3	1	1			2	1	1	1						1			1		1	1			6												1			1	2	
Gore Borough	3						1	2		1	2	1	4	1										1			1																											
Mataura Borough		1	3	1					2	1	4		6	2																																							
Invercargill and Suburbs	20	22	4	7	7		1	4		3		2	1	1	1		1		1	1			1			2			1		1			1			1	1		2	1	1		1		2								
Bluff Borough					2														1																																		
Stewart Island County																																																				
Wallace County		3		1										2	1										1		1			1									1		1		1		1								
Riverton Borough		1					1																								1																				
Lake County		2						1	1																3	1	1										2		1	1					1								
Totals	65	61	44	34	33	19	19	20	14	14	19	25	23	14	14	6	9	7	4	5	4	1	2	6	10	19	9	1	1	3	2	3	1	3	4	15	3	8	12	10	13	20	9	6	15	13	16	9			3		1	4	2		1	1	2	
	367												95												71												134												14											

Accommodation for Infectious Diseases.

Invercargill.—The Southland Hospital Board, towards the end of 1909, discarded the use for scarlet-fever cases of the large rambling pile of buildings in Invercargill formerly occupied for many years as an old men's home, and the new isolation hospital, on 44 acres of land at Kew, near Invercargill, was brought into commission. Diphtheria and enteric cases are treated in small wards in the General Hospital. An old isolation ward adjoining the latter is being fitted up to accommodate 8 incurable tuberculosis patients. Arrangements are being made to send all Southland curable cases to the Otago Hospital Board's new sanatorium at Pleasant Valley, Palmerston South.

Gore.—A new hospital of 15 beds has been opened at Gore, some forty miles from the base hospital at Invercargill. The accommodation is for non-infectious cases only.

Riverton.—A new hospital for scarlet fever, adjacent to the Wallace General Hospital, was completed during the year. Enteric cases are admitted to the main Hospital, diphtherias and incurable consumptives are treated in small isolation wards, and curables go to the Pleasant Valley Sanatorium.

Frankton and Arrowtown.—Fairly suitable accommodation exists at both these hospitals for cases needing to be isolated, but fortunately the available provision does not require to be used often.

PART 3.—METEOROLOGICAL REPORT.

New Zealand Temperature and Rainfall.

The following tables have been kindly supplied by the Government Meteorologist:—

Mean Annual Rainfall at Twelve Representative Stations.

Station.	Rainfall.	Period.	Station.	Rainfall.	Period.
North Island.	In.	Years.	*South Island.*	In.	Years.
Mangonui	53·63	20	Nelson	38·02	27
Auckland	43·09	57	Hokitika	116·09	31
Napier	37·09	15	Christchurch	25·24	21
New Plymouth	60·19	33	Dunedin	37·43	50
Wanganui	38·11	47	Invercargill	46·43	13
Wellington	49·88	46	Queenstown	29·36	19

Averages for a Period of Ten Years.

Observatory.	Days with Rain in Year.			Rainfall (Annual, in Inches).		
	Max.	Min.	Mean.	Max.	Min.	Mean.
Auckland	197	130	175	54·18	31·89	41·59
Napier	143	75	92	45·36	27·01	35·57
New Plymouth	251	191	228	82·93	52·04	64·79
Nelson	140	102	123	45·59	30·90	38·31
Hokitika	188	146	166	133·97	93·83	111·82
Christchurch	148	103	126	35·30	13·54	24·14
Dunedin	184	143	162	53·84	31·48	43·34
Wellington	201	141	167	60·40	34·93	45·70

Mean Temperatures (in Degrees Fahrenheit) for the Seasons for a Five-year Period.

Station.	Summer.	Autumn.	Winter.	Spring.	Annual.	Mean Difference: Coldest and Warmest Months.
Auckland	65·2	60·8	52·2	57·1	58·8	15·2
New Plymouth	63·4	60·1	53·1	56·7	58·3	12·6
Moumahaki	60·8	56·1	47·7	53·6	54·6	15·6
Meeanee (Napier)	62·6	56·9	47·7	54·8	55·5	17·0
Wellington	60·7	56·3	48·3	53·4	54·7	14·7
Nelson	62·5	55·8	46·4	54·4	54·8	18·4
Hokitika	60·7	55·7	46·9	53·6	54·2	16·8
Christchurch	59·7	53·1	43·1	51·7	51·9	19·3
Dunedin	57·2	51·0	43·0	50·1	50·3	17·7

APPENDIX II.—REPORTS OF DISTRICT HEALTH OFFICERS ON THE SANITARY CONDITIONS AND WORK DONE IN THEIR DISTRICTS.

PART A.—AUCKLAND DISTRICT.

Owing to the departure of Dr. Purdy just before the end of the year, I am unable to furnish the usual report on this health district. For the following information I am indebted to Mr. H. Symons.

Local Incidence of Infectious Disease.

As the total number of notifications of infectious disease is normal, and practically the same as in the previous year, there is some basis for comparison. So we find that—

Auckland City shows a decrease all along the line, which is as might be expected in view of the efforts made towards better sanitation.

Suburban Bodies.

Devonport, I regret to say, has 7 cases of enteric fever—the first since the installation of drainage in 1902.

Grey Lynn suffered severely in November and December as regards enteric cases, a total of 17 cases occurring in these months.

Newmarket.—Here the clearing-up process of 1907–8, with subsequent increased attention to sanitary matters, have no doubt contributed to bring about the satisfactory result set forth in the foregoing table.

Eden Terrace escapes with very few cases to its debit.

Thames County has suffered from typhoid fever, where also, as in the borough, there have been too many cases of diphtheria.

Whangarei County has again suffered from diphtheria.

Water-supplies Examined.

Thames County.—Sample was taken by Dr. Makgill on the 17th May, who reported, "The peculiarity about this water was the large number of moulds which grew in the plates. . . . . However, even as it is, the result places the water well within the bounds of a good domestic supply, and shows that at present there is no serious pollution."

Thames Borough.—Sample taken same day as above. Dr. Makgill reported, "We can class this water as a first-class supply at present, and it may be regarded with great satisfaction."

Te Aroha.—Sample taken same time as the foregoing, and the Bacteriologist's report was highly satisfactory.

Special Inspections.

Pakatoa Island (Salvation Army Home for Inebriates) has been visited periodically in company with District Judge Kettle.

Military camps at Morrinsville and the Domain, *Cadet camps* at Papakura and at Motuihi, were visited; as also the *Veterans' Home*; *abattoirs* at Westfield and Mount Roskill; *manure and chemical works* and *boiling-down works*; *jam-factories* and *vinegar-making plants*, with a view to definitions and restrictions under the Sale of Food and Drugs Act.

Inspections and reports were made regarding Cambridge Borough, Hamilton, and Whangarei (drainage scheme, &c.), Hikurangi, Whitianga (proposed infectious-diseases hospital), Karere tree-planting camp (twice), Thames, Te Aroha, Te Awamutu, Taumarunui (several visits), Rotorua, Whakarewarewa, Waihi, Kerepehi, Waiheke, Taitukuri, Whakatemai, Kaiau, Miranda, Huntly, Otahuhu (drainage), Mount Albert, Kawakawa, and Kaikohe, and certain areas of the City of Auckland.

Examination of Officers for Public Departments.

Four officers were examined for the Postal and Telephone Department, and one for the Department of Public Works.

Applicants for admission to Government Sanatorium, Cambridge, examined, 50.

Midwives Act.

Five registered midwives have been suspended on account of the occurrence of puerperal septicæmia in patients under their charge, and three unregistered women have been warned not to attend any further case for the usual period of suspension.

Laboratory.

The following is a summary of pathological specimens submitted to this office for examination :—

133	sputums	for examination for	tubercle bacillus.
22	swabs	,,	diphtheria bacillus.
45	blood	,,	typhoid.
13	urine	,,	general.
6	smears	,,	gonococci.
1	vaginal discharge	for identification.	
165	rats	examined for pestis.	

Twenty-three specimens were received, and forwarded to the Bacteriologist, Wellington, for report.

OFFICE.

Letters outward, 3,222.
Telegrams outward, 371.
164 orders for admission to Infectious-diseases Hospital.
295 tubes of vaccine lymph distributed to medical practitioners and public vaccinators.
274 accounts made out in favour of medical practitioners.

R. H. MAKGILL,
District Health Officer.

PART B.—WELLINGTON DISTRICT.

INSANITARY BUILDINGS.

During the year 13 condemnation certificates were issued, made up as follows: Dwellinghouses, 3; outbuildings, 5; stables, 2; lean-to, 3.

ANNUAL HOTEL-INSPECTIONS.

The following table shows the total number of hotels reported upon:—

Rangitikei	10	Egmont	9
Wanganui	15	Taumarunui	4
Wairarapa	19	Pahiatua	17
Taranaki	10	Otaki	13
Patea	25	Wairau	3
Oroua	13	Wellington	2
Stratford	11		
Manawatu	14	Total	165

LEGAL PROCEEDINGS.

The following is a list of the legal proceedings taken by the Wellington District Office during the year:—

Offence.	Under what Act or By-laws.	Date of Hearing.	Name of Magistrate.	Result of Proceedings. Fines.	Result of Proceedings. Costs.	Remarks.
Keeping pigs within borough	With Borough Council, under by-laws	29/4/09	J.P.s	20/0	12/0	Persisted in keeping pigs on his hotel premises.
Failing to notify case of infectious disease	Public Health 1908	25/6/09	A. D. Thomson	10/0	7/0	Doctor's fee, 10/6.
8 per cent. of water added to milk	Sale of Food and Drugs Act, 1908	9/7/09	Dr. McArthur	20/0	7/0, 5/0	Two charges.
Selling milk below standard				20/0	7/0, 5/0	
10 per cent. of water added to milk	Ditto	9/7/09	,,	20/0	7/0, 5/0	,,
Selling milk below standard				20/0	7/0, 5/0	
8 per cent. of water added to milk	,,	9/7/09	,,	20/0	7/0, 5/0	,,
Selling milk below standard				20/0	7/0, 5/0	
6 per cent. of water added to milk	,,	9/7/09	,,	20/0	7/0, 5/0	,,
Milk containing a preservative (boracic acid)				20/0	7/0, 5/0	
18 per cent. of water added to milk	,,	9/7/09	,,	40/0	7/0, 5/0	,,
Selling adulterated milk				20/0	7/0, 5/0	
15 per cent. added water	,,	9/7/09	W. G. Riddell	40/0	7/0, 5/0	,,
4 oz. short weight in 4 lb. loaf	,,	21/2/10	W. R. Haselden	20/0	9/0	Pleaded guilty.
1½ oz. short weight in 2 lb. loaf	,,	7/3/10	,,	20/0	9/0	,,
Pepper adulterated by addition of 25 per cent. starch	,,	14/3/10	Dr. McArthur	10/0	7/0	,,
Bread 3 oz. short weight in 4 lb. loaf	,,	14/3/10	,,	20/0	7/0	Pleaded guilty.
25 per cent. starch in pepper	,,	18/3/10	,,	10/0	7/0	,,

Nelson.—At the request of the Nelson City Council an investigation was made by Inspector Middleton and myself into the condition of the sewerage system just completed. The sewers were found to be leaking to an extent pointing to serious structural defects, more especially in the wood area. Steps were taken by the City Engineer to uncover and relay portion of the system. The need for such reconstruction was subsequently confirmed by examination by Mr. Hay, M.I.C.E.

Westport.—Plans and estimates were prepared by the Borough Engineer for a complete sewerage system. The main point in discussion has been as to the position of the outfall. The Borough Council has consulted the Engineer-in-Chief with a view to a final decision.

J. P. FRENGLEY, M.D., F.R.C.S.I., D.P.H.,
District Health Officer.

PART C.—CANTERBURY AND WESTLAND DISTRICT.

Water-supply.

The reticulation of the Central, St. Albans, and Linwood Wards has been completed all but two miles in the St. Albans Ward. The total length of mains to date is 96 miles 23 chains. In Sydenham also 22 miles are laid, and the completion is now being proceeded with. There are 2,511 houses in Sydenham connected with the old separate high-pressure water-supply in that district, and 1,241 houses in the rest of Christchurch connected with the new high-pressure water-supply. About 75 fresh connections are being made every week.

Drainage.

Thirteen miles of sewers have been laid during the year. There are now 8,000 houses connected with the sewers, of which 5,380 contain water-closets. During the year 1,363 houses were connected with the sewer, and 1,774 water-closets were fixed in 1,630 houses during the year. Owing to the installation of the water-supply there has been a great increase in the number of house-connections and water-closets installed.

Steam Disinfector.

The disinfector which had been installed at the Sanatorium has been removed to the Christchurch Hospital. It will now be possible to get clothing, &c., which has been exposed to infection properly disinfected.

Lyttelton.

The drainage scheme was completed during the year, and now every house in the borough is connected with the sewers. Inspector Kershaw had charge of the general supervision of the house connections.

Ashburton.

The installation of the high-pressure water-supply has been commenced.

Timaru.

All the houses in the northern part of the town have been connected with the drainage scheme which was put in last year. The septic tank and main outfall sewer in the south end of the town have been completed. Sewers are now being put down in the southern part of the town, and the houses are being connected.

Greater Timaru.

The extension of the boundaries of the borough to include the watershed and practically all the suburban houses is now an accomplished fact. This will enable the sanitary administration of the suburbs to be greatly improved in regard to removal of nightsoil and rubbish, and sanitary matters generally.

Hokitika.

The high-pressure water-supply has been completed. Plans for a drainage scheme have been got out, and, with some modifications which will considerably decrease the cost, have been approved by me.

Greymouth.

A report was sent to the Borough Council by me on the 26th November, 1909, copy of which was sent to the Chief Health Officer. This report recommended the Council to insist on the pulling-down of buildings which had been certified to by the late Chief Health Officer as being unfit for occupation; to pass up-to-date by-laws on house connections; to have the construction of house connections properly supervised; to insist on the provisions of the Municipal Corporations Act with regard to space about buildings being strictly complied with; and other sanitary improvements. In Inspector Middleton's annual report he states that practically none of these recommendations have been attended to, and that the sanitary administration of the borough is still very lax.

Sanitary Inspection of District.

During the first half of the year Inspector Kershaw's time was largely taken up with the supervision of house connections in Lyttelton and Timaru, arrangements having been made with these boroughs to pay the Department for his services.

In September, after consultation with the Chief Health Officer, I commenced to approach local bodies with a scheme for the combination of local bodies to appoint joint Inspectors. As a result of these negotiations, Inspector Kershaw was appointed a Joint Inspector for the Borough of Sumner and the Road Boards of Heathcote and Spreydon. The other suburban local bodies did not agree to come into the scheme.

Inspector McKenzie was transferred to Oamaru in November to act as Inspector for the Oamaru Borough Council, Waimate Borough and County Councils. Every endeavour has been made to induce the Waitaki County Council to administer the Public Health Act themselves, or to contribute to the salary of a Joint Inspector, or to delegate their powers to the Hospital Board under section 83 of the Hospitals Act; but the majority of the Council will take none of these steps. They cannot apparently see the advantage or necessity of taking any steps to carry out the administration of the provisions of the Public Health Act. This is a large district, with a population of about ten thousand; there are several small townships in which cases of infectious disease often occur, and no steps are taken by the Council to prevent the spread of infectious disease, except to occasionally employ a person to disinfect the premises.

In February, Inspector Paull, who had been previously in the service of the Department, was appointed as Special Plumbing Inspector in the Timaru Borough and as General Sanitary Inspector for Levels County.

Under these arrangements cases of infectious disease can be more quickly visited and stricter precautions enforced against the spread thereof. The sanitary inspection of the district is being very much more efficiently carried out. Several of the local bodies have expressed themselves as being very pleased with the arrangement. It is to be hoped that during the next year complete schemes to provide for the whole sanitary inspection of the district will be able to be made under section 83 of the Hospitals Act.

Inspector Middleton has continued to do good work as Sanitary Inspector in Westland. There are greater difficulties in administering the Health Act in Westland than elsewhere, partly owing to geographical and climatic reasons. Some of the local bodies are interested in the public health of their district, but others are not sufficiently progressive in these matters.

Special Reports.

Among the special matters dealt with by myself were—Inspection and report on the occurrence of diphtheria in Kaitangata, and the general sanitation of the town; the depots used for the disposal of nightsoil in Christchurch and district; the planning and construction of the shelters at the Sanatorium; the ventilation of the Otira tunnel; the occurrence of adulteration of vinegar and lime-juice; report to Chief Health Officer on private charities and homes in Christchurch; report to Chief Health Officer on the medical inspection of the Fourth, Fifth, and Sixth Standards at the East Christchurch School.

H. E. Finch, M.B., D.P.H.,
District Health Officer.

PART D.—OTAGO AND SOUTHLAND DISTRICT.

Invercargill District.

Inspector Cameron supplies the following matter:—

Plans are being prepared for a sewerage system.

Disinfection.—Seven public schools and one Roman Catholic school were disinfected after cases of infectious disease had occurred among children attending them. Disinfection of no one of them was absolutely necessary, but, the local committees concerned being anxious to have it carried out, we got the local inspectors to comply, especially as, even on only general grounds, all schools are the better of being disinfected at least once a year.

Water-supply, Invercargill.—The present water-supply is pumped by steam from a well 100 ft. deep in one of the municipal reserves, up through aerating sprinklers emptying into reservoirs; thence pumped again into a large tank on top of a tower 110 ft. high, from which it is reticulated to consumers in the main borough only, the supply being insufficient for any of the suburbs. Bores are now about to be sunk near the present well, to see if a further supply can be obtained. If not, probably an effort will again be made to get the sanction of the ratepayers to borrow £100,000 to bring in a first-class gravitation supply from the Oreti River at Dipton, thirty-six miles away. A poll on the question was defeated three years ago. This, however, was prior to the amalgamation of Invercargill and suburbs, which took place last year, making now the total population 14,000.

Riverton.

After many days the Borough Council at last has undertaken a nightsoil-removal service for the more thickly populated portion of the borough, and the service is proceeding fairly satisfactorily. The system, however, is the primitive open-pan method.

Bluff.

Drainage connections into the new sewers for liquids only are being enforced. Once the new by-laws are adopted, the work will be gone on with systematically.

The sealed-pan system has been instituted, and excellent work is being done. The nightsoil is emptied from the pans in a closed shed into a septic tank. The purification done is not sufficiently effectual, owing to the tank-capacity being rather large and the filter being too small. These defects are to be remedied.

Gore.

The first-class sewerage system laid several years ago to serve all the then thickly built-on streets now needs to be extended to a number of other streets. The matter is to be considered shortly by the Borough Council.

Otautau.

The arrangements necessary to start a sealed-pan service are nearly completed. When this service commences, a service will be in operation in every borough and town board district in Southland. When the Department was inaugurated, only one borough had a service; there are now fifteen services.

NUMERICAL SUMMARY OF ROUTINE WORK DONE.

Number of towns and districts visited	.. ..	62
,, visits paid	.. ..	145
,, inspections made	.. ..	1,746
,, defects remedied	.. ..	640
,, visits paid to infectious cases	.. ..	366
,, disinfections supervised	.. ..	262
,, letters despatched	.. ..	2,034
,, ,, received	.. ..	1,261

FRANK OGSTON,
District Health Officer.

PART E.—REPORT OF MEDICAL OFFICER IN CHARGE OF TE WAIKATO SANATORIUM.

SIR,— Te Waikato Sanatorium.

I have the honour to submit the report of the work of Te Waikato Sanatorium during the year ending 31st March, 1910. At the close of the preceding year there remained in the Sanatorium 26 males and 16 females—42 patients in all. During the year under review there were admitted 60 male and 37 female patients, so that a total of 139 patients received treatment during the year. Fifty-four males and 44 females were discharged, and 7 patients (6 males and 1 female) died during the same time. On the 31st March, 1910, 34 patients were under treatment in the institution, these consisting of 26 males and 8 females.

Of those discharged, 35 males and 32 females left the Sanatorium with their health very greatly improved, most of them being in a fit condition to return to ordinary life with a fair prospect of maintaining the improvement resulting from their treatment. Six males and 5 females improved to some extent during their stay in the Sanatorium, but their improvement could not be considered to be of a permanent character. Thirteen males and 7 females showed no response to the treatment, receiving no apparent benefit to their health by their stay in the institution.

The greater number of the deaths were due to hæmorrhage, either from sudden profuse bleeding or from subsequent pneumonia and congestion of the lungs. One patient died of chronic nephritis, and one from a perforation of a tuberculous intestinal ulcer.

Towards the close of the year the number of applications for admission to the Sanatorium appeared to have fallen off to a very considerable extent, and it is to be regretted that the institution is not now working to its full capacity. Were this due to a lack of patients requiring treatment it would be a matter for congratulation, but unfortunately I am afraid this is not the case. The falling-away of applicants is, in my opinion, due partly to the opening of similar institutions in other parts of the Dominion, to a more strict enforcement of the rule of only admitting cases showing a fair prospect of recovery, and, I am afraid, also to quite erroneous reports which have been freely circulated regarding the future administration of the Sanatorium.

Your proposal to introduce in this Sanatorium a system of graduated labour is, I think, a most excellent one, and one which, if properly carried out, will result in greatly increasing the usefulness of the institution. I feel sure that when the true nature of the proposed change becomes more fully known and appreciated there will be no lack of patients eager to enter the Sanatorium and confident in the prospect of receiving lasting benefit from the treatment.

The appointment of a resident Medical Officer will, I think, be essential to the success of the scheme, as, in my opinion, it is not possible for a visiting officer to efficiently prescribe the amounts, and supervise the proper carrying-out, of the work suitable for each patient individually.

I have, &c.,

EDWARD E. ROBERTS, M.B., Ch.,

The Chief Health Officer. Medical Superintendent.

APPENDIX III.—THE SALE OF FOOD AND DRUGS ACT.

The Department during the past year has gazetted regulations dealing with the labelling of jam, and manufacturers have been notified as to the new requirements.

Regulations dealing with labelling in general have been prepared, and also for standards of purity of a number of foodstuffs. These, however, have not yet been gazetted, since it has been deemed better to wait the report of the Interstate Conference on such regulations held in Australia during May, since it is obvious that it would be of advantage to manufacturers if the regulations under which foodstuffs are sold were identical in all parts of Australasia. The report of the Conference is now under consideration, and the regulations will shortly be ready for gazetting.

An investigation of an elaborate nature was conducted during the spring months—September, October, November, and December—as to the quality of milk-samples obtained actually at the farm. Samples were taken at both morning and evening milkings, the mixed product of from five to ten cows

being used. In all, 1,653 samples were examined, and a summary of the results is appended. From this it is obvious that there is no need to alter the standard for milk-fat of 3·25 per cent., even in the spring months.

To carry out the provisions of the Food and Drugs Act it will be necessary to retain the services of special Inspectors, and increase the staff of the laboratory.

AUCKLAND DISTRICT.

Operations under the Sale of Food and Drugs Act, 1908, are as under :—

Samples collected for Analysis.

Alcoholic Liquors.

Whisky at Ngaruawahia, April 5, 1909.
,, Kopu, April 26, 1909.
,, Whangarei, April 20, 1909.
,, Auckland (3), November 3, 1909.
,, Hamilton, November 18, 1909.
Beer at Hamilton West, April 5, 1909.
,, Kopu, April 26, 1909.
,, Whangarei, April 20, 1909.
Brandy at Hamilton West, April 5, 1909.
,, Kopu, April 26, 1909.
,, Whangarei, April 20, 1909.
Wine (Australian) : Four samples taken, and sent to Head Office laboratory for examination.

Jam.

Raspberry-pulp (4 samples), September, 1909.
Raspberry-jam (3 samples).
(For sulphur-dioxide and salicylic acid.)

Lime-water.

Six samples of lime-water by as many different makers were collected on the 17th September, and were submitted to Dr. Maclaurin, who reported that two were slightly below the standard as to lime (CaO), and that, whereas the Pharmacopœia requires lime-water to be prepared with distilled water, all had been made with ordinary water.

Foodstuffs seized.

Meat.

6 cases of tinned meat, April 29, 1909 (destroyed).
2 pork pies, January 28, 1910 (destroyed).
9 kegs of corned beef (returned from Apia), March 31, 1910 (destroyed).

Fruit.

386 cases of oranges, March 30, 1910 (destroyed).

Bread and Flour.

540 bags of rice-meal, March 19, 1910 (condemned as human food).
700 bags of flour, March 22, 1910 (containing weevils : ordered to be silk-dressed).

Cheese.

2,730½ cases of cheese which were salvaged from the wreck of the s.s. " Kaipara " were seized and kept under observation until the results of the reconditioning process adopted by the buyers could be examined. Ultimately 2,034 cases were passed as fit for consumption, and the remainder were condemned.

Prosecutions.

A milk-vendor at Devonport was fined £5, with costs, for selling milk to which water had been added.

Milk-supply.

Samples of milk were taken from farms in various localities, as under, and were submitted to the Dominion Analyst for examination :—

In October	108
,, November	125
,, December	198
Total	431

WELLINGTON DISTRICT.

Samples were collected by Inspectors as below set out :—

Where purchased.	Samples.		Result of Analysis or Weighing.
	Number.	Nature.	
By Chief Inspector Schauer,—			
Wellington (in and around) ..	79	Milk	42, complied ; 21, slightly deficient, or warned ; 12, prosecution advised ; 3, no preservative found ; 1, became defective in transit.
Blenheim	3	,, ...	Complied.
Picton	1	,, ...	,,
Hastings and Napier	5	,, ...	Became defective in transit.
Wellington	31	Bread	19, complied ; 8, slightly deficient, or warned ; 4, prosecution advised.
Napier	3	,, ...	2, slightly deficient ; 1, prosecution advised.
Blenheim	5	,, ...	2, complied ; 3, slightly deficient.
Picton	3	,, ...	1, complied ; 2, slightly deficient.
Hastings	3	,, ...	2, complied ; 1, slightly deficient.
Gisborne	2	,, ...	Complied.
Wellington	4	Pepper	4, prosecution advised.
Napier	5	,, ...	2, complied ; 3, prosecution advised.
Hastings	3	,, ...	2, complied ; 1, prosecution advised.
Gisborne	1	,, ...	Prosecution advised.
Blenheim	3	,, ...	Complied.
Picton	1	,, ...	,,
Wellington	7	Baking-powder ..	5, complied ; 1, slightly deficient ; 1, prosecution advised.
Napier	4	,, ..	Complied.
,, ...	4	,, ..	,,
Hastings	3	,, ..	2, complied ; 1, slightly deficient.
Blenheim	1	,, ..	Complied.
Picton	1	,, ..	,,
Wellington	20	Lime-water ..	20 complied, but all were made up with ordinary instead of distilled water.
Gisborne	5	Coffee	4, added chicory, varying from 38 to 55 per cent. ; 1, not analysed.
Hastings	2	,, ...	Added chicory, 5 and 46 per cent.
Napier	1	Mustard ..	Complied.
Hastings	2	,, ..	,,
Wellington	3	Spirits ..	,,
,, ...	2	Jam	,,
,, ...	1	Cream of tartar ..	,,
,, ...	1	Lung-balsam ..	,,
Inspector Gardiner,—			
Taranaki	9	Milk	7, complied ; 1, slightly deficient ; 1, became defective in transit.
,, ...	38	Bread	15, complied ; 23, slightly deficient, or warned.
Inspector Sargeant,—			
Wanganui (and district) ..	7	,, ...	1, complied ; 6, slightly deficient, or warned.
Inspector O'Brien,—			
Palmerston North	3	Lime-water ..	2, complied (see reference above) ; 1, deficient, and warned.
,, ...	3	Bread	2, complied ; 1, slightly deficient.
Feilding (and district) ..	10	Milk	6, complied ; 3, slightly deficient ; 1, became defective in transit.
By Inspector Miller,—			
South Wairarapa	4	,, ...	2, complied ; 1, slightly deficient ; 1, defective in transit.
By Inspector Gray,—			
Wellington (in and around) ..	9	,, ...	2, complied ; 5, slightly deficient, or warned ; 1, prosecution advised ; 1, examined as to labelling of bottle.

The following samples of milk were taken as a part of the investigation made by the Dominion Analyst as to the reasonableness of the milk-standard required by the regulations under the Sale of Food and Drugs Act :—

Chief Inspector Schauer, from 16 farms in and around Wellington, 448 samples.
Inspector Hicks, from 17 farms in North Wairarapa, 157 samples.
Inspector Gardiner, from 16 farms in Taranaki, 383 samples.
Total number of samples taken, 988.

The results of this investigation are to be found in the Dominion Analysts' report for this year.

Inspection of Food.

The following list shows the amount of foodstuffs condemned :—

Wellington.

1 sack pigs' cheeks.
1 ,, trotters.
21 pairs fowls.
7 carcases pork.
3 cases eggs.
2 sides bacon.
8 hams.
13 dozen bundles rock-cod.
2 ,, fish.
76 rabbits.
6 kerosene-tins whitebait.
5 cases smoked blue-cod.
80 lb. potatoes.
6 sacks tongues.

South Wairarapa.

Small quantities of vegetables and fruit.

Feilding.

Small quantities of fish and fruit.

Levin.

Small quantity of fish.

Wanganui.

7 sacks potatoes.
3 cheeses.
20 lb. plums.
12 lb. bananas.
1½ cases bananas.
4½ ,, oranges.
1 case sultanas.
13 cases raisins.
Small quantity of vegetables.
,, fruit.
,, meat.
,, jam.

Taranaki.

10 tins tinned fish.
40 lb. dates.
4 sides bacon.
14 pairs rabbits.
15 cases bananas.
6 lb. dairy butter.
Small quantity of vegetables.

CANTERBURY DISTRICT.

Milk.

In accordance with instructions from the Chief Health Officer, investigations were made into the quality of the milk that was being supplied by Christchurch dairy-farmers. The samples were taken night and morning at the farm, each sample representing the mixed milk of about eight cows. The herds of nine farms were tested in October and November, and the milk of two farms was again tested in December. Altogether about two hundred samples were taken. The dairy-farmers gave every assistance to the officers of the Department, and took considerable interest in the results obtained.

Bread.

The weight of bread was tested twice in Christchurch and Oamaru, and once in Timaru. In Christchurch in April there were 16 prosecutions, and the fines totalled £20 10s., and the costs £24 10s.; in October there were 5 prosecutions, in which the fines totalled £4 1s. In Timaru and Oamaru the weight of bread was found satisfactory on the whole, with the exception of a few small lines of fancy bread.

Miscellaneous.

The following samples were also taken :—

Beer	5 samples.	Ammoniated tincture of quinine	3 samples.
Whisky	12 ,,	Lime-juice	10 ,,
Brandy	1 ,,	Hop-beer	5 ,,
Vinegar	13 ,,		

OTAGO AND SOUTHLAND DISTRICT.

Foodstuffs Condemned and Destroyed.

Close attention was given during the year, as usual, to the wholesomeness of fresh foods and fruit. Without having recourse to any legal formalities whatsoever, the following food-supplies were destroyed in various lots on pointing out to the owners or agents that the goods were unfit for human consumption :—

	lb.		lb.
11 cases blue-cod	696	13 hams	162
14 ,, flounders	784	80 cases oranges	320
2 sacks pigs' heads ..	336	12 ,, apples	480
Corned beef	264	14 ,, cherries	276
11 rolls bacon	280	7 ,, bananas	280

Milk.

Forty-eight samples of milk, each sample representing from 6 to 10 cows, were taken on farms for analysis in order to assist in fixing a milk-standard for the whole Dominion.

APPENDIX IV.—LABORATORY REPORTS.

PART A.—PATHOLOGICAL LABORATORY REPORT.

SIR,—

I have the honour to forward the accompanying report by Mr. Hurley upon the work of the Pathological Laboratory during the past year.

My transference to Auckland limits the scope of my work in connection with the Laboratory to a general supervision, and some special subjects such as the reporting upon sections of solid tissues, tumours, and so forth. The whole responsibility of carrying out the rest of the work falls on Mr. Hurley, who has in consequence been gazetted as Bacteriologist for the Department—a position for which the excellence of his work in the past shows him to be well fitted.

My duties elsewhere have made it impossible for me to carry on the routine examinations of public water-supplies which was a feature of previous reports.

The aggregate number of pathological specimens submitted by the medical profession shows yearly a steady increase, more especially of those subjects requiring special experience and apparatus for their examination. Thus a better class of work is demanded of us—which is a matter for congratulation.

I have, &c.,

Dr. Valintine, Chief Health Officer, Wellington. R. H. MAKGILL, Pathologist.

I have the honour to submit the following tabulated report of the work done in the laboratory during the past year.

The total number of specimens examined shows an increase of 34 on those examined the previous year.

There is a decrease in the number of specimens of sputa, pus, and throat-swabs, and in water-examinations.

On the other hand, there is an increase in the number of specimens that require a more detailed examination—viz., spinal fluid and blood specimens. The blood-examinations are 130, as against 62 last year.

The work connected with the stocking of sera and the distribution for the Health Department has largely increased, and has added much to the clerical work of the Laboratory during the year.

Dr. Makgill, Pathologist. J. A. HURLEY, Bacteriologist.

TABLE SHOWING RESULTS OF EXAMINATIONS OF PATHOLOGICAL SPECIMENS.

From 1st April, 1909, to 31st March, 1910.

Material.	Object of Examination.	Result.		Total.
		Positive.	Negative.	
Sputum	For tubercle bacillus ...	94	235	329
	" other conditions ...	11	14	25
	" parasites	10	10	20
				374
	Total for 1909 ...	...	...	*391*
Pus	For tubercle bacillus... ...	1	5	6
	" gonococcus	9	19	28
	" other pyogenic organisms...	22	9	31
				65
Pleuritic fluid	" tubercle bacillus... ...	2	6	8
Spinal fluid	...	8	10	18
				26
				91
	Total for 1909 ...	...	...	*87*
Urine	Chemical	...	...	52
	Bacteriological	...	...	32
	Microscopical	...	...	67
				151
	Total for 1909 ...	...	...	*171*

TABLE SHOWING RESULTS OF EXAMINATIONS OF PATHOLOGICAL SPECIMENS—*continued.*

Material.	Object of Examination.	Result.		Total.
		Positive.	Negative.	
Fæces	Chemical and microscopical ...	3	5	8
Vomit	" ...	2	1	3
Other discharges	" ...	2	2	4
				15
	Total for 1909 ...	...	...	*14*
Blood	Typhoid	58	54	112
	Estimation of leucocytes ...	...	...	9
	Other examinations	...	...	9
				130
	Total for 1909 ...	...	...	*62*
Swabs	For diphtheria	22	78	100
	" streptococcus	6	4	10
	" pneumococcus	5	...	5
	" other organisms	15	2	17
				132
	Total for 1909 ...	...	...	*161*
Other specimens	Microscopical	11	5	16
	Bacterioscopical	19	2	21
				37
	Total for 1909 ...	...	...	*19*
Animals inoculated	For tubercle bacillus	6	11	17
	" other conditions	2	...	2
Animals examined	Rats, for plague	...	20	20
	Insects, for bacteria	...	12	12
				51
	Total for 1909 ...	...	...	*25*
Foodstuffs,—				
Fish	...	...	...	1
Milk	...	...	...	16
Meat	...	...	...	2
Fruit	...	...	...	5
Butter	...	...	...	1
Starch	...	...	...	6
Vinegar	...	...	...	1
				32
	Total for 1909 ...	...	...	*44*
Water	...	...	...	38
	Total for 1909 ...	...	...	*82*
Air...	...	...	...	22
	Total for 1909 ...	...	...	*Nil.*
Disinfectants	...	...	...	6
	Total for 1909 ...	...	...	*7*
Tissues requiring section ...	...	...	...	184
	Total for 1909 ...	...	...	*180*
Vaccine lymph	For bacteriological examinations	...	...	56
	Total for 1909 ...	...	...	*28*
	Total number of specimens examined ...			1,319
	Specimens received spoiled			3
	" without name of sender ...			10
	Total number of specimens received ...			1,332
	Total number of specimens received for 1909			*1,291*

Details of Urinary Examinations.

Method.	What sought.	Negative.	Positive.	Total.
Chemical analyses—				
Quantitative	Estimation of urea	...	8	
	,, sugar	...	13	
	,, albumen ...	...	5	
				26
Qualitative	For sugar	7	2	
	,, other substances ...	5	12	
				26
Bacteriological	For tubercle bacillus... ...	10	3	
	,, bacillus coli	9	5	
	,, gonococci	1	...	
	,, other organisms... ...	4	...	
				32
Microscopical	For casts, deposits, etc. ...	3	50	
	,, tubercle bacillus... ...	10	4	
				67
	Total	...	...	151

Results of Examination of Tissues.

Conditions found.	Reproductive System.					Digestive System.		Respiratory System.		Locomotive System.	Nervous System.	Integumentary System.	Urinary System.		Lymphatic System.	Totals.	
	Uterus.	Breast.	Ovary.	Testicle and Prostate.	External Organs.	Tongue, Mouth, Lips, &c.	Stomach, &c.	Lungs, &c.	Larynx, &c.	Bones, Muscles, &c.	Special-sense Organs.	Skin.	Kidney.	Bladder.	Glands.	1909–1910.	Previous Year.
Carcinoma ..	7	9	1	..	1	10	6	..	1	4	..	7	..	..	8	54	55
Sarcoma ..	2	3	1	3	..	3	1	2	..	9	4	7	..	..	1	36	27
Simple tumours ..	7	15	1	..	..	6	1	2	3	2	2	3	1	..	3	46	32
Simple inflammation	25	2	..	1	..	..	1	..	..	2	..	1	..	..	1	33	53
Normal	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	6
Others	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3
Bacterial,—																	
For tubercle bacillus	..	..	..	1	..	..	2	..	..	..	..	..	..	..	3	6	2
For other organisms	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	2	5
Received,—																	
Spoiled ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6
Un-named ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..
																190	189

PUBLIC WATER-SUPPLIES EXAMINED.

Source of Water.	Organisms per Cubic Centimeter.		*Bacillus coli.*	*Bacillus sporogenes.*
	At Normal Temperature.	At 37° C.		
Oamaru,—				
Tap	2,658	750	0	0
Waimate,—				
Intake	240	32	0	0
Tap	294	25	0	0
Wanganui,—				
Tap	314	265	0	0
Trentham,—				
Well 1	8,500	100	0	0
Well 2	580	20	0	0
Thames County,—				
Tap	346	40	0	0
Thames Borough,—				
Tap	127	11	0	0
Te Aroha,—				
Reservoir	316	10	0	0
Tap	450	14	0	0
Foxton,—				
River	3,760	195	0	?
Artesian well	0	0	0	0
Gisborne,—				
Tap	152	—	0	0
Napier,—				
Artesian well	10	0	0	0
Lower Hutt,—				
Tap	160	0	0	0

RETURN SHOWING RESULTS OF VACCINE LYMPH FOR YEAR 1909–10.

Series.	Number of Tubes issued.	Number of Scarifications to which Lymph was applied.	Number of Vesicles obtained.	Remarks.			
				Per-centage.	Cases done.	Cases successful.	Per-centage.
56	516	243	172	70·8	76	68	89·4
57	645	138	82	59·4	45	37	82·2
58	441	188	165	87·8	64	64	100·0
59	358	159	143	89·9	51	49	96·0
60	706	594	554	93·3	191	184	96·3
62	174	76	37	48·7	28	17	60·7
63	252	25	4	16·0	7	2	28·6
64	378	134	99	73·9	42	37	88·1
66	725	214	155	72·4	71	59	83·1
68	107	69	37	53·6	22	15	68·2
69	372	228	164	71·9	73	63	86·3
73	294	153	103	67·3	49	39	79·6
Totals	4,968	2,221	1,715	77·2	719	634	88·2

SERA AND VACCINES ISSUED BETWEEN 1ST APRIL, 1909, AND 31ST MARCH, 1910.

	Flasks.	Value. £ s. d.
Anti-diphtheritic serum	590	63 2 6
Anti-streptococcus serum and vaccine	188	28 16 0
Anti-tetanus serum	87	18 12 6
Anti-staphylococcus serum and vaccine	55	5 10 0
Tuberculin,—		
New T.R.	8	3 12 0
Azoules T.R.	76	4 15 0
Conjunctival test	18	1 2 6
Total	1,022	£125 10 6
Ishigami toxoidin	..	30 0 0
Total value		£155 10 6

PART B.—DOMINION ANALYST'S REPORT.

SIR,—

I have the honour to forward herewith returns of analyses made in this laboratory for the Department of Public Health during the year ending 31st March, 1910.

These returns show a total of 2,056 analyses of a varied character. They include 1,653 samples of milk taken by the Health Department Inspectors from a large number of dairies in various parts of the Dominion, with the object of determining the general composition of genuine milk in New Zealand.

I have, &c.,

J. S. MACLAURIN,

The Chief Health Officer, Department of Public Health. Dominion Analyst.

SUMMARY OF ANALYSES MADE IN THE DOMINION LABORATORY, WELLINGTON.

Material.	Object of Analysis.	Number of Samples.
For Health Department.		
Brandy	Quality	6
Whisky	,,	32
Wine	Alcohol	6
Beer	,,	9
Waters	General analysis	27
Milk	,,	125
,,	Preservatives	6
Tea	Mineral poisons	1
Vinegar	Quality	1
Butter	Acidity	1
Sprayed apples	Poisonous metals	3
Matches	Phosphorous	12
Sewage	General analysis	11
Lactometer	To be standardized	1
Lime-waters	Quality	44
Fruit-pulp	Preservatives	8
Lime-juice	Citric acid	4
Milk-cans	Relative amount of heat absorbed by	2
Water-glass	Purity	6
Vomit	Poisons	1
Lung-balsam	Nature	4
Baking-powder	Purity	14
Mustard	,,	3
Pepper	,,	17
Pine-apples	Poisons	5
Ammoniated tincture of quinine	Methylic alcohol	3
Arsenate of lead	Quality	3
Confectionery-colouring	Nature	1
Coffee	Purity	7
Milk—		
Auckland District	For standard	453
Wellington ,,	,,	988
Christchurch ,,	,,	164
Dunedin ,,	,,	48
For Police Department.		
Liquors	Quality	5
Cordials	Alcohol	31
Beer	,,	4
	Total	2,056

PART C.—GOVERNMENT ANALYST'S REPORT ON MILK-STANDARDS.

In February, 1908, the following regulation with regard to cow's milk was gazetted under the Sale of Food and Drugs Act :—

"Milk shall not contain less than twelve (12) per cent. of total solids, not less than eight and one-half (8·5) per cent. of solids not fat, not less than three and one-quarter (3·25) per cent. fatty solids (milk-fats), and not more than one (1) per cent. of ash."

Objections to this standard were at once raised by milk-vendors, who asserted that milk of the required quality could not be supplied during certain months of the year. In order to test this assertion the Public Health Department decided to have analyses of genuine milks made during the spring and early summer months (September, October, November, and December), the time of the year at which milk is poorest in quality.

In carrying out this investigation herds were selected as being generally representative of the various districts (care being taken that the best herds were not chosen), and morning and evening samples were taken from the same herds each month of the experiment. The districts so represented were Auckland (including Thames and Waikato districts), Taranaki, Wairarapa, Wellington, Christchurch, and Southland.

The cows were milked under the direct supervision of, and the samples taken by, the District Inspectors of the Public Health Department, who took every precaution to prevent tampering with the milk. Properly cleaned bottles containing a few drops of formalin were supplied by the Laboratory, and all samples were securely sealed, and either forwarded by post or personally delivered by the Inspector.

To make the test as severe as possible, samples were taken regularly, and regardless of weather-conditions, and the milk of the whole herd was not mixed, but each sample taken from the mixed milk of from four to ten cows (that being the quantity required to fill one of the ordinary cans).

With the milk from each herd information was forwarded as to date and time of taking samples, yield of milk, number of cows represented by each sample, weather-conditions for previous twelve hours, and also as to the breed and general condition of the cows.

In making the analyses the fat was determined in duplicate by the Leffmann-Beam process, the specific gravity by weighing in a bottle at 15·5° C., and the total solids and solids not fat calculated from Hehner and Richmond's formula. All samples below the standard were checked by gravimetric methods.

On examining these tables it will be seen that a total of 1,598 samples were analysed, and, of these, 3·69 per cent. were below the standard in total solids, 4·13 per cent. were low in solids not fat, and 3·88 per cent. were low in fat. As will be seen, however, many of these were only very slightly below the standard. Moreover, these figures include analyses of the milk from several herds which the Inspector's report showed were in very poor condition at the time of taking samples, and therefore could not be expected to give satisfactory results. (Seventy-eight samples taken under such circumstances gave forty-six—or about 3 per cent. of all samples received—below the standard, some of them being low in all three constituents.)

While the investigation was not comprehensive enough to prove beyond doubt the composition of New Zealand milk under present conditions, it was quite sufficient to show,—

(1.) That the composition of the milk varies but little in different parts of the country.

(2.) That the great majority of the herds gave only a very small percentage of samples below the standard, even when these were taken—as stated above—from a few cows only. When the analyses were averaged so as to represent the mixed milk of the herd, in every case (except in the cases quoted where the condition of the cows was poor) the result was above the standard.

(3.) A lack of sufficient good food, want of shelter, or any other cause resulting in poor condition of the cows was always followed by deterioration in the quality of the milk.

It therefore follows that if cows be judiciously selected and properly fed there will be no difficulty in meeting the requirements of the regulations under the Sale of Food and Drugs Act.

A. TABLE SHOWING THE NUMBER AND PERCENTAGE OF SAMPLES UNDER THE STANDARD IN TOTAL SOLIDS RECEIVED DURING EACH MONTH OF THE EXPERIMENT.

——	Total Analysed.	Above Standard.	Below Standard.	12·0 to 11·9	11·9 to 11·8	11·8 to 11·7	11·7 to 11·6	11·6 to 11·5	11·5 to 11·4	11·4 to 11·3	11·3 to 11·2	11·2 to 11·1
September (morning), number of samples ..	151	133	18	4	5	1	2	2	4	..	..	..
„ „ percentage ..	..	88·66	11·34	3·66	3·33	0·66	1·33	1·33	2·66	..	..	..
October (morning), number of samples ..	328	305	23	9	7	1	2	1	1	1	..	1
„ „ percentage	..	90·70	9·30	2·74	2·13	0·30	0·61	0·30	0·30	0·30	..	0·30
November (morning), number of samples ..	226	215	14	5	2	1	1	1	1	..	..	..
„ „ percentage ..	..	95·00	5·00	2·22	0·90	0·45	0·45	0·45	0·45	..	..	..
December (morning), number of samples ..	91	88	3	1	1	..	..	1	..	..	..	..
„ „ percentage	..	96·67	3·33	1·11	1·11	..	..	1·11	..	..	..	..
Whole period (morning), number of samples	796	741	55	19	15	3	5	5	6	1	..	1
„ „ percentage ..	..	93·13	6·87	2·37	1·87	0·37	0·62	0·62	0·75	0·12	..	0·12
„ (evening), number of samples	802	798	4	..	..	1	2	..	1	..	..	..
„ „ percentage ..	..	99·50	0·50	..	..	0·12	0·24	..	0·12	..	..	..
„ (morning and evening), number of samples	1,598	1,539	59	19	15	4	7	5	7	1	..	1
„ (morning and evening), percentage	..	96·31	3·69	1·19	0·93	0·25	0·44	0·31	0·44	0·06	..	0·06

B. Table showing the Number and Percentage of Samples under the Standard in Fat received during each Month of the Experiment.

—	Total Analyse.	Above Standard.	Below Standard.	3·25 to 3·2	3·2 to 3·1	3·1 to 3·0	3·0 to 2·9	2·9 to 2·8	2·8 to 2·7	2·7 to 2·6	2·6 to 2·5
September (morning), number of samples	151	140	11	2	3	3	1	1	..	1	..
" " percentage	..	92·66	7·33	1·33	0·20	0·20	0·66	0·66	..	0·66	..
October (morning), number of samples	328	300	28	3	10	9	2	2	1	..	1
" " percentage	..	91·46	8·54	0·91	3·05	2·74	0·61	0·61	0·30	..	0·30
November (morning), number of samples	226	210	16	4	7	2	1	1	1	..	..
" " percentage	..	92·92	7·08	1·77	3·10	0·88	0·44	0·44	0·44	..	..
December (morning), number of samples	91	85	6	3	2	..	..	..	1	..	..
" " percentage	..	93·30	6·60	3·30	2·20	..	..	..	1·10	..	..
Whole period (morning), number of samples	796	735	61	12	22	14	4	4	3	1	1
" " percentage	..	92·34	7·66	1·50	2·76	1·76	0·50	0·50	0·38	0·12	0·12
" (evening), number of samples	802	801	1	..	1	..	..	..	..	..	..
" " percentage	..	99·88	0·12	..	0·12	..	..	..	..	..	..
" (morning and evening), number of samples	1,598	1,536	62	12	23	14	4	4	3	1	1
" (morning and evening), percentage	..	96·12	3·88	0·74	1·44	0·88	0·25	0·25	0·18	0·06	0·06

C. Table showing the Number and Percentage of Samples under the Standard in Solids not Fat received during each Month of the Experiment.

—	Total Analysed.	Above Standard.	Below Standard.	8·5 to 8·4	8·4 to 8·3	8·3 to 8·2	8·2 to 8·1	8·1 to 8·0	8·0 to 7·9	7·9 to 7·8
September (morning), number of samples	151	139	12	6	3	1	2	..	..	..
" " percentage	..	92·00	8·00	0·40	0·20	0·66	1·33	..	..	..
" (evening), number of samples	158	136	22	6	8	6	1	1	..	..
" " percentage	..	86·08	13·92	3·80	5·06	3·80	0·63	0·63	..	..
October (morning), number of samples	328	318	10	6	..	2	2	..	..	..
" " percentage	..	96·65	3·35	1·83	..	0·61	0·61	..	..	..
" (evening), number of samples	311	299	12	4	4	..	3	..	..	1
" " percentage	..	96·15	3·85	1·28	1·28	..	0·96	..	..	0·32
November (morning), number of samples	226	221	5	1	2	1	..	1	..	..
" " percentage	..	97·78	2·22	0·45	0·90	0·45	..	0·45	..	..
" (evening), number of samples	250	247	3	1	2	..	..	..	..	..
" " percentage	..	98·80	1·20	0·40	0·80	..	..	..	..	..
December (morning), number of samples	91	91	..	..	..	..	..	..	..	..
" " percentage	..	100·00	..	..	..	..	..	..	..	..
" (evening), number of samples	83	81	2	2	..	..	..	..	..	..
" " percentage	..	97·50	2·50	2·50	..	..	..	..	..	..
Whole period (morning), number of samples	796	769	27	13	5	4	4	1	..	..
" " percentage	..	96·63	3·37	1·62	0·62	0·50	0·50	0·12	..	..
" (evening), number of samples	802	763	39	13	14	6	4	1	..	1
" " percentage	..	95·13	4·87	1·62	1·75	0·75	0·50	0·12	..	0·12
" (morning and evening), number of samples	1,598	1,532	66	26	19	10	8	2	..	1
" " percentage	..	95·87	4·13	1·63	1·19	0·62	0·50	0·12	..	0·06

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