

Enteric Fever.

The total of 181 cases notified is certainly an indication of the backward state of affairs sanitary in this district. Moreover, to complete the year (June, 1901, to May, 1902) it is necessary to add fifty-nine cases which occurred before notification came into force, the occurrence of which I ascertained during investigation into special epidemics. While the factors which tend to keep up the prevalence of typhoid are doubtless lack of drainage and other sanitary defects, we must also consider whether the warmer climate in this part of New Zealand has not also an influence. Lack of statistics make this question difficult to answer accurately; we have, however, the records of the District Hospital for the past forty years, which no doubt give a fair estimate of the annual and monthly incidence. At my suggestion, a few years ago Dr. Baldwin, then Chief Medical Superintendent, compiled tables showing these data. By taking the total admissions per month for many years back he was able to trace the curve shown in black on the accompanying diagram. It will be seen that from November to April there is a fairly steady rise attending this maximum in the latter month. In May a sudden drop occurs, and from June to October the cases are at their lowest. This follows the experience of other countries, that the hot, dry months, such as we have in autumn, show the heaviest enteric bill. The rainfall curve, shown by dotted line, is almost the reverse of that of enteric, the rise in rainfall from April to May corresponding to the sudden fall in number of cases.

It follows almost too closely to regard the rainfall as the principal factor when we consider that a certain amount of time elapses between the infection and the appearance of the disease in a recognisable form; and, further, that climatic conditions, such as rainfall, take some little time to exert their influence on the water-supply, ground-water, and so forth. The temperature curve (shown in blue) corresponds fairly accurately with the typhoid curve, preceding it in the rise and fall by a month or so. This doubtless has a strong influence on the prevalence. The fall in temperature begins about March, and the rise in October, the typhoid curve being a month later. Probably the two factors, rain and temperature, both have their influence. In any hot, dry weather typhoid is more rife; but I scarcely think, however, that the climatic differences between Auckland and the more southern towns are sufficient to warrant the belief that these are solely, or indeed much, to blame for the high typhoid rate. On the chart the curve of incidence for 1901 to 1902 is marked in red, the figures indicating those actually known to have existed. It will be seen that some variation takes place from the normal curve. In June, July, and August the number of deaths is much higher than one would expect. The sudden rise in June is accounted for by the outbreak in Auckland due to infected oysters—a subject on which I have already furnished a report. In July and August, and to some extent in September, the line is higher than normal, owing to the outbreak of typhoid at the Thames caused by infected milk. We learn from the chart, therefore, that these two sources of infection were an unusual feature.

To the total number city and suburbs contributed 141, and the country districts 100.

It will be noticed that in the following places the number is out of proportion to their population:—

	Population.	Number.
City	34,263	80
Mount Eden	5,129	14
Parnell	4,566	20
Thames County and Borough	9,052	48

City.—In the city this is perhaps not so marked, allowance being made for the large area of dense population. The districts where the largest number of cases arose are perhaps not very well defined; but, on the whole, the older portions of the city—Hobson Street, Cook Street, Queen Street, and Freeman's Bay—suffered most. In these drainage connections are old and faulty; the sewers themselves are probably defective. In making some alterations in the closets of the charitable-aid buildings, where the District Health Officers were at first located, some very primitive house connections were unearthed, and the street sewer, an old brick structure, had partially collapsed. Towards the lower portion of the city, too, the tide washing up in the sewer causes flooding in the cellars, the traps being forced by the pressure. Further, the houses in these parts in many cases are built on reclaimed land. One of the chief factors, however, is the non-removal of house refuse, the accumulated filth in the back yards creating a malodorous condition which has been shown experimentally to predispose to typhoid.

Mount Eden.—The cases occurred chiefly in the lower slopes of the district, where the clay is nearer the surface and the volcanic-rock covering is thin. The whole district is undrained, and, being thickly housed, the waste water from the higher portions doubtless has an influence on the sanitary condition of the lower parts, which have more than enough to do to deal with their own sewage. This portion of the district suffered also from dysentery to a marked extent.

Parnell.—This district on the whole is well drained; but, it being one of the early-day settlements, the older portions have some very defective drain-connections, and are, moreover, somewhat overcrowded, privies being badly situated, yards small, and too often dirty; and it is in these parts that the bulk of cases occurred. The pollution of the foreshore about Mechanics' Bay also has had its influence.

Thames.—The very heavy typhoid incidence here is largely accounted for by the milk-borne epidemic, a special report on which was furnished in October. But in addition to this it must be confessed that the borough, and those parts of the country adjoining, are in a very insanitary condition—nightsoil service defective or not enforced. Drainage is of the most primitive description, and refuse is not removed at all. Then, too, the usual influence of the mining population, with their temporary dwellings and water-supplies, and complete absence of sanitary arrangements, has to be reckoned with in the outlying parts of the country.