

THE COST OF THE FOUR PRINCIPAL EPIDEMIC OR INFECTIOUS DISEASES IN CANADA, AND HEALTH LEGISLATION.

FOR preventing the spread, and for the complete suppression, of epidemics, vigilant and prompt action in isolating and closely looking after the first cases is indispensable. Every case of infectious disease has its origin in another case however impossible it may sometimes be to trace back the trail to that origin. It is well known that the terrible epidemics of small-pox in Montreal two or three years ago developed from probably one case, certainly from not more than two cases. Just so it is with every other epidemic wherever known. As Dr. Russell, Medical Officer of Glasgow, puts it: Given one person in a community attacked by communicable disease, and the one tends to become two, the two to become four; or it may be the one tends to become three, the three to become nine, and so on. In all cases you have a tendency to geometrical progression, but the ratio will vary according to the intensity of the tendency in the special disease. This tendency carries the disease from its centre of origin, as the prairie fire licks up the blade of grass and leaps from tree to tree with an ever-widening front. Every sick person is a menace to those who are well. The settler does not awake to his danger when the careless match is thrown down among the dry grass miles away, but it began then, not when the lurid reflection of the gathering fire lights up the horizon.

But small-pox it may be well to note here, as a cause of death, taking one year with another, stands very low down in the list of causes. Either measles, scarlet-fever or typhoid causes now usually more deaths than small-pox, and diphtheria probably ten times as many more. These four diseases, like the poor, we have always with us. Daily, on every hand, we learn of their destructive work. Some boards of health seem dreadfully alarmed at small-pox; and seem to exist almost solely for the detection and suppression of this disease. Destructive and loathsome too as it is in a city without a good Sanitary organization, let us see how its mortality stands as

compared with the more familiar and less unkindly received diseases.

During the year 1887, not a single death from smallpox was reported any where in Canada. In the twenty largest cities and towns there were 51 deaths recorded as from scarlet fever, 140 from measles, 385 from typhoid fever and 1183 from diphtheria. This shows a total of 1758 deaths from these four diseases, in a population of about 700,000; or taking the whole Dominion at the same rate of mortality, and in all probability about the same rate prevailed throughout the Dominion, there were last year in Canada not less than 14,000 deaths from these four common causes.

As evidence of the reasonableness of assuming that the same rate of mortality from these causes prevailed all over the Dominion I find the mortality from measles during the year was 150 per cent greater in proportion to population in the ten smaller of the twenty cities and towns—taking the twenty largest—with a population of about 100,000, than in the ten largest cities, with a population of 600,000, while there was also a larger proportion of typhoid fever in the ten smaller places. From the four diseases together the difference in mortality was proportionately slightly less in the smaller places. Furthermore the statistics in Ontario for many years previous to 1883 showed that these diseases were proportionately more fatal in rural than in urban districts. I do not know how it is in this regard since that year.

Now how many of these 14,000 good lives, cut off at various ages, from 2 and 3 years up to 40 or 50, might have been saved and by the application of our present knowledge of Sanitary requirements? It is reasonable to say nine-tenths of them. All the cases developed directly from a few first ones, probably from less than one-tenth possibly from less than one-twentieth; had these first cases been promptly isolated and cared for, so that others could not have contracted the disease from them