

WATER SUPPLY FACTS APPLICABLE TO MANY PLACES IN CANADA.
ESPECIALLY TO TORONTO, OTTAWA, WINDSOR, &c.

AT the annual conference in Washington last month of the Association of American Physicians, Dr. H. P. Walcott, a Professor in Cambridge University, late president of the American Public Health Association, Prest. of the Massachusetts State Board of Health and who has been the chief force in the extensive investigations which that State has made during the last few years relative to public water supplies, in an address said: "Chemical analysis has failed to distinctly indicate the waters which may produce disease; for of two waters, one capable of producing serious disease and the other not, the first may be found to contain less of suspicious substances than the second. Chemical examinations made when epidemics prevailed revealed undoubted pollutions; but so far as chemistry was relied upon as a proof, the pollutions were often no greater during an epidemic of infectious diseases than they had been before it and no less than they would be when the epidemic was past. Improvements in the methods of determining both the kinds and the number of the minutest forms of organic life, and the proved connection of some of these forms with infectious diseases, have given to us more satisfactory means for the proof of the harmfulness of certain waters than chemical analysis has hitherto afforded.... As the senses of sight, smell, and taste offer us no protection against the waters that contain any of the now-known disease-producing bacteria, we must seek for safety the waters which are known to be unpolluted by sewage, or, if this be impracticable, waters which, though sometimes polluted have been rendered harmless. Methods for the biological examination of waters have not yet been devised that are practically available for the purpose." Notwithstanding that this fact has been published again and again by this JOURNAL, the authorities in many of the cities go on with the farce (largely though not wholly farcical) of periodically publishing the chemical

analyses of their water supplies as if it were the embodiment of positive proof that the water could not be the source or vehicle of infectious or specific disease.

As an example, one instance, which goes to show the connection of infectious disease with the domestic use of river-water, the experience of Lowell and Lawrence, Mass., with typhoid fever was cited by Dr. Walcott. Lawrence and Lowell are both situated upon, and derive their water-supply from the Merrimac River. The in-take of the Lawrence water-works is nine miles below Lowell. The Merrimac has always been regarded as a marked instance of the capacity of a large body of water moving rapidly to purify itself. There is nothing in the appearance and taste of the water to deter a community for its use, nor does the chemical analysis indicate a water too polluted for drinking. The average death-rate from typhoid fever of all the cities of Massachusetts, for twelve years, from 1878-89, was 4.62 per 10,000; for the same period in Lowell, the rate was 7.63, and in Lawrence 8.33 per 10,000. The death-rates of Lowell and Lawrence from typhoid do not vary essentially from those of the State, as a whole, up to the month of September. From this month on a condition of things exists in the two cities distinct from what was observed elsewhere in the State; that is to say, the deaths from typhoid fever continue to increase in number in Lowell until December, and in Lawrence till a still later date, whereas in the rest of the State the disease begins to decline in November. We find such a condition of things to exist as we should expect to find if a disease capable of being transmitted by the infected excreta of those sick with it had prevailed during the late summer and early autumn, at some point on the river above Lowell. The infected discharges of the sick in Lowell would, with the sewage of the city, enter the river lower down, and would be taken into the water-supply of