

which are submitted to the Board, and which, in turn, holds an enquiry at the locality, presided over by one of its engineering inspectors. Lengthy evidence is taken, the public being freely heard, the site examined, and the plans carefully gone into. Not until the Government Board has given its sanction can the municipality proceed with the work. By this means municipalities feel that their interests are being guarded, and they are assisted in coming to conclusions on questions on which they feel incapable themselves of forming any determination.

Is there anyone doubts but that some such system would be welcomed in Canada? We believe that much of the polluted water supply, with its consequent high typhoid death rate, is the result of the want of organized authority. There are municipalities by the hundred which hesitate because of the want of authoritative lead. They are anxious for some efficient water supply or method of sewerage, but they feel that they are in the hands of the Philistines. Can this be wondered at when we consider the history of the Lindsay ozone water purification plant. Here we have a community with every faith in a particular individual and his special goods, and in spite of guarantees, promises and converting enthusiasm, the municipality find they have paid for something which, in accordance with the Ontario Health authority, they find is useless. Experiences such as the latter make all municipalities hesitate, and they find it difficult to discriminate between the bona fide engineer and the commercial engineer.

Legislation such as outlined by Dr. Hodgetts in his address to the Conference should meet with the unanimous support of all sections of the people. There is no question of party politics in it. There is a question of health and the destiny of a people. No community can grow beyond the extent of its available pure water supply at the rate of thirty gallons per head per day. The transition of a family to a village, of a village to a town, of a town to a city, and the ultimate stability of the city, is dependent upon pure water. Transportation, cereal production, grain elevators, and all the patriotic enthusiasm for becoming a great nation are of no avail unless accompanied by drinking water. The whole future of the development of the prairie West is wrapped up in "the pure water question." The whole future of the maintenance and continued prosperity of older Canada is dependent upon immediate measures being taken to prevent what is now openly recognized, a gradual poisoning of originally pure and ample water sources.

### FASHION IN WATER PURIFICATION.

By George C. Whipple.

(From a paper before the Central States Water Works Association, entitled "Clean Water as a Municipal Asset.")

Notwithstanding expert advice, the practice of following the leader is far too common. A method perfectly successful in one city is adopted by others only to find that it does not fit the conditions. The styles of water purification plants do not change as rapidly as those of ladies' bonnets, nevertheless waves of popularity occur even in matters scientific. This is well illustrated by the recent history of the septic tank. Taken up from a long career of obscure usefulness it became famous because of its usefulness in certain places, because of the wide-spread scientific interest in the

theory of its action, and it must be admitted, partly because of the obscurity surrounding the work of the mysterious anaerobic bacteria. Visitors from Europe now tell us that the popularity of the septic tank is on the wane—not that it is being abandoned altogether, but rather its proper sphere of usefulness is being found and its use limited to that. Meanwhile other phases of sewage disposal are looming large in the scientific press.

Or, to take an illustration from water purification, the preliminary filter of coarse material worked at a high rate is sometimes a useful and appropriate device, but its field of usefulness is extremely limited. The attempt to use it to assist in the removal of colloidal matter, while moderately successful, is usually more expensive and much less efficient than the use of a suitable coagulant. These waves of scientific interest in this or that process are indications of progress, but the crests of the waves do not measure the true sea level. And the writer believes that the disinfection of water will have a similar history, that when the initial enthusiasm has subsided it will take its place, an important place, no doubt, but one subsidiary to the long-established methods of obtaining clean water.

### A TEMPORARY HYPOCHLORITE PLANT FOR TREATING THE WATER SUPPLY OF MILWAUKEE, WIS.

By Charles J. Poetsch,\* M.Am.Soc.C.E.

On June 18th, 1910, the new Health Commissioner of Milwaukee reported that the number of typhoid cases in this city were on the increase and blamed the water-supply as the cause. In a conference with the mayor, the health commissioner and the city engineer, it was decided to sterilize the water immediately. On June 21st, a very temporary plant, consisting of a single tank in which a hypochlorite solution was mixed, was set up over the water-supply tunnel. The solution was fed to the supply before it reached the pumps by means of a 1-in. pipe, the flow being regulated by a valve. One week later the present plant was started in operation.

The plant now consists of a mixing tank 3 feet in diameter and 4 feet high, and of two solution tanks, each 8 feet in diameter and 7 feet high. The mixing tank has a stirring device operated by hand. The tanks are of cypress lumber, set up outside the pumping station over the supply tunnel and connected with galvanized-iron pipes with the supply. The flow is regulated by means of ordinary valves, according to the amount of pumpage in the station. Six pounds of hypochlorite of lime are used per million gallons—which seems to be ample according to a recent test made by the city chemist. Daily tests of the raw water and of the treated water are now being made by the health department. The results of these tests show about 200 bacteria per c.c. in the raw water, and from 2 to 6 in the treated water.

#### Temporary Hypochlorite Plant for Treating the Water-Supply of Milwaukee, Wis.

Should it be necessary to continue the treatment of the water, it is proposed to construct concrete tanks, close to the pumping station, with the mixing tank inside of the

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