at Longueuil when alum is not used are very poor. The town of St. Lambert is situated directly above Longueuil on the St. Lawrence river and disposes of its sewage into the river. The raw water at Longueuil is polluted and the pollution is not removed by passing the water through the filters without the use of coagulant. Alum should be used all the time to secure a good water, for without its use the water is not much better than in its raw state. The cost of converting the polluted raw water at Longueuil into a safe filtered water would not be more than a dollar to a dollar and a half per day, a very small amount when one takes into account the improvement made in a municipal supply.

The matter has been brought to the notice of the municipal officers of Longueuil and an improvement over the system now in vogue is expected.

Here at St. Hyacinthe, the consumption is greater than the capacity of the filters, and to get sufficient water through the filters the coagulant has been temporarily discontinued. This municipality soon intends enlarging their filter capacity and will then treat the river water with a coagulant.

Sterilizing Plants.

During the recent typhoid fever epidemic in Montreal, the Provincial Board of Health suggested to the city of Montreal and the Montreal Water & Power Company, that they temporarily purify their respective water supplies by using calcium hypochlorite or bleaching powder. The plants were installed under the direction of the Board and have been operated continuously ever since.

The treatment consists in dissolving the bleaching powder in storage tanks and from the storage tanks a measured amount of the sterilizing agent is added to the water supply. The chemical breaks up, due to the free carbonic acid present in the water, and oxygen is liberated which oxidizes the organic matter. This oxygen has a strong action on the bacteria present in the water and kills a very large per cent. of them. On the two supplies treated at Montreal a good reduction in bacteria is secured and a much safer water is supplied to the municipality.

The sterilizing agent only affects the bacteria in the water, it does not remove turbidity or color and for this reason is not applicable to many waters as a permanent method for purification.

The typhoid epidemics at Montreal have occurred during the fall and early winter months, when the river is low, and it is hoped that these epidemics will be arrested by the application of the sterilizing agent. The city of Montreal is now having its water question investigated by a firm of expert consulting sanitary engineers and a report as to the methods to be adopted by the city is expected soon.

The investigations of the water supplies in this Province has just begun but it is planned to carry the whole out in a systematic way, so that information as to the character of the water will be secured for every section of the Province.

SEWER AIR.*

The popular fear of sewer gas is based not so much upon its direct poisonous action as upon its possible relation to communicable disease. For generations the belief has prevailed that typhoid fever, scarlet fever, diphtheria, etc., were induced by inhalations of sewer air from leaky plumbing fixtures. Since the day of bacteriology, doubt was cast upon this theory of disease communication. Now it is known that these diseases are due to specific terms. Every case of a transmissible disease is due to some prior case. It is difficult, in many cases, to trace the infection to its origin through certain contact or media. A very important question is, does sewer gas, as it escapes from defective plumbing systems or from the city sewer, act as a medium to transmit infectious germs to be taken into the human system by inhalation?

This question has been the subject of much research work on the part of scientists. A valuable contribution to the knowledge of this subject is due to the investigations of the sanitary committee of the National Association of Master Plumbers. Under its direction, Prof. C. E. A. Winslow of the Boston Institute of Technology conducted a series of laboratory investigations. Investigations were begun in 1907 and a final report was made two years later.

Only a few conclusions can be given. The professor says: "In the whole series of 200 liters of air collected from the most diverse locations on nineteen different plumbing systems, not a single sewage organism was found except where the air was exposed to immediate local infection by fine particles of spray." * * *

"Actual examinations of the air in sewers, however, by Miquel in France, Petri in Germany, and Carnelley and Haldane, Robertson and Laws and Andrews in England, showed that sewer air, as a matter of fact, contains very small numbers of bacteria and those of types common in street air rather than in sewage." * * *

"In general my results confirm the results of Horrocks in so far as they show that specific bacteria may be ejected from liquids into the air above. My tests of house-drain air, like those of Carnelley and Haldane and Laws and Andrews on sewer air, indicate that mechanical splashing may produce a local infection of the air in immediate contact with the spray. Such an infection does not, however, extend for any distance or persist for more than a minute or so. I found the general air of house-drainage systems singularly free from bacterial life. Out of 200 liters examined, only 48 contained any organisms capable of development at 37 degrees. Sewage bacteria were found in the air of the house drains only four times out of 200 liters, and then in the presence of mechanical spraying of sewage at the point of collection. The general air of the house-drainage system, aside from this local infection, was, as far as examined, free from sewage organisms." * * *

All investigators testify that under certain conditions, as splashing of liquids and bursting of bubbles, sewage bacteria in small number are allowed to escape into sewer air. It is also admitted that the liberation of bacteria from dried sewage adherent to the surface of pipes, by means of air currents, is to be considered. In the light of scientific research, under ordinary conditions, there is little or no danger from sewer gas as a vehicle to transmit typhoid or other pathogenic germs. Sewer air, like other foul and impure gases, for physiological reasons, is to be avoided as detrimental to health.

*From the September bulletin of the Columbus (O.) Board of Health.

COMING MEETINGS.

CHICAGO CEMENT SHOW.—February 15-23, 1911. Fourth annual exhibition, at the Coliseum, Chicago, Ill. Under the management of the Cement Products Exhibition Company, 115 Adams St., Chicago.