

METHODS.

A large proportion of the work consisted in the estimation of the number of bacteria present. (Quantative bacterial analysis.) The nature of the bacteria was also studied, as far as the time limits of the analysis permitted. Cultures, for quantitative work, were for the most part made in slightly alkaline, 10 p.c. beef peptone gelatine, made after Loeffler's formula, and grown at 20°C. The samples were taken 10 to 20 feet below the surface, by means of an apparatus which I show in figure 1, and were plated in flat glass vials. The cultures were, as a rule, made within a few minutes of the time of taking the samples, and in a few instances, when about an hour or two intervened, the samples were kept in an ice box.

The sediments were all examined microscopically, and during four months the microscopical organisms present were estimated quantitatively by the Sedgwick-Rafter method.

SOURCE OF SUPPLY.

Before giving the details of the analysis, it might be well, in order to make the report intelligible to those who are not familiar with the local conditions of the Montreal water supply, to briefly mention the character of the water, and the topography of the district from whence it is obtained.

Although taken from the north shore of the St. Lawrence river, the Montreal water supply is derived, during the greater part of the year, from the Ottawa, which enters the St. Lawrence from the north at a point about 20 miles above the intake, and forms a belt of dark water close to the shore, the border between this water and the clear green of the St. Lawrence proper being very distinct, though varying in position with changes in the direction and force of the wind and the relative level of the water in the two rivers. During the winter owing apparently to an ice-jam, the Ottawa passes to the north of the island of Montreal, so that the Montreal supply during the months of January, February and March consists of nearly pure St. Lawrence water.

Ottawa River.

The Ottawa river drains an area of over 60,000 square miles