

mes from hour to hour, running from clear to very muddy and from but slightly colored to highly colored. Such changes demand corresponding changes in the volume of sterilizing agent in order to effect the most efficient results possible, and sometimes overdosing occurs causing objectionable tastes of the chemical in the water, or underdosing, resulting in markedly lower sterilizing efficiency.

Again, where the water holds in suspension fine particles or organic matter, as is true of the Quebec supply, bacteriae, perhaps, the typhoid germ, may become embedded in these particles, and not coming in direct contact with the germicide will pass unscathed. It is true, unfortunately for the reliability of the sterilization treatment of unfiltered waters, that when heavy rains occur on the watershed, and when in consequence accumulations of filth are washed into the stream, the water is more than otherwise heavily charged with such suspended particles, and more liable to contain disease producing germs than at any other time. The efficiency of the sterilizing treatment, on the other hand, is the lowest at such times when it is urgently necessary that it should be at its highest degree of efficiency. With filtered water, this is never so, for suspended particles which afford protective coverings for the bacteriae have been filtered out.

Nevertheless, next to filtration, sterilization by chlorination will afford the greatest degree of protection against water borne diseases, and I therefore recommend that such a plant be installed at once pending the construction of a filtration plant. When the filtration plant has been built and placed in operation, the chlorination plant can be made apart of it, and be continued as a desirable adjunct to the filtration process of purification.

My observations led me to recommend that the sterilization plant be located on the line of the pipes now supplying water to the City, at a point in or near the village of Lorette where approximately twenty to twenty-five pounds pressure can be obtained. At this point, venturi meters should be installed on each of the three existing pipe lines, and the chlorination appa-