

Now, here comes the point. Although the above facts have been officially made known to the corporation, the facts have been pigeon-holed and embalmed, only to be resurrected by a New York engineer when he finds that his filtration plant is not acceptable to the waste conditions which prevail.

Why, in the name of everything reasonable and municipal, were not the people told at once that the \$750,000 voted for water filtration would be of no practical use unless their water supply was measured out to them by a meter? We have to wait until the city is pledged to a filtration scheme, until the work is half completed, until the engineer for the works happens to address a casual meeting of the Canadian Society of Civil Engineers, in order to obtain this important information, quoting the very words of the engineer: "Unless steps are taken by the corporation to lessen the tremendous waste of water, the filters at present being installed will prove inadequate for the purpose of purifying the water."

The above procedure absolutely excels in municipal muddle, and the retention of valuable and available information. However, out of evil good may evolve, and if the conditional predicted failure of the filtration plant will only make the Council wise to the enormous sum annually wasted in pumping 21,500,000 gallons of water per day for the mere fun of simply pumping it and filtering it in order to flush the sewerage system, then we may yet be able to say, "All's well!"

The suggestion to meter the water for domestic purposes in order to curtail the waste is radically bad from a hygienic point of view. The towns quoted by Mr. Rust in Great Britain where the per capita consumption is low are not metered. The British principle is totally against metering domestic supply. For legitimate purposes the people should feel that they have a free and unbounded right to water. Cleanliness should not be made the privilege of those who can afford to bath and wash, and dirtiness the penalty of those who may first have to consider the effect of a morning tub upon the meter index.

There is a huge difference between an unbounded supply of water for legitimate purposes and direct waste caused by faulty mains, bad workmanship, and total lack of proper inspection and supervision.

Where there are good, sound mains and thorough inspection and supervision, an unbounded legitimate supply of water is represented by about 30 gallons per head per day. Any figure above this amount is up to the corporation or those managing the system to explain and make good. The onus is not with the consumer, but with the method of supply.

The October outputs of the Nova Scotia Steel Company were as follows:—Steel, 7,148 tons; pig iron, 5,640 tons; coal, 77,130 tons..

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The statement of the Winnipeg Electric Railway for September shows gross earnings for the month, of \$218,088, an increase of 24 per cent., while the net earnings increased 21 per cent. For the nine months of the year the gross totals \$1,848,897, an increase of 20 per cent., the net gain being the same. Earnings are at the rate of 14 per cent. on the common stock.

## SEWAGE DISPOSAL.

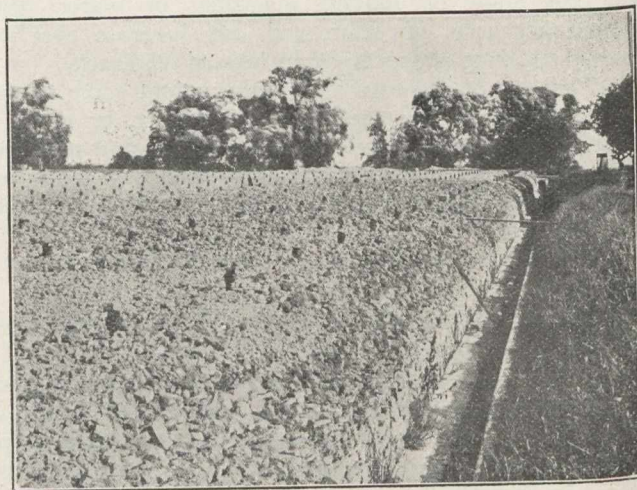
### REMOVAL OF PUTRESCIBILITY.

#### Chapter VII.—Continued.

#### Distributing Appliances.

Revolving sprinklers and travelling distributors have been used more extensively in Great Britain than on this continent for distributing sewage over percolating biological filters.

Mr. Clark, chemist to the Massachusetts Board of Health, recently read a paper before the Boston Society of Engineers, following after a visit to Great Britain, his remarks upon revolving sprinklers, are here worth quoting. Mr. Clark states that when he started on his round of visits he was strongly inclined to believe that the use of nozzles (fixed sprays) was the common-sense method, but that he has be-



Fixed Sprays.—Hamilton Sewage Disposal Works.

come convinced that under English conditions revolving or travelling distributors are by far the best, as with these, other things being equal, filters produce better effluents per unit of filter surface, and every square inch of filter can be used. He points out that "by sprinkling nozzles operating under a constant head, as at Birmingham and Salford, as can be seen from observation of these areas, and as has been shown by experiments at Lawrence and elsewhere, only about 50 or 60 per cent. of the filter is really used." That is to say, if 2,000,000 gallons of sewage are applied daily to an acre bed by means of nozzles, a considerable area will operate at the rate of 5,000,000 or 6,000,000 gallons per acre daily, while a portion will only operate at a rate of 500,000 gallons or less. "There is little or no spreading of sewage as it passes through filters of clinker, coke, or broken stone. In other words, if the sewage was as perfectly distributed over the Birmingham filters, as over the Hanley, Heywood, and other filters, the area of these filters might perhaps be reduced 50 per cent., the cost of construction be not more than half as great, and the same purification result be achieved. Even in this country," Mr. Clarke goes on to say, "I believe, perfect distribution, even if the form of distributor necessitates covered

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