THE

Sanitary Review

SEWERAGE, SEWAGE DISPOSAL, WATER SUPPLY AND WATER PURIFICATION

TORONTO WATER SUPPLY AND WASTE.

Last week Mr. Allen Hazen, lecturing upon "Slow Sand Filtration" in Toronto, called attention to the large per capita amount of water used in Toronto. He stated that if the consumption was allowed to increase at its present rate the slow sand filters at present being installed would be found inadequate.

This statement is reasonable, as slow sand filtration will only allow of limited quantities of water being treated per acre of filter, and any increase over the amount at once shows itself in loss of efficiency.

The city of Toronto must either adopt some method of decreasing its per capita rate of supply, or make up its mind to at once borrow another large sum of money for increase of the filter plant area, otherwise slow sand filtration is going to prove a failure without even giving it a fair test.

Ten years ago Mr. Rust (City Engineer) reported as follows:—

Extract from City Engineer's Annual Report for the year 1899:—

"This year, taking the population to be 215,000, the consumption averages 99.7 gallons per head; of this, the metered water amounts to 12.5 gallons per head. Between three and four o'clock a.m., when there is practically no consumption, water is being pumped at the rate of 15,000,000 gallons per day, or 70 gallons per head of population. Careful measurements of the discharges of the sewers, which were taken recently for sewage disposal purposes, show that the minimum quantity carried off by all the sewers was at the rate of 15,214,000 gallons per day, showing a very close agreement with the rate at which water was being pumped between 3 a.m. and 4 a.m.

"It is evident that the greater part, if not all, of this 70 gallons per head was waste water, leaving 17.2 as the quantity used for domestic purposes. That this quantity is very close to that actually used the experience of the following cities indicates: At Fall River the quantity per head for domestic purposes is 11.2; at St. Lawrence, 16.3; at Woonsockett, 14.1; at Worcester, 14; while for London, Birmingham, Manchester and Sheffield the rate per capita is from 13 to 25 gallons. So that, allowing 10 gallons per head for incurable waste (this being the amount fixed upon by Mr. Freeman in his report to the New York Water Board) and adding to this amount 12.5 gallons metered water and 17.2 for domestic purposes, a total of 39.7 gallons per head would be a fair figure for all purposes, including incurable waste. In other words, 60 per cent. of the water pumped is absolutely wasted without benefit of any kind being derived from it. It would, therefore, appear reasonable on economical grounds alone to take some measures to reduce this waste."

This straightforward and alarming report, handed in by the present City Engineer ten years ago, has been followed by a further increase in the per capita consumption.

In 1899 the per capita consumption was 99.7 gallons.

In 1909 the per capita consumption is over 120 gallons.

In 1899 about 12,000,000 gallons per day of water were being pumped to waste.

In 1909 about 21,500,000 gallons per day of water are being pumped to waste.

We respectfully ask that the Board of Control at once obtain an estimate from the City Engineer of the cost as follows:—

(a) The annual cost of pumping 21,500,000 gallons per day without benefit of any kind being derived from it.

(b) The probable annual cost of treating 21,500,000 gallons per day of waste water, represented as sewage, at the Morley Avenue site.

(c) The probable annual cost of filtering at the Island 21,500,000 gallons per day of water which will never be used, but only filtered in order to pass it direct from the leaking water mains to the inleaking sewers.

(d) When the annual costs of a, b and c have been arrived at, then we would like these sums added together and capitalized at, say, 3½ per cent., so that the available capital amount can be arrived at which might be spent in putting the Toronto water supply on a reasonable and efficient basis."

We must not run away with the idea that the Council did nothing after receiving Mr. Rust's report. In 1900 we find a small sum appropriated to test the actual waste in a small portion of the city, extending from Dundas Street on the west to Manning Avenue on the east, and from College Street on the south to the city limits on the north, the number of houses being 2,090; the tubs, 3,008; lawn hydrants, 472; baths, 864; closets, 932. In this section of the city systematic repairs to mains and tap fittings were made. **Before the repairs were made the consumption of water amounted to 234,163 gallons per day. After the repairs were made the consumption amounted to 140,565 gallons per day.** The leaks on mains numbered 58, showing a loss of 26,122 gallons per day, and the leaks to service taps 308, with a loss of 59,304 gallons per day. This loss of 40 per cent. in a sparsely built up section of the city would, of course, have shown a much larger percentage of loss in other parts more thickly populated. Mr. Rust concludes in connection with this test as follows: "The time is not far distant, unless proper means are taken to prevent waste, when the ratepayers will be called upon to provide large sums for improvements to the system."