

The statement is often repeated, both by the Commissioners and by the public, that there is a greater probability of obtaining purer water for greater lengths of time at Scarboro than at Centre Island. On page 71 of the report the Board of Commissioners state that the transporting currents depend entirely upon the wind. The results of certain experiments made in the year 1909, by City Engineer Rust, and given on page 76 of the Commissioners' report, were that "the net result of our observations is that the wind controls the current, and that during the last year the wind blew away from the present intake 68.9 per cent. of the time." Records of the Meteorological Service show that the greater proportion of winds at Toronto come from the west.

With these facts clearly in mind, it is hard to understand Mr. Chipman's statement that it will not be necessary to filter at all times at Scarboro.

It is agreed by the Commissioners that it will cost more to pump the water at Scarboro than it will at Centre Island, but they claim that this extra cost will be off-set by the fact that the Centre Island has to be pumped twice under present conditions. Yet, they expressly state that "booster" pumping stations will be required throughout the city on the feeder from Scarboro.

The serious defect in the Scarboro scheme, more serious than the question of first cost or the question of operating cost, is the defect which is common to all gravity systems; and it might well be questioned whether it would be advisable to use Scarboro as a source of supply, even if it was unnecessary to raise the water 330 feet from lake level to the elevation of Scarboro Bluffs. This defect is the fact that the elevation of the reservoir at Scarboro, with the gravity pipe line feeder, absolutely fixes the amount of energy present in the system. That is, when no water is flowing through the gravity line the pressure head will stand at the level of the reservoir. When the demand increases the head drops as the friction loss increases, until at the point of maximum water demand the minimum head is available. There is no way of controlling this variation in the pressure in a gravity system, and the result is the most undesirable condition of maximum demand and minimum pressure. On the other hand, with the present pumping system, as the demand increases, more energy is put into the system by increasing the pumping capacity, and, therefore, the pressure can be kept at almost a constant.

This fact in favor of the pumping system cannot be too strongly emphasized. It is a matter which has been entirely overlooked in the Board of Commissioners' report. To show what the result would be, it is only necessary to take an example. Mr. Chipman states in the Toronto Telegram of December 27th that with the maximum demand there will be a loss of head of about seven feet in the mile. That is, at the present high-level pumping station there will be a loss of 84 feet of head under conditions of maximum load. When there is no demand for water the pressure level will be at the elevation of the Scarboro reservoir. This will mean that the house services in that neighborhood are subjected to a daily variation in pressure of 84 feet. At West Toronto conditions will be far worse than this unless "booster" pumps are used. It would be interesting to know if the Commissioners had at all considered this variation in pressure. It would also be interesting to know how they intended to control the excess pressure in the east end where the ground level is 250 to 275 feet below the elevation of the Scarboro reservoir.

The absolute lack of flexibility of a gravity scheme such as that from Scarboro, together with its greater first cost and the greater continuous cost of operation, demands the city's consideration of a duplicate Centre Island plant.

LETTER TO THE EDITOR.

DESCRIPTIONS OF LAND.

Sir,—I send you herewith copy of description taken from deed of a lot of land in New Brunswick. This is a fair sample of hundreds of descriptions still used in that province.

The registration system is antiquated and, as there is no complete system of lot numbers, a separate index for each lot is not used in the registry offices.

This entails enormous waste of time and money in making searches against titles and uncertainty as to completeness.

It would be a decided benefit to land owners in New Brunswick if the Dominion Government would apply part of the annual subsidy to establishing a registry system similar to the Cadastral system in Quebec province.

The Provincial Government seems to be helpless in the matter.

Yours truly,

H. IRWIN, Q.L.S.

370 Kensington Avenue, Westmount, P.Q., 28th Dec., 1912.

Description.

"All that certain lot of land situate in the Parish of Douglas . . . bounded and described . . . as follows: On the south by the Saint John River, extending eastward to an oak tree near a brook, thence northerly to a hemlock tree near the highway road, thence westerly to a willow tree on the north side of the said road; thence northward to a cedar post near a brook; thence following the said brook to near the head, and so on to a spruce tree on Hallett's line, and thence following the said Hallett's line to the oak tree aforesaid on the bank of the River St. John, being the same lot of land conveyed to the said Thomas E. Wheeler by Charles J. Tozier."

GENERAL NOTES.

The table shows for fifteen stations, included in the report of the Meteorological Office, Toronto; the total precipitation of these stations for December, 1912:

	Depth in inches.	Departure from the average of twenty years
Calgary, Alta.
Edmonton, Alta.	0.1	—0.70
Swift Current, Sask.	0.3	—0.42
Winnipeg, Man.
Port Stanley, Ont.	3.4	+0.32
Toronto, Ont.	1.85	—0.76
Parry Sound, Ont.	7.7	+3.04
Ottawa, Ont.	2.2	—0.51
Kingston, Ont.	2.4	—0.44
Montreal, Que.	2.9	—0.92
Quebec, Que.	3.0	—0.16
Chatham, N.B.	3.2	+0.02
Halifax, N.S.	8.4	+2.71
Victoria, B.C.	5.8	—0.47
Kamloops, B.C.	0.5	—0.32