

THE WATER SUPPLY OF TORONTO, CANADA.

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DURING the past six months I have made monthly analyses of the water supply of Toronto, according to the instructions published in THE ANALYST, the results of which are embodied in the following table.

Toronto is situated on the shores of a bay which is nearly closed by a long sandy island, which is situated opposite the town. At each end of the island there is a narrow

channel between the island and the main land. The sewage of the town is poured into this basin at various points along the shore, and the water supply is drawn from the opposite or island shore of the basin, and brought by a pipe across the basin a distance of 4,500 feet.

Dangerous as is such a source of supply, sewage contamination does not seem to have occurred to any appreciable extent, owing, doubtless, to the large size of the basin, and to the fact that a current continually blows through one gap and out of the other, and thus sweeps the foul water away.

A sample of the water of the bay, close to the mouth of one of the principal sewers, gave :—

[illegible]

A sample of water from the lake, outside the island, gave:—

[illegible]

Analysis of the Toronto Water Supply for the Six Months ending March, 1882.

GRAINS PER GALLON.

	October.	November.	December.	January.	February.	March.
Colour.	pale yellow.	pale yellow.	pale yellow.	pale greenish yellow.	chalky white.	chalky wht. sly. turbid.
Smell at 100° F.	veg. mattter.	none.	none.	none.	none.	none.
Chlorine in Chlorides.	·21	·23	·21	·21	·21	·21
Nitrogen in Nitrates.	·015	·0161	·0132	·0184	·0156	·0173
Phosphoric Acid in Phosphates.	none.	none.	none.	none.	none.	none.
Ammonia.	·0028	·0013	·0008	·0056	·0022	·0014
Albuminoid Ammonia.	·0098	·0076	·0028	·0154	·0056	·0063
Oxygen absorbed at 80° F. in 15 min.	·0223	·0308	·0196	·0342	·0216	·0154
Oxygen absorbed at 80° F. in 4 hours.	·0463	·0476	·0411	·0658	·0496	·0560
Hardness—Clarks' Scale before boiling.	6·5°	7°	7°	6·5°	6·5°	6·5°
Hardness after boiling.	2·0°	2·5°	2·5°	2·5°	2·5°	2·0°
Total Solid Matter dried at 220° F.	9·50	9·52	9·80	10·36	9·66	9·24
Microscopical Exam.	vegetable deb. diatoms, algæ and infusoria.	vegetable deb. algæ, diatoms, infusoria.	algæ, diatoms, infusoria.	algæ, diatoms, infusoria.	algæ, diatoms, infusoria.	algæ, diat., infusoria.

We hope next summer to get water from the open lake (Ontario) beyond the island. When this is effected, I hope to send the analysis of the water from this source.

BREAD ANALYSIS IN MASSACHUSETTS.

A recent report of the Massachusetts Board of Health gives the following interesting particulars as to the analysis of samples of bread bought in the State. One hundred and three samples of bread were tested for alum. Of these seven were known to contain it, and two known to be free from it. Of the remaining number, seven contained a very small quantity, less than one-tenth of one per cent., and eighty-eight were entirely free from it. These ninety-five samples were purchased from as many different bakehouses, without it being known to the baker for what purpose the bread was to be used. Twenty

of these samples were also incinerated, and the ash examined for other mineral adulteration—but none was found. All the bread examined looked, smelled, and tasted well. The moisture was estimated in thirteen samples, and varied from 31.42 per cent. to 65.27 per cent. Only four of these contained over 38 per cent. The fat was estimated in house-made and in baker's bread. The two samples of home-made bread gave 1.12 per cent. and 1.17 per cent.; four of baker's gave 1.33 per cent., 1.34 per cent., 1.10 per cent., and 2.10 per cent. respectively. This would show that there is no important difference in the amount of moisture and fat in baker's bread and that ordinarily made in families. The "logwood solution" was used in testing for alum. This, though criticised, never failed to show alum when it was known to be present; and it is so delicate that it will show the presence of less than one part in ten thousand of crystallized alum in bread, and will do this even after the bread has been baked a month, and has become covered with mould. This was proved by the following experiment: samples of pure flour that had been tested were mixed with known amounts of alum, and baked in the ordinary way, taking care that no alum was introduced. The test worked very satisfactorily, both upon the samples of flour thus prepared and the bread which had been made from them.—*Sanitary Record*.
