

the tap, the latter appears colorless. Two long colorless glass tubes containing the filtered water before and after it had been ozonized could not be distinguished apart. The first thing that ozone does to a colored water is to render it colorless; this the Howard-Bridge system has absolutely failed to accomplish, a simple observation which may be made by anybody.

As it seems to be generally conceded that one cubic metre of water with a low content of organic matter will need at least half a cubic metre of ozone, with a concentration of one-half to one gram of ozone per cubic metre, to purify it, and as it did not seem to me that this quantity could be going into the water, judging from the ebullition on the surface of the ozonizing well, I had a T pipe put in the ozone pipe four feet above the aspirators and tried to measure the flow by a standardized anemometer, at the same time aspirating off samples in order to estimate the strength of ozone.

If 500,000 gallons of water per day are flowing through the aspirators with ten hours of pumping then 250,000 gallons of ozonized air per day, or 25,000 gallons per hour, should be drawn through them. This would mean a flow of air at the rate of 340 feet per minute through the six-inch pipe.

2. Leaking of the walls of the square filter.
3. Insufficient sand on the round filter.
4. No means for drying the air to be ozonized.
5. Lack of power in the blower.
6. No means for distributing the air evenly through the plates of the ozonizers.
7. Failure of the aspirators to draw into the water any but traces of the ozone produced; as shown by
 - (a) No physical changes in the ozonized water.
 - (b) No chemical changes in the ozonized water.
 - (c) Very slight bacterial reduction in the ozonized water.

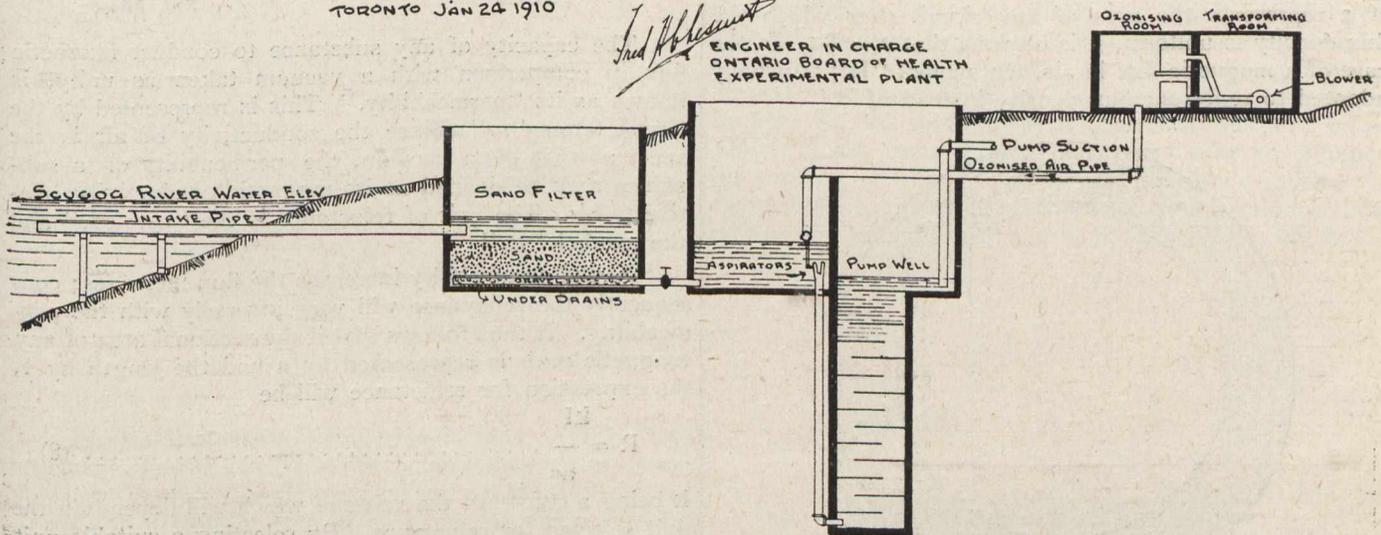
From the evidence obtained by us I do not hesitate to say that the Howard-Bridge system, as installed at Lindsay, is an absolute failure, as far as purifying the water is concerned. From the mechanical standpoint of the means for carrying to and mixing the ozone with the water it is defective in every particular.

With the knowledge that the ozone does not get into the water the bacterial and chemical results are self-evident, or from the reverse standpoint the bacterial and chemical results are an absolute indication that the ozone is not getting into the water.

**WATER PURIFICATION PLANT
LINDSAY ONT.
DIAGRAM SHOWING RELATION OF UNITS**

TORONTO JAN 24 1910

Fred H. Blount
ENGINEER IN CHARGE
ONTARIO BOARD OF HEALTH
EXPERIMENTAL PLANT



As a matter of fact, the movement of air in the pipe was so slight that the anemometer would not turn at all, though the draught passing through the anemometer into an ordinary stove would cause it to revolve rapidly. In other words, the ozone which was being generated was not being drawn into the water.

The evidence all shows that the work of the system at Lindsay falls solely on the filters, which clarify the water and remove 30 per cent. of the bacteria present. A fairly good roughing filter ought to remove 40-50 per cent. of the bacteria present.

The covers of the filters and ozonizing wells are not water-tight; during every thaw or rain there is a steady drip into these wells capable of contaminating the water even if it had been purified.

To bring the points of failure of the Lindsay system more vividly to mind I will enumerate them in detail.

1. Leaking of the covers on the filters and pure water reservoir.

The system would achieve practically the same results with the ozonizers shut off or removed. The filters remove 30 per cent. of the bacteria and the ozonizers 8 per cent. more; a fairly good roughing filter should itself remove 40-50 per cent. of the bacteria.

**THE DIGBY METHOD OF PRODUCING
ELECTROLYTIC CHLORINE.**

Sir;—May I ask you to insert the following correction in the Sanitary Review, with regard to the article upon the Digby method of producing electrolytic hypochlorite, which appeared in your issue of April 22nd. The process was there referred to as the "Digby-Shenton method;" this is incorrect, as the process was invented by Mr. Digby, and I have no interest whatever in it, and the patent belongs to Mr. Digby solely. I have merely studied the various processes, and among them the Digby process. It appeared to me that