the number of bacteria at the surface of the water. In the case of a rapidly flowing stream this is of little moment as the water is sure to be thoroughly mixed and the bacteria pretty evenly distributed. In standing bodies of water, such as lakes, ponds, reservoirs and wells, the bacteria for the most part sink to the bottom, so that the number of bacteria found at the surface affords no indication of their number in the deeper part, from which usually supply pipes are fed in the case of drinking waters.

In the course of a recent biological examination of the waters of the Ottawa and St. Lawrence rivers it was found necessary to take samples at some distance beneath the surface. In winter, when samples were obtained through a hole cut in ice, often from one to two feet in thickness, the water which welled up into the hole was found to be contaminated by the instruments used in cutting it. On one occasion the water in the ice hole yielded 8,000 colonies per c. cm., while a sample obtained from the running stream beneath the ice only gave 30. Lying beneath the solid ice running water there is often found a stratum of "*frazil*" ice. This consists of a dense mass of small, sharp ice fragments which have at one time been in contact with the bed of the stream and have then become contaminated from the soil. That water obtained from the midst of a bed of "*frazil*" ice is unsuitable for bacteriological examination was shown by one examination of St. Lawrence water made in mid-winter, when two samples from a bed of *frazil* yielded respectively 473 and 480 colonies per c. cm., while clear water from an adjacent spot gave only 77 and 39.

In endeavoring to obtain some apparatus suitable for obtaining deeper samples, I was surprised to find no mention of anything of the kind in any dealers' catalogues; their poverty in this particular contrasting strangely with the wealth of appliances available for other purposes.

It thus became necessary to procure some simple form of apparatus, secure from sources of extraneous contamination