were to establish courses of instruction, similar to the best in Europe, for the training of experts in school sanitation and hygiene.

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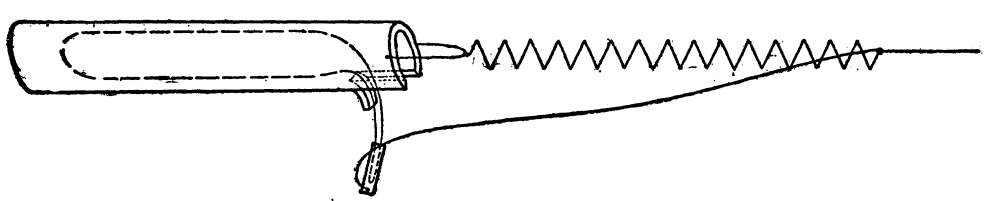
A SIMPLE APPARATUS FOR COLLECTING SAMPLES OF WATER AT VARIOUS DEPTHS.

VARIOUS devices have been used for collecting samples of water for bacteriological examination at different depths below the surface of a pond, but few of them are satisfactory. Some are too complicated and liable to get out of order; some are too expensive; some are too fragile for transportation; some cannot be well sterilized; while others have the besetting sin of operating at the wrong time or of failing to operate when required. Realizing the great importance of having a reliable method for collecting samples, the writer, after much experimenting, decided upon the form of apparatus here described.



It consists primarily of a glass tube $\frac{3}{4}$ inch in diameter and 5 inches long, closed at one end and having the other end drawn out at right angles and bent downwards as shown in the figure. The air is partially exhausted by means of an aspirator and the end of the tube sealed in the flame.

This vacuum tube is essentially the same as that first recommended by Pasteur, though he obtained his vacuum in a different way.

After being sterilized the tube is placed in the collecting frame, which consists of a piece of lead pipe about seven inches long and having an internal diameter of $\frac{7}{8}$ inch. At the upper end a strip of the lead is cut out and turned downwards, as shown in the figure, so as to form a rest for the bent arm of the glass tube. The glass tube is held in place either by a stopper pressed into the top of the tube or by a suitable spring clip passing around the bent arm and the projecting strip of lead. The weight of the lead is sufficient to sink the apparatus. A bail at the top of the lead pipe is attached to a spiral spring about eight inches long, which in turn is fastened to the cord or wire by which the apparatus is lowered. To the upper end of the spring there is attached a flexible wire, carrying at its lower end a small brass tube, one inch long, of such a diameter that it will easily fit over the end of the bent arm of the glass tube. The length of the flexible wire and the stiffness of the spring are so adjusted that when the apparatus is suspended by the cord in the water the flexible wire is slack; but when a sudden jerk is given to the cord the spring stretches so much that tension is brought on the flexible wire and a sudden pull communicated to the bent arm of the tube, resulting in the same being fractured. If the bent arm has previously been scratched with a file the break will be an even one.

The operation of collecting a sample is quite apparent. The glass tube being fastened in its place and the brass cap being put over the end of the bent arm, the apparatus is lowered to the required depth, care being taken that the cord runs out smoothly and without jerking. A sudden jerk is then given to the cord. This breaks

off the end of the bent arm, and the water rushes into the tube to an amount depending upon the completeness of the vacuum and the pressure of the water where the sample is taken. Usually the tube is found to be almost, but not entirely full.

After being drawn to the surface the vacuum tube containing the collected sample is removed from the frame and its end plugged with cotton or sealed with a bit of wax. Even if the end is left open there will probably be little danger of contamination on account of the shape of the tube and the small diameter of the bent arm.

The vacuum tubes may be conveniently transported in an ordinary 'cabin topped' leather bag, which has a tin box inside divided into two compartments, the lower one for ice and the upper one for the tubes which are placed in a suitable rack.

When a tube is to be opened a scratch is made near the bend of the tube with a file or glass cutter and the end knocked off, allowing the admission of a pipette. Both the glass cutter and the outside of the tube should first be sterilized by flaming. It is perhaps needless to say that the sample should be planted immediately after opening the tube.

This apparatus for collecting samples possesses several advantages. It is lowered and operated by a single cord. The whole apparatus may be easily sterilized by dry heat, or the vacuum tubes may be sterilized separately and inserted one after another in the collecting frame. The vacuum tubes are cheap and easily made; they may be transported without fear of breakage. There is practically no danger of contamination of the sample either in collecting, transporting or opening. The apparatus, if properly adjusted, is absolutely sure to operate at the right time and in the manner desired.

In conclusion, it may be said that the method has been used for some time at the biological laboratory of the Boston Water Works and its results have been uniformly satisfactory. A somewhat similar apparatus, in which a spring and flexible cord were used to open a small valve in the stopper of a bottle, was recently used by the writer at Lake Champlain to obtain samples at a depth of 370 feet. Even at that depth no trouble whatever was experienced.

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THE LOBACHÉVSKI PRIZE.

On May 1, 1895, the Lobachévski Fund had reached, beyond all expenses, 8,840 roubles, 95 kopeks.

This sum permits the accomplishment of the double aim of the committee: to found an international prize for research in geometry, especially non-Euclidean geometry, and to erect a bust of the celebrated scientist. The prize, 500 roubles, will be adjudged every three years to the best works or memoirs on geometry, especially non-Euclidean geometry.

The prize will be given for works printed in Russian, French, German, English, Italian or Latin, sent to the Physico-mathematical Society of Kazán by the authors, published during the six years which precede the adjudication of the prize. Works to compete must be sent to the Society at the latest one year before the day of award, October 22, old style (November 3).

The first prize will be adjudged October 22 (November 3), 1897.

To award the prize, the Society will form a commission to choose judges among Russian or foreign scientists.

The work of the judges (reporters) will be recompensed by medals of gold, bearing the name of Lobachévski.

As a fixed capital to found this prize, 6,000 roubles were invested.

Of the sum collected, an additional 2,000 roubles goes to share the expense of erect-