

that the stopper is not jammed in the neck of the bottle, from unequal expansion in the hot air sterilizer.

In working at considerable depths I have found it convenient to use a screw at O. This increased pressure upon the wings of the clamps holds the stopper more firmly. At other times the screw is not needed. By substituting a wire for the string attached to the cross bar, the opening and shutting can be readily controlled at very great depth.

A bottle is removed by simply compressing the wings of the clamps and lifting it out from the jaws. The ease and rapidity with which the apparatus works will be understood from the fact that I am able to collect 10 separate samples of water at a depth of 20 feet in from 10 to 15 minutes.

The bottles made use of are those dropping bottles fitted with ground glass pipettes now in common use for holding histological reagents. Both ends of the pipettes are sealed up in a gas flame, thus converting them practically into glass rods. As these bottles are kept in stock in the laboratory, one can always be replaced if it happens to be broken. The ones I employ hold 50 c. cm., but I would have preferred 100 c. cm. bottles had they been obtainable. The method of clasping the bottle by the neck admits of various sizes being employed in the same frame as there is space to spare between the cross bars.

The differences between the model here described and the original form introduced by Dr. Ellis are that the bottle is grasped by the neck instead of being forced into a socket from above. The use of spring clamps to hold the bottle, enables bottle and stopper to be brought into position by a single act instead of taking them apart and putting them in separately. The chief advantage of using the dropping bottles described lies in its giving a long tapering stopper; the lower end of which remains in the neck of the bottle when open, and guides it back into position, and it seemed preferable to use a bottle readily obtainable rather than to order a special form, which could not be replaced if broken.

The little sinking frame I have just described was ori-