The edges of the glass are ground by rubbing upon a sheet of carborundum paper moistened with turpentine, or upon a metal or glass plate fed with carborundum and turpentine or water.

It will be found convenient to have a dozen or two pockets—as many as are likely to be used in a single lecture, and to letter them consecutively on the thumb labels. A large collection of slides will take up very little room and will weigh very little. To avoid scratching, it is well to keep adjacent slides separated by sheets of paper of the same size. Before a lecture one merely arranges the empty pockets in the order of their letters and inserts the slides in the order in which they are to be shown.

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April 5, 1918

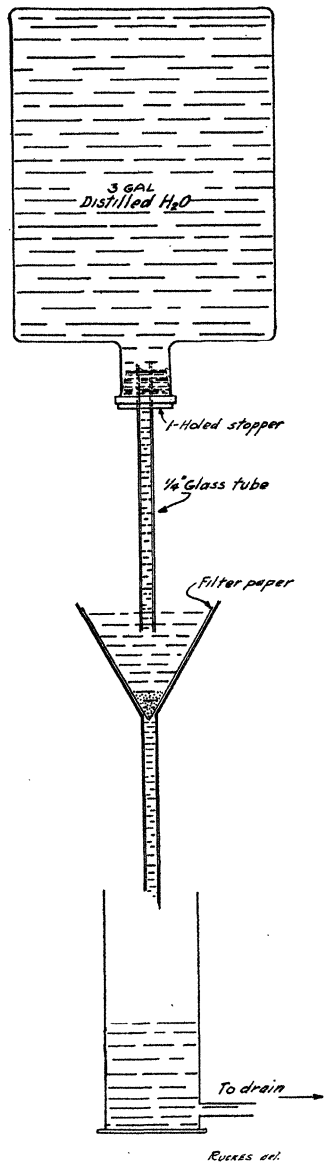
WASHING MICROSCOPIC ORGANISMS

One of the big hindrances to the study of plankton organisms is the difficulty encountered in manipulating these microscopic plants and animals during the first few steps of the technique. Hall (*Bot. Gaz.*, May, 1917) has outlined a method that the present writer has used for some years while at Cornell University. The problem of thoroughly and easily washing plankton material was one of the big features with which to contend.

For both diatoms and fresh-water crustacea the following procedure was found to be efficient:

1. Kill and fix the material in a mixture of
   Chromic acid .... one part,
   Acetic acid ..... one half part,
   Distilled water ...four hundred parts.
2. Wash by filtering through funnel.
3. Mordant in one quarter per cent. ferric alum for thirty minutes.
4. Wash again in funnel.
5. Stain in one half per cent. hemotoxylin for two hours.
6. Destain and wash as above.
7. Dehydrate by the glycerine method and mount, or
8. Dehydrate by the glycerine method and wash with 95 per cent. alcohol.
9. Ten per cent. Venetian turpentine, concentrate and mount.

The process of washing, originally, was to allow water to drip on the material that was held in a filter paper in a funnel. This may



seem an easy matter. However, several things have to be taken into account. Chief among these is to maintain a constant flow of water during the process. Frequently a prolonged

washing is necessary. Nearly everywhere the pressure in water pipes varies during the day and the night. Either the dripping may become so rapid as to flood the funnel and cause a loss of the organisms or the flow may cease altogether, leaving the material in an exposed condition and hence subject to drying. To overcome this trouble the following device was used.

Prepare a funnel and filter paper in the ordinary way. Then fill a two or three gallon bottle with distilled water and stopper it. The stopper should be a one-holed rubber one through which passes a glass tube of desired length but having an inside diameter of at least one quarter of an inch. Make the stopper very secure. Empty the organisms previously fixed, into the filter and then quickly invert the two or three gallon bottle; allow the tube to extend into the funnel so that the end of it is about a half inch below the edge of the filter paper. Give a good support to the reservoir. See the accompanying diagram for arrangement.

As filtration goes on the surface of the water in the funnel falls below the end of the tube that projects into it. This allows air to pass into the tube; the ascent of the air causes water to flow out of the tube and replenish the supply in the funnel. The flow continues till the surface of the water reaches the tip of the tube when the supply is automatically shut off. The process is continued in this way as long as there is water remaining in the reservoir. The descent of the water causes sufficient disturbance of the material in the funnel to prevent the organisms from matting against the side of the filter paper.

The rate of filtration and consequently the flow of water from the reservoir may be regulated by using various grades of filter paper or several sheets of a thin quality. The writer has found that a rather heavy grade of paper permits sufficiently slow filtration so that three gallons of water will last about fourteen continuous hours.

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AN OPTICAL ILLUSION WITH FATAL CONSEQUENCES

THERE is an optical illusion that has probably led, within comparatively recent times, to the death by drowning of scores, or even hundreds, of capable but inexperienced swimmers. A person swimming with the wind, and consequently with the waves which travel in the same direction faster than it is possible to swim, receives the impression of being carried backward by the water. In the absence of knowledge or information covering the case, most persons, so situated, if headed toward the shore, immediately think of "undertow," a word which nearly every one has heard, and believe themselves to be caught in an offshore current. The instincts of an untrained or half-trained swimmer always lead to a nervous haste and overexertion in deep water, even under conditions most favorable for swimming. When these instincts are supplemented by the panic that arises from the belief that the person is caught in an "undertow," the resulting increase of effort and acceleration of action reduces efficiency to a degree that must certainly have left many persons fatally exhausted before they reached a footing.

My attention was first called to this phenomenon through two cases of able-bodied but indifferent swimmers who, after swimming just beyond their depths in an onshore breeze at Pasay Beach, near Manila returned to the bathhouse in an excited state and reported having been caught in an "undertow" with nearly fatal result. In each case I made immediate investigation of the water at the point indicated and found neither "undertow" nor offshore current sufficient to embarrass any swimmer. Subsequently, on numerous occasions, while initiating beginners into deep-water swimming, being headed for shore with an onshore breeze, I have heard the initiate remark, with deep concern, that there was a current against us. This required to be accounted for. The feeling of being carried backward may be satisfactorily explained to most persons as arising in the same way as the effect commonly produced on a person