

ous Publication 318) is an excellent reference on insect orders, collecting, preserving, and mounting, as well as suggestions for control.

The General Biological Supply House, Chicago, Illinois can supply teachers with their famous *Turtlox Service Leaflets* which cover many projects, experiments, and laboratory procedures.

A good encyclopedia is a nice addition to have, but in smaller schools it may be necessary to forego such an expensive set of books and use the ones in the main library.

Permanent scrap-books are commonly made up by the pupils themselves and cover many of the current articles and pictures from newspapers, magazines, and advertisements.

The individual teacher will be able to stock the reference shelf to suit local needs, but the suggestions made above will serve to show how useful a few books can be if they are near by.

## A METHOD OF QUIETING PARAMECIUM FOR OBSERVATION<sup>1</sup>

The polyvinyl alcohol method of quieting paramecium and other microorganisms is not new, but it is probable that many readers of *THE AMERICAN BIOLOGY TEACHER* have not had it brought to their attention.

A solution of completely hydrolyzed, medium viscosity *polyvinyl alcohol* is prepared by stirring the powdered alcohol<sup>2</sup> into water until the solution is as

<sup>1</sup> Reprinted, in part, from *Science*, Vol. 99, p. 544, June 30, 1944.

<sup>2</sup> Type B, Grade RH-349-A, obtained from E. I. duPont de Nemours Company, Electrochemicals Department, Niagara Falls, New York. Other grades of the alcohol can be used, but they go into solution with more difficulty and remain cloudy in solution.



Using the Biology Reference Shelf. Photo by Lacroix.

thick as heavy molasses—approximately 12 to 14 grams of dry alcohol in 100 cubic centimeters of water. This should be done over a steam bath and the solution left until all bubbles rise to the surface, after which the solution will be glass clear, and may then be kept indefinitely in a stoppered wide-mouth bottle.

In use, two drops of a thick suspension of paramecia or other similar microorganisms are placed on a slide and two drops of the polyvinyl alcohol solution added. The whole is thoroughly stirred with a needle and covered with a cover glass. The animals are brought almost to a standstill at once and will remain so in good condition for over four hours. Abrupt and striking reversals of ciliary beating and many other details are clearly visible. The frequency of pulsation of the contractile vacuoles usually becomes slower after three hours. The cover glasses are self-sealing because the polyvinyl alcohol dries to form a firm membrane that prevents further evaporation. The slides can be cleaned merely by soaking briefly in water.

*Stentor* presents a handsome object when immobilized by this method. The same holds for the larger hypotrichs and various small aquatic worms like *Nais* and *Chaetogaster*.

G. B. MOMENT,  
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