

form and color without adverting to the scientific import of the model. Oral discussion in which the students take active part with frequent references to important details by the teacher will do much to center the attention in the right place. A brief test, oral or written at the close of a modeling period will show the teacher how successful the work has been.

For the convenience of teachers who are not familiar with modeling materials the following list is offered:

From the General Biological Supply House, Chicago, Ill.

Permoplast—5 lb. brick, any color .....	\$1.50
Permoplast—1 lb. brick, four colors .....	.50
Mexican Pottery clay, powder form .....	.60 per lb.
Pliamould .....	.90 per lb.
Ivory casting plaster .....	.15 per lb.

From the Metropolitan Supply Co., Cedar Rapids, Iowa

Amaco clay flour, dry form—5 lbs. ....	\$ .35
Amaco clay flour, moist, ready to use—5 lbs. ....	.50

## Two Simple Demonstrations

DONALD S. LACROIX

Amherst High School, Amherst, Massachusetts

### Transpiration

One of the easiest and most direct methods of showing the release of water vapor from leaves is to use a large test tube (about ten inches long and one inch



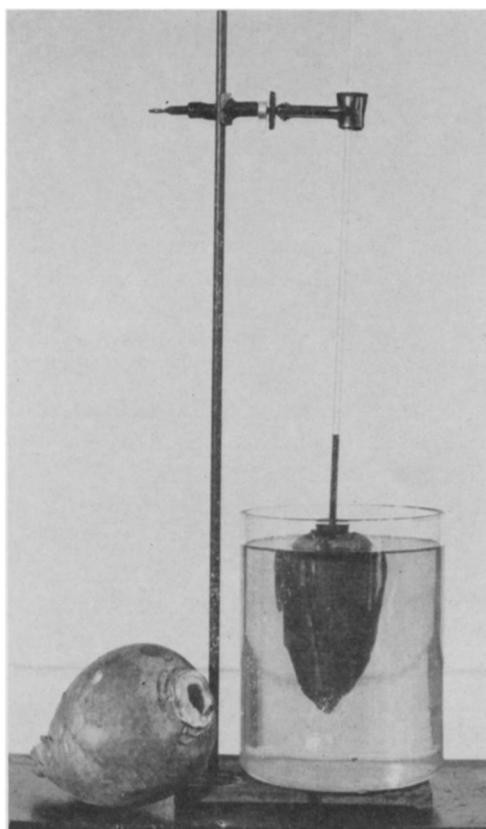
in diameter) instead of the conventional bell jar. Merely insert some leaves on a growing plant into the test tube (without breaking the connection with the rest of the plant), suspend the tube in a clamp on a ring stand and plug the open end with cotton. Water the soil around the plant copiously, and condensed water vapor will appear inside the tube within an hour. The only source of this condensed water vapor is obviously the leaf. Incidentally, if the leaf is a large one, it may be rolled into convenient size for insertion into the test tube without seriously affecting the experiment.

### Osmosis

Diffusion of liquids through living tissue can be demonstrated as indicated in the accompanying figure. A large carrot or medium-sized turnip makes excellent experimental material. (Select some that are free from worm-holes.) Using a cork borer or old-fashioned apple-corer, bore a hole from the top of the carrot or turnip well down into the cen-

ter. Fill this hole with a mixture of sugar and ink or syrup and ink. Fit two single-hole stoppers to a 3-foot length of glass tubing—one stopper being placed at one end of the tubing, the second being 18 inches or so above it for clamping the whole assembly to a ringstand. Insert lower stopper and tubing in the hole bored in the carrot and seal with melted paraffine. Place the carrot in a battery jar of water. After a few hours, the ink-stained sugar or syrup will rise in the tube since water is osmosing through the plant tissue into the sugar or syrup. The ink serves to make the liquid in the tube visible at a greater distance.

Many variations of this technique are possible. By using a glass tube of very small bore, a column of liquid 6 or 8 feet in height may be obtained. It is also interesting to try common salt and concentrated solutions of various kinds in place of the sugar.



## DO YOU HAVE AN OPAQUE PROJECTOR IN YOUR SCHOOL?

If you have an opaque projector, use it sometime for variety when planning oral reports. Have each pupil make post-card slides on tagboard to illustrate his special topic. When these are done in colors or with appropriate cutouts pasted on, they contribute much to the report. Labels and explanations are important too.

The pride that each pupil has in seeing his own slides seems to add to the effectiveness of putting over his topic. Of course the report has to be prepared well enough to be given without notes. Being in the dark seems to give a certain confidence to the pupil who is often shy when reporting.

Pupils always seem to enjoy their oral reports best when they make use of the opaque projector. Wouldn't you like to try it sometime too?

HELEN DRUGG,  
Keene High School,  
Keene, New Hampshire

It was necessary because of lack of space to omit one of the articles originally submitted for the Visual Aids Issue.—*Evaluating Motion Pictures for Biological Science*, by D. W. McCavick of the Visual Instruction Bureau, University of Texas, Austin, Texas. This article, which includes an evaluation chart and a list of previewed and evaluated films, will appear in the May issue.

Also, *Laboratory Aids* by John M. Hamilton and by Rev. John W. Baechle; *The Realm of Nature* by Alfred Novak . . .