arations are not harmed by the heat, nor do they boil, as conventionally mounted preparations sometimes do.

Early chick embryos may be mounted on polyvinyl chloride sheets for projection through a 35-mm projector. Several layers of the medium may have to be applied, depending on the size of the specimen; each layer is dried before the next is added. The sheets are then cut to fit a 35-mm slide-holder and projected.

The versatility of these mounting media is easily demonstrated with a wide variety of living things found in freshwater plankton. We have also successfully mounted fern spores, bread molds, tardigrades, sponge spicules, and frog parasites. Specimens such as fern sori are placed on a slide in a drop of water and thoroughly crushed to release the spores. The material is then partly dried. Either of the mountants is applied by forming a ring around the material and gradually filling in the ring. This prevents the specimen from moving ahead at the edge of the medium.

Specimens may be flushed from glass slides with water; or they may be lifted off with a razor blade and stored for future use. Plastic slides may be bent to pop off the specimen, which can be saved.

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RADIOISOTOPE DEMONSTRATION OF CARBON DIOXIDE UPTAKE

Every biology textbook discusses the role of radioactive tracers in the investigation of the biochemistry of photosynthesis. Demonstration of radioactive carbon (^{14}C) uptake by land plants involves the addition of an acid to a radioactive carbonate. Although this can be done in an enclosed chamber or under a hood, it is inconvenient, and there is some hazard that the released radioactive carbon dioxide ($^{14}CO_2$) may escape during the demonstration. In the procedure described here the inconvenience and the hazard are eliminated by the use of a water plant. The purpose of the procedure is to show that light is essential for the uptake of carbon dioxide in photosynthesis.

The main materials are a Geiger counter (preferably one with an end window tube) and a carbonate containing 50 μCi (microcuries) of ^{14}C. The latter is usually available from the supplier as sodium carbonate ($Na_2{}^{14}CO_3$) or barium carbonate ($Ba^{14}CO_3$). The quantity 50 μCi is that generally licensed for use by any teacher, with or without special training in the use of isotopes. The other materials are a water plant, such as *Elodea;* fingerbowls; and planchets.

To carry out the demonstration, first dissolve the 50 μCi of ^{14}C in 500 ml of distilled water. Pour equal amounts of the solution into fingerbowls—one labeled "light," the other "dark." Also, attach a "Caution" label to each bowl. Into each fingerbowl put a healthy sprig of *Elodea* or similar water plant. Cover the bowls with glass plates. Place one bowl in good light and the other in the dark for 12–24 hours. (The amount of time is not critical. One might modify this experiment to determine how soon after exposure to light the uptake can be detected.) At the conclusion of the time chosen, remove the plant and rinse it thoroughly in tap water, to wash off all external traces of the radioisotope. Flush this rinse water down the drain with plenty of tap water. Then, dry the plants completely. (This may be hastened by using a heat lamp.) After dessication, place the residue of each plant in a separate planchet and count with the Geiger counter.

The demonstration may be repeated a number of times, using the original solution.

To prepare radioautographs of treated plants, proceed through the rinsing stage but do not dry the plants; instead, enclose them in plastic wrap, press them, and place them in cassettes with no-screen x-ray film. Expose them overnight and then develop the films.

Comparison of plants placed in the light with those kept in the dark provides results that are spectacular and clear-cut. Further questions that students and teachers may wish to explore, using the above techniques, are the following:

1. How does the color, kind, or intensity of light affect the uptake of ^{14}C in *Elodea*?
2. In what plant part or parts is ^{14}C uptake greatest?
3. How is the age, maturity, or health of a plant related to ^{14}C uptake?
4. How is ^{14}C uptake affected by prolonged periods of dark before demonstration? By prolonged periods of light?

Normal precautions should be taken in disposing of the radioisotope. Dilute the radioactive solution with plenty of tap water and discard in the sewer. The radioactive plants should be incinerated, outdoors.

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A "CLOCK" FOR *DROSOPHILA* CROSSES

A hindrance to the use of the fruit fly *Drosophila melanogaster* in genetic studies is the need to obtain virgin females for the crosses. Collecting the virgin flies is particularly difficult in the high-school laboratory. One needs to separate males from females within 8–10 hours after eclosion (emergence from the pupa case), because after that time the females mate, and controlled crosses are no longer possible. While I was a graduate student at Purdue it was the task of the graduate assistants to keep the genetics laboratory open until 10 P.M. so that the students could separate the sexes in their stock bottles; then the