

Collecting, Preserving, and Mounting Plant Materials

Pressed and dried plant specimens are useful as teaching aids and reference sources for plant identification, or as decorative material. Select plants to be mounted with care, prepare properly, and accompany by adequate, clearly expressed, written identification data. This publication suggests materials and methods for selecting and preparing plants for mounting.

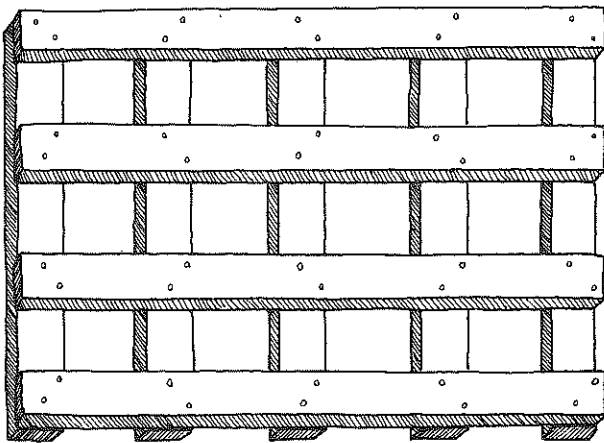
Equipment

1. A plant press, consisting of two hardwood frames plus straps, corrugated cardboard, blotters, and newspapers.

If you do not already have a plant press, you can construct one using the materials listed. Each press requires two frames. For *each* frame you will need:

- Four smoothly finished wooden lath or strips $\frac{1}{4}$ inch by $1\frac{1}{2}$ inches by 16 inches.
- Five smoothly finished wooden lath or strips $\frac{1}{4}$ inch by $1\frac{1}{2}$ inches by 12 inches.

Arrange strips as shown in drawing. Nail or rivet securely at each intersection of the strips, thus forming a rectangular frame 12 inches by 16 inches.



- A pair of 3- or 4-foot straps about 1 inch wide. Window sash cord with a loop tied in one end is also satisfactory.

- At least two (preferably more) pieces of corrugated cardboards, 12 inches wide and 16 inches long, with the corrugations running crosswise.

- Blotters (15 or more, depending on number of plants to be pressed) 12 inches by 16 inches cut from heavy blotting paper or from lightweight builders' deadening felt. If possible, keep extras on hand to rotate with dry blotters during the drying process.

- Newspapers folded to 12 inches by 16 inches.

2. A pocket-size notebook.

3. A digging tool such as a small shovel or trowel for digging roots.

4. Pruning shears, clippers, or a sharp knife for cutting branches of woody plants and trimming specimens.

5. "Herbarium Sheets." A standard botanical mounting paper is $11\frac{1}{2}$ inches by $16\frac{1}{2}$ inches, made of poster board. You can buy these at a stationery store or have a printer cut a supply for you.

Collecting plant specimens

To obtain typical specimens collect from areas with at least 10 other plants of the same species in sight.

Complete and typical specimens should be collected. Select specimens to illustrate as complete as possible the various parts of the plant. If at all possible, collect material in the flowering and/or fruiting condition.

- For small herbs, collect the whole plant or several plants, including underground parts.

- With larger herbs, take representative parts of both the upper and lower portions of the plant. Describe the basal parts, if not collected, in your notes.

- For woody plants, take a typical branch, bearing fertile material whenever possible. Cut branches rather than breaking them. Sometimes a piece of bark is desirable for identification.

Reprinted July 1985

4-H 1007



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The quantity of material collected should moderately fill a standard 11½ inch by 16½ inch herbarium sheet.

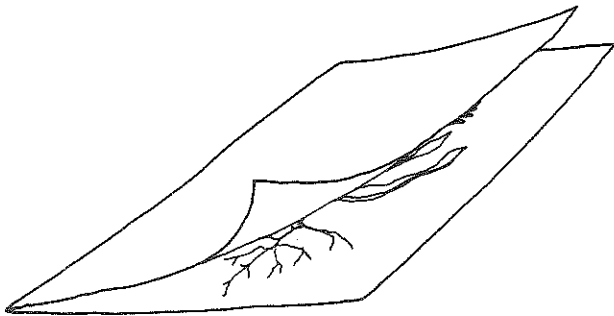
In cool weather, you can carry collected specimens in plastic bags for some time without wilting, especially if they are sprinkled with water or wrapped in moist newspaper and the bags closed with elastic bands or wire ties. Put material from one collection only (plants that appear to be all alike and all from one location only) in one bag. In hot summer weather, place plants in a press directly upon collection.

Record appropriate notes in the field at the time of collection to assure accurate and complete information. Notes on habitat, abundance, color of flowers and fruit (they often change color upon drying), and associated species in the area are important for study and identification of collected specimens. Do not rely on your memory!

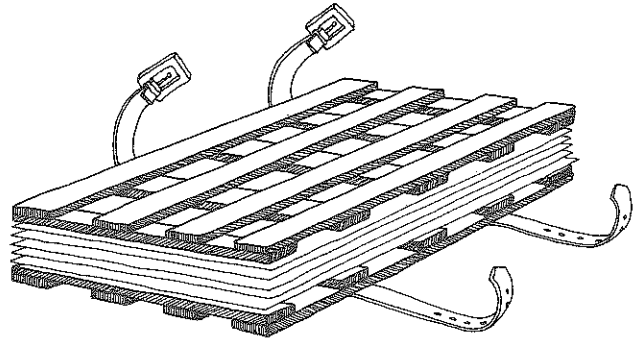
A notebook is useful for recording information. Give each specimen a number, record the number, date, and collecting information in your notebook. Place corresponding numbers in the plastic bags and on the newspapers in which the specimens are pressed.

Pressing and drying plant specimens

To press the plants, arrange them on the open half of a folded newspaper, as naturally as possible. Avoid excessive overlapping of plant parts, and see that leaves are not unnecessarily crumpled or folded. Mark the same identification number on the newspaper as recorded in your field notebook.



Build up the press by starting with one of the press frames on the bottom. Turn the frame so that the long strips are on the outside to prevent pulling the press apart and to insure uniform pressure when the press is strapped. Lay a corrugated cardboard over the frame, following this lay a blotter, then the folded newspaper in which the plant specimen is spread, then another blotter. Blotters absorb the moisture from the plants. Repeat this sequence (blotter, folded newspaper with contained plants, blotter) until all specimens are arranged. An occasional cardboard scattered throughout the press may be helpful. Top the pile with another corrugated cardboard and the second press frame



(long strips on outside). Strap together very tightly with two straps or two pieces of rope (window sash). Pressure should be even. Maintain pressure by tightening the straps or rope as drying progresses.

Colors are retained more naturally if specimens are dried quickly. Open the press and inspect the specimens twice daily at the start. If the blotters are moist, change them. Spread the damp ones out in the sun to dry or dry them over a radiator or other heat source. The blotters absorb moisture from the plants and consequently may become very moist within a day's time. Moist blotters should be changed or dried every day until the plants are dry. Leave the specimens stacked in their newspaper unless these sheets are also wet, in which case, replace them too. (Be sure to transfer any numbers recorded on the newspaper.) The press should be reassembled as soon as dry blotters are available. Most plants dried in this manner take 4 to 6 days to dry.

Artificial heat can be used to hasten drying, which helps prevent mold or mildew, retains better color in foliage and flowers, and requires less work and press equipment. A portable, fan-equipped electric heater makes a very good drier, since it supplies continuous, gentle, circulating warm air through the tubes of the corrugated cardboard. When using artificial heat, cardboard should be used between each layer of plant material, in this order: cardboard, blotter, folded newspaper with contained plants, blotter, repeating the sequence until all specimens are arranged. Lay the press on its side on an elevated rack 1 or 2 feet above the heater (with the corrugations in the cardboards in vertical position). Two chairs or stools, set apart, make an adequate rack. Foil or some other deflective device may be hung from the bottom of the press to the floor to force the air upward, through the corrugations. With this system, plants may take only 24 hours to dry and the press need not be dismantled to take out, dry, and replace the blotters.

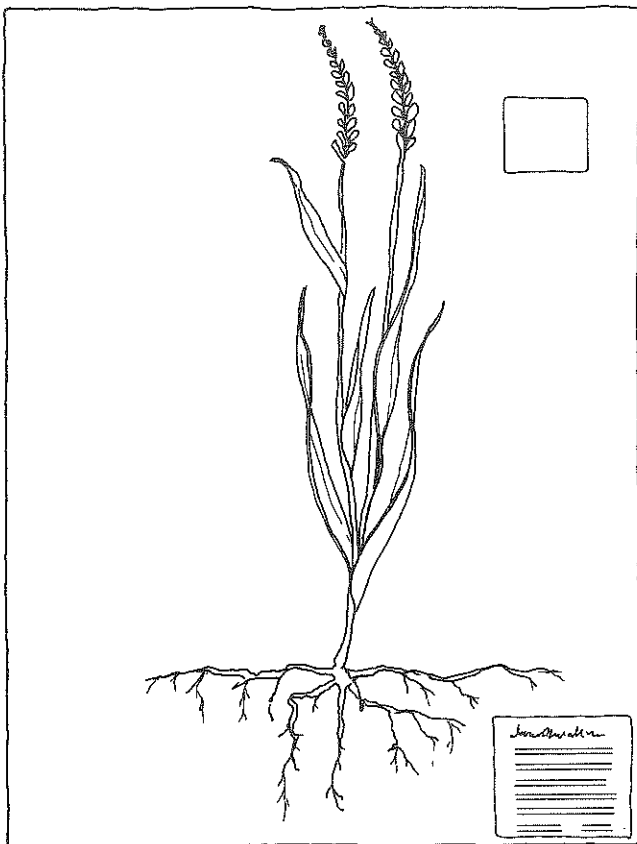
Tighten straps or ropes occasionally during the drying process so that specimens do not wrinkle.

Mounting plant specimens

Where specimens are handled frequently, mounting will help prevent breakage. Also, some collectors may want to mount dried specimens for wall or counter display.

1. Use standard botanical mounting paper (11½ inches by 16½ inches) of medium weight. If mounting paper is not available, stiff white paper or poster board can be used.

2. Specimens should be glued with a white casein liquid glue. The glue should spread freely and be clear when dry. Do not use clear musilage or paste. Place a coating of glue on the under side of the dried specimen. Then place it on the sheet as desired. Cover the specimen with waxed paper and apply even pressure over the entire sheet until the glue dries. Be as neat as possible.



Specimens may be held in place by the use of transparent acetate tape rather than glue. Making mounts using tape may be quicker, but the tape has a shorter life than the glue. Do not use the common, clear pressure-sensitive tape because it will deteriorate, become sticky, or dry out with age. If you use tape, apply it in several places to hold the entire specimen firmly to the sheet.

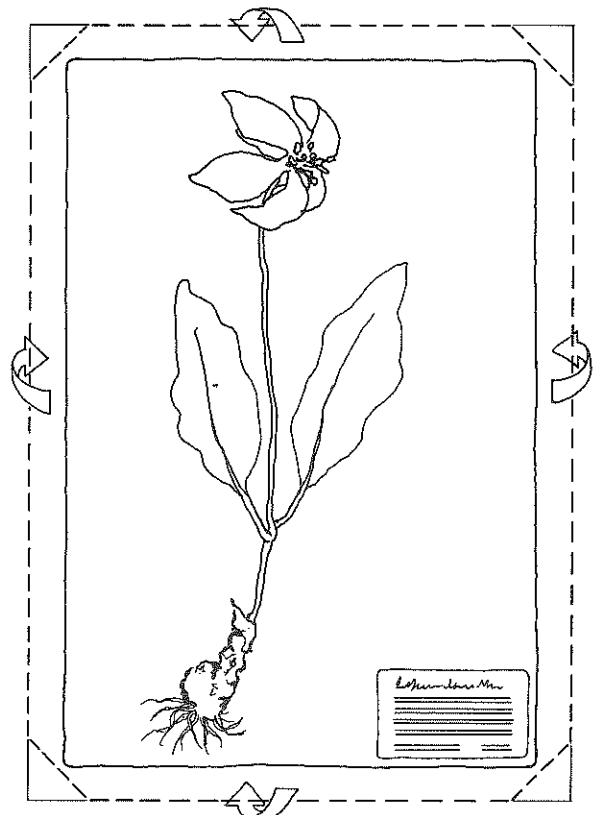
3. Place extra flowers, fruits, seeds, or other loose plant parts in a envelope or glue to an unoccupied portion of the sheet.

4. Glue a permanent label about 3 inches by 5 inches to record all the pertinent information (from the notebook) on the lower right-hand corner of the mounting sheet, or print the information directly on the sheet in the lower right-hand corner. This is a suggested format.

Common name:	
Scientific name:	
Location:	
Habitat:	
Comments:	
Collector:	Date:

5. Once mounted, the specimen can be covered for protection. A stiff, clear plastic sheet, the same size as the mounting paper works best. Place plastic over the mounted specimen and tape all four edges the entire length of the sheet. Use tape ¾- or 1-inch wide and place one half of the width of the tape on the plastic, then binding the rest to the back of the mounting sheet, thus holding the sheets together.

Clear, pressure-sensitive "contact" paper also can be used to protect the specimen. Contact



paper should be about 2 inches longer and 2 inches wider than the mounting paper. After applying the contact paper to the mounted specimen, cut off the corners of the contact paper, fold it over and bind it to the back of the mounting paper in similar manner as for the tape. In this case, it is not necessary to glue the specimen to the mounting paper, as the contact paper will secure the

specimen. Contact paper is much easier to handle if two people can work together.

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