

Miscellaneous Collecting & Preserving Methods

Bacteria

No good simple techniques are available to preserve bacteria

Protists

No good simple techniques are available to preserve unicellular or colonial protists

Collecting and Preserving Seaweeds

Seaweeds are common on rocks and jetties along the coast. Sargassum and other seaweeds also frequently wash ashore and can be collected if in good shape.

Collect the seaweed, rinse it off with fresh water and blot dry with paper towels

Place between two sheets of wax paper or aluminum foil and proceed using the technique for pressing plants below

Fungi

Collecting and Preserving Fungi

You can search your yard and nearby parks for different kinds of fungi; they are easiest to find a few days after a rain but some can also be found almost anytime growing on rotting wood, or in very rich organic soil. You may even find some in your indoor plant pots.

Another good source of fungi is stale bread, old fruit, or various kinds of parasitic fungi on both indoor and outdoor plants.

Collect mushrooms using a trowel or knife to 'dig out' the mushroom from its substrate. Some structures need for identification are at the very base of the stalk (stipe); if you just pull it up you may not get these parts.

Place your specimen in a box or paper bag (not a plastic bag) and allow it to dry. A light box will speed the drying process.

If you have a camera with a macro lens or a fairly good closeup lens you can try photographing them instead. But you will need good, crisp photographs at fairly close range to have any hope of identifying them accurately.

Making a Spore Print

If you find mushrooms you might want to attempt to make a spore print. Spore prints can provide a permanent record of the gill pattern and spore color of the larger fungi:

- a. Remove the stem by cutting it close to the cap.
- b. Place the cap, gills down, on a white sheet of paper (some spores are white or light colored and would appear in better contrast on a darker color of paper).
- c. Cover to prevent air drafts and leave undisturbed for several hours or overnight
- d. Spray the finished print with clear lacquer or fixative and label it

Plants

Collecting & Drying Plant Specimens

To collect and preserve plant specimens you will need to have a **plant press**. A **plant press** is easily made or can be checked out from your instructor, a small deposit (such as your firstborn child or favorite pet) is required for checkout.

A plant press consists of a:

- wooden frame up to 12 X 18 " (about the size of a newspaper page)
- several pieces of corrugated cardboard about the same size (it is important that the corrugations be parallel with the shorter edge of the cardboard)
- a stack of newspapers
- two adjustable straps or ropes

In the case of herbaceous plants the entire plant should be collected. In the case of large and/or woody plants, representative vegetative structures should be collected if possible (eg, typical leaves and small branches, tendrils, bark sample, adventitious roots) Notes should be made describing the size and general appearance of the plant if the entire plant was not collected. A large plant can be bent or folded to fit your press. In most cases, specimens collected should include both vegetative and reproductive parts (either flowers or fruits or both). Plants should be immediately placed in the plant press when you collect them.

When specimens are collected they should be placed between one or two sheets of newspaper, then between two pieces of cardboard before being placed in the plant press. Tighten the straps to put some pressure on the plant.

Thick stems, succulents (such as cacti) or large fleshy fruits (such as tomatoes, apples, etc) may be halved or sectioned to dry more effectively. You don't want the total specimen to be any thicker than about a half inch. Very large structures such as pine cones, etc can be preserved and stored separately in a drawer rather than on the specimen sheet. See your instructor for helpful tips.

Plants in the press can be dried on a light box, in your attic or out in the sun on a hot dry day. The press must be lifted off the ground so air can flow through the cardboard around the plants. Depending on your method it may take 3 to 7 days for your plants to dry. Plants that do not dry quickly enough may become moldy and useless.

Mounting Plant Specimens

Remove the specimen from the plant press only after it has been thoroughly dried. You will need to get a piece of special **mounting paper** from your instructor. Do not substitute other kinds of paper or cardboard for this purpose. Choose what will be the upper side of the plant and place it on the mounting board for layout. There should be room for the label in the lower right corner (see below). Turn the plant upside down and spread Elmer's glue or 'tacky glue' on various places, particularly the stems and branches. Paste the specimen on the board, place the cardboard and a small weight on the plant to insure good contact with the mounting paper. Allow to dry at least one hour before disturbing or moving.

Making a Plant Label

Your label should contain the following information:

Plant name: usually Genus and species, in a few cases Genus only (ask your instructor about this; remember the genus is capitalized and both are underlined)

Common Name

Habitat: such as grassland, backyard, wetland, pond, desert, roadside, etc, if possible you might also mention the soil type, etc.

Location: where the plant was collected; include a reference to the nearest intersection and the nearest city or town, also list the county and state.

Collector (your name but you might also include other members of a group if you collected together)

Date specimen was collected

Animals

Collecting & Preserving small soft bodied animals, mainly invertebrates

Kill and preserve in jars of 10% formalin solution or 70% alcohol (ethyl or isopropyl); make label with India ink and place **inside** jar

Collecting and Preserving Insects

Collecting: Most adult flying insects are generally collected using a fine net. Individual insects can be collected with forceps by searching on plants, under logs and rocks and among weeds. Insects can be placed in bags or jars and placed in the freezer for several days. This will kill most insects although a few may revive when thawed.

Mounting and Preserving: Most insects, unless very small or fleshy larvae, are best preserved by pinning and drying. Use only specially made insect pins to mount insects and pay attention to the location of the pin through the animal. Butterflies, moths and dragonflies will need to be spread on a pinning board to arrange their wings and legs and antennae.

Bones and Skulls

Clean thoroughly and allow to air dry
If desired bones can be placed in a bleach or hydrogen peroxide solution to whiten;
allow to dry;
place in bag or box with complete label tied to skull if possible

Nests, Feathers, Eggs, Racks, shells, feathers:

Clean up as much as possible and place in bag or box with complete label

Footprints and Burrows

Use plaster of Paris, follow directions to mix
Pour onto footprint or into burrow
Allow to harden
Dig around plaster to free from soil
Carefully clean and allow to air dry
Place in individually labeled boxes or bags.

Photographs

Photography can provide an excellent opportunity for originality and creativity if you have a facility with the medium and would like to express yourself in this way. However, you should only use photography as an option if you are good with a camera and have a good camera with a variety of lenses or an underwater camera for marine and aquatic organisms. It is very difficult to get good photographs of animals without either some kind of telephoto lens for birds and mammals or close up lens for fish, reptiles, amphibians, insects, etc.

The animal should fill at least one fourth of the area of the photograph.