



Plant Collection Techniques

What plant makes an ideal specimen

When we encounter a plant population we need to choose the specimens that best document all critical features:

- The plant should be as complete as possible, meaning it should feature fruits and flowers and all the vegetative parts, including roots (or part of the roots) when possible. However, it is often hard to collect plants with both fruits and flowers because fruits often develop after the flowering stage is over.
- Healthy specimens are obviously ideal, but often plants have interesting fungi and other organisms growing on them, and too often these specimens are discarded.
- Plants should be collected in their typical habitat, but given morphological characters are often plastic, and plants that growing outside their natural habitat may have unusual features, making these specimens interesting for documenting morphological plasticity.
- In a population, when choosing between diminutive plants and full grown, mature individuals, always choose the mature specimen even if it is harder to collect or press; small plants can be complimentary to a collection, but should never replace more mature individuals.

How to collect

The whole plant should be collected, including the underground portions such as roots, runners, stems and storage organs. These often display diagnostic features essential for plant identification. Use knives and other digging tools to help pull out plants with underground organs deep in the soil, so as to not damage any of its parts.

Mosses and lichens should also be collected as a whole, if possible with fruiting bodies. Ideally, when growing in mixed populations, individuals should be picked one by one, with a minimum of 10 individuals collected, although separating these organisms is often impossible. For specimens growing closely

together on a substrate such as bark, rotting wood, soil, humus or rock, collect the substrate also so that the entire growth form is retained. Soil can be easily discarded after it is dry.

The best way to preserve a plant is to press it immediately after collection. However, it is often cumbersome to carry a plant press in the field. Plastic bags provide useful temporary storage, but delicate flowers and other plant parts can potentially be damaged. Blowing into the bag can help to cushion the material to prevent crushing. The old-fashioned vasculum is still an ideal tool to bring along for temporary storage of delicate plants. Mosses and lichens should always be immediately stored in paper bags or envelopes.

How to write a useful specimen label

When in the field carry a notebook to record critical information about the specimens and their habitats. Essential information to record includes:

- 1) *Date*. This is essential to pinpoint the flowering or fruiting period, and to give the specimen a timeframe.
- 2) *Collector's name*.
- 3) *Collection number*. Each collector should have a numbering system to record collected specimens. Often numbers start from 1 and continue on for the duration of the collector's lifetime; in other cases, people use the date or a combination of a number and date (for example, 1982-9-3-1 stands for the first collection made on the 3rd of September 1982). In other words, a collection number should be a unique identifier for that particular collection.
- 4) *The name of the plant*. If known, the plant name should be recorded, or at least the family name should be recorded. Guessing is allowed!
- 5) *Locality*. The location of collection should be as detailed as possible. Road names, intersections, towns, vicinity—the more the better. Ideally, a GPS unit should be carried in the field and a record of each point should be taken for accuracy.
- 6) *Description*. A description of the plant is always very useful, especially regarding characters that are not kept on herbarium specimens, such as the height of a plant, plant habit, petal color, flower smell, among others.
- 7) *Habitat*. Note information on both the macro- and micro-habitat, including the substrate, associated species, surrounding vegetation, light exposure, landscape, etc. The more information provided, the greater is the value given to that particular collection.

Drying plant material

Plant material should be pressed and dried as soon as possible to prevent mold growth and preserve flower color. If you cannot attend to this task the same day you collect, keep your material in a cool place. Woody specimens can be placed in water for a day or so, but in general the sooner they are dried the better the specimen will be.

Mosses and lichens should be taken out of their packets to air dry and are never pressed. When very bulky, gentle pressure can be applied to flatten the specimen. Mosses in particular could keep growing if left in damp conditions. This growth is quite different from normal growth and should not be allowed to occur. Once dried, both mosses and lichens can be stored in specially made packets. Lichens growing on rocks can also be stored in cabinets together with the substrate.