11.1.3 Collecting equipment

Botanical collecting, especially in remote areas, requires considerable planning before the fieldwork is undertaken. A summary of what should be done to ensure safe and successful field studies is discussed in §11.6. Before starting to collect botanical specimens, the correct equipment is required. The equipment includes: secateurs, hand lens (10× magnification), jeweler's tags, field book, knife, paper and plastic bags (of various sizes to put plant samples in), small clip-lock plastic bags, silica gel (for drying samples quickly if required for molecular studies), plant press, newspaper, cardboard sheets, tissue paper, GPS (Global Positioning System), maps—topographical, road, and any other maps of the area—pencil (preferable) or waterproof or permanent-ink pen.

11.1.4 Using local knowledge

Local knowledge of the landscape (see Turk et al., Chapter 16 below), other natural features including local climate, and an understanding of modifications to the local environment are always valuable. This information may mean the difference between finding a plant and not locating it. Furthermore, since you may need to visit or traverse private land, it is important to obtain permission and assistance from local landowners before undertaking any field activities.

11.2 The Botanical Collection

The essential aspects of making an adequate plant collection for identification and further scientific study include collecting botanical material that is of adequate size and has required morphological features, and the provision of adequate supplementary information provided by the collector.

p. 254 The importance of collecting adequate botanical specimens cannot be overemphasized. Good specimens are always required for accurate identification. The morphological characteristics of good specimens form the basis of continuing scientific research. Although other sources of data are being increasingly utilized, such as molecular data, morphological features remain the primary source of data for communicating species concepts. As our scientific knowledge of taxonomy improves, the identity of good specimens can be re-determined. Since these collections are authenticated vouchers for the original project, the information in that project will remain linked to the most modern taxonomic concepts via these collections.

Although it may be easier to examine an unmounted botanical specimen, normal handling easily damages dried, brittle material. Therefore, herbaria and museums affix these specimens to white mounting cards/sheets. Many of the collections held by these organizations are irreplaceable, and any serious damage would lessen their scientific value. Furthermore, herbaria and museums are custodians of these natural heritage objects on behalf of the citizens of their region. Therefore, it is useful to remember the size of the herbarium sheet that will be used to mount the specimen. Since most herbarium sheets are about 430mm long and 280mm wide (or larger), botanical specimens about 300mm long make suitable specimens of most species.

When possible, collect the entire plant or at least a portion of a plant when it is much large than a typical herbarium sheet. A typical branch or portion of the stem, about 200–300mm long, showing the leaves in position and with flowers and/or fruits (both if possible), should be collected: these are the characteristics that are traditionally used for determining the identity of a plant. If open flowers are not available, then flowers buds should be included. If variation in leaf form is apparent, specimens should include different parts of the same plant to represent this variation. Seeds can be useful in the identification of plants and should be included, if available.