(ix) Palms.

When collecting palms it is important to realize that ample time is required to prepare a good herbarium specimen, especially of large tree palms. Since the plant is too large to collect in its entirety, the collection should represent the living plant in such a way that someone else can imagine what the palm looked like from the material that you collected (Dransfield 1986). As for other flowering plants, it is generally not sufficient to collect sterile specimens for the purpose of identification. However, sterile material of rattans (climbing palms) has many useful features for identification purposes in the leaf and leaf sheath (Baker and Dransfield 2006). The features to collect include:

- A section of stem: if stem is slender then take a sample of stem. However, if large, cut off a thin strip of the stem's outer surface.
- Leaf sheath: take an entire sheath and split it down the middle, cut into fragments if very large, representing base and apex (always clearly label all parts).
- Leaf: remove an entire leaf, or if large, then cut into smaller sections representing base of petiole (stalk of leaf), basal part of leaf (often first leaflets) plus apex of petiole, a middle section of leaf with axis (rachis), and then apex. Label all parts carefully. The leaflets from one side of the leaf can be removed if the leaf is very large.
- Inflorescences (arrangement of flowers): if large, then cut inflorescence into sections and provide a basal part, middle, and apical portions.
- Flowers and fruits: good flowers and fruits are required. You may not be able to get both from the same plant. Furthermore, fruits and seeds may be plentiful on the ground. Collect germinating seedlings as these can be useful.
- Rattans (climbing palms): collect the climbing 'tendrils' and record if they arise from the leaf apex or the leaf sheath. Do not attempt to remove the sheath from the stem.

(x) Aquatic plants.

Generally the entire plant should be collected, if possible. As for terrestrial plants, aquatic vascular plants
p. 260 usually require flowers and mature ↳ fruits for identification; others require the rhizomes (e.g. water lilies) and rootstock; since immature and/or submerged leaves are different from mature and/or emergent or floating leaves, these should be collected as well. Remember that aquatic plants will wilt very quickly once removed from the water. Keep them in a bag or bucket with some water at all times until ready for pressing.

Some very small plants, like the floating duckweed (*Lemna*) and floating fern (*Azolla*), do not make very satisfactory pressed and dried specimens, but these can be placed between paper towelling (very absorbent paper) for pressing and drying, to produce reasonable specimens. Plants which contain a lot of mucilage are better pressed between sheets of greaseproof paper (Leach and Osborne 1985). Many publications that provided useful information on collecting aquatic plants (e.g. Haynes 1984; Ceska and Ceska 1986; Fish 1999).

11.2.1.2 Non-vascular plants

Non-vascular plants ('lower plants') are plants that lack specialized vascular tissue. These plants have no true roots, stems, or leaves; however, they often have structures that are superficially similar. Non-vascular plants include two distantly related groups, namely, Bryophytes (Lepp 2008+) and Algae (green algae) (Entwisle and Yee 2000–; Entwisle et al. 1997; Millar 1999–).