

Mosses, leafy liverworts, and algae

Mosses and leafy liverworts may look similar but you can tell them apart by the shape and arrangement of their leaves. Moss leaves are pointed and spirally arranged on their stems whereas leafy liverworts have rounded leaves arranged in double rows that grow flat against the host. Algae are hard to see with the naked eye. They often grow underneath the cuticle and may be parasitic on their host.



Magnified X 5

Barbella sp. This moss is commonly found on rainforest leaves. It often trails over the edges.



Magnified X 5

Cheilolejeunea sp. This species is frequently found on a range of host plants where it may cover the entire leaf surface.



Magnified X 20

Trentepohlia sp. is a common filamentous alga with leaf-like scales.

Ecology

Almost every leaf in the understorey is colonised by epiphylls, and these organisms contribute greatly to the biodiversity in rainforests. The rainforest leaf can be regarded as a small ecosystem in itself. A variety of microscopic animals such as mites, worms, and insect larvae, and several fungi and bacteria live in association with epiphylls. Many leaf-living bacteria are able to use nitrogen in the atmosphere and play an important role in the recycling of nutrients in the rainforest ecosystem.

Leaves may become completely covered by epiphylls. A heavy cover causes a significant shading effect which reduces the ability of the underlying leaf to make use of energy from the sun. This effect is more pronounced for leaves in the rainforest understorey where light is low.

Epiphylls are generally sensitive to human-induced disturbance and they are considered vulnerable due to the loss of their natural habitat. Recent research suggests that some epiphylls may be useful as monitors of forest stress.

Epiphylls are vulnerable organisms.

When studying epiphylls, remember:

- handle the leaf with care
- do not break, tear, cut, or squash the leaf
- avoid touching the epiphylls
- do not collect or take the leaf away

Brochure compiled by:

Pia Anthony, Andi Cairns, and Betsy Jackes.
Department of Tropical Plant Sciences,
James Cook University,
Townsville 4811 Qld, Australia.

Miniature Gardens on Rainforest Leaves

A guide to common epiphylls
in the Wet Tropics



Cooperative Research Centre for Tropical
Rainforest Ecology & Management
PO Box 6811 Cairns
Qld Australia 4870

