

A guide to common bryophytes for Selby Youth Club



The 'palm tree' sporophytes of Common Liverwort.

What are bryophytes?

Bryophytes include mosses, liverworts and hornworts. They are related to the flowering plants and conifers that we are more familiar with, but have no true *vascular system* (plumbing for transporting water and nutrients) - so rely more on absorbing stuff directly from the environment - and propagate via spores rather than seeds.

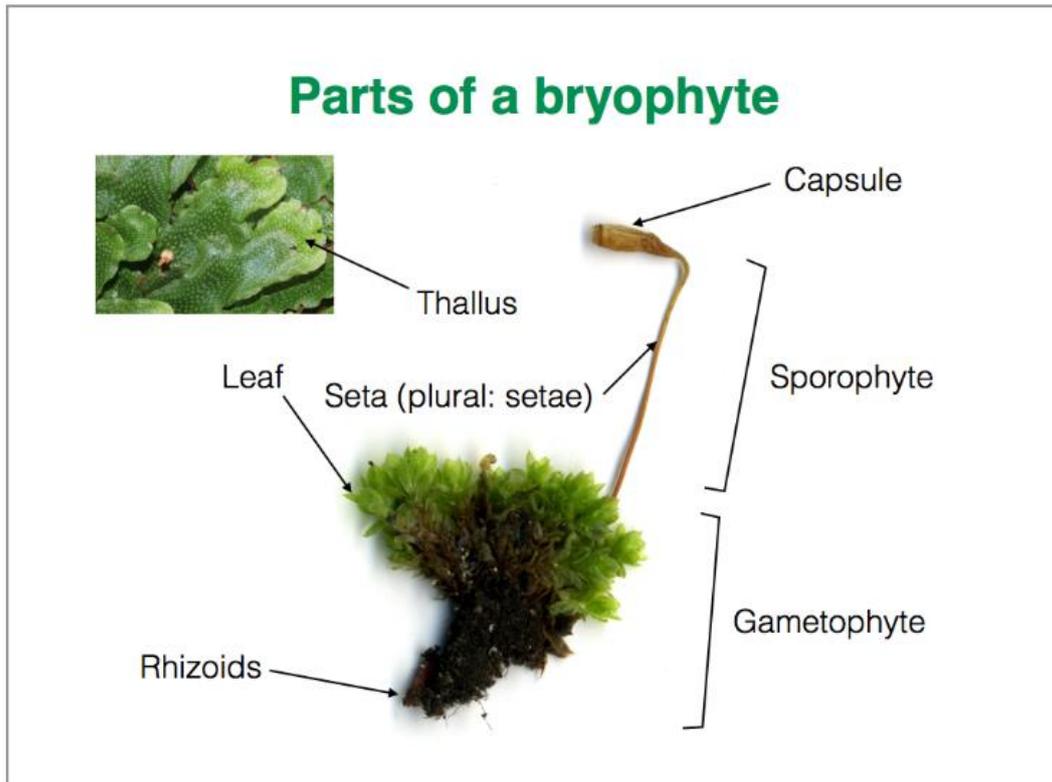
Bryophytes are typically small, low-growing and damp-loving. The earliest land plants on Earth (which probably appeared ~500 million years ago) would have probably looked similar to today's bryophytes. Even today, bryophytes are 'pioneers' - they are often the first colonists of bare soil, rock and bark, providing the foundation for more complex ecosystems to form.

The UK is one of the best places in the world for bryophyte diversity, thanks especially to all the rain we receive from the Atlantic! There are around 763 moss species in the UK, 300 liverwort species and four hornwort species. Some of our bryophyte species are found nowhere else on Earth.

Parts of a bryophyte

There are a few technical terms regarding bryophyte anatomy that crop up in this guide. The main leafy part of bryophytes is called the *gametophyte* because it produces the gametes (sperm and egg cells). When gametes undergo fertilisation they produce the *sporophyte*, usually on a stalk that sticks out from the gametophyte. The sporophyte is so-called because it has a capsule at its tip that releases spores. These spores will form new gametophytes

when they land somewhere suitable. Some bryophytes also reproduce clonally via mini green blobs called *gemmae*.



Guide to common bryophytes

This guide includes a small selection of common bryophyte species that you may find around your house and garden, as well as Selby Abbey. As a general rule, liverworts tend to look a bit slimmer than mosses and rely even more heavily on moist conditions. At the top right-hand corner of the following ID factfiles there are two initials. These tell you what major group of bryophytes the species belongs to:

AM = acrocarpous moss. This is a moss which grows like a cushion.

PM = pleurocarpous moss. This is a moss which grows like a carpet.

LL = leafy liverwort. This is a liverwort with obvious leaf-like structures.

TL = thalloid liverwort. This is a liverwort which looks like slimy green flaps without obvious leaves.

AM

Wall Screw-moss

Tortula muralis

- Leaves have long silver excurrent nerve
- Leaves tongue-shaped
- Sporophytes common, with long yellow seta



Walls, rocks and other hard surfaces

Grey-cushioned Grimmia

AM

Grimmia pulvinata

- Grey compact cushions
- Narrow, pointed leaves (not tongue-shaped) with long silver hair point
- Looks furry from a distance
- Sporophytes arch back into cushion



Walls, rocks and other hard surfaces

Silver-moss

AM

Bryum argenteum

- Compact little tufts
- Looks silver
- Likes nutrient enrichment



Walls, rocks and other hard surfaces

Common Liverwort

TL

Marchantia polymorpha ssp. ruderalis

- Model organism in lab work
- Circular splash cups with gemmae
- Sporophytes look like miniature palm trees
- Likes damp places: paving stones, greenhouses, etc.



Walls, rocks and other hard surfaces

Pointed Spear-moss

PM

Calliergonella cuspidata

- Sharp-looking
- Red stems
- Especially likes damp grassland



Grassland

Springy Turf-moss

PM

Rhytidiadelphus squarrosus

- Red stems
- Kinked leaves
- Springy!
- Big patches in lawns



Grassland

Wood Bristle-moss

AM

Orthotrichum affine

- Wood Bristle-moss = most common *Orthotrichum* species
- Small bristly cushions
- Capsules held close to leaves on short setae



Wood and bark

Cypress-leaved Plait-moss

PM

Hypnum cupressiforme

- Shoots look plaited
- Forms big silky mats



Wood and bark

Dilated Scalewort

LL

Frullania dilatata

- Overlapping scales
- Often purplish



Wood and bark

Common Feather-moss

PM

Kindbergia praelonga

- Mini Christmas trees!



Woodland floor

Useful equipment

Although you can identify lots of bryophytes quite easily by eye, it's handy to have a hand lens or magnifying glass for appreciating bryophytes' intricate detail.

If your bryophyte looks dry and crispy, try giving it a spray of water mist from a converted spray bottle and watch it revive!