

Devonian Fact File

Liverworts

This strange plant looks very much like a moss that has been ironed; it has small green, flat leaves that look fleshy and curl at the edges. It has never reached the huge size that other types of plant reached in the Devonian, but it has survived virtually unchanged until the present day. You might find it on stream banks, bogs – even on top of the soil of a soggy plant pot in the house.

Kept in the dark

Liverworts lack true roots – they anchor themselves to the soil with underground stems (rhizomes) and root hairs on the underside of their stems. Their leaves are grown in overlapping rows down the stem to maximise the amount of sunlight they can absorb – they need to make up for living in the shadow of the larger plants.

Reproduction

Strangely, the form that we see in our flower pots is actually the gametophyte plant. It produces two types of structure – one that makes male gametes that swim over the surface of the plant in a thin film of water – and special cups that hold the female gametes. These archegonia keep the female gametes nice and wet and protected from grazers. After the two types of gamete fuse, they produce a sporophyte plant which in liverworts is reduced to a capsule on top of a thin stalk – very much like the capsules you might see on moss. Inside here spores are produced and then shaken out by rain or wind. If they land in a nice wet area, they germinate and start the cycle again by growing into another gametophyte plant.

Some liverworts also produce vegetatively by developing little cups on their surface. These are full of pseudospores (actually cloned cells) that are splashed out of the cups by rainwater and land close by to grow again. Liverworts might be a big success story, but compared to some of the other plants of the Devonian they lack a number of features and adaptations to life on land and still need water to reproduce at all.