



# Welsh plant fossils

315-300 million years ago Wales was covered in dense forests and swamps. Giant clubmosses and ferns grew as tall as trees. Their fossils can be found in the Upper Carboniferous rocks of the south Wales valleys and parts of north Wales.

**Keep away from rock faces as they are often unstable and rocks could fall at any time.**

## Carboniferous Swamps

Fossil plants have different names for each part (stem, leaves, cones etc).

Carboniferous plants grew rapidly and densely in the swampy conditions which covered much of Wales 315-300 million years ago.

Episodes of plant growth were interrupted when rivers flooded. Sand layers were then deposited, followed by muds in which the forests re-grew.

Huge thicknesses of densely packed plant fossils became compressed into rich coal seams, many of which have been mined as fuel.

Delicate plant fossils can sometimes be found in spoil tips left near former coal mines. They are preserved in finely layered muds which can carefully be split with a hammer and chisel.

**Please do not hammer at cliffs, or at any fossils in layers of solid rock.**



*Mariopteris*

Seed ferns and ferns.  
These looked a little like modern tree ferns. There are many more than we have shown here.



They bore large seeds called *Trigonocarpus*.



*Alethopteris*



*Neuropteris*



*Calamites* (stem)



*Annularia* (leaves)

Horsetails  
Small horsetail plants still exist today, but some of the fossil types grew up to 20m tall. Fossils of the *Calamites* stem are actually only a cast of the hollow interior section.



*Sphenophyllum* – a small creeping horsetail



*Lepidodendron* (with diamond-shaped leaf scars)

Clubmosses  
Modern clubmosses are only a few cms tall. The ancient forms grew up to 30m tall, and formed dense forests in swamps. They bore large cones (*Lepidostrobus*) on the tips of the branches.



*Lepidodendron* (small branches)



*Stigmaria* (root)



Non-marine bivalve shells which give evidence of the freshwater swamps.



This small horseshoe crab lived in the swamps along with scorpions, millipedes, insects and spiders.



*Cordaites*  
One of the earliest conifer trees.