

SEED BEARING PLANTS

Seed ferns

376–50 MYA – EXTINCT

Seed ferns were the first seed bearing plants to evolve and are very early members of the clade gymnosperm, meaning 'naked seed'. Gymnosperms have exposed seeds like those on a pinecone. Seed ferns reproduced using pollen to develop seeds

which contained a small embryonic plant and a store of food to help the seedling grow. Before the evolution of conifers, seed ferns such as Glossopteris dominated the global flora.

Domain	Eukaryota
Kingdom	Plantae
Clade	Gymnosperm

Fossil Record

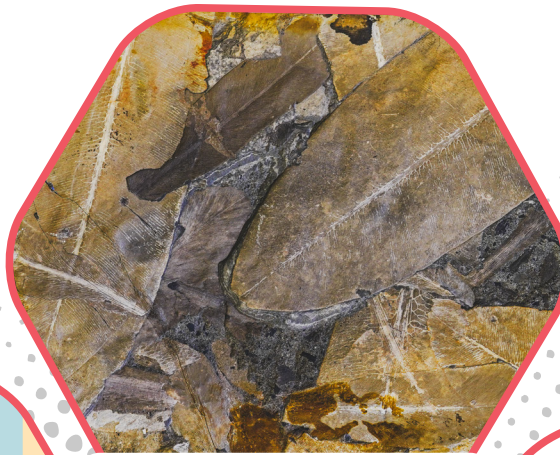
The oldest fossil seed ferns are found in rocks deposited in the late Devonian approximately 400 million years ago. They flourished during the Carboniferous and Permian but declined during the Mesozoic as conifers diversified and proliferated. The youngest fossil seed ferns have been found in Eocene rocks in Tasmania.

Habitat and Lifestyle

Seed ferns occupied most environments from the tropics to near the poles and ranged from small fern-like plants to large trees over 30 m high.

Fossilisation

Fossilised Glossopteris leaves are abundant in Gondwanan rocks as they grew in a swampy environment and were deciduous, meaning they drop their leaves seasonally.



Well preserved fossilised leaves of Glossopteris. Image from James Cropper, Geoscience Australia.



Modern distribution of fossil Glossopteris dated to the late Permian. b. Interpreted distribution of late Permian Glossopteris.

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DID YOU KNOW



Glossopteris belongs to a group of seed ferns that lived around the south pole during the late Permian. Glossopteris fossils are found in Australia, India, Africa, Madagascar, South America, and Antarctica. This distribution was one of the pieces of evidence which led to the recognition that these continents had once been joined together as the supercontinent Gondwana.