

Early Evolution of Plants



Which moved onto land first, plants or animals?

This fossilized fern may be millions of years old. Over 200 million years ago, the first evidence of [ferns](#) related to several modern families appeared. The "great fern radiation" occurred in the late-Cretaceous, which ended 65 million years ago, when many modern families of ferns first appeared. And if animals were the first on land, would many have starved?

Evolution of Plants

Plants are thought to have evolved from an aquatic green alga protist. Later, they evolved important adaptations for land, including vascular tissues, seeds, and flowers. Each of these major adaptations made plants better suited for life on dry land and much more successful.

From a simple, green alga ancestor that lived in the water, plants eventually evolved several major adaptations for life on land.

The Earliest Plants

The earliest plants were probably similar to the **stonewort**, an aquatic [algae](#).

Modern stoneworts may be similar to the earliest plants.

Life on Land

By the time the earliest plants evolved, animals were already the dominant organisms in the ocean. Plants were also constrained to the upper layer of [water](#) that received enough sunlight for [photosynthesis](#). Therefore, plants never became dominant marine organisms. But when plants moved onto land, everything was wide open. Why was the land devoid of other life? Without plants growing on land, there was nothing for other organisms to feed on. Land could not be colonized by other organisms until land plants became established.

Plants may have colonized the land as early as 700 million years ago. The oldest [fossils](#) of land plants date back about 470 million years. The first land plants probably resembled modern plants called **liverworts**.

The first land plants may have been similar to liverworts.

Colonization of the land was a huge step in plant evolution. Until then, virtually all life had evolved in the ocean.