



Maidenhair ferns are small and delicate-looking with fronds divided into what appear to be small separate leaves. Filmy ferns grow in soft green carpets in damp patches on the forest floor. Both types are popular as pot plants.

The kidney fern, one of the filmy-fern family, has rounded kidney-shaped fronds that look like the leaves of a flowering plant. Many of the fragrant-fern family, which you can find growing in bright green clumps on the forest floor or climbing up the trunks of trees, also have fronds shaped like leaves.

Bracken, or pig-fern, can be seen in most parts of New Zealand growing widespread on open hillsides. It is a hard, tough fern that can grow in the most exposed conditions.

There are many more interesting species that you can identify for yourself with the help of a book like "Ferns and Fern Allies" in the Mobil NZ Nature series.

In one important way ferns are very different from all other kinds of plants.

Forest trees, shrubs, herbs, vegetables, garden plants, weeds and grasses all have flowers and seeds, even if they are sometimes rather difficult to recognise. Like the flowers on pine trees or grass, for example. And all flowering plants are either male or female, or both.

Ferns are neither male nor female. And they do not have flowers, or fruit or seeds.

If you look on the underside of most fern fronds you will see a number of spots or lines arranged in a regular pattern. Look at these carefully through a hand lens (about 8x or 10x will do) and you will see a very large number of tiny round bumps called sporangia.

These contain microscopic grains of life called spores.

Thousands of spores are released by the sporangia when they are ripe and blow about in the wind until they settle in a damp shady place where they can grow.

The spores do not grow into ferns.

Each spore will grow into a small heart-shaped green plant called a prothallus. Even the biggest prothallus is not likely to be more than 8mm across, so they are hard to find.



The prothallus has male and female parts like a flowering plant but it does not have flowers or seeds. Instead it has archegonia (female), which produce one egg cell each, and antheridia (male), which produce large numbers of sperm cells.

The sperms have long thin tails and can swim around by themselves, which is why the prothallus must grow in a damp place.

When they are mature the antheridia break open and release the sperms which swim towards the archegonia on another prothallus growing nearby. The archegonia and antheridia mature at different times so that a prothallus cannot fertilize itself.

One of the sperms will join with an egg cell to form a zygote and this will grow into an embryo. The embryo, in its turn, will grow up into a new adult fern plant.

This is the life story of all ferns, from the giant mamaku to the feathery maidenhair fern. It is one of the reasons why these ancient plants are so interesting to study. 🐾

A fern shaded path, Rimutaka Forest Park.

Photo: D Gregorie