

## Tree Ferns of Cloudbridge

Cloudbridge Nature Reserve - Nature Notes No. 13

### Ferns

Ferns belong to a very ancient family. There is fossil evidence of ferns from 345-395 million years ago. They were at their height during the Carboniferous Period (the "age of ferns") as they were the dominant part of the vegetation at that time. Today there are over 12,000 species of ferns found all over the world. The eight species of tree ferns are perhaps the most conspicuous kinds of fern seen at Cloudbridge, like this one on Cloudbridge North.



### Tree Ferns

Tree ferns are not really trees — they don't have true trunks. Their stems are structures called rhizomes from which the fronds arise. The rhizomes may be up to 60cm in diameter and up to 12 m tall.

The frond is the "leaf" of the fern, and it develops in an unusual manner starting with the growing tip rolled up in the center and gradually unfurling over several weeks. The frond is the most conspicuous and distinctive part that we see as we walk through the forest. It is divided into two main parts, the stipe (leaf stalk) and the blade (the leafy expanded portion of the frond).



### Tree Fern Reproduction

There are two distinct stages of the fern life cycle. Ferns do not flower but reproduce from spores which are produced from the brown scales on the underside of mature fronds. Millions of these tiny spores are scattered by the wind, and with luck, land on damp soil. When these germinate they grow into small heart-shaped plants known as prothalli. Male sperm and female eggs are produced in these plants and in the presence of moisture, the egg is fertilized and grows into an adult fern.

This dependence on water for their reproduction has limited the presence of ferns in the world today compared to the moist conditions that prevailed millions of years ago. It explains why they are commonly found in the rainforest and cloud forest conditions. One wonders how their status will be impacted by global warming and whether the tree ferns we see at this elevation will disappear.

Tree ferns are a pioneer species and are often to be found colonizing recent landslides. Some we see here could be fifty years old or older. On Cloudbridge, the ferns we see probably fall into either the Cyatheaceae or Dicksoniaceae families.

Watch out for *Alsophila* (Cyatheaceae) - you may encounter it on a steep gully - don't grab onto the trunk as it is covered with spiky, sharp hairs!