

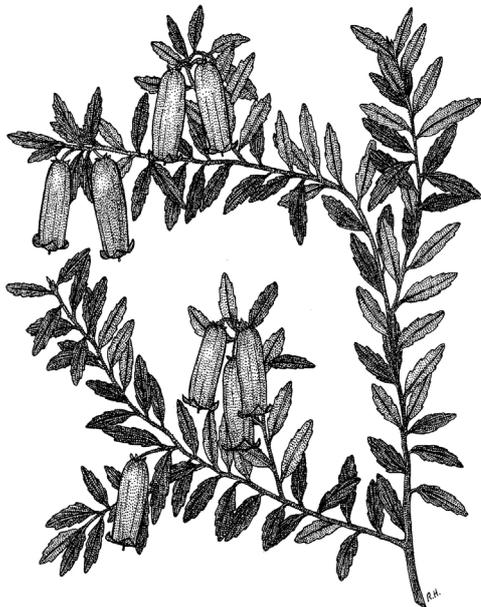
# Endemic Plants



Parks and Wildlife Service Tasmania

DEPARTMENT of TOURISM, PARKS  
HERITAGE and the ARTS

What is an endemic plant? It is a plant that occurs naturally in one place and nowhere else. An endemic species may be restricted to a specific area such as an island or continent or even a group of mountains. Australia, including Tasmania, has a high number of endemic plants. Up to 70% of Tasmania's alpine plants are endemic, occurring naturally only in Tasmania.



*Climbing heath - a Tasmanian endemic alpine plant (Drawing courtesy R. Hale)*

## Becoming unique takes time

Over millions of years the plants of Tasmania have changed from their mainland relatives and those on other continents to become unique species. The history of this change has a lot to do with changes in the landscape.

Early studies of the flora of Australia found that there was a similarity between the flora in Victoria and Tasmania. The obvious conclusion was that this was a result of a past land connection across Bass Strait. Strong links between the flora of Tasmania, southern South America, New Zealand and the sub-Antarctic islands also exist from the time when these land masses were connected in the ancient supercontinent of Gondwana. Once the land connections disappeared the plants evolved separately, with some becoming endemic.

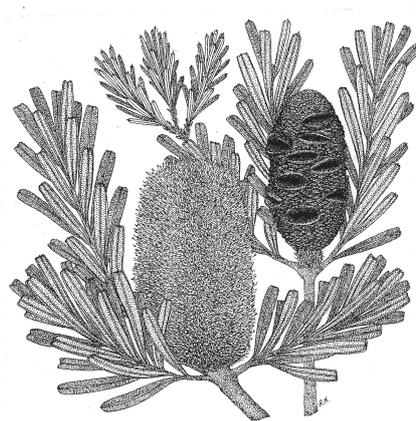
## Freezing and thawing – the effect of glaciers

During the last 70-80 million years ice sheets sometimes covered much of Tasmania's central plateau. There were also broad surrounding areas of grassland/tundra. Forested areas were probably pushed towards the margins of the available land area. Drops in sea level, however, would have increased the size of Tasmania and provided a land connection across Bass Strait to Victoria.

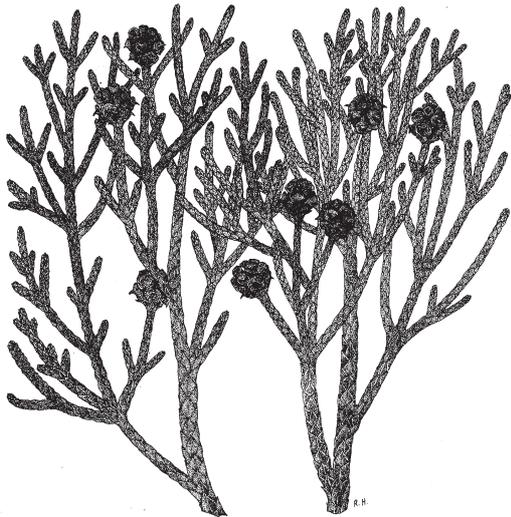
With the retreat of the ice sheets, the Gondwanan plant elements recolonised the central highlands. Sea levels rose, and Tasmania again became isolated from the mainland. The climate became wetter, and dry sclerophyll forest found only a very limited area suitable for recolonisation.

As Tasmania is more mountainous than mainland Australia, there is an exaggerated difference in available habitats compared with the lower, drier states. Consequently, although *Eucalyptus* forests in Tasmania today occupy between a third and a half of the land area, they are relatively species poor. *Eucalyptus*, comprising 2.7% of the species of the Australian flora, but makes up only 1.3% of the Tasmanian flora. *Acacia* (wattles) occupy about 4.2% of the total Australian species numbers but make up only 1% of the Tasmanian flora. *Banksia*, a genus of about 75 species is represented in Tasmania by only two species. *Grevillea*, another large and obvious component of mainland Australian forests, is represented by only one species in Tasmania.

The same climatic and geological features that reduced eucalypts, banksias and grevilleas have also led to the proliferation of species in other families.



*Banksia marginata is Tasmania's most widespread banksia (Drawing courtesy R. Hale)*



*Pencil pine (detail) (Drawing courtesy R. Hale)*

Tasmania has a much higher proportion of wetlands, heathlands and alpine shrubberies than any other part of Australia. This is a result of Tasmania's topography and its placement in the direct path of the prevailing winds known as the Roaring Forties.

## Compact cushions

A number of endemic alpine shrub species from different plant families in Tasmania have evolved dense 'bolster' or 'cushion' like forms known as cushion plants. The compact form of cushion plants gives a smooth outer surface to the plant that protects them from severe cold winds and ice.

Cushion plants grow in a variety of environments. They are at their most spectacular where they form extensive sheets on thin, peaty soils on alpine plateaus. At Newdegate Pass in Mt Field National Park they have modified the drainage by forming a series of stepped dams called 'string bogs'.

## Ancient pines

Conifers are very ancient plants that dominated the world's landscape at the time of the dinosaurs. They predate the evolution of today's flowering plants. The alpine conifers are the most frost hardy species in Tasmania. Alpine conifers endemic to Tasmania include the creeping pine (*Microcachrys tetragona*), the cheshunt pine (*Diselma archeri*), King Billy pine (*Athrotaxis selaginoides*) and the pencil pine (*Athrotaxis cupressoides*).

The Huon pine *Lagarostrobos franklinii* (formally *Dacrydium franklinii*) is a conifer and is one of Tasmania's most famous endemic plants. The Huon pines are Australia's oldest living trees and are one of the oldest living organisms on Earth. Individuals have been known to reach an age of 3,000 years. Fossil records from a tree found in a boggy area in the south west of Tasmania were dated at 3,462 years! (Carder A., 1995). Only the bristle-cone pine of North America exceeds it in age.

## Further information

Reid J.B., Hill R.S., Brown M.J. and Hovenden M.J. 1999, *Vegetation of Tasmania* Australian Biological Resources Study, Environment Australia, Canberra.

White, Mary, 1986, *Greening of Gondwana*. Reed Australia, Sydney.

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*Huon pine (detail) (Drawing courtesy Forestry Tasmania)*

*Cone (detail) (Drawing courtesy of Sue Backhouse)*

## FURTHER INFORMATION

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