Nothofagus or Southern Beech

The distribution and growth habits of Nothofagus provide significant information of the earth's history, in particular about continental drift, changing climates and vegetation evolution. This genius is only found living in parts of the Gondwanda (except for Antartica) and fossils records in all parts of Gondwanda.

There are currently 43 species of Nothofagus and until recently was included within the Beech family. DNA analysis has them in their own family comprising of one genius.

South America – *N. alessandri, N. macrocarpa, N. alpina, N. antarctica, N. glauca, N. obliqua, N. leonii, N. betuloides, N. dombeyi, N. nitida, and N. pumilio*

New Zealand – *N. truncata, N. solandri, N. fusca* and *N. menziesii*

Australia – *N. gunnii, N. cunninghamii* and *N. moorei*

New Caledonia – *N. aequilateralis, N. balansae, N. baumanniae, N. codonandra,* and *N. discoidea*

New Guinea – *N. brassii, N. carrii, N. crenata, N. flaviramea, N. grandis, N. nuda, N. resinosa, N. perryi, N. pseudoresinosa, N. pullei, N. resinosa, N. rubra, N. starkenborghii, N. stylosa,* and *N. womersleyi*

Given the right conditions they form the dominate species in forest stands, particularly in South America (Chile and Argentina) and south Island New Zealand. As a whole they colonise areas of disturbance and are more shade tolerant than eucalypts but less so than other rainforest trees.

The three 3 Australian species;

N. gunnii (Tanglefoot or deciduous beech) a small woody tree (up to 3 meters in height) grows exclusively in the higher altitude areas of Tasmania. Fossil records have been found in Antarctica. It is extremely fire sensitive.

N. cunninghamii (Myrtle Beech) is found in Tasmania and Victoria and is a highly sought after by wood workers. It is an evergreen.

Tree heights range from 30–40m tall with large trunks to low-growing alpine shrubs less than 1m tall. Maximum height is about 55m. The leaves are simple and alternate, growing 0.5–1.5cm long, and in Victoria up to 2cm long. The leaf color is dark green, with new growth brilliant red, pink or orange in spring. They are triangular with irregular minute teeth. The plants have separate male and female flowers on the same tree. These flower form inconspicuous clusters beside leaves near the tips of the branches. The fruit is small (about 6mm) and woody and contains three small winged nuts.

It is an excellent cabinetry timber which is hard with strong, tough, close grain. It is a soft pink to reddish brown, often figured and can be polished to a fine sheen. It is used for flooring,

joinery, cogs of wheels, and furniture, and is good for steam bending, turnery and carving. Dry Density is 700kg/m³ and wet5 density is $1100 kg/m^3$

End grain

Myrtle and Patridgewood

It grows best in the deep red mountain soils of Victoria, or in highly organic soils. It can grow in full shade, albeit slowly, through to full sun, given enough water. It is easily grown from fresh seed, germinating in a few weeks. Cuttings can be struck, although they tend to perform less well than seed grown plants. Cultivated specimens survive temperatures of 45C down to −7C; though it is known that trees growing in the mountains can withstand lower temperatures at least to −15C.

Please note is undergoes considerably shrinkage in the drying process - Radial: 5.4%, Tangential: 10.0%, Volumetric: 16.3%, T/R Ratio: 1.9

The heartwood can be pink or a more popular warm reddish brown and may also feature traces of orange, while the sapwood is pale and narrow. Even-textured, myrtle beech has a fine grain that can be straight, interlocked or feature a fiddleback pattern. Growth rings may also be visible. The burls and knotty wood of myrtle beech are favoured by woodworkers.

While myrtle beech is good for steam bending, it only provides moderate workability. Some collapse can occur through drying.

A strong and dense timber, it is not particularly durable, and due to its generally colour-rich appearance, myrtle beech is favoured for internal applications such as decorative veneers, high-end joinery, furniture and flooring. Myrtle Beech is also used for bridge and wharf decking and plywood.

It is susceptible to Lyctid Borer and not resistant to termites.

Myrtle beech only provides a moderate workability but will deliver a very smooth finish – perfect for internal applications. It can be difficult to glue and care needs to be taken when nailing to avoid splitting the timber. It generally accepts most timber coatings and oils well.

Although severe reactions are quite uncommon, Tasmanian Myrtle has been reported to cause mucous membrane irritation.

Myrtle beech forests cannot survive strong fire, and must re-establish from neighbouring areas. They can, however, survive light fires, by regenerating from seed, or sometimes vegetatively from basal epicormic shoots. Generally myrtle beech forests only form once a wet sclerophyll

eucalypt forest reaches maturity and is not subject to fires, taking several hundred years to do so. Myrtle wilt, a parasitic fungus, attacks myrtle beech when the air-borne spores settle on open wounds.

Both *N. cunninghamii* and the closely related *N. moorei* are excellent hosts for epiphytes. And one species of orchid (Beech Orchid) is only found on them.

N. moorei, commonly known as **Antarctic beech**, previously known as Niggerhead or Negrohead Beech. These names we dropped in the mid 1970s. It occurs in wet, fire-free areas at high altitude in eastern Australia: Barrington Tops, Point Lookout, Comboyne Plateau, upper reaches of the Belligen, Hastings and Macleay Rivers, Gibraltar Ranges, Border Ranges and Lamington Plateau in Queensland.

I have visited all known NSW sites except for the Comboyne Plateau. All of these sites are now within National Park so it is only available as re-cycled timber. It was not sought after timber species in the days of rainforest logging.

One of the sites in the former Wiangaree State Forest (now Border Ranges National Park) adjacent to the Breadknife, was used by the Australian Army for jungle warfare training during the Vietnam war. The Army took great steps to protect the Beech stand. They also recorded the annual rainfall and during that period it was the wettest place in NSW.

These trees typically grow to 25m tall and have large trunks to 1 m in diameter with scaly, dark brown bark. Maximum height is about 50 m. The leaves are simple and alternate, growing six centimeters long. The leaf color is dark green, with new growth brilliant red, or orange in spring. The tree is deciduous in its native environment, but only partially deciduous in warmer areas, dropping half its leaves in autumn. The leaves are triangular to oblong with fine teeth along the crenate edges. The plants have separate male and female flowers that occur on the same tree. The flowers are small and form inconspicuous clusters near the leaves towards the end of the branches. The fruit, produced from December to February, is a small woody structure of four prickly valves. Each fruit contains three small winged nuts.
Complicated root structures are frequently exhibited. These roots would once have been soil-covered, but have been exposed over the ages by erosion, and covered in moss and lichen.

Antarctic beech trees in Lamington National Park

Many of the trees have multiple trunks emanating from a crown, formed by this root structure. Fires are detrimental to the survival of the Antarctic Beech which, unlike many other Australian plants, is slow to recover from fire.
At one time it was believed that it could not reproduce in present-day conditions, except by suckering (asexual reproduction), being remnant forest from a cooler time. It has since been shown that sexual reproduction may occur, but distribution in cool, isolated high-altitude environments at temperate and tropical latitudes is consistent with the theory that the species was more prolific in a cooler age.