

Bennett's Ash *Flindersia bennettii*

The reconstruction of Macquarie University's Central Courtyard began in May 2019 and was completed in February 2021. This included planting two tree species, the evergreen Australian native rainforest tree, *Flindersia bennettii*, Bennett's Ash (at the time known as *F. bennettiana*) and a Northern Hemisphere deciduous ash, *Fraxinus pennsylvanica* 'Urbell' from North America. The Australian, *Flindersia bennettii*, was selected to provide shade in summer, the Northern Hemisphere Ash was planted on the courtyard boundaries to allow sun to reach the inner courtyard in the cooler, shorter days of the winter months. The *Flindersia* trees have been spectacular in full flower this midwinter. Despite the common name, *ash*, the two trees are totally unrelated.



Flindersia bennettii is a handsome tree from the rainforests of northern NSW and SE Queensland. The selection of this tree for the Macquarie University courtyard is particularly apt. In 1896, in his book *Some New South Wales Plants Worth Cultivating for Shade, Ornamental and Other Purposes*, Joseph Henry Maiden, director of the Royal Botanic Gardens in Sydney and government botanist, wrote: *Flindersia*. – *Several species of this genus may be deservedly recommended for cultivation. F. australisof our northern brush forests, forms a noble tree, which has been recommended for avenues. F. Bennettiana, our "Bogumbogum" or "Teak," may be similarly referred to.*

Flindersia bennettii has probably been more commonly planted in Queensland (Brisbane) where it is one of several rainforest species selected for potential to survive exacting environments of city and suburban streets, than it has in Sydney where you are more likely to encounter *F. australis*, Australian Teak. For all that, Bennett's Ash is a magnificent evergreen tree known from subtropical rainforest from sea level to 300 m, from the Clarence River in northern New South Wales northwards to Bundaberg in south-eastern Queensland. The timber is tough and durable and highly valued for flooring and cabinet making. Woodworkers say that the timber is greasy and difficult to work but it's this characteristic that makes the wood eminently suitable for boat building, outdoor furniture and decking.



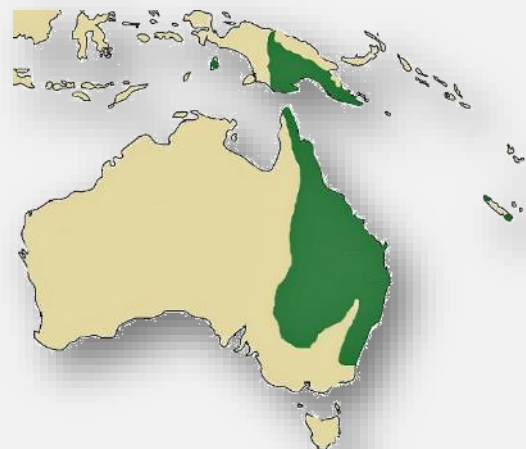
Flindersia bennettii – its straight grained timber is excellent for cabinet making, boat building and for flooring.

The genus, *Flindersia*, belongs in the citrus family Rutaceae – which includes oranges, lemons, mandarins and grapefruit, and some beautiful native Australian shrubs, such as *Boronia*, *Eriostemon*, *Philotheca* and *Leionema* that flower in abundance in bushland on local Sydney sandstones in spring. Although often referred to as *teak*, *Flindersia* species are not related to *teak* (*Tectona grandis*) of south and south-east Asia which belongs in the Mint Family (Lamiaceae). Altogether, there are 17 species of *Flindersia*, of the 15 that occur in Australia, 12 are endemic species, with others in Indonesia, New Guinea and New Caledonia. Most are restricted to rainforests of coastal Queensland and northeastern NSW, but four are found in drier, inland environments, including



Flindersia bennettii in Australia – modified from Atlas of Living Australia:

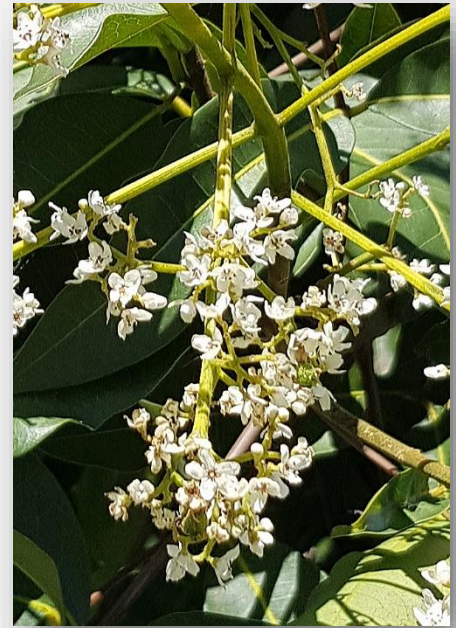
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Flindersia – in Australia, New Caledonia, New Guinea and Indonesia – modified from Atlas of Living Australia:

https://biocache.ala.org.au/occurrences/search?q=taxa%3A%22Flindersia%22#tab_mapView

one bizarre species, *F. maculosa*, the Leopard Wood, widespread across the drier areas of western NSW. Interestingly, those that grow in the drier regions of Australia produce more alkaloids (nitrogenous organic compounds of plant origin) than those that grow in rainforests. It seems that the radiation of rainforest *Flindersia* species into drier and more stressful environments triggered the evolution of this unique alkaloid diversity to prevent attack. Not only do dryland *Flindersia* species produce a greater diversity of alkaloids than rainforest species, but the mix of alkaloids produced by each of the four species is generally unique to each species.



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Maiden J H. 1896. *Some New South Wales Plants Worth Cultivating for Shade, Ornamental, and Other Purposes*. New South Wales Department of Agriculture. C. Potter. Page 5.

Plantnet: <http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=fm&name=Rutaceae>

Plantnet: <http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=gn&name=Flindersia>

Plantnet: <https://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Flindersia~bennettii>

Robertson L P, Hall C R, Forster P I, Carroll A R. 2018. Alkaloid diversity in the leaves of Australian *Flindersia* (Rutaceae) species driven by adaptation to aridity. *Phytochemistry* 152: 71-81.

<https://doi.org/10.1016/j.phytochem.2018.04.011>

See M, Sheridan R. 2003. 'Tree Trunks': an urban forest education kit for schools. Proceedings of the 4th National Street Tree Symposium, Adelaide University – Waite Campus: pp. 117-120.

Wood Solutions: <https://www.woodsolutions.com.au/wood-species/ash-crow%E2%80%99s>



Capsules of *Flindersia australis*



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