

Queensland Black Bean

Castanospermum australe

The **Queensland Black Bean**, or **Moreton Bay Chestnut**, is a tree of rainforests of eastern Australia, from north-eastern NSW to Iron Range in Cape York. It has been prized as a handsome, evergreen tree for parks and gardens, famous for its colourful flowers and massive, albeit toxic, fruits. However, not only have Indigenous Australians known how to treat the seed to make it safe to eat, but there is strong evidence that they have long been involved in the dispersal and propagation of this rainforest species. A recent study led by evolutionary ecologist Maurizio Rossetto from the National Herbarium of NSW and ecologist Emilie Ens from Environmental Sciences at Macquarie University used modern genomic techniques together with oral histories and



traditional knowledge of Indigenous Australians to determine that all samples of Black Bean from northern NSW populations are known to have been derived from either one, or a small number of very closely related lineages.

Queensland Black Bean, *Castanospermum australe*, is unusual for several reasons. It might be a tree, but it's still a legume in the family Fabaceae, so it's related to peas, beans, soybeans and peanuts, and it can *fix nitrogen*. Although it

is related to these edible plants, without knowledgeable preparation, the seeds are toxic and should not be eaten. It is also unusual in that it is what is known as a *monotypic* genus. In other words, it's the *only* species in the genus *Castanospermum*. It has long been known from rainforests of Queensland, from north-eastern NSW, and, surprisingly, from the Pacific islands of New Caledonia, Vanuatu and the island of New Britain in Papua New Guinea as well as being extensively cultivated

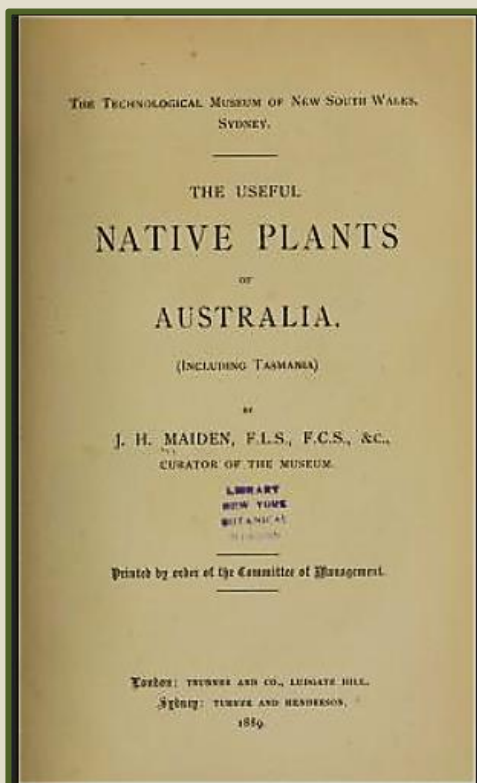




elsewhere in the world, India, Malaysia, Papua New Guinea, Sri Lanka and North America for a start. In recent years, Black Beans have also become popular as indoor plants, often with multiple seeds planted in shallow bowls to form *forests* of small trees.

The flowers are cryptic, hidden within the canopy, produced directly from older branches and even the tree trunk itself. This characteristic is known as “cauliflory” – from “caulis” – “stem” and “flos” – “flower”. Flowers of trees which exhibit cauliflory are often pollinated and seeds dispersed by animals.

Although the seeds are poisonous (they contain toxic *saponins* – usually toxic, bitter-tasting, plant-derived organic chemicals), Indigenous Australians have known for ~ 2,500 years how to process the seeds to produce a safe, edible food. In his first book published in 1889, botanist J H Maiden described a method used by Aboriginal people to treat the seeds. As the seeds are exceptionally large and substantial quantities are produced by each tree they have not only been of considerable importance as a food source but also as a seasonal gathering point for ceremonies.



41. *Castanospermum australe*, A. Cunn., N.O. Leguminosæ, B.Fl., ii., 75.

“Moreton Bay Chestnut,” “Bean” tree. Called “Irtalie” by the aboriginals of the Richmond and Clarence Rivers (New South Wales); and “Bogum” by others of Northern New South Wales.

“The beans are used as food by the aborigines, who prepare them by first steeping them in water from eight to ten days; they are then taken out, dried in the sun, roasted upon hot stones, pounded into a coarse meal, in which state they may be kept for an indefinite period. When required for use, the meal is simply mixed with water, made into a thin cake, and baked in the usual manner. In taste, cakes prepared in this way resemble a coarse ship biscuit.” (C. Moore.)

A sample of starch from these beans was exhibited by Mr. Moore at the Intercolonial Exhibition of Melbourne, 1866. Northern New South Wales and Queensland.



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