

Survivors from ancient times?

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It's an Australian, it may live for up to three thousand years, most parts of it are edible and people can shelter inside it. Puzzled?

I'm talking about a boab (*Adansonia*) also known as, among other names, Australian baobab and bottle tree; surely one of the most unusual plants in the world.

These trees do not grow outdoors in New Zealand – but who knows what will be possible as a result of climate change?

Young trees grow as slender saplings but as adults they become strangely obese, each tree developing an extraordinary trunk that is best described as a huge misshapen bottle. Trunk diameters of up to nine metres have been recorded on very old specimens. The tree is deciduous, and during winter and early spring with its often sparse, bare branches waving in the air it can look decidedly unhealthy. When I first viewed a collection of boabs in the Darwin Botanic Gardens I mistakenly thought they were struggling to survive.

There are eight known species of *Adansonia*, one endemic to Australia, one endemic to Africa and the Arabian Peninsula, and the rest natives of Madagascar where forests are their natural habitat. Sadly, with the extensive deforestation in Madagascar they are becoming sentinels left behind in a barren landscape as they can't be used for firewood.

In Australia *Adansonia gregorii* (syn. *A. gibbosa*) is a feature of the landscape in the northwest where winters are warm and dry, and summers hot and wet.

Botanists used to think that the African-Australian disjunction of *Adansonia* was due to continental drift, where they've survived since Africa and Australia were part of Gondwanaland. However, it is now thought that they arrived in Australia via long-distance dispersal well within the last 30 million years, after Australia entered the tropics. The large, oval, woody fruit float in seawater and can disperse that way.

However they arrived, they are well-entrenched in Aboriginal folklore as the upside-down tree – a plant seemingly with its roots in the air. Curiously there is a similar Arabian legend, claiming that "...the devil plucked up the baobab, thrust its branches into the earth and left its roots in the air."

Unlike most trees the boab does not have annual growth rings. The trunk is composed of fibrous, spongy 'wood', saturated with water which maintains them during the dry season and traditionally served as a much-needed resource for travellers in times of drought. Termites hollow out these trunks providing homes for birds, lizards and other small creatures and this process can be accelerated by carving a 'door' in the trunk, removing the soft pulp and lighting a fire inside to dry out the hollow. Bark grows over the damaged surfaces to cauterise the wounds and voilà, a shelter for humans.

In a more sinister use of boab trees in 19th century Australia they served as overnight prisons for aboriginal wrongdoers being transported to town. Near Derby on the west coast there is a prison tree whose hollow trunk measures more than 14 metres in circumference while the door is two metres high. Not so well known is another prison tree near Wyndham in the north-west that still bears bolts and studs as witness to this notorious practice.

At the end of the dry season – early August in the Northern Territory – the boab begins its annual transformation from ugly upstart to glamour queen. The flowers are creamy, waxy and exotic, fragrant when fresh but becoming pungent when bruised. Bright green, palmate leaves follow the blooms and around January the seed pods mature.

Traditionally, almost every part of the tree was used. Both the pods themselves and the seeds inside are valued. The kernels, packed in a dense mass of cotton-wool-like hairs, are nutritious 'bush tucker' eaten raw or roasted, while the pith surrounding the seeds was pounded to make a drink, now confirmed to be rich in Vitamin C. When early explorers in Australia were suffering from scurvy they found that jam made from the pith was an effective treatment. Once their velvety covering has been scraped off the woody pods are used as a 'canvas' for aboriginal carvings or paintings. From the leaves and roots medicine was made to treat primarily gastric and chest complaints. Water was squeezed out of pulp from the trunk or drained from the roots. The bark produced fibre and twine for fishing lines, and the gum was used as glue.

Boab trees are now grown commercially in Kimberley and sold as gourmet food – but it's not the leaves or the seeds that are harvested. At about eight weeks

of age the root of a boab is the size and shape of a big carrot and, just like carrots, they are sold in bundles with the tops still attached. They can be peeled, sliced or grated and the young tender leaves are reputedly tasty in salads.

Boabs are also prized by bonsai aficionados – provided they are grown in the right climate. They grow easily from seed although people are not allowed to collect seed from the wild. Plants need a warm environment and must not be watered in their pot once they are in dormant mode. I wonder how long a bonsai boab takes to develop a bottle trunk?

When in Darwin, we were stopped in our tracks by the sight of a boab tree in the downtown area (Fig. 1A–B). Now 12 metres high, with an equivalent spread (12 m) and a trunk circumference of more than eight metres it is a glorious sight. It is also a survivor. Planted at the end of the 19th century it lived through the bombing of Darwin during World War II, though destruction was close. An unexploded 'daisy cutter' bomb lay in its shade for several days before it was discovered and defused. In 1974 it also remained intact during Cyclone Tracy which destroyed 80% of the town.

If left alone, will this remarkable tree still exist in a thousand years, or more, for future visitors to Darwin to admire?



Fig. 1 A, survivor of the bombing of Darwin during World War II, and a ferocious cyclone in 1974, this old boab grows in the middle of a parking lot in downtown Darwin. B, flowering begins, usually at the end of winter, and this tree was just coming into bloom in July. Photos: Russell McGeorge.

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