

Brachychiton, Bottle Trees

The Six *Brachychiton* – Bottle Trees in Geelong Botanic Gardens (GBG)



***Brachychiton rupestris*:** Left: Tree outside front entrance to GBG. Photo: BS (Beverley Stringer).
Above: Flower in RBG Melbourne. Photo: Melburnian, Wikimedia Commons CC BY-SA 3.0

All these *Brachychiton* are considered to be Australia's most spectacular genus of flowering trees. There are more than 30 species most of which are endemic & occur in the tropical parts of Australia in dry or rainforest areas. Only one species is found in New Guinea.

They range from large shrubs to trees which may reach 30-35 metres in height. However, they are usually much smaller in cultivation in cooler areas. Fossils found in New South Wales & New Zealand were estimated to be 50 Million years old (Paleogene).

See pages 5-7 for additional photos of each species and page 8 for a map showing tree locations.

Definition

Brachys - Greek meaning – “Short”. Chiton means a “tunic” referring to the coating of the seed.
Family: Malvaceae. Originally classified in the family Stericuliaceae.

Description

Brachychiton are variable in size, shape of trunk and leaves as well in size & colouring of the flowers which are generally bell shaped.

Trees that grow in the semi-tropical forests of Australia's moist east coast are taller & flower profusely on the bare tree after leaf fall in Summer. In dryer parts of the Outback, the trees are smaller in size with bloated water storage trunks. Flowers are less showy and appear under new summer foliage. Most farmers will leave at least one tree growing in a paddock for fodder during severe drought.

1. *Brachychiton rupestris* Queensland Narrow Leaf Bottle Tree

Location: Front Steps, C21 garden and forming an avenue along Podbury Drive from the Gardens entrance.

www.friendsgbg.org.au

Phone: 5222 6053

www.geelongaustralia.com.au/gbg/

General: *rupestris* means “Growing among the Rocks”.

In 1848, Thomas Mitchell & John Lindley on an expedition through Queensland, after climbing Mount Abundance near Present-day Roma, described & named the tree for its bulbous trunk which can be up to 3.5 metres in diameter at breast height. The bottle shape trunk develops after 5-8 years. This tree is a deciduous succulent losing its leaves seasonally between September & December which is totally dependent on the timing & duration of extremes of rainfall & drought. Sometimes trees shed leaves from only some branches.

Leaves: Variable in shape ranging from narrow to elliptic to deeply divided. The upper surface is glossy contrasting with a pale under surface.

Flowers: Monoecious. Each plant has distinct male & female flowers. Male flowers have 15 stamens with pale yellow anthers; Female flowers have cream or white stigmas surrounded by star shaped carpels which sit atop the ovaries. Panicles of creamy yellow flowers with red markings appear from September to December.

Fruit: Groups of 3-5 woody boat shaped follicles each containing 4-8 seeds develop from November to May. The follicles are smooth on the outer surface but covered with a hairy coating called exotesta. Hairs are irritant to eyes & skin.

It adapts to cultivation & is tolerant to a wide range of soils & temperatures. It is a key component in its native environment, dominated by Brigalow Scrub, where the vegetation is primarily of *Acacia* forests & Eucalypt woodlands. It is noted for its shade, bird attraction & stock fodder.

Conservation: It is an emergent tree species in an endangered ecosystem known as semi-evergreen vine thickets of the Brigalow Belt. This ecosystem is in decline. The health of the trees in cleared areas may be compromised. The species is conserved within its natural habitats in a number of National Parks especially in the Bunya Mountains, Qld. & the Auburn River, NSW.

Brachychiton rupestris is a host plant for the mistletoe species *Dendrophthoe glabrescens* Smooth Mistletoe. Insect pests are the pale cotton stainer bug (cotton crop pest) & Kurrajong leaf roller caterpillar. It's a perfect habitat for the black breasted button quail. Trees can withstand bush fires & they respond by flowering & producing new foliage afterwards.

Uses for this species: First nations people ate the roots of the young trees, consumed the secretions from the trunks (after removal of the bark). Fibre is used to make nets. The pulp from inside the trunk is energy-rich but protein poor. Cattle occasionally die from nitrate poisoning after eating the leaves of this species. An avenue of honour was planted in the township of Roma, Queensland between 1918 & 1920 to commemorate the 93 local men who were killed in WW1.

2. *Brachychiton australis* Broad Leaf Bottle tree

Location: This tree is residing in C21 garden in the plant adaptation area.

General: Endemic to Queensland, occurring in the north and central east & southwards as far as south eastern Queensland. Prefers a long dry season and it can be found in vine thickets (brigalow scrub) in rocky regions as well as in dry rainforests. They are a long-lived (approximately 100 Years) deciduous tree without leaves from June to August. Mature leaves are 4-9 lobed each ending in a fine tip. Tree growth can attain 20 metres with a bulky trunk which does not develop the characteristic bottle shape. However, this species are water-bearing & can be tapped during dry times.

Flowers: Appear in the winter and are white- cream in colour.

3. *Brachychiton acerifolius* Illawarra Flame Tree

Photos of tree and flowers: next page

Location: Found in C20 garden below the Conservatory on the north side of garden.

General: *acerifolius* means foliage like the genus *Acer* Maple. Endemic to the tropical & subtropical regions of the east coast of Australia. Most spectacular of all native trees. This species is a very large deciduous tree which develops a pyramidal habit.



Brachychiton australis:

Top: Tree in C21 garden, GBG. Photo: BS.

Below: Flower, Nebo, Queensland.

Photo: Steve Dew, iNaturalist.org CC BY-NC

In its natural habitat this species will grow up to 30 metres but is shorter in cultivation. Popular as an ornamental and used in public parks, street plantings & private gardens.

First described in 1855 by W. Macarthur & C. Moore under the assumption that the genus name *Brachychiton acerifolius* suggested its foliage appeared similar to the Maples. In 1891, two other botanists had relegated the *Brachychiton* to different generic names *Sterculia* & *Clompanus*. However, von Mueller maintained his recognition of the genus *Brachychiton* being separate.

Flowers: Flowering takes up to 5-8 years when grown from seed. Flowers are bright red or scarlet, bell shaped & produced on long panicles in early summer.

Trunk: Smooth, green or grey – green cylindrical shape often tapering unbranched to the tip of the tree. Leaves are variable in shape, glossy green with long petioles measuring up to 30cms. The fruits are a 10 cm dehiscent leathery boat shaped dark brown pod, ripening in May to August by splitting along one side to reveal 2 rows of yellow hairy papery arils which are irritant to touch.

Uses: Seeds are edible after removal of the irritating hairs. First Nations people ate them raw or roasted. Nutritious, containing 18% protein, 25% fat with high levels of Zinc & Magnesium. Young tree roots were eaten. Fibrous bark used for making fishing nets & rope.

Easily propagated from seed (use gloves as the hairs surrounding the seeds are irritant to skin).

Ecology: Host plant for the larvae of the pencilled shining, common aeroplane-tailed emperor butterflies. Seeds are eaten by King Parrots, Regent & Bower birds.

4. *Brachychiton acerifolius* x *populneus*, *roseus* Pink Flame Tree

Location: GBG . Left (ie. north) of the entrance to C19 Gardens, in the Spotted Gum bed, (*Corymbia maculata*).



***Brachychiton x roseus* flowers:** This hybrid located between *B. acerifolius* & *B. populneus* shows the character of the Kurrajong (*B. populneus*) genes, as this tree is even more drought tolerant in harsher sites than *Brachychiton acerifolius*.

***Brachychiton x roseus*:**

Left: Tree in C20 garden GBG.
Photo: BS.

Right: Flowers, High St. Northcote. Photo: crausz, iNaturalist.org



Brachychiton acerifolius

Top: Tree in C20 garden, GBG. Photo: BS.

Below: Flower, Nebo, Queensland.

Photo: Steve Dew, iNaturalist.org CC BY-NC



5. *Brachychiton populneus* Kurrajong

Location: GBG. C20 garden south side near Tea House and Fernery, in the Oak Lawn.

General: populneus – ‘poplar-like’ Latin derivative.

First Nations Name: Kurrajong comes from the Dharuk, garrajun, ‘fishing line’ made from the Kurrajong bark.

Description: Resemblance to the genus, *Populus* (Poplars), in the family Salicaceae. The Kurrajong is a small to medium sized tree occurring naturally in Australia in a diversity of habitats in the wetter coastal regions as well as the semi-arid areas of Victoria, New South Wales & Queensland.

Flowers: The bell shaped flowers are whitish, streaked with purple brown.

Trunk: The extended trunk acts as a water storage device in our warm dry climate. Water can be obtained from the tree roots by boring a hole in the trunk & squeezing the wood.

Leaves: simple & pointed, or 3-9 lobed.

Uses: First Nations People roasted the seeds, after removing the fine hair, as a good food source. Early settlers used ground up roasted seeds as a coffee supplement. Seed pods were turned into children’s rattle or toy. The spongy wood was fashioned into shields. The bark was used a fibre for twine & fish netting. Leaves were used for animal fodder during drought.

Horticulturists have hybridised the Kurrajong to produce new garden ornamentals in Australia, South Africa, USA, & Mediterranean countries. Saplings will grow from a drought & fire resistant tap-rooted tuber. Western Australia has found this species to be invasive in disturbed areas (deep roots clog drains & they escape into native vegetation).

6. *Brachychiton discolor* Queensland Lacebark Tree

Photos: Below right and page 7.

Location: C19 Garden. Follow the path leading to the large fig tree & nursery area.

General: discolor means “two different colours”.

The species is an attractive rainforest tree growing in the drier areas of Paterson, New South Wales to Mackay Queensland, as well as growing as far north as in Cape York Peninsula. This attractive tree grows to 30 metres tall with a straight grey cylindrical trunk with a diameter up to 75 cm without a buttress at the base. Twigs are brown & hairy with leaves which are lobed in three, five, or seven points. Whitish on the underside, dark green above. Leaf veins are visible on both sides.

Flowers: Features pink flowers without petals. The large, bell shaped pink flowers occur in clusters at the end of branches from November to February. Spectacular flowers are followed by seed capsules which contain up to 30 seeds. It is partly, to completely, deciduous before flowering.

The fruit is a hairy boat shaped follicle (7-20 cm), maturing from December to July. Readily germinates from the fresh seed.

Uses: First Nations People used wood for shields. Roasted seeds are edible. Widely used as an ornamental tree. Lacy inner bark used for nets. Early settlers used the inner bark for stiffening in shirt collars.

References:

1. Wikipedia
2. What Tree is That?, Stirling Macoboy
3. Toohey Forest Environmental Education Centre
4. Australian Supplier
5. Paten Park Native Nursery
6. Tree & Pod photos Beverley Stringer



Brachychiton populneus (photos above)

Top: Centre of image: Tree in C20 garden, GBG.

Photo: DJ, CC BY-NC-SA 4.0.

Below: Flowers, Murcia, Spain. Photo: Philmarin, Wikimedia Commons CC BY-SA 3.0

Brachychiton discolor (photo below)

Functionally female flower. Photo: SAplants, Wikimedia Commons CC BY-SA 4.0





Six photos at top of this page.

1. *Brachychiton rupestris*

- a. Above, left: Leaves. GBG. DJ CC BY-NC-SA 4.0.
- b. Top, middle: *Dendrophthoe glarescens*, Smooth or Orange Mistletoe, Narrabri-Bingara Road. Photo: Margaret R. Donald, Wikipedia CC BY-SA 4.0.
- c. Lower: *Dysdercus cingulatus-fabricius*, Red cotton stainer bug, Kaeng Krachan National Park. Photo: Rushenb, Wikimedia Commons CC BY-SA 3.0.
- d. Top, right: Pods with seeds. Photo: Margaret R. Donald, Wikimedia Commons CC BY-SA 4.0.
- e. Middle right: Emerging leaves, GBG. DJ CC BY-NC-SA 4.0.
- f. Avenue of Honour in Roma, Queensland. Photo: State of Queensland: Queensland Heritage Register, Wikipedia CC BY 3.0.



Three photos at bottom of this page.

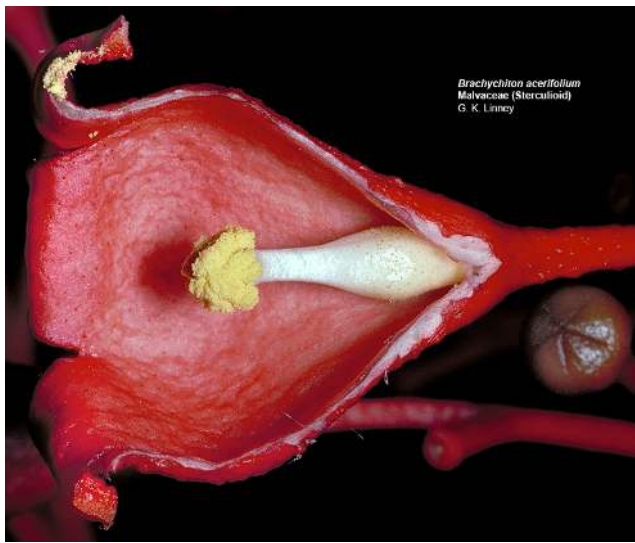
2. *Brachychiton australis*

- a. Left: Tree, Whitsunday Islands National Park, Mount Rooper. Photo: getplanted, iNaturalist.org CC BY-NC
- b. Middle: Pod with seeds, Burdekin, QLD. Photo: Lucas Christofides, iNaturalist.org CC BY-NC.
- c. Right: Leaves, GBG. Photo: BS.





Brachychiton acerifolium
Malvaceae (Sterculioidei)
G. K. Linney



Brachychiton acerifolium
Malvaceae (Sterculioidei)
G. K. Linney



Four photos above:

3. *Brachychiton acerifolius*

Left top: Functionally female flower, showing a well-developed stigma and under-developed anthers.

Left lower: Functionally male flower with a ripe stamen. The filaments are joined to completely enclose the under-developed stigma. Two photos: G. K. Linney, University of Hawai'i, CC BY-SA-NC.

Right top: Seed pod. Photo: Mike Peel, Huntington Botanic Gardens, California, Wikimedia Commons CC-BY-SA-4.0

Right lower: Leaf. Photo: tree-species, Flickr & Wikimedia Commons CC BY 2.0.

Two photos below:

4. *Brachychiton acerifolius* x *populneus*, *roseus*

Left: Flowers, GBG 2015.

Right: Empty seed pods and leaves. GBG 2016.

Photos: DJ, CC BY-NC-SA 4.0.





Two photos above:

5. *Brachychiton populneus*

Left: Leaves and empty seed pods. Photo: Desert Trees, Flickr CC BY-NC-SA 2.0.

Right: Sometimes the leaf shape varies.

Photo: Flavorcup, Wikimedia Commons CC BY-SA 4.0.

Three photos below and right:

6. *Brachychiton discolor*

Left: Pod with seed. Photo: Philmarin, Wikimedia Commons CC BY-SA 3.0.

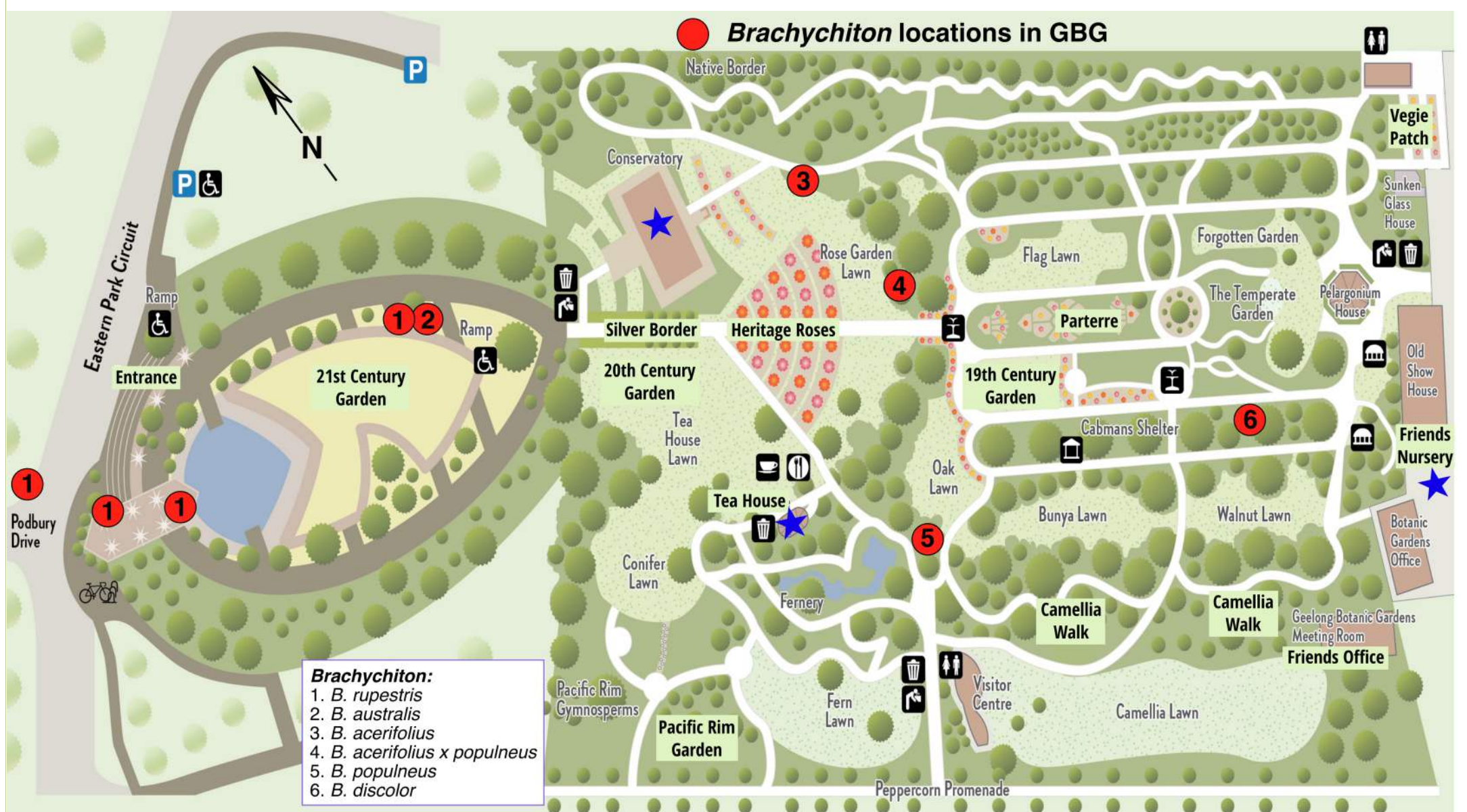
Right, upper: Trunk and branches, GBG 2024. Photo: BS

Right, lower: Flowers cover the ground, GBG, 2014. Photo: Liz Bennetto.



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Map of Geelong Botanic Gardens