

## *Eucalyptus goniocalyx* subsp. *goniocalyx*

Long-leaved box, Bundy, Apple, Olive-barked box

### Classification

Eucalyptus | Symphyomyrtus | Maidenaria | Euryotae | Globulares | Remanentes

### Nomenclature

***Eucalyptus goniocalyx*** F.Muell. ex Miq., *Ned. Kruidk. Arch.* 4: 134 (1856) subsp. ***goniocalyx***.

T: Buffalo Ra., Vic., 1853, *F.Mueller s.n.*; holo: MEL; iso: K, NSW.

*Eucalyptus elaeophora* F.Muell., *Fragm.* 4: 52 (1864). T: Macalister R., Vic., Jan. 1863, *F.Mueller s.n.*; holo: MEL; iso: NSW.

*Eucalyptus cambagei* H.Deane & Maiden, *Proc. Linn. Soc. New South Wales* 25: 106 (1900). T: Hassans Walls, NSW, 8 Apr. 1900, *J.H.Maiden s.n.*; syn: BM, NSW; Mt Bulaway, NSW, Oct. 1899, *W.Forsyth s.n.*; syn: NSW.

*Eucalyptus cordieri* var. *brachypoma* Blakely, *Key Eucalypts* 147 (1934). T: Mt McDonald, near Cowra, NSW, May 1900, *R.H.Cambage s.n.*; holo: NSW.

### Description

**Tree** to 15 m tall. Forming a lignotuber.

**Bark** rough to small branches or the branches smooth; rough bark fibrous or box-type, grey, grey-brown, or mottled with grey and white patches; smooth bark white, cream or grey.

**Juvenile** stem rounded or square in cross-section, glaucous; juvenile leaves opposite and sessile for many pairs, orbicular, 3.5–10 cm long, 3.5–11 cm wide, margin entire or subcrenulate, apex rounded sometimes apiculate, or emarginate, quite to slightly glaucous.

**Adult leaves** alternate, petiole 1–4 cm long; blade lanceolate to falcate, 6–25 cm long, 1.3–4 cm wide, flat or undulate, base tapering to petiole, concolorous, glossy, green, side-veins usually greater than 45° to midrib, densely reticulate, intramarginal vein parallel to and well removed from margin, oil glands island, intersectional or obscure.

**Inflorescence** axillary unbranched, peduncles 0.5–1.5 cm long, buds 7 per umbel, usually sessile, rarely on pedicels to 0.4 cm long.

**Mature buds** oblong to ovoid to obovoid, 0.6–1.1 cm long, 0.4–0.7 cm wide, green to yellow, often slightly angled longitudinally, scar present, operculum conical to rounded, stamens irregularly flexed, anthers cuboid or cuneate, versatile, dorsifixed, dehiscent by longitudinal slits (non-confluent), style long, stigma blunt or tapered, locules 3 or 4, the placentae each with 4 vertical ovule rows. Flowers white.

**Fruit** sessile, rarely on pedicels to 0.4 cm long, cup-shaped or cylindrical to barrel-shaped, 0.5–1 cm long, 0.6–1.1 cm wide, sometimes slightly angled longitudinally, disc usually descending, valves 3 or 4, slightly exerted to enclosed.

**Seeds** black, brown or grey, 1.5–2.5 mm long, ovoid to flattened-ovoid, sometimes lacunose, dorsal surface smooth or shallowly pitted, hilum ventral.

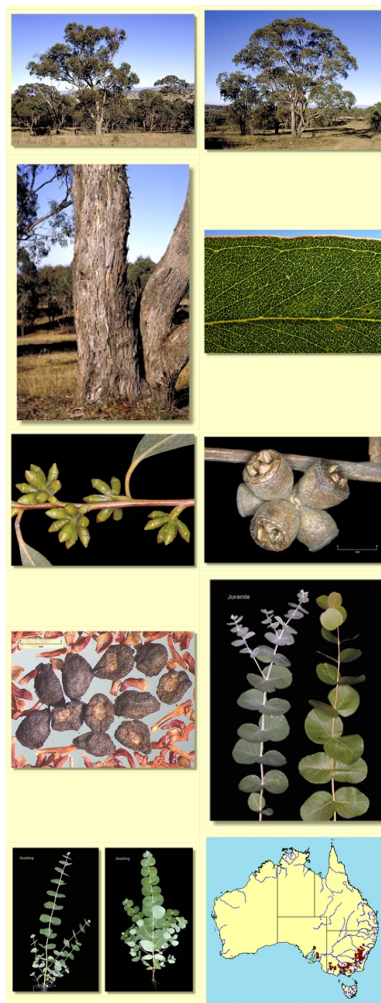
**Cultivated seedlings (measured at node 10):** cotyledons bilobed; stems rounded to square in cross-section, smooth to slightly warty, usually glaucous, rarely non-glaucous; leaves sessile and opposite for many nodes, orbicular or wider than long, 1–8 cm long, 1–8 cm wide, amplexicaul (rarely truncate to rounded at base), glaucous to grey-green, rarely green.

### Flowering Time

Flowering time unknown.

### Notes

*Eucalyptus goniocalyx* is a small to medium-sized tree species found on tablelands and hills from the Northern Tablelands of New South Wales to central-western Victoria, also in South Australia in the Mt Lofty and Flinders Ranges, occurring as a mallee in the driest areas. The tree form has rough box-type bark on the trunk extending at least as far as the largest limbs and often to the smallest branches, but there is little or no rough bark on the mallee form. Adult leaves are always glossy green and buds and fruit are sessile in the axillary clusters.



In eastern Australia it is most likely to be confused with the often co-occurring *E. bridgesiana* but differs in the following ways: rough bark does not become tessellated, the orbicular juvenile leaves remain opposite for many pairs rather than becoming subopposite to alternate, and the buds and fruit are sessile. A related species, *E. nortonii*, occurs on poorer sites with shallow soil and differs by the glaucous adult leaves, buds and fruit.

The authors of EUCLID recognize three subspecies:

***E. goniocalyx* subsp. *goniocalyx***

Distributed south from Glen Innes and the Liverpool Range through the tablelands and western slopes of New South Wales, through the lower parts of the eastern highlands and the midlands of Victoria, both north and south of the Great Dividing Range, extending west to the Grampians and to near Diapur in the Wimmera district; and disjunctly in South Australia from the Mt Lofty Ranges as far as Mt Brown east of Port Augusta.

***E. goniocalyx* subsp. *exposa***

Found in the northern Flinders Ranges in South Australia where restricted to high exposed sites in the Elder range and Wilpena Pound Range. It differs from the other subspecies in being of poorer form, having much less rough bark, glaucous branchlets and not quite as glossy adult leaves.

***E. goniocalyx* subsp. *viridissima***

A Victorian endemic abundant on Mount Arapiles and also occurring in the northern Grampians at Mount Zero, near Halls gap, the northern Serra Range, and Red Rock in the Victoria Range. Subsp. *viridissima* can only be identified by its seedling and juvenile growth which have leaves strikingly mid-green and glossy, not glaucous like other subspecies. Elsewhere in Victoria botanists have collected this subspecies with its green juvenile growth: S of Wangaratta at 15-mile Creek and in Burrowa - Pine Mountain National Park. Seedlings raised from a population of trees of *Eucalyptus goniocalyx* subsp. *goniocalyx* at Mulligans Flat Nature Reserve, ACT, are occasionally green and glossy (non-glaucous) but more usually glaucous.

*Eucalyptus goniocalyx* belongs in *Eucalyptus* subgenus *Symphomyrtus* section *Maidenaria*, a large group of species more or less restricted to south-eastern Australia, characterised by bilobed cotyledons, simple axillary inflorescences, buds with two opercula the outer of which sheds early in bud development, stamens with versatile anthers and flattened seeds with a ventral hilum. Within this section, *E. goniocalyx* belongs in series *Globulares* subseries *Remanentes*, having sessile, juvenile leaves opposite for many pairs on square stems, small buds in clusters of seven and small fruit usually with a descending disc.

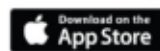
Kevin Rule (2011) published three new subspecies of *Eucalyptus goniocalyx*, all endemic to Victoria. Subsp. *viridissima* is included above, whilst the Rule's other two subspecies, viz. *E. goniocalyx* subsp. *laxa* Rule and *E. goniocalyx* subsp. *fallax* Rule, are regarded as plants of intermediate morphology between *Eucalyptus goniocalyx* and *E. cypellocarpa*.

### Origin of Name

*Eucalyptus goniocalyx*: Greek *gonio-*, angled and *calyx*, calyx, referring to the angles on the fruit.

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