

More about the Ironbarks

Notes

The ironbarks get their name from the normally hard, grey to black, longitudinally furrowed, kino impregnated, rough bark on their trunks and large branches.

This bark characteristic makes the ironbarks an easy group to recognize in the field, and apart from a few unrelated species like *E. sieberi*, *E. aromaphloia*, *E. brassiana* and *E. indurata*, which can also have bark that resembles the true ironbarks, no other eucalypt has bark similar.

Apart from one species, *Eucalyptus jensenii*, which grows in the Top End of the Northern Territory and the central Kimberley Region of Western Australia, ironbarks are confined to the eastern mainland States. Several species grow tall and straight and have been used by the timber industry as millable logs and as poles for electrical wiring and street lighting. The timber is usually hard and in the past was sought by owners of combustion stoves, as the wood burned slowly and hot. Two species, *E. sideroxylon* and *E. tricarpa*, produce a colourful display of white to pink to red flowers and these species have been widely used throughout eastern Australia in street plantings.

Although they are very easy to recognize as a group, the ironbarks are a very difficult group to identify to species and more work is required to elucidate the differences between the species. Intergradation is common and this adds to the complexity of what is already a very complex group of plants.

Following are some important questions to ask when trying to identify ironbarks in the field or from fresh specimens:

- Are the branches rough or smooth-barked?
- What colour are the adult leaves and are they discolourous or concolorous?
- Is the upper leaf surface dull or glossy?
- What shape are the adult leaves; are they narrow or broad?
- Are the inflorescences compound and formed mainly at the end of the branchlets or are they single umbels and formed predominantly in the axils of the leaves?
- What shape are the buds and are they glaucous?
- Is there an operculum scar or any evidence of the outer operculum still hanging on the tip of the inner operculum?
- Do the buds have an outer whorl of staminodes (stamens without an anther) and are the stamens all regularly inflexed? (Best seen with a x10 lens.)
- Is the hypanthium of the bud square or round in cross-section?
- What shape is the operculum? Is it rounded or acute at the apex?
- What shape is the fruit and is it square or round in cross-section?
- Are the younger fruits glaucous?
- Are the valves of the fruit exerted or enclosed?
- Does the staminophore remain on the fruit well into maturity?
- Is the disc of the fruit narrow or broad and is it ascending, level or descending?

In all eucalypts, information about the shape, colour and size of the juvenile leaves is a very useful addition to help in identification. Care must be taken, however, when accessing this information in the field as it is sometimes difficult to be certain that the juveniles in the ground come from the adult growing nearby.

The ironbarks are closely related to the boxes. Together they make up the Section *Adnataria* in the subgenus *Symphyomyrtus*. Their buds have two opercula, ovules are in four rows, seeds are flattened-ovoid, cotyledons are reniform, and anthers are rigid on the staminal filaments. Within section *Adnataria*, the ironbarks can be divided into three distinct groups.

Group 1. (Formally treated in Brooker (2000) as genus *Eucalyptus* subgenus *Symphyomyrtus*, section *Adnataria*, subsection *Terminales*, series *Rhodoxylon*.) This group has terminal inflorescences, buds that lose the outer operculum early in development (operculum scar present), has inflexed stamens, with the outer stamens sterile (staminodes) and a broad staminal ring that often persists to the fruiting stage.

This series is broken further into two groups, subseries *Discolores*, in which the adult leaves are distinctly discolourous, and subseries *Concolores*, where the adult leaves are concolorous or sometimes slightly discolourous.

At present we are recognising 17 taxa in the series *Rhodoxylon* but. They are diagnosed by the following:

subseries *Discolores*

E. paniculata - adult leaves distinctly discolourous, glossy green, fruit hemispherical to cup-shaped to barrel-shaped, juveniles ovate.

E. decolor - adult leaves discolourous, dull green, fruit hemispherical to cup-shaped to barrel-shaped, juveniles lanceolate.

E. sp. Dorsiventralis - adult leaves distinctly discoloured, glossy green, fruit obconical to barrel-shaped, slightly bigger than the others in the subseries *Discolores*, 0.6–1 cm wide and distinctly four-sided, juveniles ovate to lanceolate.

E. placita - adult leaves distinctly discoloured, glossy green, juveniles ovate and slightly broader than the other species in the subseries *Discolores*.

E. ancophila - adult leaves normally slightly discoloured, rarely concolorous, glossy green, fruit obconical to barrel-shaped, juveniles ovate to broadly lanceolate.

subseries *Concolores*

E. caleyi subsp. *caleyi* - adult leaves concolorous, blue-grey to glaucous, dull, fruit rounded in cross-section to weakly four-sided, juvenile leaves glaucous, orbicular to ovate.

E. caleyi subsp. *ovendenii* - adult leaves concolorous, blue-grey to glaucous, dull, buds and fruit square in cross-section and distinctly four-sided, juvenile leaves glaucous, orbicular to ovate.

E. scopulorum - adult leaves concolorous, dull green to grey-green (not glaucous), buds and fruit not glaucous, juveniles elliptical to ovate, dull green to grey-green.

E. fusiformis - adult leaves concolorous, dull green, fruit relatively long and narrow, barrel-shaped to obconical, juveniles lanceolate to ovate.

E. tetrapleura - adult leaves concolorous, dull green, buds and fruit distinctly four-sided, juveniles ovate to broadly lanceolate.

E. dura - adult leaves concolorous to slightly discoloured, semi-glossy to rarely dull green, fruit obconical to barrel-shaped, juveniles broadly lanceolate to ovate.

E. suffulgens - adult leaves concolorous to slightly discoloured, glossy green, fruit barrel-shaped, juveniles linear to narrowly lanceolate.

E. melanoleuca - branches normally conspicuously smooth-barked, adult leaves concolorous to slightly discoloured, glossy green, fruit barrel-shape, juveniles ovate.

E. corynodes - adult leaves concolorous, dull blue-grey to glaucous, fruit barrel-shaped, juveniles lanceolate.

—

E. panda - adult leaves concolorous, dull green to grey-green, fruit hemispherical to cup-shaped to broadly funnel-shaped, 0.6–0.7 cm wide, juveniles linear to lanceolate. Very close to *E. beyeri*. Differs marginally by having slightly larger fruit.

E. beyeri - adult leaves concolorous, dull green to grey-green, buds and fruit small, fruit hemispherical to cup-shaped to broadly funnel-shaped, 0.4–0.6 cm wide, juveniles linear to lanceolate. Very close to *E. panda*. Differs only marginally by having slightly smaller fruit.

E. virens - adult leaves concolorous, glossy green, fruit hemispherical to funnel-shaped, juveniles narrowly lanceolate. Differs only slightly from *E. sicilifolia* by having hemispherical to funnel-shaped fruit.

E. sicilifolia - adult leaves concolorous, glossy green, fruit barrel-shape, juveniles narrowly lanceolate. Differs only slightly from *E. virens* by having barrel-shaped fruit.

Group 2. (formally known in Brooker (2000) as genus *Eucalyptus* as subgenus *Symphyomyrtus*, section *Adnataria*, subsection *Terminales*, series *Melliodora*, subseries *Solidae*). This group has axillary inflorescences, buds that hold the outer operculum into maturity and both the inner and outer operculum shed together at anthesis (operculum scar absent), has inflexed stamens where the outer stamens are sterile (staminodes) and a broad staminal ring that often persists to the fruiting stage.

Two species are recognised in this group:

E. sideroxylon - has seven-budded umbels and usually has slightly smaller buds and fruit than *E. tricarpa*.

E. tricarpa - has three-budded umbels and usually has slightly larger buds and fruit than *E. sideroxylon*.

series *Melliodora* is split into two subseries, subseries *Solidae* (as discussed above) and subseries *Leucoxylon* which is distinguished from subseries *Solidae* by its lack of ironbark on the trunk. There are three species in this group, *E. melliadora*, *E. leucoxylon* and *E. petiolaris*, all very closely related to *E. sideroxylon* and *E. tricarpa*. *E. leucoxylon* and *E. petiolaris* are normally smooth-barked on the trunk, while *E. melliadora* has fibrous rough box-type bark on the trunk, which is not hard and kino-impregnated like the ironbarks.

Group 3. (formally known in Brooker (2000) as genus *Eucalyptus* as subgenus *Symphyomyrtus*, section *Adnataria*, subsection *Apicales*, series *Siderophloiae*) This group has terminal inflorescences, buds that shed the outer operculum early in development (operculum scar present), stamens irregularly flexed and all fertile (no staminodes).

The group is broken further into two subseries, subseries *Subglaucae* in which the juvenile leaves are petiolate and the mature crown consists of true adult leaves, and subseries *Jugatae* in which the juvenile leaves are sessile, glaucous and the mature crown consists entirely of juvenile leaves.

They are diagnosed by the following:

subseries *Subglaucae*: (mature crown leaves petiolate and alternate)

E. fibrosa subsp. *fibrosa* - adult leaves dull green to grey-green, lanceolate; buds fusiform, not glaucous, operculum conical, long and narrow; juvenile leaves ovate to deltoid to orbicular, relatively large, dull grey-green to green.

E. fibrosa subsp. *nubilis* - adult leaves blue-grey to glaucous, lanceolate; buds fusiform, glaucous, operculum conical, long and narrow; juvenile leaves ovate to deltoid to orbicular, relatively large, blue-grey to glaucous.

E. siderophloia - adult leaves dull to glossy green, lanceolate; buds diamond-shaped, operculum conical, fruit 0.5–0.7 cm wide, slightly narrower than *E. rhombica*; juvenile leaves ovate to broadly lanceolate to lanceolate, green.

E. rhombica - adult leaves dull to glossy grey-green, lanceolate to broadly lanceolate; buds diamond-shaped, sometimes longitudinally ribbed, operculum conical to beaked, fruit 0.8–1 cm wide, slightly wider than *E. siderophloia*; juvenile leaves ovate to broadly lanceolate, blue-green.

E. decorticans - branches conspicuously smooth-barked in the upper canopy, adult leaves dull green to blue-green, buds diamond-shaped to obovoid, operculum conical; juvenile leaves lanceolate, grey-green to green.

—

E. tholiformis - adult leaves dull green to blue-green, lanceolate; buds obovoid to ovoid to fusiform, operculum conical to rounded; juvenile leaves blue-grey, ovate.

E. ophitica - adult leaves dull to glossy green, lanceolate; buds obovoid to fusiform to more or less oblong, operculum rounded; juvenile leaves green, broadly lanceolate, 3–7 cm wide, slightly wider than *E. taurina*.

E. taurina - adult leaves dull to glossy green, lanceolate; buds ovoid to fusiform to more or less oblong, operculum conical to rounded; juvenile leaves green, lanceolate, 1.4–3 cm wide, slightly narrower than *E. ophitica*.

E. beaniana - adult leaves dull green to blue-green, lanceolate; buds obovoid to fusiform to more or less oblong, operculum conical to rounded; juvenile leaves blue-green, linear, 0.4–0.6 cm wide.

—

E. crebra – adult leaves dull green to grey-green, linear to narrowly lanceolate to lanceolate, buds small, operculum rounded to acute, fruit hemispherical to cup-shaped to barrel-shaped, disc narrow, 0.25–0.7 cm wide, juvenile leaves linear to lanceolate.

E. exilipes - adult leaves normally dull green, linear to narrowly lanceolate, intramarginal vein absent, usually confluent with the margin of the leaf; buds narrowly ovate to fusiform, operculum conical; juvenile leaves blue-grey to grey-green and linear, 0.2–0.6 cm wide.

E. cullenii - adult leaves dull grey-green to green to occasionally glaucous, lanceolate to narrowly lanceolate to linear; buds more or less globular, operculum rounded and apiculate; fruit hemispherical with a relatively broad flat disc; juvenile leaves linear to narrowly lanceolate.

E. granitica - adult leaves glossy green, buds obovoid to ovoid, operculum rounded to conical; juvenile leaves lanceolate and glossy green.

E. jensenii - adult leaves dull green to grey-green, lanceolate to ovate to sometimes elliptical; buds obovoid to ovoid to pyriform, often glaucous, operculum conical; juvenile leaves green, ovate to elliptical.

—

E. farinosa - adult leaves glaucous, broadly lanceolate to ovate; buds obovoid to fusiform and glaucous, operculum conical, the hypanthium of the buds and fruits square in cross-section; juvenile leaves orbicular, distinctly petiolate and glaucous.

E. paedoglauca - adult leaves dull blue-grey to glaucous to sometimes green, lanceolate; buds ovoid to obovoid, not glaucous, operculum conical to rounded; juvenile leaves ovate to broadly lanceolate and glaucous.

E. atrata - adult leaves dull blue-grey to glaucous, lanceolate; buds ovoid to obovoid, glaucous, operculum conical to rounded; juvenile leaves ovate to broadly lanceolate and glaucous.

E. quadricostata - adult leaves mature from dull grey-green to dull or glossy green, buds obovoid, operculum conical, buds and fruit square in cross-section; juvenile leaves ovate, blue-grey to glaucous.

—

E. staigeriana - adult leaves dull grey-green to glaucous, lanceolate to broadly lanceolate to ovate, crushed leaves have a strong smell of lemons; buds obovoid to ovoid to fusiform, operculum conical to slightly beaked; juvenile leaves ovate, grey-green to glaucous.

E. whitei - adult leaves grey-green to glaucous, lanceolate; buds obovoid to pear-shaped, glaucous, operculum rounded to conical to slightly beaked; juvenile leaves glaucous, ovate to broadly lanceolate.

subseries *Jugatae*: (mature crown leaves sessile and opposite)

E. melanophloia - mature crown leaves cordate to ovate to rarely lanceolate and glaucous; buds ovoid to diamond-shaped and glaucous; fruit normally slightly smaller than *E. shirleyi* to 0.8 cm wide; juvenile leaves cordate to orbicular to ovate and glaucous.

E. shirleyi - mature crown leaves cordate to orbicular and glaucous; buds obovoid, glaucous and often longitudinally ribbed on the hypanthium; fruit slightly larger than *E. melanophloia* to 1 cm wide; juvenile leaves cordate to orbicular and glaucous.

[DIAGNOSTIC TABLE \(pdf\)](#)

Copyright © CANBR 2020, all rights reserved.



Web edition hosted at <https://apps.lucidcentral.org/euclid>