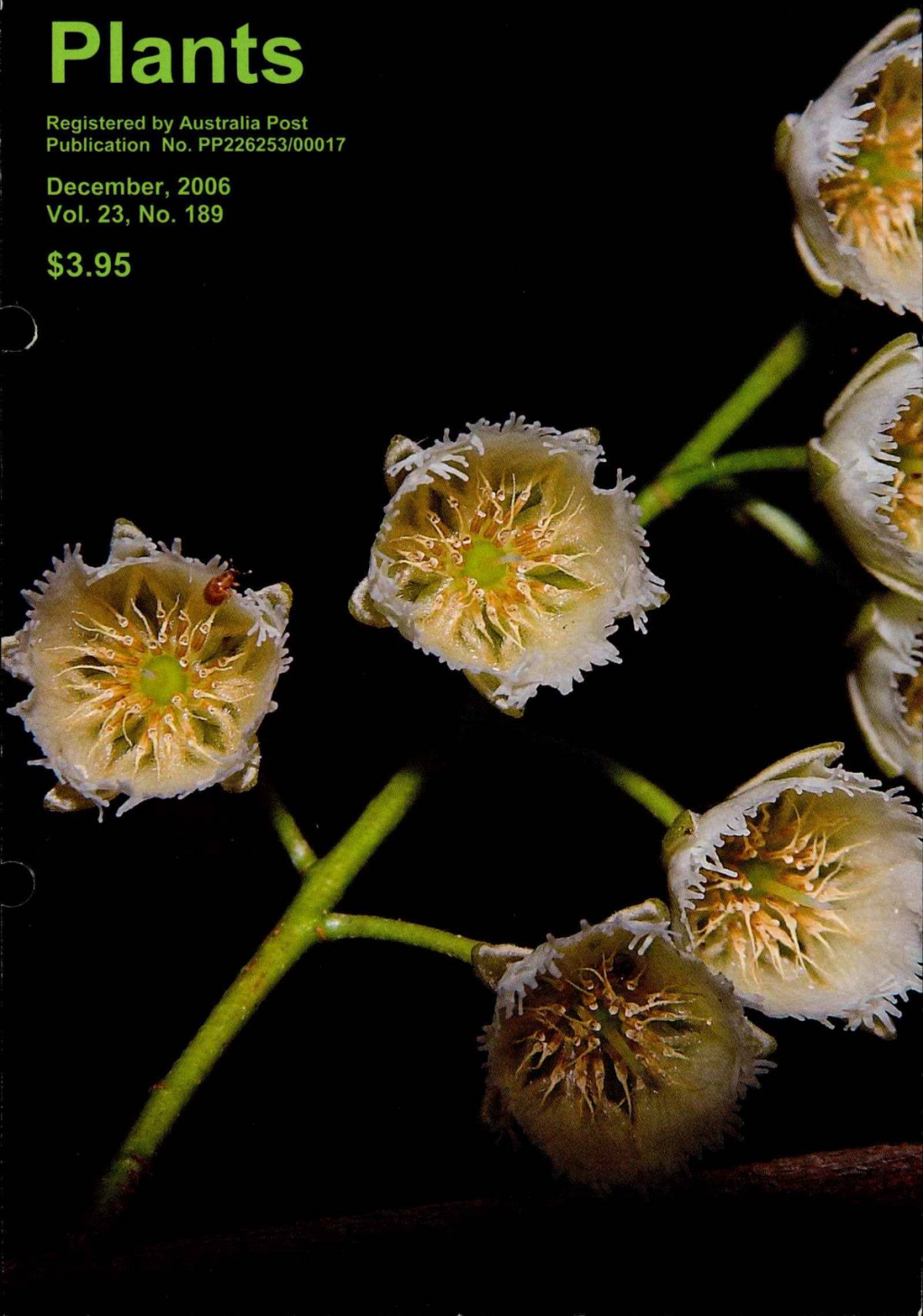


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Editorial

Cas Liber, Publishing Committee

The bulk of this issue is taken up with a detailed overview of the Australian members of the diverse Elaeocarpaceae family; six genera are covered, the most notable being the large genus *Elaeocarpus*, commonly known as Quandongs. It also contains the best-known member the widely cultivated Blueberry Ash (*E. reticulatus*). Another three genera have recently been transferred to the family and we'll endeavour to get them covered in a later issue. The article is the result of collaboration between Darren Crayn, Research Scientist at the Royal Botanic Gardens in Sydney and Kris Kupsch, the ASGAP Rainforest Study Group Leader. Once again Garry Sankowsky helped out with some superb photos. Garry has released a CD of images; *Rainforest Plants Volume 3* available from Zodiac Publishing.

We are really proud to be able to bring various experts to work together to produce such an article under the 'Society banner and print it in Australian Plants. In what other periodical could we print such an overview looking at the botanical, conservation-related and horticultural aspects of a plant family so comprehensively? Let us know what other plant groups you feel we've neglected and we'll try to get some experts to produce similar articles.

Do you enjoy reading *Australian Plants*? Would you like to contribute an article on your experiences (or expertise) with Australia's native flora?

We want the magazine to appeal to a wide range of readers from the beginners to the experienced and it's been a while since we have had an "Our Garden" featured!

Please don't be intimidated about putting together an article - we will help wherever possible. Please send submissions to:

E-mail: edap@austplants-nsw.org.au

Snail-mail: Editor, Australian Plants, PO Box 744, Blacktown NSW 2148

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All photos: Garry Sankowsky

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Elaeocarpaceae in Australia

Darren Crayn & Kristopher Kupsch

The Elaeocarpaceae is a family of some 500 species including a wide range of forms from towering, broadly buttress-rooted rainforest giants to shrubby cliff dwellers. Members of the family typically have bell-shaped flowers which mostly hang downward with the petals often delicately fringed. In Australia the best-known examples are the rainforest carabeens (genus *Sloanea*), and the Blueberry Ash (*Elaeocarpus reticulatus*). Recent classifications based on large-scale DNA studies place the family, previously thought to be related to the Tiliaceae and allies, in the order Oxalidales with such diverse plants as the Albany Pitcher Plant (*Cephalotus*, family Cephalotaceae), Christmas Bush (*Ceratopetalum*, family Cunoniaceae) and *Oxalis* (Oxalidaceae).

Until very recently Elaeocarpaceae was generally regarded to contain nine genera: *Aceratium*, *Aristotelia*, *Crinodendron*, *Dubouzetia*, *Elaeocarpus*, *Peripentadenia*, *Sericolea*, *Sloanea* and *Vallea*. Members of this family are common in most tropical regions world-wide but are not found on continental Africa, despite there being several *Elaeocarpus* and a *Sloanea* on Madagascar. There are also quite a few Elaeocarpaceae that are found in more temperate climes, including Tasmania (*Aristotelia*), New Zealand (*Aristotelia*, *Elaeocarpus*), and southern South America (*Aristotelia*, *Crinodendron*, *Sloanea* and *Vallea*). Recent studies have shown convincingly that the Australian black-eyed susans (*Tetralthea*) are part of a lineage that shares a common ancestry with Elaeocarpaceae. Several recent classifications of flowering plants include *Tetralthea* and its two small allied genera, *Tremandra* and *Platythea*, in Elaeocarpaceae. Formerly these three genera together made up the family Tremandraceae.

In the article following we give brief notes on the nomenclature, relationships, biogeography, ecology and cultivation of the indigenous Australian species in the six genera typically found in rainforests. We have not included the species formerly included in Tremandraceae (*Tetralthea*, *Tremandra*, *Platythea*) since these plants are ecologically very different to the rest of Elaeocarpaceae, being small and compact to sparse and wiry shrubs growing in relatively dry situations ranging from sclerophyll forests and woodlands to exposed rock crevices in the arid zone. This group of three genera and about 53 species deserve to be treated in an article of their own.

***Aceratium* DC.**

The genus *Aceratium* contains about 20 species most of which are endemic to New Guinea, with others extending the range to the Moluccas, Malaysia, Solomon Islands, Vanuatu and Australia. The five Australian species are endemic, occurring in well-developed rainforests in the Wet Tropics of north-eastern Queensland. The genus is closely related to *Elaeocarpus* (and to the New Guinea endemic genus *Sericolea*), differing in having opposite leaves (alternate in *Elaeocarpus*), fruit with densely fibrous flesh (usually not or barely fibrous in *Elaeocarpus*), petals with hairy margins and anthers opening by a terminal pore that is surrounded by stiff bristles (anthers usually



Aceratium ferrugineum
(p. 342) Photo: D Crayn



Aceratium megalospermum
(p. 343) Photo: D Crayn



Aceratium sericoleopsis
(p. 343) Photo: D Crayn





Opposite; Centre left, bottom left and bottom right and

This page; Top left, top right, centre left & centre right all: *Elaeocarpus angustifolius* (p. 350)

Bottom left & bottom right *Elaeocarpus arnhemicus* (p. 351)

All photos unless cited: G Sankowsky



with a terminal sterile appendage but not bristles in *Elaeocarpus*). This last feature gives the genus its name: A-, the Greek prefix meaning "without", and -ceras, also Greek, for "horn-like projection". However none of these attributes serves to distinguish all species of *Aceratium* from all species of *Elaeocarpus*.

1. *Aceratium concinnum* (S.Moore) C.T.White

Etymology: *concinus* (Latin) = elegant, in reference to the habit.

Common name: Hard Carabeen

Natural history: This species, originally described as an *Elaeocarpus*, is widespread in rainforest in north-eastern Queensland from the Paluma Range north west of Townsville to just south of Cooktown, occurring from sea level up to about 900 m in altitude. It is immediately recognisable in the field on account of the leaves having distinctive venation, a short petiole, an almost cordate base and a velvety pubescence. Suckers are often present adjacent to large specimens especially along road cuttings.

Height: a relatively large tree - specimens 25 m tall having been reported, although it occurs most often as bushy, slightly weeping treelet to 10 m tall.

Propagation: Cultivation requirements are unknown but would likely be similar to *A. doggrellii*, i.e. a moist sheltered site. Recruitment of seedlings has been recently observed beneath a fallen tree toppled by Tropical Cyclone Larry, suggesting that dormant seed may be triggered to grow by a sudden fluctuation in light and/or temperature. Seedlings have densely hairy leaves.

2. *Aceratium doggrellii* C.T.White

Etymology: named for R.H. Doggrell, collector of the type specimen.

Common name: Buff Carabeen

Natural history: This species has a similar distribution and ecological range to *A. sericoleopsis*, being found only on the Atherton Tableland and nearby peaks in well developed rainforest mostly on granite between about 600 and 1200 m altitude. The oblong, red fruits can reach about 3.5 cm in length.

Height: Probably the biggest of the species of *Aceratium*, being sometimes encountered up to 35 m tall.

Propagation: Grows well from cuttings and is currently doing well in north-eastern NSW in a shady site without irrigation - producing a rather bushy specimen.

3. *Aceratium ferrugineum* C.T.White

Etymology: *ferrugineus* (Latin) = rust-coloured, in reference to the hairs.

Common name: Rusty Carabeen

Natural history: This is perhaps the most striking of the five Australian species. It has the largest leaves, which are a glossy dark green colour with a dense, rusty-coloured indumentum below, the largest flowers, which are pink to red in contrast to the pale greenish to white flowers of the other Australian species, and large, orange-red, hairy, succulent fruit. It occurs in well developed rainforest on granitic soils between about 900 and 1300 m in altitude and is restricted to a narrow area of habitat between Mt. Lewis and the Mt. Spurgeon-Black Mountain (Carbine Tableland) area to the south-west

and north-west of Mossman in the Wet Tropics World Heritage area of north-eastern Queensland. The species is conspicuous along the Mt. Lewis Road, particularly when the fruit ripen and overhang the road. Trees are often multiple stemmed from the base and fallen trunks can resprout to produce a row of clonal stems – these have been observed up to 20 m across.

Height: to about 30 m.

Propagation: An absolutely stunning small tree when grown from cuttings (the preferred method since the ovaries are nearly always aborted) and planted in full sun. Plants adopt a squat, bushy habit. It can be grown as far south as Melbourne and thrives in subtropical NSW with ample rainfall. This species has been previously sold as 'Flamingo Belle' but it is rarely available. It should be promoted in higher rainfall areas which have a mild summer. Specimens are somewhat prone to limb death and pruning may be a desirable practice.

4. *Aceratium megalospermum* (F.Muell.) Balgooy

Etymology: *mega* (Greek) = large, *spermus* (Greek) = seeded, in reference to the seeds being large in the context of the genus *Aristotelia*, within which this species was originally placed.

Common name: Creek Carabeen

Natural history: This small tree is commonly found in well developed rain forest between the Cardwell Range and Cooktown, preferring sheltered sites such as creeks and gullies at altitudes from sea level to about 800 m. At certain sites it is a dominant riparian species weeping out over the water's edge with its characteristic abundant adventitious roots often emerging horizontally from the trunk.

Height: to about 15 m

Propagation: This is a lovely species, smaller and more delicate in all parts than *A. ferrugineum* and perhaps better suited to a shady corner of a smaller, more subtle garden. Notable attributes are the red fruits and the leaves, which are clothed when young in long, silky hairs appressed to the leaf surface, often persisting on the underside to leaf maturity. It grows well from cuttings and produces flower and fruit as a 5 m tall shrub in coastal Sydney, but would probably not tolerate frosts. It is little known in cultivation as seed germination is painstakingly slow if it occurs at all.

5. *Aceratium sericoleopsis* Balgooy

Etymology: in reference to the resemblance to certain species of *Sericolea*.

Common name: Silky Carabeen

Natural history: This species is found only on the south-east of the Atherton Tableland where it prefers basalt-derived soils at altitudes between 500–750 m. It is similar to *A. megalospermum* in having narrow leaves with a silky indumentum below, and larger red fruits.

Height: to about 25 m.

Propagation: In cultivation it is sometimes less prodigious in flower and fruit than *A. megalospermum* but is otherwise just as attractive and it seems to do just as well in coastal Sydney. It is otherwise little known in horticulture.



Top, centre left & centre right:
Elaeocarpus arnhemicus (p. 351)
 Left, below, opposite top (L & R):
Elaeocarpus bancroftii (p. 351)
 Opposite bottom:
Elaeocarpus coorangooloo (p. 353)
 All photos: G Sankowsky



***Aristotelia* L'Her.**

The five species of the genus *Aristotelia* are widely separated across the southern hemisphere with two species each in Australia (*A. australasica*, *A. peduncularis*) and New Zealand (*A. fruticosa*, *A. serrata*), and one species found in south-eastern South America (*A. chilensis*). The Australian species are endemic in Tasmania (*A. peduncularis*) and the temperate ranges of the mid north coast of New South Wales (*A. australasica*), respectively. They are generally found growing as understorey shrubs in mountain rainforest, indicating a preference for cool, wet, shady conditions. The leaves are usually opposite in this genus and the fruits are true berries in that they lack a stone which differentiates *Aristotelia* from other members of the family in Australia. All species in the genus except for *A. peduncularis* are in cultivation at the Mt. Tomah Botanic Garden at Bilpin in the Blue Mountains west of Sydney, which is situated about 1000 m above sea level. They all do well there, setting seed and recruiting prolifically on the basalt-derived Krasnozern clay soils.

1. *Aristotelia australasica* F.Muell.

Etymology: presumably a reference to its Australian origin.

Common name: Mountain Wineberry

Natural history: This species is found in or near Antarctic Beech (*Nothofagus moorei*) rainforest from Mt. Boss near Wauchope to around Tenterfield. It produces white flowers in spring with the small red berries following.

Height: to at least 4 m in cultivation, but rarely more than 2.5 m in the wild.

Propagation: Seed sprouts readily on richer soils, with seedlings often appearing in abundance under cultivated specimens. Plants can tolerate aggressive pruning, resprouting vigorously.

2. *Aristotelia peduncularis* (Labill.) Hook.f.

Etymology: *peduncularis* (Latin) = with a peduncle.

Common name: Heart Wineberry

Natural history: Originally described as an *Elaeocarpus*, this species is relatively common in the south of Tasmania where it grows in shady places, often in or near rainforest dominated by *Nothofagus cunninghamii*. The long peduncles (stalks), which bear the white flowers and the purple to pink berries, give this species its Latin name.

Height: to about 4 m in the wild, probably larger in cultivation.

Propagation: We do not know of any specimens in cultivation, but the requirements are likely to be similar to those for *A. australasica*, except for possibly being more sensitive to warm conditions.

Dubouzetia Pancher ex Brongn. & Gris

Until recently, *Dubouzetia* was regarded as comprising about seven to nine species distributed from the Moluccas to New Guinea and New Caledonia. Fruits in this genus are 3–5-chambered capsules which split to release seeds with a conspicuous appendage. In at least one unusual species from New Guinea (*D. galorei*) the seeds are bright red, spongy and buoyant and possibly dispersed by birds or fish. In 1984 the first Australian member of the genus was recorded with the description of *D. australiensis* Coode from the Northern Territory. In 1996 a second Australian species, closely related to *D. australiensis*, was described from near Townsville, viz. *D. saxatilis* A.R.Bean & Jessup. Both Australian species are cliff dwellers, a habit that contrasts sharply with the remainder of the species in the genus which are either rainforest trees or shrubs of open, scrubby vegetation on ultramafic soils. Being tropical plants of exposed sites the Australian *Dubouzetia* species are unlikely to tolerate cool, wet and shady conditions.

1. *Dubouzetia australiensis* Coode

Etymology: a reference to its Australian origin.

Common name: none known

Natural history: This species is known only from the Magela Creek area east of Darwin where it was first found in 1984 growing on sandstone gorge walls. This species is listed as endangered under Northern Territory legislation.

Height: It is of small stature, growing to a maximum of 1 m high, which is probably an adaptation to its precarious, cliff face habitat.

Propagation: We do not know of any specimens in cultivation so its performance is unknown. It is likely to require similar conditions to *D. saxatilis*, as the two species are closely related.

2. *Dubouzetia saxatilis* A.R.Bean & Jessup

Etymology: *saxatilis* (Latin) = dwelling or found among rocks.

Common name: Cliff Quandong

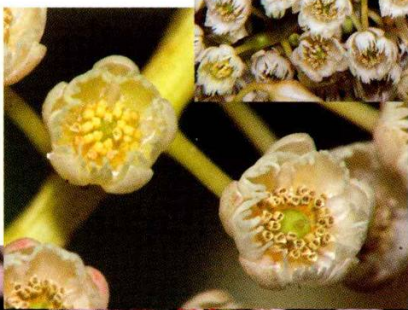
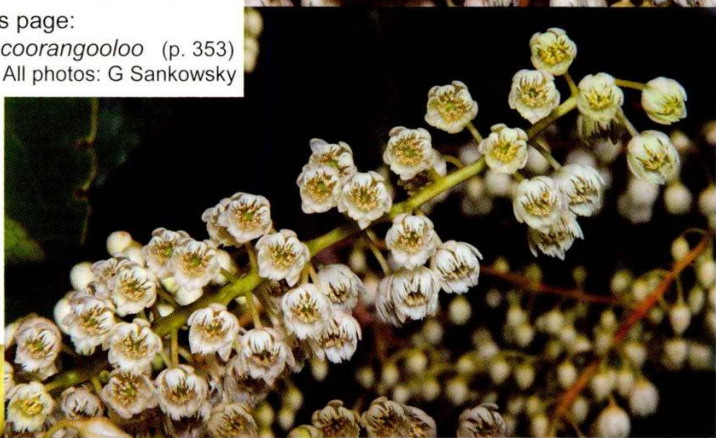
Natural history: This species grows in rock cracks on steep rhyolite cliff faces in the Frederick Peak area southwest of Townsville. Unlike most other species in the family (*Elaeocarpus reticulatus* being an exception) it is probably relatively drought and fire-tolerant, possessing a fleshy orange lignotuber from which plants may resprout. The fruits split to release seeds with a long, waxy, curved process which is probably attractive to ants and promotes seed dispersal.

Height: to about 50 cm.

Propagation: Cuttings or seed, although few plants produce seed which is probably due to the absence of a suitable pollinator. In the tropics it seems to do well under a range of conditions (an attempt to cultivate it in subtropical NSW failed), provided soils are aerated and very well drained and plants are located in a warm, sunny position. Growers are rewarded with a vigorous bushy shrub (pruning not required) with clusters of creamy bell-shaped flowers hanging on long pedicels beneath the branches.



All photos this page:
Elaeocarpus coorangooloo (p. 353)
All photos: G Sankowsky





Elaeocarpus coorangooloo (p. 353)
Photo: G Sankowsky



↑
← *Elaeocarpus culminicola*
(synonym *E. michaelii*) (p. 354)
↓
Photos: G Sankowsky



***Elaeocarpus* L.**

The genus *Elaeocarpus* is the largest in the Elaeocarpaceae containing probably at least 300–350 species worldwide. Australia has more than 30 species, many being restricted to refugial habitats in the Wet Tropics and north-east NSW whilst a small number occur over a wide geographical range. The Australian taxa are a diverse assemblage, and although this country contains a relatively modest number of species compared with New Guinea (about 85 species) and Borneo (at least 70 species), there is a greater amount of variation among them than is found elsewhere in the genus (Coode, 1984). This knowledge, taken together with the fact that the earliest fossils of *Elaeocarpus* are from south-eastern Australia and show that the genus was already diverse there in the early Miocene (c. 30 million years ago), suggests *Elaeocarpus* may have first evolved on this continent (or the part of Gondwana that became it) and then radiated throughout Asia and much of the Pacific.

Elaeocarpus species have drupaceous fruit, sometimes resembling olives (the name reflects this: Greek: elia = olive, carpo = fruit) with a fleshy layer over a hard stone containing the seeds (one per locule). At maturity the fruits often contain just one fertile locule however there may be as many as five in *E. angustifolius*, *E. grandis*, *E. sp.* 'Rocky Creek', *E. stellaris* and *E. williamsianus*. In some species the stone is covered in fibres which radiate through the flesh. They are commonly known as Quandongs in Australia and are mostly easy to grow from cuttings, but seed is usually difficult to germinate. Many species have considerable horticultural potential in southern Australia given sufficient water, especially the highland species of the Wet Tropics. *Elaeocarpus bancroftii*, *E. carolinae* and *E. johnsonii* are the most overlooked species, growing well by cuttings, developing a squat, bushy habit with very decorative bell shaped flowers in profusion.

1. *Elaeocarpus angustifolius* Blume

Etymology: *angustifolius* (Latin) = narrow-leaved.

Common name: Northern Silver Quandong

Natural history: This species is part of a complex that extends geographically from north-eastern New South Wales and New Caledonia to the Indian subcontinent. Species limits in this complex are difficult, and in the past have often been drawn along geopolitical lines. The southern species *E. grandis* is also part of this complex and its recognition as an entity distinct from *E. angustifolius* has been debated. The leaves of *E. angustifolius* (as the specific name suggests) are much narrower and the fruits are smaller than *E. grandis*. However, genetic studies indicate these two entities freely exchange genes, which suggests that they may be different ecotypes rather than different species. The Northern Silver Quandong is particularly common in non-riparian habitats (*E. grandis* is a riparian specialist although it is not restricted to this habitat by any means). It is widespread throughout North Queensland in highland and lowland habitats on various soil types.

Height: a tall tree exceeding 35 m.

Propagation: It grows easily from seed (when cracked) or cuttings although it might be wise not to grow it in NSW to avoid possible 'genetic pollution' of the southern ecotype '*E. grandis*'. It prefers full sun, and growth may be retarded in the presence of competition from grasses.

2. *Elaeocarpus arnhemicus* F.Muell.

Etymology: a reference to its occurrence in Arnhem Land, Northern Territory.

Common name: Bony Quandong

Natural history: This Quandong grows in drier sites of tropical Australia, superficially resembling *E. obovatus* to which it is closely related. It also occurs in the south-east of Papua New Guinea where it grows in open eucalypt woodlands at low altitude. This species often suckers freely from its roots.

Height: to 15 m in ideal conditions but is commonly found flowering as a shrub of 2 m or less and in harsh situations barely reaches 4 m.

Propagation: Seed-grown plants have grown well in cultivation in north-eastern NSW and have adopted a bushy habit having attractive serrated leaves. Apart from the small white flowers with fringed petals and the trees short stature, this species has limited horticultural appeal. This species and *E. reticulatus* would be suited to drier, inland places.

3. *Elaeocarpus bancroftii* F.Muell.

Etymology: named for Thomas Bancroft, Australian physician and naturalist.

Common name: Kuranda Quandong

Natural history: This species is restricted to the Wet Tropics being usually found in the wetter forests between 0–1100 m altitude from Cooktown to Innisfail. Its fruits are large and the rat-eaten fruit stones on the forest floor, which are conspicuous by their football shape and pitted surface, signal the location of trees. The white flowers of this species are possibly the largest and showiest of all Australian *Elaeocarpus* species, except perhaps for those of the related species *E. stellaris*.

Height: large tree to 40 m.

Propagation: This is a hardy tree that has been successfully grown in NSW as far south as coastal Sydney. It can be grown by seed, which doesn't require cracking, and by cuttings, which are relatively easy to strike. Seed grown trees are usually fast-growing in full sun, fruiting after 6–8 years. Seed predation in garden plants in NSW hasn't been observed – thus seedlings recruit freely beneath trees. Cutting-grown plants produce attractive full-flowering specimens when 1 m tall. Limbs of *E. bancroftii* can be brittle during wet weather, especially when in fruit.

4. *Elaeocarpus carolinae* B.Hyland & Coode

Etymology: named for Caroline Coode, then wife of one of the species' authors.

Common name: Caroline's Quandong

Natural history: species occurs in the highlands of the Wet Tropics between 800–1200 m altitude from the Windsor Tableland to the Ravenshoe area and is very common along mountain roads such as on Mt. Lewis. Its branchlets often bear a whitish waxy bloom. It is probably most closely related to *E. reticulatus* group of species: viz. *E. culminicola*, *E. eumundi*, *E. grahamii*, *E. kirtonii* and *E. linsmithii*.



Elaeocarpus eumundi (p. 354)



Elaeocarpus grahamii (p. 355)



Elaeocarpus foveolatus
(p. 355)

All photos: G Sankowsky



Height: poorly known, but probably at least 20 m.

Propagation: from cuttings. Rates of seed germination are unknown. Grows readily in full sun in north-eastern NSW, in the Royal Botanic Gardens in Sydney, and reportedly also in the Australian National Botanic Gardens in Canberra. It seems to do well without additional water, but it may brown off somewhat during dry spells. With its lovely glossy, lime green leaves, abundant racemes of white flowers arising mainly from the older branches and open, layered crown form, this species should be further promoted as a garden ornamental.

5. *Elaeocarpus coorangooloo* J.F.Bailey & C.T.White

Etymology: derived from 'Gurangalu', the probable name used by the Ngajanji people of the Atherton area.

Common name: Atherton Quandong

Natural history: This species occurs mainly between 700–1000 m altitude on the Windsor Tableland, northwest of Mossman and the Atherton Tableland west of Cairns, with an outlying occurrence on the Coane range north-west of Townsville. Flowering specimens are outstanding and resemble *E. obovatus*. Like most *Elaeocarpus* species, the old leaves turn red before falling. Of the Australian members of the genus, *E. coorangooloo* appears to be most closely related to *E. miegei*.

Height: not accurately known but at least 25 m.

Propagation: Seed is slow to germinate but cracking the fruit stones evidently helps - a specimen near Atherton that is regularly mown beneath produces abundant seedlings probably because the mower blades fracture the fruit stones (Kris has seen this occurring beneath *E. grandis* as well). It has performed very well in cultivation growing quickly, flowering and producing buttress roots from an early age. Cutting-grown plants produce tall trees rather than bushy specimens.

6. *Elaeocarpus costatus* M.Taylor

Etymology: *costatus* (Latin) = ribbed, a reference to the longitudinally ridged fruit stones.

Common name: Lord Howe Island Quandong

Natural history: Endemic to Lord Howe Island, this species appears to be related to *E. sericopetalus*, *E. elliffii* and *E. foveolatus*. Although considered rare it is relatively common in forests on the southern, wetter parts of the island. The buttress roots of this species are apparently very noteworthy and old leaves turn an attractive red colour. It has white flowers borne in axillary inflorescences, and blue fruits.

Height: up to about 10 m.

Propagation: To our knowledge the species has never been brought into cultivation, but it should do well from cuttings in frost-free climates.

7. *Elaeocarpus culminicola* Warb.

Etymology: *culminicola* (Latin) = summit-dweller, odd in light of its mostly coastal occurrence.

Common name: none known

Natural history: This species (including the synonym *E. michaelii*) occurs from Tully/Mission Beach north into Papua New Guinea. It is usually found in close proximity to the ocean (occasionally on sand) but it also occurs less commonly up to 400 m altitude. Larger specimens are often multiple stemmed.

Height: to 25 m but mostly found as smaller trees.

Propagation: It is worthy of cultivation growing into a bushy shrub producing attractive white flowers during August. It has been planted into a full sun 'suntrap' in north-eastern NSW where it has grown slowly into an attractive tree however others have died from water-logging during the wet season. Cool winters are tolerated as long as the soil is not too heavy and wet. A specimen growing in the Royal Botanic Gardens in Sydney is vigorous enough, but suffers fairly regular near-defoliation by some unknown herbivore (possibly caterpillars, but the despicable beasts have never been caught in the act).

8. *Elaeocarpus elliffii* B.Hyland & Coode

Etymology: named for Maurice Elliff, Kew Herbarium.

Common name: Northern Mountain Quandong

Natural history: This species is common in the granite highlands of the Wet Tropics between Cooktown and Paluma at 200–1300 m altitude. It is a fairly nondescript species although the several pocket-like domatia on the under surface of the leaves are so large that they produce prominent bumps on the upper surface. The new growth is pale red/apricot in colour.

Height: to about 35 m.

Propagation: Seed or cuttings, but otherwise little is known of cultivation requirements. Plants can be difficult to establish in dry climates. Soil fertility shouldn't be a concern as somewhat stunted plants occur naturally on oligotrophic granite soils.

9. *Elaeocarpus eumundi* F.M.Bailey

Etymology: named for the Queensland town (Eumundi) where the type specimen originated.

Common name: Eumundi Quandong

Natural history: This species is distributed from the southern rim of the Mount Warning Shield Volcano in north-eastern New South Wales to the McIlwraith Range, east of Coen on Cape York. It is rather common in warm temperate rainforest on the Nightcap Range, and in subtropical lowland rainforest on the Tweed. The new growth is red and clothed in silky, silver hairs. Trees develop a dense compact crown unlike that of the more open layered crown typical of many other *Elaeocarpus* species. Leaf shape varies across the species' distribution, being slightly narrower in the south. Floyd (1980) mentions the old leaves of this species turn yellow rather than red before falling and that the flowers are sweet-scented.

Height: to about 30 m.

Propagation: Germination from seed is unreliable but not discouraging. Trees are fast-growing in full sun reaching 6 m in 4 years and are spectacular in flower. Occasionally cutting-grown specimens are available from retail outlets, some having unusually broad leaves.

10. *Elaeocarpus ferruginiflorus* C.T.White

Etymology: *ferrugineus* (Latin) = rust-coloured, in reference to the hairs.

Common name: Rusty Quandong

Natural history: This species occurs naturally from Hinchinbrook Island to just south of Cooktown between 300–1600 m altitude. It is a highland-mountain top species with attractive, relatively small, serrated, rigid leaves that bear a rusty-red, felty indumentum when young. This indumentum sometimes persists on the midrib. Plants can be observed on the summit of Mt. Bartle Frere and the Mt. Lewis road, along with a number of other interesting *Elaeocarpus* species. Some consider there to be two taxa under this name, however few people visit populations of this species with the intention of critically analysing character traits.

Height: to 25 m.

Propagation: Not common in cultivation but is known to be slow-growing and to dislike dry, hot conditions with low humidity. Young plants are growing in full sun in north-eastern NSW.

11. *Elaeocarpus foveolatus* F.Muell.

Etymology: *foveolatus* (Latin) = minutely pitted, in reference to the domatia.

Common name: Northern Quandong

Natural history: This species occurs naturally on various substrates from Eungella to the Cape Tribulation area between 0–1200 m. The mature leaves are relatively rigid and are often covered in a rusty indumentum. The flowers are white to cream and fragrant although rather small. A variant found between the Julatten area and Gordonvale (south of Cairns) is possibly a separate species.

Height: to about 30 m.

Propagation: Well suited to southern latitudes, it is a moderately fast growing species quickly developing the typical Quandong layered growth habit. Seed germination is unreliable but usually successful.

12. *Elaeocarpus grahamii* F.Muell.

Etymology: named for botanist George Graham.

Common name: Graham's Quandong

Natural history: This species is found in rainforests and wet sclerophyll forests from 0–750 m altitude between Mt. Sorrow (west of Cape Tribulation) and Mission Beach, and can be locally abundant. It is an understorey tree to 20 m tall often with multiple trunks arising from a central base. It often fruits when young, at less than 3 m tall. The attractive lime green leaves are covered in silky hairs and are soft to touch. It appears to be closely related to *E. caroliniae*. A collection dubbed *E. sp.* 'Yeti Ridge' has been confirmed as this species.

Height: to 20 m.

Propagation: Trees have grown very well in north-eastern NSW and quickly develop a central leading stem that bursts through to the garden canopy. Its architecture is layered but the limbs are comparatively short and slender. It prefers a semi-shaded position as it is naturally an understorey species. Seed germination is surprisingly trouble-free.

13. *Elaeocarpus grandis* F.Muell.

Etymology: *grandis* (Latin) = tall, lofty, a reference to the stature.

Common name: Blue Quandong

Natural history: This species occurs as far south as Arakoon (near South West Rocks, NSW) but the species has been widely planted so determining the natural distribution can be difficult. In north-eastern NSW trees are mostly found near lowland creeks however plants occur uncommonly on the Border Ranges at altitudes close to 1000 m in proximity to *Nothofagus moorei* forests. If exposed, the species cannot tolerate frost and Kris has observed 10 m high trees in the wild killed by sudden cold spells. Plantations of *E. grandis* have been established because usable timber can be milled following 15 years of growth, under ideal conditions (viz. alluvial soils in high rainfall areas).

Height: to 3 m.

Propagation: This species requires little introduction to native plant enthusiasts. It is a very fast-growing tree that prefers being planted near water or in moist, fertile soil in full sun. Unlike many species of *Elaeocarpus*, plants can be grown from seed, which must be extracted from the previous year's fruit by cracking the fruit stone. This ensures that germination takes two weeks rather than two months or even two years. Growth of 4 m within the first year isn't uncommon with buttresses forming after 4 years and flowers appearing after 6–8 years.

14. *Elaeocarpus holopetalus* F.Muell.

Etymology: *holo* - (Greek) = entire, complete, a reference to the unfringed petals.

Common name: Black Olive Berry

Natural history: This unusual species occurs in or near cool temperate rainforest from Mount Chaelundi on the New England Tableland of New South Wales to East Gippsland, Victoria. It is locally common in the Point Lookout area occurring with *Doryphora sassafras*, *Nothofagus moorei* and another *Elaeocarpaceae*, *Aristotelia australasica*. Kris was first introduced to the species in 1994 when he mistook it for a species of *Helicia*, covered as it was in moss and with hard, rigid leaves. The small fruits are black with a bluish bloom.

Height: to 25 m.

Propagation: Very little is known regarding cultivation of this species. A three year-old specimen at Coffs Harbour Botanic Gardens has proven disappointing in growth, undoubtedly uncomfortable with coastal conditions and the occasional dry spell.

Australian Plants Index to Volume 23

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Index A - General Interest Articles / Plant Groups to provide a starting point for those wishing to access information in Australian plants without knowing specific plants or botanical plant names

Index B - Index to plants using Botanical Names. The pronunciation of the generic name is also provided.

Letters following the page number indicate the type of reference:

- | | |
|--|--|
| B refers to a black and white photograph | F refers to use as a Bush Food |
| C refers to Cultivation details | L refers to a line drawing |
| D refers to a description of the plant or its natural occurrence | M refers to Medicinal use / implications |
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| | X gives propagation details. |

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<i>junceae</i>	40D, 42D	<i>ternata</i> var. <i>austrofoliosa</i>		<i>validus</i>	198D
<i>kalumburuensis</i>	93P		89P	Calotis	
<i>keysii</i>	86D	<i>tetragona</i>	40D	<i>scabiosifolia</i>	78CD
<i>kulumburuensis</i>	90D	<i>tetrandra</i>	38D	<i>scabiosifolia</i> var. <i>integrifolia</i>	78CD
<i>lanceolata</i>	86D	<i>thujona</i>	39D	Calytrix	
<i>lanuginosa</i>	87D, 90D	<i>tolerans</i>	90D	(CAL-ee-trix)	
<i>latipinna</i>	39D	<i>umbellata</i>		<i>tetragona</i>	336P
<i>laxa</i>	88D		86D, 279CDX, 281P	Castanospermum	
<i>ledifolia</i>	49P, 85D, 86D	<i>verecunda</i>	88D	<i>australe</i>	71D, 73P
<i>megastigma</i>	38D, 41P	<i>virgata</i>	38D		
<i>microphylla</i>	39D	<i>viridiflora</i>	86D, 87D		
<i>minutipinna</i>	93P	<i>warangensis</i>	42D		
<i>minutipinnae</i>	90D	<i>westringioides</i>	42D, 43D		
<i>mollis</i>	86D, 297D	<i>wilsonii</i>	90D, 93P		
<i>mollis</i>	38D	<i>wurrumbunglensis</i>	86D		
<i>montimulliganensis</i>	42D	<i>xanthastrum</i>	88D, 92P		
<i>muelleri</i>	38D, 39D	<i>yarrowmerensis</i>	42D		

Casuarina		Cynanchum		bancroftii	
(caz-yoo-a-REE-na)		<i>elegans</i>	259P, 260D	344P, 345P, 351CDEX	
<i>cunninghamiana</i>	300D	Dampiera		<i>carolinae</i>	351CDEX
<i>glauca</i>	255D, 300D	(dam-pee-EER-a)		Elaeocarpus coorangooloo	
Chenopodium		<i>purpurea</i>	296P	345P, 348P, 349P, 353CDEX	
<i>desertorum</i>	75CD, 76P	<i>stricta</i>	257D, 296P, 297D	costatus	353CDEX
<i>desertorum</i> ssp.		Darwinia (dar-WIN-ee-a)		<i>culminicola</i> syn. <i>E. michaelii</i>	
<i>microphyllum</i>	75CD, 76P	<i>meeboldii</i>	213P	349P, 354CDEX, 337P	
Chiloglottis		Davidsonia		<i>eiliffii</i>	354CDEX
<i>triceratops</i>	165P	(day-vid-SO-nee-a)		<i>eumundi</i>	74D, 72P,
Chionanthus		<i>jerseyana</i>	277CDEX	352P, 354CDEX	
<i>ramiflorus</i>	102C	<i>johnsonii</i>	277CDEX	ferruglniflorus	355CDEX
Choricarpia		<i>pruriens</i>	277CDEX	<i>foveolatus</i>	352P, 355CDEX
<i>subargentea</i>	73P	Daviesia (da-VEE-zee-a)		<i>grahamii</i>	352P, 355CDEX
Cissus		<i>pachyphylla</i>	198D	<i>grandis</i>	70D, 113P,
<i>antarctica</i>	313P	Dendrobium		116P, 119C, 356CDEX	
Clematis		<i>aemulum</i>	298D, 328C	<i>holopetalus</i>	6D, 8P,
<i>aristata</i>	184B	<i>canaliculatum</i>	102C	356CDEX, 361P	
Comesperma		<i>gracilicaule</i>	328C, 329P	<i>johnsonii</i>	357CDEX
<i>defoliatum</i>	162D	<i>kingianum</i>	326C, 327C	<i>kirtonii</i>	357CDEX, 361P
Conospermum		<i>linguiforme</i>	258P	largiflorens	357CDEX, 364P,
<i>burgessiorum</i>	264P	<i>speciosum</i>	326C, 327C,	369P, 376P	
<i>taxifolium</i>	129D, 130D	<i>speciosum</i> var. <i>hillii</i>	328C	largiflorens ssp. <i>retinervis</i>	
<i>tenuifolium</i>	313P	<i>tetragonum</i>	328C	358CDEX, 364P	
Conostylis		Deplanchea		<i>linsmithii</i>	358CDEX
<i>aculeata</i>	133C	<i>tetraphylla</i>	104P	<i>miegei</i>	358CDEX
Coprosma		Dichanthium		<i>obovatus</i>	74D, 117C, 260D,
<i>quadrifida</i>	6D	<i>sericeum</i>	76P, 78D	364P, 359CDEX	
Correa (CORR-ee-a)		Dichopogon		reticulatus	6D, 7D, 52P,
<i>alba</i>	171C	<i>strictus</i>	316P	359CDEX, 365P	
<i>backhouseana</i>	171C	Dillwynia		ruminatus	359CDEX
<i>lawrenceana</i>	6D	<i>floribunda</i>	296P	<i>sericopetalus</i>	360CDEX
<i>reflexa</i>	171C, 172P	<i>retorta</i>	257D	sp. 'Bellenden Ker'	362CDEX
Corunastylis		Diospyros		sp. 'Minyon'	368P
<i>morrisii</i>	162D	<i>ferrea</i>	102C	sp. 'Mossman Bluff'	
Corymbia		Diplarrena		363CDEX, 369P, 372P	
<i>eximia</i>	148P, 151C	<i>moraea</i>	160D	sp. 'Mount Spurgeon'	
<i>filcifolia</i>	151C	Dissiliaria		366CDEX	
<i>gummifera</i>	254D, 297D	<i>baloghioides</i>	74D	sp. 'Rocky Creek' (syn. sp.	
<i>leichhardtii</i>	67D, 69P	Diuris		'Minyon')	363CDEX
<i>maculata</i>	254D	<i>sulphurea</i>	128P, 284P	sp. 'Windsor Tableland'	
<i>ptychocarpa</i>	104P	Dodonaea		366CDEX	
<i>tessellaris</i>	100P, 102C	<i>boroniifolia</i>	319ED	stellaris	360CDEX, 368P
Crinum		<i>triquetra</i>	256D	<i>thelmae</i>	360CDEX
<i>pedunculatum</i>	248P	<i>viscosa</i>	276D, 319ED	williamsianus	362CDEX
Cryptocarya		<i>viscosa</i> ssp. <i>cuneata</i>	318ED	Elatostachys	
<i>williiwilliana</i>	278CDX	Dubouzetia	347	<i>xylocarpa</i>	71D
Cupaniopsis		<i>australiensis</i>	347CDEX	Eleocharis	
<i>anacardioides</i>	145P, 149P,	<i>saxatilis</i>	347CDEX	<i>sphacelata</i>	255D
	152C, 260D, 299D	Ehretia		Enchylaena	
Cupressus		<i>acuminata</i>	70D, 72P	<i>tomentosa</i>	75CD, P
<i>torulosa</i>	183C	Einadia		Epacris (ep-AC-ris)	
Cycas	24P, 25P, 119C	<i>nutans</i>	319ED	<i>impressa</i>	187C
<i>cairnsiana</i>	27D, 29P	Elaeocarpus		<i>longiflora</i>	285P
<i>calicicola</i>	26D, 28P, 180D	(ell-ee-o-CARP-us)	350	<i>obtusifolia</i>	126P
<i>canalis</i>	28P	<i>angustifolius</i>	341P, 350CDEX	<i>stuartii</i>	161P, 162D, 163D,
<i>canalis</i> ssp. <i>carinata</i>	27D,	<i>arnemicus</i>	341P, 344P	166ED	
	28P, 29P, 29P		351CDEX	Eremophila	
<i>silvestris</i>	180D			(er-e-MOFF-il-a)	
				<i>mitchellii</i>	178C, 181CD
				<i>nivea</i>	244P

Eriostemon		Eupomatia (yoo-po-MAY-ti-a)		Hakea (HAKE-ee-a)	
<i>australasius</i>	257D, 284P	<i>laurina</i>	6D, 9C	<i>archaeoides</i>	263P,
Erythrina		Eustrephus			278CDX, 281P
<i>vespertilio</i>	71D	<i>latifolius</i>	7D	<i>bakeriana</i>	256D, 257P
Eucalyptus (yoo-ca-LIP-tus)		Eutaxia		<i>dactyloides</i>	256D
<i>amygdalina</i>	162D, 171C	<i>microphylla</i>	79CD, 318ED	<i>decumbens</i> ssp.	
<i>astringens</i>	151C	Evodella		<i>physocarpa</i>	188P
<i>barbata</i>	187C	<i>mueileri</i>	180D	<i>decurrens</i> ssp. <i>physocarpa</i>	171ED
<i>blakelyi</i>	318D	Exocarpos (ex-o-CARP-os)		<i>laevipes</i>	256D, 332D
<i>bosistoana</i>	19D	<i>cupressiformis</i>	52P, 160D	<i>lorea</i>	129D
<i>botryoides</i>	9C, 298D	Ficus (FY-cus)		<i>plurinervia</i>	129D
<i>burgessiana</i>	271P	<i>coronata</i>	6D, 255D	<i>tephrosperma</i>	318ED
<i>caesia</i>	243C	<i>fraseri</i>	71D	<i>teretifolia</i>	256D
<i>camaldulensis</i>	318D	<i>opposita</i>	102C	Harpullia (har-PULL-ee-a)	
<i>camfieldii</i>	313P	<i>rubiginosa</i>	247C	<i>pendula</i>	121C, 149P, 152C
<i>cladocalyx</i>	151C	<i>virens</i>	71D	Hedraianthera	
<i>dolichorhyncha</i>	151C	<i>watkinsiana</i>	71D	<i>porphyropetala</i>	71D, 73P
<i>erythrocarpus</i>	148P, 151C	Flindersia (flin-DER-zee-a)		Helipterum	
<i>erythronema</i> x <i>stricklandii</i>	301X, 305P	<i>australis</i>	71D	<i>roseum</i>	244P
<i>franklinii</i>	187C	<i>collina</i>	71D, 72P, 74D	Helmholtzia	
<i>gardneri</i>	151C	<i>xanthoxyla</i>	74D	<i>glaberrima</i>	9C
<i>globulus</i>	23C, 160D, 162D	Gahnia		Hibbertia (hib-ER-sha)	
<i>grandis</i>	9C, 67D, 187C	<i>grandis</i>	187C	<i>dentata</i>	298D
<i>haemastoma</i>	254D, 285P	Geijera (GUY-jer-a)		Hovea	
<i>incrassata</i>	221E	<i>parviflora</i>	152C	<i>cymbiiformis</i>	270D
<i>largiflorens</i>	318D	<i>salicifolia</i>	119C	Hymenanthera	
<i>leichhardtii</i>	67D	Gleichenia		<i>dentata</i>	22D
<i>leucoxylon</i>	79D, 151C	<i>rupestris</i>	313P	Hymenosporum	
<i>melioidora</i>	318ED	Glochidion		<i>flavum</i>	149P
<i>mensalis</i>	67D	<i>ferdinandi</i>	71D	Imperata	
<i>microcarpa</i>	318ED	Grevillea (gre-VILL-ee-a)		<i>cylindrica</i>	330D
<i>obliqua</i>	162D, 163D, 166ED	<i>acerata</i>	265D	Ipomoea	
<i>occidentalis</i>	151C	<i>australis</i>	169P, 170C	<i>pes-caprae</i>	332D
<i>ovata</i>	162D	<i>baileyana</i>	102C	Isolepis	
<i>paludosa</i>	187C	<i>buxifolia</i>	265D, 297D	<i>nodosa</i>	255D
<i>paniculata</i>	298D	'Fleming'	292P	Isopogon	
<i>perriniana</i>	187C	<i>floribunda</i>	129D	<i>anemonifolius</i>	256D
<i>pliperita</i>	254D	<i>floribunda</i> ssp. <i>floribunda</i>	126P	<i>mnoraifolius</i>	278CDX
<i>platypus</i>	151C	<i>formosa</i>	101P	Jacksonia	
<i>pleurocarpa</i>	197P, 198D	'Lady O'	292P	<i>scoparia</i>	284P
<i>prelssiana</i>	197P, 198D	<i>longistyla</i>	125P, 129D, 130D	Jagera	
<i>pulverulenta</i>	152P, 153C,	<i>magnifica</i>	263P	<i>pseudorhus</i>	73P
154C, 155C, 156CDB, 157CD		<i>parallela</i>	129D	Kennedia	
<i>risdonii</i>	173P, 187C	'Peaches & Cream'	292P	<i>rubicunda</i>	284P
<i>robusta</i>	255D	<i>pteridifolia</i>	102C	Kunzea (KUN-zee-a)	
<i>saligna</i>	9C, 67D	<i>rhyolitica</i> ssp. <i>rhyolitica</i>	294P	<i>ericoides</i>	22D
<i>sargentii</i>	151C	<i>singuliflora</i>	125P, 129D	<i>pomifera</i>	221E
<i>scias</i> ssp. <i>scias</i>	298D	<i>striata</i>	129D	Lagarostrobos	
<i>sepuicralis</i>	196P, 198D	'Sylvia'	292P	<i>franklinii</i>	168P, 170C, 171C
<i>spathulata</i>	148P, 151C	<i>obtusiflora</i> ssp. <i>fecunda</i>	272P, 276D	Lambertia	
<i>sphaerocarpa</i>	67D, 68P,	Gymnoschoenus		<i>formosa</i>	256D, 271P
	123D	<i>Sphaerocephalus</i>	162D, 187C	Lepironia	
<i>torquata</i>	151C	Haemodorum		<i>articulata</i>	255D
<i>viminialis</i>	53P, 170D, 172P	<i>austrorueenslandicum</i>	131D	Leptospermum	
Eucryphia (yoo-CRIF-ee-a)		<i>coccineum</i>	102C	(le p-to-SPERM-um)	
<i>moorei</i>	6D			<i>rupestre</i>	170C
Euphrasia (yoo-FRAY-zee-a)				<i>whitei</i>	332D
<i>fragosa</i>	161P, 162D,				
	163D, 166ED				
<i>gibbsiae</i> ssp. <i>psilantherea</i>	161P, 162D, 163D				

Leucochrysum		<i>vinnula</i>	33D	Patersonia	
<i>graminifolium</i>	276D	<i>viridiflora</i>	102C	<i>sericea</i>	285P
Leymus		<i>zeteticorum</i>	33D	Peripentadenia	367
<i>arenarius</i>	105	Melastoma (mel-a-STO-ma)		<i>mearsii</i>	367CDEX
Libertia		<i>affine</i> (compact form)	244P	<i>phelpsii</i>	367CDEX, 373P
<i>paniculata</i>	53P	<i>maibathricum</i>	332D	Persoonia	
Licuala		Melia		(per-SOON-ee-a)	
<i>ramsayi</i>	101P	<i>azedarach</i>	74D	<i>falcata</i>	129D
Linospadix		Melicope (mee-li-CO-pee)		<i>fastigiata</i>	129D
<i>monostachys</i>	9C	<i>elleryana</i>	102C, 180D, 71D	<i>pinifolia</i>	185P, 262P
Livistona (liv-is-TO-na)		<i>rubra</i>	180D	<i>silvatica</i>	6D
<i>australis</i>	6D, 255D, 260D, 297BD	Microcachrys		Petrophile	
<i>fuiva</i>	67D, 69P	<i>tetragona</i>	171C	<i>canescens</i>	144P, 124P, 129D
Logania		Microlaena		Phalus	
<i>albiflora</i>	256D	<i>stipoides</i>	105C, 106L, 106B	<i>australis</i>	332D
<i>diffusa</i>	127P	Microstrobos		<i>tancarvilleae</i>	328C
Lomatia (lo-MAY-tee-a)		<i>fitzgeraldii</i>	274D	Phaleria	
<i>fraseri</i>	6D	Minuria		<i>clerodendron</i>	119C
<i>polymorpha</i>	171C, 188P	<i>scoparia</i>	270D	Phebalium	
<i>silailifolia</i>	125P, 129D, 130D	Mirbelia (mer-BEEL-ee-a)		<i>bifidum</i>	272P, 276D
<i>tinctoria</i>	171C	<i>confertiflora</i>	264P	<i>daviesii</i>	171C
Lophostemon		<i>rubiifolia</i>	256D	<i>squameum</i>	6D
<i>suaveolens</i>	300D	<i>speciosa</i>	267D, 267DP	Phytophthora	
Lysiphyllum		Monotoca		<i>cinnamomi</i>	163E
<i>gilvum</i>	149P, 152C	<i>scoparia</i>	276D	Pimelea (pim-MEEL-ee-a)	
Macadamia		Mucuna		<i>linifolia</i>	257D, 296P
(mac-a-DAY-mee-a)		<i>gigantea</i>	102C	<i>linifolia</i> ssp. <i>linifolia</i>	268P
<i>integrifolia</i>	11D	Myoporum (my-o-POR-um)		<i>physodes</i>	196P, 198D
<i>tetraphylla</i>	11D	<i>boninense</i>	299D	Pittosporum	
Maclura		<i>platycarpum</i>	318ED	<i>bicolor</i>	6D
<i>cochinchinensis</i>	259P, 260D	Myrmecodia		<i>revolutum</i>	259P, 260D
Macrozamia		<i>beccarii</i>	328C	<i>undulatum</i>	6D, 7D, 19D
<i>platyrhachis</i>	122P, 122P, 123D, 67D, 68P	Nematolepis		Poa	53P
Malreana		<i>squamea</i> ssp. <i>retusa</i>	173P	Podocarpus	
<i>excavata</i>	75CD, 76P	Notelaea		(pod-o-CARP-us)	
Marsdenia (marz-DEEN-ee-a)		<i>ligustrina</i>	6D	<i>elatus</i>	71D, 259P, 260D
<i>flavescens</i>	19E	<i>longifolia</i>	73P	<i>lawrencei</i>	6D, 171C
<i>rostrata</i>	7D, 8P	Nothofagus		Polyscias	
Melaleuca		<i>cunninghamii</i>	6D	<i>murrayi</i>	6D
(mel-a-LOO-ca)		Oldenlandia		Pomaderris	
<i>alternifolia</i>	31D	<i>gibsonii</i>	119C	<i>aspera</i>	5P, 6D, 19D
<i>armillaris</i>	183C	Olearia (o-lee-AIR-ee-a)		<i>oraria</i>	19D
<i>atroviridis</i>	31D	<i>archeri</i>	171C, 8P	<i>oraria</i> ssp. <i>callicola</i>	19E
<i>bracteata</i>	152C	<i>argyrophylla</i>	5P, 6D, 168P	Pongamia	
<i>concreta</i>	31D, 32P	<i>lirata</i>	22C	<i>pinnata</i>	102C
<i>ericifolia</i>	19D, 255D	<i>phlogopappa</i>	53P	Posidonia	
<i>exuvia</i>	31D	<i>viscosa</i>	19D	<i>australis</i>	300D
<i>hamata</i>	31D, 32P	Orthrosanthus		Prasophyllum	
<i>interioris</i>	31D, 33D	<i>multiflorus</i>	53P	(pras-o-FILL-um)	
<i>lanceolata</i>	152C	Oxylobium		<i>pulchella</i>	162D
<i>leucadendra</i>	100P, 102C	<i>robustum</i>	262P	<i>pulchellum</i>	161P, 163D
<i>linariifolia</i>	31D, 255D	Ozothamnus			
<i>nodosa</i>	288P, 255D, 284P	(o-zo-THAM-nus)			
<i>osullivanii</i>	31D	<i>costatifructus</i>	173P		
<i>scalena</i>	33D	<i>diosmifolius</i>	272P, 276D		
<i>stereophloia</i>	31D	<i>purpurascens</i>	171C		
<i>styphelioides</i>	152C, 255D	Pandorea			
<i>uncinata</i>	31D	<i>pandorana</i>	184B, 256D		

Prostanthera (pros-TANTH-er-a)	127P	Schizaea <i>bifida</i>	131D	Thyridolepis <i>mittelliana</i>	319ED
<i>cryptandroides</i>	276D	Schoenia <i>filifolia</i>	244P	Thysanotus <i>tuberosus</i>	97P
<i>hindii</i>	276D	Schoenoplectus <i>validus</i>	255D	Triodia <i>scariosa</i>	268P
<i>lasianthus</i>	5P, 6D	Senna <i>artemisioides</i>	318ED	Tristanlopsis <i>laurina</i>	6D, 7D, 71D, 152C
<i>nivea</i>	185P	Sicyos <i>australis</i>	19E	Triunia <i>erythrocarpa</i>	14CD, 16D, 17P
<i>staurophylla</i>	267D	Sloanea	370	<i>montana</i>	14CD, 17P
<i>teretifolia</i>	266P, 267D	<i>australis</i>	370CDEX, 373P	<i>robusta</i>	1P, 11DE, 12D, 14CD, 48P
<i>variegata</i>	184B	<i>australis</i> ssp. <i>parviflora</i>		<i>youngiana</i>	11D, 12D, 14D, 15CD, 16D
Pseudovanillum <i>cassythoides</i>	130D	<i>langii</i>	370CDEX	Uromyrtus <i>australis</i>	278CDX
Pseudoweinmannia <i>lachenocarpa</i>	72P	<i>macbrydei</i>	371CDEX	Velleia <i>spatulata</i>	245P
Pteridium (ter-ID-ee-um) <i>esculentum</i>	331D	<i>woollsii</i>	371CDEX	Verticordia (ver-te-CORD-ee-a)	
Pterostylis (ter-o-STY-lis) <i>baptistii</i>	328C	<i>australis</i>	19E	<i>chrysantha</i>	244P
<i>curta</i>	328C	Smilax <i>australis</i>	7D	<i>galeata</i>	244P
<i>nutans</i>	328C, 329P	Stenocarpus <i>salignus</i>	124P, 129D	Villarsia <i>reniformis</i>	168P
Pultenaea <i>maritima</i>	277CDX	Styldium (sty-LID-ee-um) <i>affine</i>	133C	Walwhalleya <i>pungens</i>	271D
<i>pedunculata</i>	79CD	<i>graminifolium</i>	128P	Westringia (west-RIN-jee-a) <i>brevifolia</i> var. <i>raleighii</i>	162D
Pyrrosia <i>confluens</i>	328C	Swainsona (swain-SO-na) <i>galegifolia</i>	332D	<i>fruticosa</i>	254D, 256D
<i>rupestris</i>	328C	Syncarpia <i>glomulifera</i>	255D, 297D	Wodyetia <i>bifurcata</i>	104P
Rapanea <i>howittiana</i>	6D, 7D, 8P, 23C	Synoum <i>glandulosum</i>	298D	Wollemia <i>nobilis</i>	274D
Regelia <i>velutina</i>	197P, 198D	Syzygium (siz-IDG-ee-um) <i>anisatum</i>	278CDEX, 281P	Xanthorrhoea (zanth-o-REE-a)	119C
Rhagodia <i>candoileana</i>	23C	<i>australe</i>	70D	<i>caespitosa</i>	221E
<i>splinescens</i>	52P	<i>corynanthum</i>	72P	<i>resinifera</i>	255D
Rhizanthella <i>gardneri</i>	33D	<i>francisi</i>	70D	<i>pyriforme</i>	129D, 263P, 285P, 297D, 313P
Rhododendron <i>viriosum</i> = <i>lochiae</i>	10C	<i>luehmannii</i>	70D, 7	Zanthoxylum <i>brachyacanthum</i>	71D, 73P
Rhodosphaera <i>rhodanthema</i>	71D, 74	Tasmannia (taz-MAN-ee-a) <i>lanceolata</i>	6D	Zieria <i>arborescens</i>	6D
Richea (RICH-ee-a) <i>curtisiae</i>	189P	Telopea <i>aspera</i>	264P, 265DP	<i>prostrata</i>	279CDLX
<i>occidentalis</i>	187C	<i>oreades</i>	6D		
<i>pandanifolia</i>	187C	Templetonia (temple-TO-nee-a)			
Ricinocarpus <i>pinifolius</i>	127P	<i>stenophylla</i>	79CD		
Rupicola <i>decumbens</i>	276D	Tetradthea (tet-ra-THEEK-a) <i>thymifolia</i>	285P		
Salix <i>babylonica</i>	23C	Thelionema <i>grande</i>	266P, 267D		
Santalum (SANT-al-um) <i>acuminatum</i>	319ED	Thelymitra (thell-ee-MY-tra) <i>azurea</i>	163D		
Sarcocollus 'Burgundy on Ice'	329P	<i>jonesii</i>	161P, 162D, 163D		
'Sartylis Toowoomba'	329P	Themeda <i>australis</i>	254D, 300D, 331D		
<i>falcatus</i>	328C	<i>triandra</i>	52P, 319ED		
<i>olivaceus</i>	328C	Thinopyrum <i>intermedium</i>	105		
Scaevola (SEE-vo-la) <i>aemula</i>	243C				
<i>albida</i>	252D				
<i>calendulacea</i>	252D				

15. *Elaeocarpus johnsonii* C.T.White

Etymology: named for chemist William Johnson.

Common name: Johnson's Quandong

Natural history: This species is found in rainforest between 500–1600 m altitude from Mt. Pieter Botte and Mt. Sorrow west of Cape Tribulation to Mt. Bartle Frere. It mainly occurs on granite but also occasionally on basalt and fine-grained metasediments. Wild trees are often gnarled and multiple-stemmed with aerial roots emerging from the main trunk. Spotty green to purplish fruits with a fibrous, unpalatable flesh follow the white flowers.

Height: to 25 m.

Propagation: This is a wonderful tree having large, furry leaves growing easily from cuttings and flowers prolifically from every leaf axil when just 2 m tall. It thrives from cuttings in cooler climates and does very well in subtropical NSW on metamorphic substrate. It is also likely to grow in Canberra and Victoria if frost is avoided and moisture supplied. An ultimate height of 8 m is envisaged within the garden. Seed germination is unknown in cultivation but has been observed in the wild.

16. *Elaeocarpus kirtonii* F.M.Bailey

Etymology: named for W. Kirton, collector of the first specimen.

Common name: Silver Quandong

Natural history: This species occurs from Milton (NSW) to Eungella (west of Mackay, QLD). It is common in the Tweed district and can be found at all altitudes in all rainforest types except littoral. This under-appreciated species is spectacular in new growth with a pink flush covered in whitish hairs which renders trees relatively conspicuous in the forest.

Height: to 45 m.

Propagation: Cuttings strike reliably and seed is slow and unreliable to germinate. In the wild trees have been known to grow 45 m high with prominent buttress roots - garden specimens would likely reach about 15 m high. They grow quickly but opt for a bushier, tightly packed crown, thus trees may take many years to achieve large proportions.

17. *Elaeocarpus largiflorens* C.T.White subsp. *largiflorens*

Etymology: *largus* (Latin) = abundant, a reference to its prodigious flowering.

Common name: Tropical Quandong

Natural history: This species is divided into two subspecies, which apparently do not overlap in distribution. The first subspecies (*largiflorens*) occurs as a common tree over a rather wide distributional range, from Gladstone northwards to Black Mountain (between Cairns and Mossman), at altitudes from 0–1400 m and on various substrates. Records from north of Black Mountain have been identified as subspecies *retinervis*. It is easily identified in the field due to its large leaves with recurved margins and like many species of *Elaeocarpus*, the leaves turn red before falling.

Height: to 25 m in the forest and much less in full sun.

Propagation: It grows well in cultivation, rapidly so in NSW. It tolerates full sun when young, which makes sense given that it seems to appreciate disturbance in its natural habitat and is frequently encountered along mountain roads. Seed germinates somewhat more reliably than other *Elaeocarpus* species however a permanent sowing bed is suggested. Owing to its large leaves and showiness in flower this species would be an ideal shade tree for parks in milder climates receiving moderate rainfall.

18. *Elaeocarpus largiflorens* subsp. *retinervis* B. Hyland & Coode

Etymology: *retinervis* (Latin) = reticulately veined (leaves).

Common name: Veiny Quandong

Natural history: This species is restricted to the granite highlands extending from Mt. Lewis (where it is common on the roadsides) to just north of Cape Tribulation between 400–1200 m altitude.

Height: to about 30 m.

Propagation: This relatively small tree is growing well from a cutting in a crowded bed in coastal Sydney with some irrigation, putting on a lovely, rusty orange flush of flowers. It is otherwise poorly known in cultivation.

19. *Elaeocarpus linsmithii* Guymer

Etymology: named for Australian botanist Lindsay Smith.

Common name: Lindsay's Quandong

Natural history: This species occurs as a small tree on the higher ridges in the Mt. Lewis-Mt. Spurgeon area west of Mossman, and further south on Mt. Bartle Frere, being quite common above 1000 m altitude. It was named by Gordon Guymer (Director of the Queensland Herbarium) for the renowned Queensland botanist, Lindsay Smith, who first realised it was a new species. Closely related to *E. eumundi*, it is a spectacular species with large flowers set against a compact habit. In the wild, plants just 1 m tall, happily flower in *Dicranopteris* fern thickets on highly leached soils on Mt. Bartle Frere where they receive over 6 m of rain annually.

Height: to 7 m.

Propagation: Despite its potential, to our knowledge this species has been trialed in cultivation just once in north-eastern NSW, and this specimen has died. It should prove to be a most manageable species probably succeeding well in Victoria or Tasmania. Full sun shouldn't be a problem as long as water is available.

20. *Elaeocarpus miegei* Weibel

Etymology: named for Prof. J. Miège, director of the Conservatoire et Jardin Botaniques, Geneva.

Common name: Soni (in Papua New Guinea)

Natural history: This is a variable species known mainly from Malesia, the Solomon Islands and Papua New Guinea, creeping into Australia on the Tiwi Islands off Darwin. It is the sole species to be accorded critically endangered status under Northern Territory legislation. This is a precautionary measure however as its occurrence in Australia are possibly linked to migratory birds arriving from the north. The inflorescences of approx. 15–20 white flowers are produced in the leaf axils, usually on older, leafless parts of the branches and are followed by dull blue fruits. The leaves are obtuse at the apex with crenate margins.

Height: to 35 m, commonly 15–20 m.

Propagation: This species is not known in cultivation but would undoubtedly require warm (frost-free), moist conditions.

21. *Elaeocarpus obovatus* G.Don

Etymology: *obovatus* (Latin) = inverted egg-shaped, a reference to the leaf shape.

Common name: Hard Quandong

Natural history: This species is rather common from Wyong, NSW to its northern limit in the Undara Volcanic National Park, south-west of Cairns; however Proserpine is generally regarded as its northern limit. At the Undara Crater, specimens barely reach 15 m high and become partially defoliated during the dry season whilst those that occur naturally in NSW are tall trees to 35 m and always fully foliated. Although these differences prompt questions as to the proper taxonomic status of the Undara specimens, they appear in every respect other than stature to be typical of *E. obovatus*. It seems the torturous heat and drought have diminished these plants' form. When in flower, trees of this species hum with the sound of countless bees. It is known to sucker freely and to tolerate wet, partly saline, swampy soils quite unlike other *Elaeocarpus* species.

Height: to 35 m.

Propagation: Propagation is difficult, although easier than many other *Elaeocarpus* species. Kris once observed mass germination of this species following the construction beneath a large tree of a 'blue-metal' gravel walking track - possibly the heating of the stones triggered germination. This species is moderately slow growing but otherwise trouble-free.

22. *Elaeocarpus reticulatus* Sm.

Etymology: *reticulatus* (Latin) = reticulate (leaf venation).

Common name: Blueberry Ash

Natural history: This is a well known species producing white to pink flowers in abundance, with small blue fruits following. It occurs from King and Flinders Islands in Bass Strait to Fraser Island (Qld). In north-eastern NSW it occurs as a common small tree in nearly all types of forests especially those of low fertility where large-leaved plants don't perform well. It is commonly encountered in blackbutt forests and coastal dune scrubs where it co-occurs with heath vegetation.

Height: up to about 10 m, mostly smaller.

Propagation: mostly by cuttings. It does particularly well in a well-drained soil but being very hardy it tolerates a wide range of conditions - it is used successfully as a street tree in parts of inner Sydney. 'Prima Donna' is a most attractive cultivar of this species and is freely available.

23. *Elaeocarpus ruminatus* F.Muell.

Etymology: *ruminatus* (Latin) = appearing chewed, a reference to the invaginated endosperm.

Common name: Brown Quandong

Natural history: This species grows rapidly and has an attractive layered habit (as many Quandongs do). It is a common tree in the Wet Tropics at higher elevations (200–1200 m) from Eungella west of Mackay to the Windsor Tableland north of Mossman. It has attractive lime green leaves that tend to be crowded toward the end of the arching branchlets. Its relationships are not well established although it is possibly close to *E. grahamii*, *E. largiflorens* and an undescribed species known as *E. sp.* 'Windsor Tableland'.

Height: to 35 m.

Propagation: An easy tree to grow producing characteristic Quandong growth spurts often up to 2 m without branching. If moist conditions are provided growth can be rapid though seed is notoriously difficult to germinate, as is the case with many *Elaeocarpus* species. A shady location is preferred.

24. *Elaeocarpus sericopetalus* F.Muell.

Etymology: *sericeus* (Latin) = silky, a reference to the hairs on the petals.

Common name: Northern Hard Quandong

Natural history: This tree is a common component of highland rainforests on granite in the Wet Tropics but can be found at altitudes down to 200 m. It occurs from the Eungella area west of Mackay to just south of Cooktown. It is an attractive species, having glabrous oblong leaves which are red in new growth and a spreading crown. This species is rather different to other species of *Elaeocarpus* with which it co-occurs i.e. *E. elliffii*, *E. foveolatus* and *E. sp.* 'Bellenden Ker'.

Height: to 20 m.

Propagation: by cuttings, germination from seed is unknown. It requires humid conditions and is sensitive to excessive heat and exposure to the sun.

25. *Elaeocarpus stellaris* L.S.Sm.

Etymology: *stellaris* (Latin) = starry, a reference to the distinctive 5-angled fruit stone.

Common name: Star-fruited Quandong

Natural history: This species is most peculiar in that it has fruit approaching the size of a small apple, consisting of a fleshy layer over a characteristic stone having five pronounced longitudinal ridges. Geographically, it is a rather restricted species, growing only in very wet rainforests to the west of Innisfail in the East Palmerston area and in the Cape Tribulation lowlands north of the Daintree River between 0–500 m altitude (there are several mountain records but these are probably *E. sp.* 'Mt. Spurgeon' – see below). The ground under wild trees is usually littered with the remains of fruit stones, robbed of their seeds by native rodents that gnaw through the thick, bony material.

Height: at least 20 m.

Propagation: It grows very well and rather rapidly in north-eastern NSW without irrigation in a metamorphic-derived soil. Specimens have been planted in semi-shade. The fruit stone must be cracked to extract the seeds and then protected from rodents.

26. *Elaeocarpus thelmae* B.Hyland & Coode

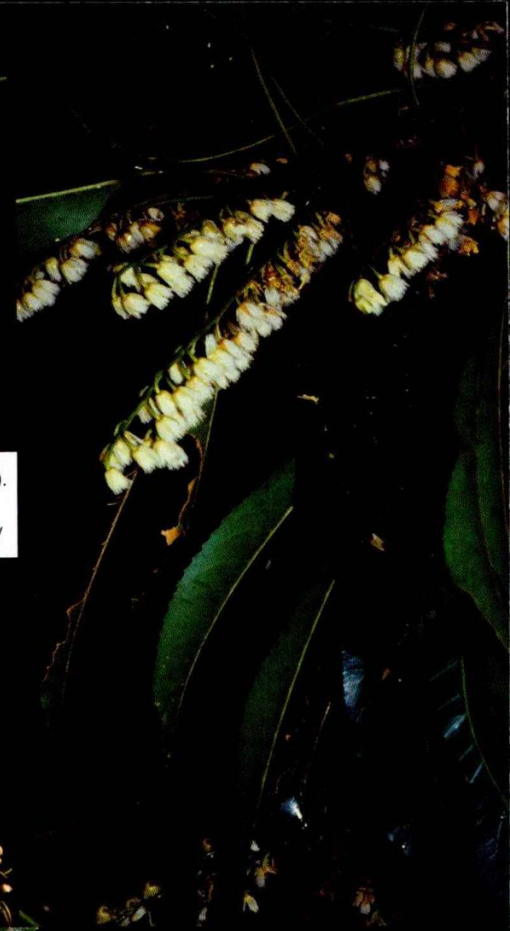
Etymology: named for Thelma Hyland, wife of one of the species' authors.

Common name: Thelma's Quandong

Natural history: This species is a canopy tree in mature closed forest between 800–1200 m altitude in the mountains between Cape Tribulation and west to the Windsor Tableland. It is not known to occur south of the Daintree region. It superficially resembles *E. largiflorens* subsp. *retinervis* (with which it has been confused with in the past). *Elaeocarpus thelmae* is probably related to *E. elliffii*, *E. foveolatus* and *E. largiflorens*.

Height: to 30 m.

Propagation: Little known in cultivation. In north-eastern NSW it has quickly grown to 10 m in 15 years with a bushy crown and is self fertile. *Thelma's Quandong* is rarely cultivated with just a single specimen known to us.



Above & right *Elaeocarpus kirtonii* (p. 357).
Below & bottom *Elaeocarpus holopetalus*
(p. 356). All photos: A Fairley



27. *Elaeocarpus williamsianus* Guyer

Etymology: named for botanist John Williams.

Common name: Hairy Quandong

Natural history: This species is listed as endangered and has been found only in approximately ten locations between Goonengerry-Broken Head area on the northern extremity of the 'Big Scrub' (SW of Byron Bay) to Couchy Creek, west of Murwillumbah, up to about 200 m altitude. Recent genetic analysis has confirmed that with the exception of the largest site, all plants within each site comprise a single genetic individual, but these differ between sites (in other words the persistence of this species appears to be due solely to vegetative growth). All efforts to cultivate this species from seed have proven futile which likely reflects the very low genetic diversity within populations. It is possible that the species is so highly inbred that it is unable to produce viable seed. An amateur botanist and horticulturist, Mike Lickfold, first found the species in the late 1970's in Upper Burringbar, south of Murwillumbah in the Tweed district growing in association with a large population of *Davidsonia johnsonii*. The fruit are a similar size to *E. grandis* but have a more fibrous flesh.

Height: up to about 15 m.

Propagation: Grafting has had limited success with the rootstock rejecting the scion after a period of time when using *E. eumundi*, *E. foveolatus* and *E. grandis*. Cuttings have proven successful however, as has marcotting. Kris grew his specimen from an air-layered branch in 1994 and now the tree is over 6 m tall but hasn't flowered yet. The showy flowers and large leaves make this a very attractive species deserving of wider use, but propagation material is limited (less than a dozen trees are in cultivation). Seed-grown plants are unknown. The chances of seed production could be increased by planting several genetically diverse specimens together.

28. *Elaeocarpus* sp. 'Bellenden Ker'

Etymology: yet to be formally described – the informal name reflects the geographical origin of one specimen (Mt. 'Bellenden Ker').

Common name: Bellenden Ker Quandong

Natural history: This undescribed species is relatively common in rainforests in north-eastern Queensland from sea level to 1200 m altitude between the Big Tableland, south of Cooktown and the Paluma Range, near Townsville. The leaves lack domatia, have crenate margins and are somewhat two-ranked in arrangement. It is closely related to *E. obovatus* and *E. arnhemicus* and has been known as *E. sp. aff. arnhemicus* in the past. It flowers abundantly, producing numerous racemes each with several dozen white flowers along the branchlets in spring.

Height: to 35 m.

Propagation: It has only recently been brought into cultivation and its wide range of occurrence suggests it should be easy to grow under a range of conditions. Seed germination is slow and propagation by cuttings not yet tested. It is of limited horticultural appeal compared to other *Elaeocarpus* species.

29. *Elaeocarpus* sp. 'Rocky Creek' (also known as *E.* sp. 'Minyon')

Etymology: yet to be formally described – the informal name reflects the geographical origin of first known specimen (Minyon Falls, NSW).

Common name: Minyon Quandong

Natural history: This endangered species was known from a single specimen collected in 1936 and was thought to be extinct until it was rediscovered in 1992 growing on the banks of Rocky Creek Dam north of Lismore. It has been located since growing on rhyolite-derived soils at a handful of sites (approx. 100–400 m altitude) on the wet, mountainous refugia of the Koonyum and Nightcap Ranges which form part of the Mt Warning Caldera in north-east NSW. The species is now thought to comprise at least 800 plants although less than 200 of these have stems thicker than 10 cm at breast height. A number of other rare species occur in this general area, such as the Nightcap Oak, *Eidothea hardeniana* and the Peach Myrtle *Uromyrtus australis*. Recently a single specimen has been collected on metasediment soils in the Tomewin area to the north of Murwillumbah. This is a significant collection extending the species known range and soil preference. The flowers are disappointingly small and mostly hidden within the foliage. The fruits have a rather fibrous, unrewarding flesh, and appear to be ignored by frugivorous birds. This species is very closely related to a New Guinea species, *E. blepharoceras*. Studies have shown that it is distinct from that species, however, and the manuscript name *E. sedentarius* has been coined for it (but not yet published) to reflect its very low capacity for dispersal.

Height: to 30 m.

Propagation: Propagation from seed is slow and unpredictable but often successful, and cuttings strike and grow relatively easily. Plants are rather fast-growing in full sun and capable of reaching 4 m and flowering within 5 years. In cultivation plants seem to prefer the richer and moist alluvial soils than drier sites.

30. *Elaeocarpus* sp. 'Mossman Bluff'

Etymology: yet to be formally described – the informal name reflects the geographical origin of one specimen (Mossman Bluff, between Cairns and Mossman).

Common name: Bluff Quandong

Natural history: This undescribed species occurs in fairly exposed situations on mountaintops from 900–1300 m on the Windsor Tableland and Thornton Peak north of Mossman to Kahlpahlim Rock west of Cairns. The exposure seems to keep it to a manageable size, about 15 m or less, and plants are often seen resprouting from the base of trunks snapped off by cyclones. It commonly occurs with *E. elliffii*, *E. sericopetalus* and *E. ferruginiflorus*. The species has serrate leaves with huge domatia rather like *E. elliffii*, and the branchlets, petioles and leaf midribs are an attractive red colour (photo p. 372). It appears to be related to the *E. angustifolius*/*E. grandis* group of species based on genetic data and the surface sculpturing of the fruit stone.





Opposite: Top left; *Elaeocarpus largiflorens* subsp. *retinervis* (p. 358). Photo: D Crayn

Top right; *Elaeocarpus largiflorens* (p. 357)

Photo: G Sankowsky

Bottom; *Elaeocarpus obovalis* (p. 359)

Photo: A Fairley

This page: All *Elaeocarpus reticulatus* (p 359). Top; pink form, right; fruit & below; flowers.

All photos: A Fairley



A single collection from the Solomon Islands whose identity is undetermined bears a resemblance to *E. sp.* 'Mossman Bluff' but there are sufficient differences that further study and more collections are needed to establish to what degree, if any, they are related. Interestingly, fossil fruit stones from Victoria dated to the mid-Miocene (approx. 10–16 million years ago) are very similar to those of *E. sp.* 'Mossman Bluff'.

Height: to 15 m.

Propagation: This species might prove to be a worthy garden plant but little is known of its horticultural requirements – its habitat suggests it would do well in full sun and poor soils. Recently, we have heard of a number of cuttings having struck successfully and seed has been germinated occasionally.

31. *Elaeocarpus* sp. 'Mount Spurgeon'

Etymology: yet to be formally described – the informal name reflects the geographical origin of one specimen (Mount Spurgeon, Queensland).

Common name: none known

Natural history: This entity is very closely related to *E. stellaris* based on genetic studies and has a fruit stone with longitudinal ridges similar to, although less pronounced than those of *E. stellaris*. It is restricted to altitudes between 1000–1200 m in the Mt. Lewis-Mt. Spurgeon area. On Mt. Spurgeon it can be locally common however is reputed to be difficult to find on Mt. Lewis.

Height: not accurately known but probably taller than 30 m.

Propagation: In cultivation it is represented by only a handful of specimens which are apparently slow growing. It adapts well to gardens of much lower rainfall than its natural habitat. This species has been reported to have cauliflorous inflorescences.

32. *Elaeocarpus* sp. 'Windsor Tableland'

Etymology: yet to be formally described – the informal name reflects the geographical origin of one specimen (Windsor Tableland, west of Mossman).

Common name: Windsor Quandong

Natural history: This poorly known species is also sometimes referred to as *E. sp. aff. ferruginiflorus*. It occurs predominately in highland rainforest between the McIlwraith Range on Cape York to the Julatten area (west of Mossman).

Height: to about 20 m.

Propagation: This species requires moist conditions to survive and has been successfully grown in NSW in a shady position whilst young, and later thriving in full sun on maturity. Plants have a spreading layered habit and don't seem to grow too tall, to about 20 m.

***Peripentadenia* L.S.Sm.**

There are two species in this endemic Wet Tropics genus. They are rainforest trees with leathery fruits that split from the apex to release a single seed completely enveloped by the fleshy, sticky, bright red aril. Plants produce large white flowers which in *P. phelpsii* are in clusters (fascicles) and in *P. mearsii* are solitary in the axils of the leaves. The genus is named for the flowers which exhibit five gland-like appendages on the disc each of which is surrounded by a group of stamens. The petioles bear two small glands near the junction with the leaf blade, a feature typical of certain Euphorbiaceae (e.g. *Croton*) and which along with the fruit may have lead C.T. White to originally describe *P. mearsii* as an *Actephila*!

1. *Peripentadenia mearsii* (C.T.White) L.S.Sm.

Etymology: named for J. E. Mears, collector of the type specimen.

Common name: Buff Quandong

Natural history: This rare tree is restricted to the central Atherton Tablelands around Lake Eacham to Topaz including the Johnstone River valley northwards to Babinda and Harvey Creek. The seedlings have huge cotyledons and young specimens display very ornamental deeply lobed leaves.

Height: to 30 m, although usually much shorter.

Propagation: from seed, which germinates easily. Under optimal conditions (which include high rainfall) this species grows rapidly, but such conditions are difficult to meet. If planted in the shade trees tend not to fruit, however when planted in full sun in north-east NSW they have fruited at 4 m high and 6 years of age. Plants have been sold in the nursery trade from time to time.

2. *Peripentadenia phelpsii* B.Hyland & Coode

Etymology: named for Roy Phelps, collector of the first material (fruits).

Common name: Mossman River Quandong

Natural history: This tall tree is found between the lowlands of the Mossman River catchment to Julatten in well developed rain forest up to 400 m altitude. It is an attractive tree in flower producing masses of bell shaped flowers from the branches. The aril of this species has been used as a very tasty jam.

Height: to 35 m.

Propagation: This species grows easily by cuttings and specimens in north-eastern NSW have grown rapidly producing very bushy trees which have fruited after 5 years at a height of 5 m. Seed-grown plants are fast growers in pots however they can be slow to establish and are best planted in 140 mm pots or larger. There are a couple of these planted on the east side of the main street in Mossman and another couple in Atherton however most cultivated plants exist in the gardens of enthusiasts in southern states. High rainfall is required for good growth and very porous soils could be troublesome during dry weather for this species.



This page:

Top left & right and centre: *Elaeocarpus stellaris*
(p. 360)

Photos: G Sankowsky

Below: *Elaeocarpus* sp. 'Minyon' (p. 363)

Photo: D Crayn

Opposite:

Top: *Elaeocarpus* sp. 'Mossman Bluff' (p. 363)

Bottom: *Elaeocarpus largiflorens* (p. 357)

All photos: G Sankowsky





***Sloanea* L.**

Of the genera in Elaeocarpaceae, *Sloanea* (named for Sir Hans Sloane, British scientist and collector) is second only to *Elaeocarpus* in terms of numbers of species worldwide, and it exceeds that genus in terms of geographical distribution. Its roughly 100–120 species are found in Central and South America, northern India and Nepal, through south east Asia and Malesia to Australia and New Caledonia, and Madagascar. Four species are recognised in Australia, one of them with two subspecies. These are fairly readily cultivated and can grow to very large trees. They are all typically mature phase rainforest species except *S. langii*, which is commonly a secondary disturbance-adapted species.

1. *Sloanea australis* (Benth.) F.Muell. subsp. *australis*

Etymology: *australis* (Latin) = southern, a reference to its occurrence.

Common name: Maiden's Blush

Natural history: This species is relatively common between Bateman's Bay and Gympie. In northern NSW it is primarily a species of gullies and near-permanent watercourses. It is most often observed as a regrowth tree along creeks, however at high altitude on the Border Ranges specimens can attain heights of 30 m supported by trailing buttress roots and bearing numerous coppice shoots.

Height: to 30 m.

Propagation: by cuttings or seed. It is a relatively hardy species, attractive in full flower with a moderate growth rate. In full sun plants become very bushy. The species is ideal for planting along creek banks, tolerating flood waters well.

2. *Sloanea australis* subsp. *parviflora* Coode

Etymology: *parvus* (Latin) = small, a reference to its small flowers compared with the type subspecies.

Common name: Northern Maiden's Blush

Natural history: This tall tree is common in the highlands of the Wet Tropics. It occurs from Paluma, where it can be observed near the first lookout at the top of the range, north to the Windsor Tableland. Trees typically occur on granite or basalt and are very common in Wooroonooran National Park in complex mesophyll vine forest. However, in the Wet Tropics the species also occurs in notophyll forests on poorer soils or at higher altitudes (up to 1200 m). The leaves are shorter with a greenish-red flush and the flowers smaller than the southern subspecies - they are otherwise very similar.

Height: to 35 m.

Propagation: Little is known of the cultivation requirements but a protected location with ample soil moisture is assumed.

3. *Sloanea langii* F.Muell.

Etymology: named for G. Lang.

Common name: White Carabeen

Natural history: This superb tree is a stand-out among Australian members of the genus and has the largest leaves of all Australian Elaeocarpaceae. It occurs from just north of Rockhampton to the McIlwraith Range on Cape York. The leaves are sometimes lobed, especially on juvenile plants or regrowth shoots where they may also be a vibrant crimson-green colour. The showy flowers are produced along the branches and are followed by large, bristly, yellow-orange, usually 3–5 valved capsules, which resemble a giant *Jagera* (Sapindaceae) fruit.

Height: to 25 m.

Propagation: From seed. Trees are fast growing in sun or light shade, reaching 5 m in 6 years in cultivation.

4. *Sloanea macbrydei* F.Muell.

Etymology: named for James Francis Macbryde, 19th century South Carolina botanist.

Common name: Northern Yellow Carabeen

Natural history: This tall tree is relatively common across its range, from near Gladstone north to the McIlwraith Range in tropical rainforest of all altitudes and on various soil types. It has small, rigid, glabrous leaves with prominent yellowish veins visible from above. It is probably closely related to *S. woollsii*.

Height: to 35 m.

Propagation: From seed however poorly known in cultivation. The flowers are fragrant but otherwise the species appears to be only moderately appealing in flower.

5. *Sloanea woollsii* F.Muell.

Etymology: named for Rev. William Woolls, amateur botanist and friend of Mueller.

Common name: Yellow Carabeen

Natural history: This species is an impressive forest tree with its characteristic massive, convex buttresses reaching up to 5 m up the voluminous trunk. It is typically found, sometimes as the dominant species, in subtropical and warm temperate rainforest on basalt-derived or alluvial soils from the Gloucester-Barrington Tops area to Gympie. It is a common species in mountain gullies. In contrast with its stature, the flowers are unremarkable, lacking petals like *S. macbrydei*. The fruits are spiny capsules about 2 cm long that split to release two shiny black seeds that are almost completely enveloped by the orange to red 'aril' (or arillode).

Height: up to 55 m.

Propagation: Trees are easy to grow from seed and plants grow well in weed-free plantings in full sun adopting a stature similar to *E. grandis*.

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Distribution and altitude information for the tropical species was obtained from Cooper, W. and Cooper, W. (2004) *Fruits of the Australian Tropical Rainforest* (Nokomis Publications, Clifton Hill, Victoria) and Hyland, B. P. M., Whiffin, T., Christophel, D. C., Gray, B., and Elick, R. W. (2003) *Australian Tropical Rain Forest Plants - Trees, Shrubs and Vines*. (CSIRO Publishing, Collingwood, Victoria).

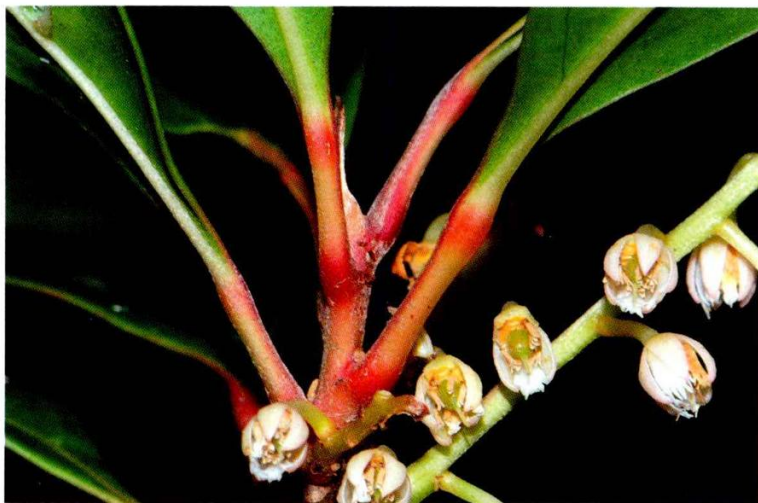
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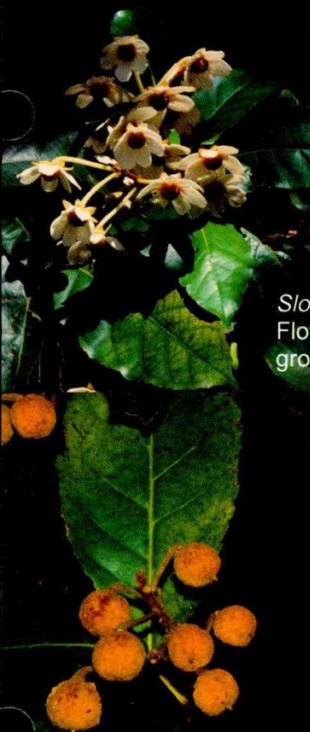


Elaeocarpus sp. 'Mossman Bluff' (p. 363) Photos: G Sankowsky





Peripentadenia phelpsii (p. 367)
Fruit & flowers Photos: D Crayn



Sloanea australis (p. 370)
Flowers (hanging naturally), fruit, new
growth & flowers (turned up)

Photos: A Fairley



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