

Australian Plants



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Australian plants, their conservation and cultivation

We wish to save our flora from extinction. This can only be done in large reserves adequately managed. The wildflowers outside these areas will need to be replanted in them. There is much we need to learn about their propagation and cultivation. Those learning to grow them are making a contribution to the conservation of the Flora of Australia and its dependent creatures.

As with each issue there are a number of plants described and illustrated that are easy to grow and reward with reliable flowering. The articles on cultivation also cover less easily grown flowers, the recommendations for their cultivation being a guide to the best practices to be adopted for a wide range of wildflowers.

Gardening in sub-tropical, tropical and dry inland areas is also a feature of this issue. The general gardening practices for plants in the temperate areas are to be used, the difference being in the choice of plants and the supply of water.

Australian Plants in the future; we are regularly reviewing our presentation. On page 132 is a summary of what we have been doing over many years. If you are satisfied with this there is no need to reply. If you would prefer the emphasis to shift, please advise the editor in some detail. You will notice that we are concerned with conservation. Save your comments on this aspect pending a statement of our proposals for the future in the next issue.

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COVER PLATE, *Melaleuca megacephala*, well displayed balls of flower of a good yellow. This plant has been recommended for the production of cutflowers. For others see page 113. The limiting factor in the wider use of such plants from the family Myrtaceae, is the vase life, the dropping of stamens. It is a spectacular plant in the garden, readily pruned after a rewarding flowering. It does not have that dense bushy look when not in flower, in fact it adds foliar interest. Can any reader advise on their experience with *Melaleuca* in the vase as a cut flower. I am advised by an eminent scientist in this area that the problem of stamen retention will be solved by breeding and genetics. The starting point is advice from the home gardener of which plants gives the longest vase life.

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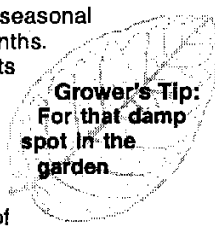
Publication date of previous issue No. 158 was 1st March, 1999.

Plants for wet areas

from Dragonfly Aquatics

Aquatic and wetland plants* are found in many different types of wetland and water bodies. Those described here are mainly non-tropical plants that can be used in that damp spot, a badly drained area or on the edge of ponds and artificial water features. Such plants are most frequently found in soils which remain wet only during rainy or flood periods, areas that can be frustrating as the usual garden plants rot off because of poor drainage and water logged soil.

In **damplands** water is mostly underground, rising with seasonal rains so that it is just below the surface in wetter months. Dampland soils are often peaty because there are few nutrients available to speed the decay of plant matter in this water-logged environment. In large damplands, this peat can hold very large amounts of water releasing it slowly over the drier months and more permanent wetlands down stream remain filled. **Sumplands** are similar but here the water rises further so that the ground is waterlogged at times and pools of standing water are common in wetter months.



Grower's Tip:
For that damp
spot in the
garden

Wetlands may be ephemeral, filling only seasonally, drying out for part of the year. They are usually shallow and may be rich in animal life while flooded. The plants are adapted to dry conditions, particularly in summer, although they may die away to regrow from seed, tuber or rhizome.

Marshes and swamps are classic wetlands, areas of low-lying ground which are flooded for at least a part of the year and often remaining fairly wet even during the dry season. They are often species rich. If the water is particularly saline it will be a salt marsh. Most wetland and aquatic species are not noticeably affected by salinities up to 1,000 ppm; those tolerate to 2,500 ppm are moderately salt tolerant.

Mazus pumilio is a creeping plant of wet to waterlogged soils. See the photograph on page 93. Its flowers are asymmetrical with an orchid-like lip varying from blue to pink to white; widespread in south-eastern Australia, extending to southern Queensland.

Mimulus gracilis, Slender Monkeyflower,** is a low-growing, upright herb of seasonally wet to flooded soils. Its leaves are 1–2 cm long and the flowers vary from lilac-blue to purplish. It is found across southern mainland Australia.

Mimulus prostratus, Small Monkeyflower, has furry stems and somewhat elongated leaves less than a centimetre long. It forms a creeping mat on wet, saline soils. The flowers are pink, blue or sometimes white. It is found in South Australia, east and north to southern Queensland.

***Aquatic and Wetland Plants — A field guide for non-tropical Australia**, by Nick Romanowski (University of NSW Press) is a small book of 120 pages. Buy a copy of this book from your bookseller. More than 340 plants are described using colour photographs in the manner presented over the next three pages. I have selected that section of the book describing plants of the family Scrophulariaceae. I was prompted to do this because of the successful use of *Mazus* in the garden of Jeanette and Don Closs pictured in colour in Volume 19, page 359. The picture shows a mosaic of mauve flowers on a rich green carpet surrounding a round wooden stepping block path. Many of these wetland plants are easy to grow and effectively complement the landscaping. Many have a wet spot in the garden where everything we plant dies but Don and Jeanette have created a water feature and used a wetland plant to great effect.

****A good reference on how to create bog gardens and water gardens**, illustrated with many colour photographs, is in Volume 17, pages 141–165.



△ *Glossostigma elatinoides*, Small Mudmat

▽ *Limosella curdieana* (left) *Limosella australis* (right) ▽▽ (lower photograph) *Bacopa monnina*





△ *Mazus pumilio* ▽ *Mimulus repens* (Big fleshy leaves are *Selliera*)
Cotula australis (Asteraceae) dense mats of succulent leaves and masses of yellow buttons



Mimulus repens, Maori Musk, is also a creeping species of saline soils, often in brackish tidal areas where it may be regularly flooded. The stems are smooth, the tiny leaves rounded and finely pitted; the flowers may be blue, purplish or occasionally pink. This is the most widespread native monkeyflower found across most of non-tropical Australia. In the photograph on page 93, the small, round greyish leaves belong to *M. repens*, the large fleshy leaves to *Sellieria radicans*.

Bacopa monnieri, Bacopa is a creeping plant of shallow, ephemeral wetlands and wet soils, with rounded pairs of leaves opposite each other. It is shade tolerant and will also grow in deeper waters if these are clear, so has been used as an aquarium plant. Bacopa is found from Queensland south along coastal areas to central New South Wales. See the photograph on page 92.

Glossostigma elatinoides, Small Mudmat, is one of six species of mudmats found in Australia, tiny-leaved, creeping plants of shallow, ephemeral waters which grow best where there is little competition from other plants. Some will grow deeper in clear water, even permanently. Small Mudmat has a leaf-blade longer than its stalk and a flower stalk which is shorter than the leaves. The petals are fused to form a flower, ending in four broad, short lobes with four stamens. It is a widespread species found across most of non-tropical Australia. Photo, page 92.

Glossostigma diandrum is similar but with two stamens only, and the flower has three broad lobes. This is mainly a warmer climate species extending from Queensland south to Victoria and west to Western Australia.

Glossostigma drummondii, Desert Mudmat, has a leaf blade shorter than and tapering into its stalk. The flower stalks are usually as long as the leaves or longer. The flowers are three-lobed with one lobe wider than the others, and there are four stamens. It is found across most of the non-tropical mainland.

Glossostigma cleistanthum, Mountain Mudmat, is a higher altitude species found from Tasmania north to Queensland. It is similar to Desert Mudmat but with flower stalks shorter than the leaves and only two stamens.

Gratiola peruviana, Austral Brooklime, is a low-growing herb of wet and seasonally flooded places. It is quite shade tolerant and can form extensive carpets of densely packed upright stems. This species is widespread across most of non-tropical Australia.

Limoselia australis, Austral Mudworts, is similar to the other three native species and also to *Glossostigma* species in appearance and in habitats. Austral Mudwort has a leaf-blade less than 4 mm wide on a stalk up to 3 cm long. The flowers are also on stalks which are up to 3 cm long. It seems to scatter its seed explosively and is found across most of non-tropical Australia. Photograph on page 92.

Limosella granitica is similar but is only found on Eyre Peninsula among granite rocks in flood-prone areas replacing the more widely distributed *L. australis*.

Limosella curdieana, Large Mudwort, usually has a wider leaf blade on a very slender stalk sometimes up to 8 cm long. The flowers are not stalked and are usually hidden among the foliage. It occurs in southern Queensland south to South Australia.

Veronica. There are nine native species growing mostly in moist situations; *Veronica notabilis* from wet forest and rainforest, *V. plebela* is a weed in lawns and gardens, *V. arguta* syn. *brownii* from the Blue Mountains west of Sydney, and *V. gracilis* in swampy sites in grassland and forests, New South Wales south to Tasmania and South Australia. ■

Bladderworts

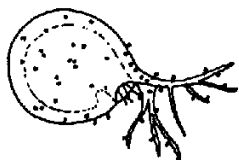
Carnivorous plants*

by Tony Camilleri

The bladderwort was first classified in 1753 by Carl Linnaeus. The botanical name is *Utricularia* (Latin for "bagpipe") of the family Lentibulariaceae. It receives its name from the trapping mechanism, a tiny, but very efficient bladder that is able to capture mosquito larvae, small tadpoles and any other tiny creature.

It was ranked a very close second by Charles Darwin as the "most wonderful plant in the world". He was amazed by the ingenious trap which not only lured prey, but also sucked them into the deadly chamber. It is the most abundant genus of carnivorous plants with over 215 species, found mainly in the warmer climates of South America, Australia, Africa and Asia.

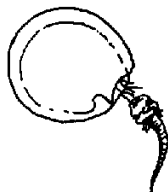
Many species are totally devoid of any leaves and can only be easily distinguished from one another through the often beautiful flower which appears on the stem. A very unusual property of this genus is that it survives without any root system throughout its entire life. Underneath the soil surface or beneath the water, the bladderwort forms branches which produce bladders that capture tiny insects and provide its nutritional source.



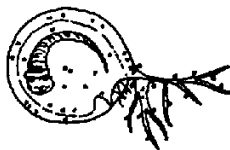
1. Bladder awaits prey.



3. On touching hairs mosquito is sucked into trap.



2. Mosquito touches sensitive trigger hairs.



4. Bladder will ingest mosquito as its food.

The bladderwort consists of many transparent traps, usually smaller than a pinhead, which grow either underground or underwater on the end of shoots. It can be round, oval or more cylindrical. The bladder is a complex structure consisting of trigger hairs at the entrance. The hairs are protected by larger stalks which prevent larger insects from falsely triggering the trap. As tiny insects stray beside the bladder, they touch the trigger hairs which instantly open the trap inwardly. This inward force creates a vacuum which pulls water and insects into the bladder and closes immediately in fractions of a second. Once trapped, enzymes and acids are released and slowly digest the victim.

***Carnivorous Plants** by Tony Camilleri is a fascinating 104 page book. One hundred colour plates illustrate the carnivorous plants of the world. I have reproduced only a small segment to encourage you to buy the book and learn about the Venus fly trap, Pitcher plants, Sundews and all the other fascinating plants that prey on creatures to live. See your bookseller. Editor.



△ *Utricularia fulva* growing on rocks
(Photo: Terry Knight)

▽ *Utricularia bisquamata*,
a typical Bladderwort flower



Aquatic species of Bladderworts

A water tank is required for aquatic species. A layer of peat moss should be added to the bottom of the tank. It can then be filled with water, preferably rain water. The tank can be placed in an area of filtered light.

Why not a terrarium for indoor decoration? It is basically a sealed glass or plastic container which forms its own unique environment. A general peat/sand mix is appropriate with a covering of sphagnum moss. Add the plants and fill with enough water to ensure the soil is damp. When the plants are first placed within the enclosure they will experience climatization and can initially die back. However, they should re-grow healthily in the environment. Once this is done the container can be sealed and watering no longer required for long periods. Place in a light area away from direct sunlight preventing overheating within the enclosure. Regular spraying of fungicide is necessary to prevent fungus from growing.

Grower's Tip:
Why not a
terrarium for a
large range
of plants

These plants require varying degrees of acidity and some experimentation and regular pH checks of the water are needed. A pH gauge should be purchased. If the pH is incorrect, whilst the plant will survive, bladders will not grow.

The most dangerous enemy to the aquatic varieties is algae, the onset of which can easily kill all your plants. Microscopic algae is noticeable as a cloudy formation in the water surface. I have had success with treating algae through purchasing commercially available formulas obtainable from an aquarium. Follow the instructions carefully and results should be obtained within a week.

The simplest method of propagation is to take stem cuttings. Most aquatic species will multiply like weeds if maintained in the correct environment.

Terrestrial and rheophytic species

Many of this group survive in extremely wet areas bordering watercourses, such as swamps, lagoons, etc. In cultivating, generally a mix of two parts peat moss with one part coarse river sand is appropriate. Some species will survive, grown in straight live sphagnum moss. The pot must be kept in a tray of water and placed in a filtered sunlight position.

Propagation by leaf cuttings: The species which grow leaves can be propagated through leaf cuttings. Simply cut the leaf off just above the soil level and place it on a bed of sphagnum moss. Lightly cover the cutting with small pieces of moss. Place the container in a warm and humid environment, such as a terrarium. Otherwise enclose it with a plastic bottle container cut in half. After a month, roots and new leaves will form. The plant is now ready to pot.

Propagation by seed: As a general rule, fresh seed can be sown in a peat/sand mix and placed in a humid, filtered light position within a tray of water.

Carnivorous pond

An interesting addition to your garden could include a carnivorous pond. Commercially manufactured ponds are obtainable from your local nursery. The pond can then be dug into your garden, filled with water and an array of bladderworts placed within it.

It is advisable to choose the species which survives in your climate and remember that aquatic bladderworts prefer acidic water. Water lilies and reeds (if available) could also be added to simulate the natural conditions of a pond. ■

Watering

Tropical areas, dry areas, any garden area

by Keith Townsend*

Water is probably the most essential factor of all for successful plant growth and survival. Very few gardeners can grow successfully without some supplementary watering at various periods throughout the year. An idea of the moisture level in clay and loam soils can be obtained by taking a sample from at least 20 cm down. Squeeze the soil in your fist. If it has any tendency to stick together and maintain its moulded shape, it is moist enough to maintain most plant life. If it is impossible to mould it, then it needs watering. This test will not work in sandy soils, but an inspection of the soil at a similar depth will give an indication of the moisture content.

The best approach to watering is to wet at least the whole depth of the root zone at each watering. A concept of "little and often" is dangerous. It encourages surface rooting and the plants lose drought tolerance. A general programme for trees and shrubs should be a heavy watering each 2–3 weeks in summer and each 3–4 weeks in winter, depending on any rain which may fall.

Mulched, drought tolerant native plants may not need watering at all once they are established. There are a number of benefits in grouping together plants which grow in a similar environments. Not the least of these is a saving of water and effort which can be made by planting dry-land plants together.

Over or Under Watering?

1. An over-watered garden may lose 15 litres of water per square metre on a very hot, dry day. A minimally watered garden may only lose only 5 litres.
2. Overwatering produces soft plants with poor ability to cope with stress.
3. Frequent light watering produces large losses by evaporation from the soil and shallow roots.
4. Infrequent deep watering produces small evaporation, deeper roots and greater drought tolerance.
5. To soak the top 30 cm of dry sand takes about 25 mm of water.
6. To soak the top 30 cm of dry loam takes about 40 to 50 mm of water.
7. To soak the top 30 cm of dry clay takes about 70 mm of water.
8. One millimetre of rain will add about 1 litre of water per square metre.
9. A sprinkler delivering 10 litres per minute (600 litre per hour) will supply an area of 40 square metres with $600/40 = 15$ litres per sq. metre/hour = 15 mm per hour.

***Across The Top — Gardening with Australian Plants in the Tropics** by Keith Townsend is a 404 page book of exceptional value to people caring for a garden in the tropics. It has been available for four years and has been in demand in Darwin, across the top and down to Gladstone. The information is so valuable, the book deserves a special mention here for those who do not know about it. The articles are extremely well done, the chapter on watering being reproduced above. In it mention is made of soil preparation, mulching and fertilizing, all similar, well presented chapters to the one above. The chapters on Landscaping, Pruning, Pests, Diseases and Disorders, Propagation, Birds and Butterflies in Your Garden, Growing Bush Tucker and Planting a Rainforest are also extremely valuable. He then goes on to describe over 400 plants that could be successfully grown in Tropical areas. Exceptional value for \$24 plus \$9 postage from Keith Townsend, P.O. Box 363, Aitkenvale, Qld 4814. The book was published by the Society for Growing Australian Plants, Townsville Branch, who gave valuable support.

Common Watering Problems

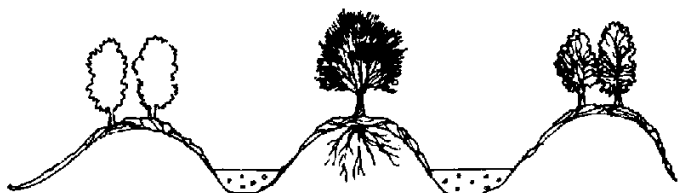
1. Not Enough Water — often caused by light daily waterings. Remember — water more thoroughly and not as frequently.
2. Too Much Water — low spots in the garden, trenches around trees or garden beds, undrained garden borders. All these may cause overwatering and result in killing plants or in giving them a set-back. Wet patches also promote the growth of weeds, and can be the source of fungal attack by water borne fungal organisms which revel in poorly drained areas.

Improving Water Management

Coarse sand dug into heavy clay will open it up and increase the rate of water penetration; within limits, the more coarse sand the better.

Mulching will prevent drying of the soil and also check weed growth which robs the soil of moisture. A mulch of any organic material can be spread over a garden bed or around a shrub. Keep the mulch away from the stems or trunks, otherwise stem rots may develop. If you eventually dig the mulch into the soil, add nitrogen fertilizer to help it decay speedily, saving the plants from nitrogen shortage.

Drainage is probably the most neglected aspect of watering. It is especially important in controlling salts. If you have a good deep soil, excess water will seep down below the root zone, taking dissolved salts with it. If your topsoil or subsoil is a tight clay, you will need to take special precautions. Garden beds with improved soil may be prepared on top of the clay. Do not remove the original soil, but instead, build up the soil above the ground level and plant in the mound. This method is particularly successful for growing Australian native shrubs and trees, many of which have a pronounced dislike for poorly drained situations. The subject of mounding is covered more fully in the chapter on soils.



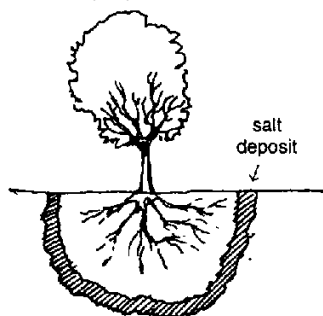
Mounding allows you to apply hard water where it will soak deeply; mulching will help prevent evaporation.

“Hard” or Saline Water. Some are faced with the need to use bore water with a high mineral content for their gardens. Hard water may cause salts to be concentrated in the soil reaching a level toxic to plants; the soil pH may be increased and plant nutrients may be “locked up” in chemical reactions with the water salts, becoming unavailable to plants. The “hardness” of water is measured by the amount of dissolved salts present. The combination of salts, Total Dissolved Salts (TDS), may vary from area to area, Water with TDS of up to 500 parts per million usually has little effect on most trees and shrubs, Soft indoor plants, ferns and orchids may be affected toward the top of this range.

TDS readings of 500 to 1,500 parts per million indicate that the water is far from ideal, but may be used for most gardening purposes but care is necessity. Water with TDS readings above 1,500 parts per million are not recommended for widespread garden use, but it is an unfortunate fact that there is a lot of groundwater in the tropics which falls within this range, and many gardeners are faced with little alternative. It requires more care and attention, but there is no doubt that quite successful gardens can be grown.

Methods of Use

The higher the TDS of your water, the greater the care you need to take with its use. One of the readily apparent problems is loss of foliage if the water is sprayed on to plants. Deposits of minerals (usually Calcium Carbonate) on the leaves will block the pores and cause loss of the leaf. High TDS water should never be sprayed but needs to be flooded on the ground surface.



Drip irrigation can also be a problem if watering is limited to an amount which only wets the immediate root area of the plant. In such a case the salts deposited by the water are concentrated in a limited area and continual irrigation will concentrate the salts to a level far above that which the plant can tolerate. High concentration of calcium will often result in blockage of dripper heads.

Gardening practices which may be helpful when using hard water are:

- (A) Do not spray irrigate — or if watering trees, use a low trajectory spray which keeps the water below the leaf level.
- (B) Use flood irrigation in channels or drains, or alternatively, trickle or adjustable dripper heads which are able to supply a fair rate of water. Water supplied by a trickle system should be sufficient to soak far beyond the limits of the plant root system. Salts tend to be deposited at the edge of the water penetration area, and need to be washed from the plant root area.
- (C) Water only when necessary, and then in sufficient quantity to last the plant at least 2–3 weeks. It is far better to water heavily each 2–4 weeks than to lightly water every few days.
- (D) Mulch heavily where possible — mulching reduces evaporation from the surface and therefore reduces the deposits of salts left behind by evaporation. It also reduces the amount of water which needs to be applied.
- (E) Mounding of beds provides the opportunity to apply hard water in channels between the mounds, allowing it to soak deeply and moisten the subsoil. To establish young plants; rainwater, or an alternative good quality water, can be applied to the plants, while hard water is used to cool and moisten the lower levels of the soil. A heavy mulch assists to prevent the hard water being drawn to the surface by evaporation.

The salvation of those gardens condemned to the use of hard water is a good wet season — this will flush away most of the accumulated salts and give plants a new lease of life. Adopting the methods outlined above will help.

Summary of *Eriostemon* name changes

by Peter Bailey

Eriostemon angustifolius is now *Philotheca angustifolia*; (note that the ending *lus* becomes *la*) Similarly we have: *Philotheca apiculata*, *P. brevifolia*, *P. brucei*, *P. buxifolia*, *P. coccinea*, *P. cymbiformis*, *P. desertii*, *P. difformis*, *P. ericifolia*, *P. falcata*, *P. fitzgeraldii*, *P. gardneri*, *P. glabra*, *P. hispidula*, *P. linearis*, *P. myoporoides*, *P. nodiflora*, *P. nutans*, *P. obovalis*, *P. pachyphylla*, *P. pinoides*, *P. pungens*, *P. rhomboidea*, *P. scabra*, *P. sericea*, *P. spicata*, *P. sporadica*, *P. thryptomenoides*, *P. tomentella*, *P. trachyphylla*, *P. verrucosa*, *P. virgata*, and *P. wonganensis*.

Long-leaf waxflower

Philothea myoporoides

by Marilyn Gray, Karwarra Gardens*

It is easy to overlook common or popular garden plants when seeking out new plants for our gardens just because "everyone's got that" or because we are always searching for something different. But there are times when the tried and true should not be discarded.

Philothea myoporoides (how long will it take us to not think of this plant as *Eriostemon*, it is the same plant with a new name, see page 104 for the reason for the change) or Long-leaf Waxflower is such a plant. It has been in cultivation a long time and was introduced to England in 1824. Beginning in winter and lasting through spring, this has to be one of the most floriferous plants for our gardens, the white as pure as snow. It is reliable in most temperate areas, being hardy to frost and tolerating extended dry periods once established.

The Long-leaf Waxflower, photograph on page 114, provides a profuse display of large, white starry flowers with a waxy sheen, set off against the dark green of the foliage. Buds are pink. It flowers, in small bunches, throughout the year but the main flowering time at Karwarra Garden is from July to November.

A member of the Rutaceae family, it has highly aromatic foliage, the oil glands standing out prominently especially on the underside of the leaves. Plants usually occur as an understory shrub in mountain forests in Victoria but also occur in coastal heathlands or in dry sclerophyll forests in New South Wales.

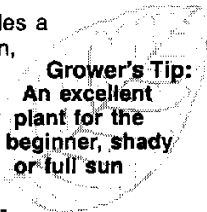
The typical form is an open shrub to 2 x 2 m with flattish leaves to 110 mm long. Stems are warty and flowers are in bunches of 3-8. A form which is larger in all respects, growing to 4 m tall if not pruned, is known as 'Mountain Giant', see page 116 for a photograph. The many subspecies are summarized by Peter Bailey at the end of this article and they are:

Philothea myoporoides subspecies ***acuta***, Short-leaf Waxflower, is the most commonly grown. Its leaves are only 15-52 mm long. From central New South Wales, its incurved, oblong-elliptic leaves are either pointed or blunt, ending in a small point. Flowers are bunched in groups of 3-5 with another flower often at the base of the flower stalk. I have noticed at Karwarra that the early flowers on this form can be 6-8 petalled instead of the typical five petals. The inner ring of stamens are red-orange rather than cream. The shrub is dense, growing 2-2.5 m high. I have to confess to preferring this subspecies with its masses of flowers and dense habit, a very tight attractive garden plant.

Philothea myoporoides subspecies ***epilosa***, collected from near Tenterfield, NSW is growing well and has flowered this year. It grows in granite outcrops near the border of NSW and Qld. The obovate leaves to 30 mm are rounded with margins incurved at the ends but tip recurved. Flowers are usually solitary.

Philothea myoporoides subspecies ***conduplicata*** also occurs in northern New South Wales and Queensland. Its stems are almost smooth and the narrow-elliptic leaves from 45-70 mm long are folded inwards lengthwise; sepals and petals are tinged with red.

*Karwarra Australian Plant Garden is on the Mount Dandenong Tourist Road, Kalorama, Victoria. It is a delight to walk through so next time you are in Melbourne do not miss it. The competence of the Curator shows in this article.



Grower's Tip:
An excellent
plant for the
beginner, shady
or full sun

Philotheca myoporoides subspecies **leichhardtii** from the summits of the Glasshouse Mountains, Queensland has single pink flowers. It is a spreading shrub 1–1.5 x 1.5–2.5 m with short oblong-elliptic leaves which are rounded and sometimes notched at the ends, culminating in a small point.

Philotheca myoporoides subspecies **queenslandica** grows on sandy wallum heathlands near Moreton and Wide Bays, Queensland. It is a low shrub 0.5 x 1–1.5 m with narrower leaves to 25 mm long which are only slightly warty. It has single pink flowers but flowers profusely and is recommended for cultivation.

Philotheca myoporoides subspecies **brevipedunculata** is a newly named subspecies from southern New South Wales occurring from Little Forest near Milton to Deua National Park, growing near the tops of mountains. It is a shrub to 1.8 m with oblong-elliptic leaves to 30 mm long. The pink-tinged, usually single white flowers have tiny stalks or are stalkless. These flower stalks are a major distinguishing feature and are reflected by their subspecific name.

Philotheca myoporoides subspecies **euroensis** is a very rare plant known from few localities and even most closely allied to the Victorian form of ssp. *myoporoides*, colloquially known as 'Mountain Giant' but is a smaller, more open shrub to 1 m high with shorter, broader leaves and clusters 1–4 flowers rather than the more floriferous larger form.

Philotheca myoporoides subspecies **obovatifolia** is restricted to 3 mountain peaks within Mt Barney National Park, south-east Queensland where it grows in heath or woodland. A small shrub to 1 m, it has large, broadly obovate leaves to 60 mm long with a short point on the rounded end. White flowers are in clusters of 1–5 on stout stalks.

Garden cultivars include 'Profusion' a compact shrub that is covered in masses of flowers. 'Stardust' and 'Daughter' are hybrids with *Philotheca verrucosa*. Both flower profusely for long periods, the latter a compact shrub to 1.5 m.

Propagation is usually by cutting which can be slow to set roots. I produce the best results from cuttings taken in summer.

Cultivation requires well drained soils and dappled shade or partial sun. They will also tolerate semi-shade and full sun. *Philotheca myoporoides* is an excellent screen plant, especially the small leaf form, responding well to pruning to increase density. Like most wildflowers tip pruning from an early age will determine the ultimate shape of your plant. Flowers last for a long time in vases so it is easy to do your pruning as you cut and enjoy your plant inside as well. ■

Table of *Philotheca myoporoides* subspecies

as prepared by Peter Bailey

Subspecies	Height	Leaf shape	Leaf length	Leaf width	Inflorescences
<i>myoporoides</i>	.6–2.0 m	oblong to elliptic	40–90, rarely 30–155	9–20 rarely 5–32	3–9, rarely 1–13
<i>acuta</i>	to 1.8 m	oblong-elliptic	15–52 mm	2–8 mm	1–2, rarely 1–5
<i>epilosa</i>	to 1 m	obovate	11–34 mm	4–11 mm	solitary
<i>brevipedunculata</i>	to 1.8 m	oblong-elliptic	13–30 mm	5–10 mm	solitary, rarely 1–3
<i>euroensis</i>	to 1 m	broad elliptic	15–35 mm	6–12 mm	1–4
<i>obovatifolia</i>	to 1 m	broad-obovate	35–60 mm	14–30 mm	1–5
<i>conduplicata</i>	to 1.4 m	elliptic	45–70 mm	4–10 mm	1–4
<i>leichhardtii</i>	to 1.5 m	oblong to obovate	20–50 mm	4–10 mm	solitary usually
<i>queenslandica</i>	30–80 cm	oblong	10–30 mm	1.5–4 mm	solitary

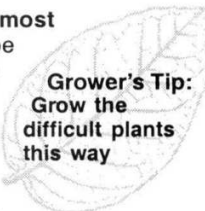
Cultivation of *Eriostemon*/*Philotheca*

by P. N. Ellis and W. H. Payne*

"Exceedingly good results have been obtained by planting them in a raised bed of medium soil to which has been added some gravel, grit and sand, and plenty of nice decayed bush humus. They appear to like large rocks set into the soil or to retain the bed, as this probably acts as an anchor for their roots, a temperature buffer from frost and heat, and moisture supplier. Plants definitely do better in bush loam, and after the above treatment, they grow very fast into large bushes, producing abundant flowers, August to October. Perfect drainage is necessary.

"Heavy pruning is beneficial every few years, and a light trimming or 'hair cut' more regularly after flowering. A surface mulch of bush humus is appreciated with very light applications of rabbit, sheep, or cow manure, well decayed of course. A fairly moist soil is more desirable than the hard dry conditions of the old school. I find that a thorough soaking by allowing the hose to trickle around its root system for a few hours once a fortnight quite adequate, although it could be increased to weekly doses during exceptionally hot weather. Scale is about the only pest which ever needs controlling. A dusting with sulphur discourages moulds, etc., and keeps the soil slightly acid. A pinch or two of Epsom Salts on the surface soil may help to cure any yellowing tips. If this fails, try a little iron sulphate or potassium nitrate in the same manner. They like morning sun, but some partial shade during the heat of a mid summers afternoon", P. N. Ellis.

Cultivation of *Eriostemon*, *Philotheca*, in fact most Rutaceae including the difficult *Boronia* species can be successful using the method above. But! who has adequate supplies of bush loam and bush humus to mulch the area with? In fact most native species will grow in these conditions. The key factors are a loamy soil with humus in it, perhaps from the compost heap, depth of soil, excellent drainage and watering by regular soaking between rain periods, but no more than once a week. A cool root system created by mulching is essential but keep it away from the trunk, or use gravel.



**Grower's Tip:
Grow the
difficult plants
this way**

Are these perfect conditions essential for all species. Most certainly for *Eriostemon australasius* and probably the only other species, *Eriostemon banksii*, but there is at least one species, now *Philotheca myoporoides*, that **will grow and flourish** under less ideal conditions. I have it growing **everywhere**, in light soil or garden loam but in the open or under trees. It seems the hardiest plant you can find. It also flowers prolifically and for long periods. There are many natural forms and the best of these are available widely. The forms with the smaller leaves appear to flower more abundantly although the flowers are also a little smaller. They propagate easily from cuttings. Be sure to prune them heavily after flowering, be savage you cannot kill them. Reliable performance from a plant discourages some growers, "it is too easy". It is nice to have a unifying theme in the garden why not *Philotheca myoporoides* popping up everywhere.

*The article by Peter Ellis, the first two paragraphs above, was published in our Number 36 issue in September 1968. It was for the cultivation of a delightful double form of *Eriostemon verrucosus*, see photographs on page 133. I searched through the issues of the 40 years of publication for articles on the cultivation of *Eriostemon* but apart from repeated statements that *Eriostemon myoporoides* was very easy to grow and that there were some excellent forms of it, so why try to grow the difficult ones, this article gave the best advice to cover the lot. Will readers please advise of their experiences with this group of plants. Editor.

Eriostemon?

Name Change in Rutaceae

by Michael Bayly, University of Melbourne

Most of the familiar eriostemons (family Rutaceae) have had a formal name change. A new classification, which will be adopted in the *Flora of Australia*, sees *Eriostemon* comprising just two species (*E. australasius* and *E. banksii*), and the remaining 39 species placed in the related genus *Philotheca*. The widely known and grown *Eriostemon myoporoides* the Long-leaved Wax Flower is among the species that have undergone this name change (see summary on page 100).

The new classification aims to provide a naming system that best reflects our understanding of the evolutionary relationships of these plants. By separating *E. australasius* and *E. banksii* into their own genus it recognizes that these species comprise a lineage distinct from the other eriostemons, some of which are very closely related to the formerly smaller genus *Philotheca*. Under the rules of the International Code of Botanical Nomenclature the genus including *Eriostemon australasius* (the type species for *Eriostemon*) must retain the name *Eriostemon*, and the other group must take the name *Philotheca*.

Eriostemon australasius, photograph on page 115, is a distinct, pink-flowered shrub (which is somewhat fickle to grow), and occurs naturally in heathland and open woodland on the east coast, from the south-east of Queensland to just south of Sydney. It, together with *Eriostemon banksii* from far north Queensland, is distinct from other plants previously known as *Eriostemon* in having large flowers, flat and almost papery leaves that have obscure oil glands (rather than prominent warts), petals that have at least three main veins, Figure 1 (rather than one), staminal filaments that are distinctly warty toward the apex, Figure 2, unusual stellate (star-like) hairs that resemble those found in some *Boronia*, distinctive seeds, a different leaf chemistry and chromosome number.

Grower's Tip:
The most difficult of all plants to grow see page 101 for the secret

The species now placed in *Philotheca* display a great range of morphological diversity but, on present evidence, are all taken to be related. *Philotheca* was previously distinguished from *Eriostemon* because its members had their staminal filaments united into a basal tube. It now seems, however, that these species are very closely related to some small-leaved eriostemons (those formerly in section *Nigrostipulae*) and that keeping the two groups in separate genera is not well justified. Features shared by the traditional philothecas and small-leaved eriostemons include: leaves that are usually small, and often round in cross-section [and contain structural cells (called sclerieds) of a very distinctive form], hairy petals, very similar seed morphology, staminal filaments that are erect when young but become recurved with age, and most notably, distinctive, stipule-like glands that occur on either side of the leaf bases, Figure 3.

The new classification is largely the work of Paul Wilson and was published in *Nuytsia*, Volume 12/2, 1998 the publication of the Western Australian Herbarium. A smaller paper dealing only with name changes in *Eriostemon myoporoides* was published in *Muelleria*, the journal of the Royal Botanic Gardens, Melbourne.

Other name changes in Rutaceae are given on page 111.



Fig. 1. **Eriostemon** have petals with at least three main veins rather than one for *Philotheca*.

▽ Fig. 2. **Eriostemon** flowers have staminal filaments that are distinctly warty towards the apex as shown below; for *Philotheca* they are erect when young, becoming recurved with age.

▽▽ Fig. 3. **Philotheca** leaf bases have distinctive, stipule-like glands that occur on either side.



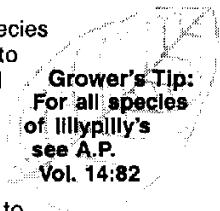
Lilly Pilly cultivars

by Richard Logan, Fairy Meadow, NSW

I believe the *Syzygium* genus has huge potential for the horticultural industry with many of the species having beautiful foliage, flowers and fruit, see page 108 for photograph. Some species are very particular in their requirements of water, light and temperature while many are very tough and adaptable plants. A number are useful bushtucker plants, see page 111. A number of garden cultivars have been developed although most of these have been derived from four species, *Acmena smithii*, *Syzygium australe*, *Syzygium luehmannii* and *Syzygium paniculatum*, see photograph on page 108. Some cultivars described below.

***Syzygium* 'Minipilly'** is a small bushy form of *Acmena smithii*, the now growth is bronzy red in colour and as usual for this species, it responds well to pruning. The habit of this plant tends to be more open than most cultivars, but it is still a nice looking plant. 'Minipilly' grows to about 2 m high with a spread of about 2 m. The fruit of this variety is pink in colour, which of course follow the creamy white flowers. It enjoys a sunny open position but is an extremely versatile plant which is ideal for hedging and borders or as a tub or patio specimen.

***Syzygium* 'Aussie Blood Oath'** derived from an *Acmena* species from the East Normanby River, is only relatively new to cultivation, since it was only discovered in 1989 around Cooktown in the Wet Tropics region of North Queensland. The most attractive feature of this plant is its blood red new growth, which is held above its hanging foliage. New growth flushes occur throughout the year in a suitable climate. In the garden, 'Aussie Blood Oath' can be expected to grow to 3 m with a spread of 1.5 m in a protected sunny or semi-shaded position. Tiny white flowers are in spring, with these being. The fruit then follows and they are green in colour.



Grower's Tip:
For all species
of lillypilly's
see A.P.
Vol. 14:82

***Syzygium* 'Aussie Copper'** is a compact form of *Syzygium australe* growing to around 3 m high, and holds its foliage from the ground up. The foliage is held in layers or cascades, with the new foliage being a bronzy colour, thus the name 'Aussie Copper'. This would make quite a good garden shrub or tub plant.

***Syzygium* 'Aussie Southern'** is a cultivar of *Syzygium australe*, bushy shrub which retains its foliage to ground level. It grows to approximately 3–4 m high with a spread of about 1.5 m. The glossy foliage makes it a desirable specimen plant or tub plant. It may be pruned to form a dense shrub. It is sensitive to severe frosts.

***Syzygium* 'Blaze'** (PBR) is another cultivar of *Syzygium australe* with a compact growth habit, with the added attraction of seasonal foliage colour. The foliage colour varies from green through to bronze, and can even become a fiery red during the cooler months. 'Blaze' can be used as a tub plant or garden specimen.

***Syzygium* 'Bush Christmas'** (PBR) is a very compact form of *Syzygium australe*, which will grow to around 2–3 m high by 1.5 m wide. The major feature of 'Bush Christmas' is its compact habit, which lends itself to shaping into a dense hedge (recommended spacing 75 cm) or other fancy shapes. In winter 'Bush Christmas' is covered with a flush of orange new growth.

Syzygium 'Hunchy' is a form of *Syzygium australe* from Queensland's Sunshine Coast area. It grows into a small tree or large shrub making it suitable for a street tree, a large screen or parkland planting. With an overall height of 3–5 m and a spread of 2–3 m, making it one of the larger Brush Cherry cultivars. It was introduced into cultivation by Garrads Nursery at Woombye, Queensland.

Syzygium 'Tiny Trev' (PBR) is a cultivar of *Syzygium australe* which has the smallest leaves of any cultivar to date, making it a very cute specimen plant. It forms a small dense conical plant, which requires little or no pruning and grows to approximately 75 cm in 5 years. Making it a beautiful little plant suitable for topiary, tubs and low hedges.

Syzygium 'Undercover' (PBR) is a prostrate version of *Syzygium australe*, the first prostrate Lilly Pilly to reach the nursery industry, making it a very versatile plant. Undercover is suitable for using as a groundcover, which will spread to around 3 m by 3 m. It could be used as a garden specimen to cascade over rocks or even used in hanging baskets. Undercover could equally be grafted onto a rootstock to make a beautiful standard. The new foliage is bronzy in colour which adds to the attraction of this plant.

Syzygium 'Royal Flame' is a new selection of *Syzygium luehmannii*, growing only to 1 m high and spreading 1 m. Even the leaves are far smaller the normal species, being only a third to half the size. As with any *Syzygium luehmannii*, this cultivar also possesses the beautiful flushes of colour of pink, red and purple fading through copper to green. This would make an excellent small hedge or pot specimen, or just as a beautiful small shrub in the garden.

Syzygium 'Beachball' is a dwarf selection of the popular *Syzygium paniculatum*. Which reaches 1.5 m high with a spread of 1.5 m, with the new growth flushes being bronze in colour. It is suited for pruning into topiary shapes either for your garden or for large tubs and forms a neat rounded shape that is ideally suited for hedges or specimen plantings. See **'Magenta Cherry'** photograph on page 108.

Syzygium 'Elite' is a cultivar of *Syzygium paniculatum* which forms a graceful tall shrub or small tree. It has dense foliage and of compact growth habit, with the new growth being pinkish in colour. 'Elite' can be used as a decorative plant for gardens and is suitable for screening, it can also make a rewarding tub specimen.

Syzygium 'Lillyput' (PBR) is an older cultivar of *Syzygium paniculatum* which grows to approximately 2 m in sun or part shade. Its glossy foliage is highlighted by reddish new growth. The compact dense growth habit of 'Lillyput' is natural and the plant maintains its rounded shape. This feature makes it an excellent tub specimen or attractive low screening plant for the garden.

Syzygium 'Little Lil' (PBR) is a small but fast growing form of *Syzygium paniculatum* which will grow to around 1.0–1.5 m high by 1.0–1.5 m wide. Due to its dense habit it can be used for topiary, small hedges or as a garden specimen. ■

Lilly Pilly cultivars: there are many more. Please advise details of any that you know. Some on record for which details are required are: *Syzygium* 'Tinkling Satinash', *Syzygium* 'Aussie Compact', *Syzygium* 'Aussie Boomer', *Syzygium* 'Austral Dwarf', *Syzygium* 'Aussie Dazzler', *Syzygium* 'Hedgemaster', *Syzygium* 'Petite Blush', *Syzygium* 'Amber Curlys', *Syzygium* 'Sophie', *Syzygium fullagarii* from Lord Howe Island, transferred from *Cleistocalyx* in *Muelleria* Volume 11: 95–96 (1998). The one on the next page is an exceptional plant. Editor.





△ An Australian garden with *Dampiera linearis* the purple prostrate plant in the front. Other plants include low yellow-flowered *Conostylis* and *Hibbertia* species plus yellow *Phebalium whitei*, the blue-flowered *Orthrosanthus multiflorus*, *Callistemon citrinus* white-flowered form, *Leptospermum brevipes* and a deep pink form of *Calytrix tetragona*. This display may be repeated in your garden by referring to articles in recent issues. Why not buy the issues of Volume 18 or 19, beautifully bound, as offered inside the rear cover, a wonderful gift.

◁ A Lilly Pilly developed for a spectacular display in, 'Magenta Cherry' is a form of *Syzygium paniculatum*, the fruit a recognized bush food for use in jams, tarts and pies, see page 110.

▽ *Pultenaea pedunculata* 'Pyalong Pink'. The species is a densely foliated mat plant that spreads 1–2 m across producing masses of "egg-and bacon" flowers, yellow with an orange, red or brownish tinge, soft pink as in the cultivar form shown here or all yellow for 'Pyalong Gold'.

***Australian Plants for the Garden** by Gwen Elliot is widely available for \$14.95. Over the 130 pages, 115 plants are described with advice on cultivation. The excellent photography by Rodger Elliot is shown by these photographs reproduced from the book. Editor.



Lilly Pilly, bush tucker

The fruit of Lillypillies and Riberries

by Keith Smith*

The various lillypillies and the riberry are beautiful ornamental rainforest trees that yield masses of tangy, often aromatic, fleshy, berry-like fruit, for fruit salads, jams and jellies. They are also good food for fowls. Previously known as *Eugenia*, botanists have reclassified these trees into *Acmena* and *Syzygium*

While exploring around Botany Bay on 3 May, 1779, Lieutenant James Cook and the Danish botanist Daniel Solander of HMS *Endeavour* found "several trees which bore fruits of the Jambosa kind, much in colour and shape resembling cherries". They ate some on the spot and brought more back to the ship, "which we eat with much pleasure though they had little to recommend them but a slight acid", Joseph Banks recorded in his journal.

Lillypillies and riberries can be raised from seed. They grow best in moist, well composted soil and need plenty of watering. In nature, lillypillies grow along creek banks and watercourses, so make sure they are planted well away from drains and sewers, where they could cause problems. In cultivation, lillypillies are widely planted as shade and ornamental trees in parks and gardens. They have attractive green foliage and grow well in containers in good potting mix if kept well watered. See page 106 and the photograph on page 108.

Purple Lillypilly, *Acmena smithii* Lillypilly or Red Eungella Gum.

This is the best-known and most widely spread lillypilly growing in the wild from the tip of Wilson's Promontory in the south to Cape York and the tropical north coast of the Northern Territory. Fruits are round and white or pink, with a purple tinge. The outer flesh contains vitamin C and is made into juice, jelly or jam after discarding the seeds. In cultivation, trees reach about 12 m in height, and fruit profusely. Leaves are glossy, dark green and flowers fluffy and white.

Magenta Lillypilly, *Syzygium paniculatum* Bush, Creek or Scrub Cherry.

The fruits tried by Cook and Solander were most likely those of the Magenta Lillypilly, now listed as an endangered species. They are native to shrubby rainforest from Jervis Bay to Atherton, but also grow in the cool Blue Mountains of New South Wales. Magenta Lillypilly fruits are oval and usually dark red, but sometimes white, pink or purple, each with a single seed. The taste is crisp, juicy and slightly acid and fruits are eaten raw or in jams and pies.

The 'jambosa', jambu or roseapple fruits of Indonesia and South America, closely related to lillypillies, are basic foods to the people of those countries.

Blue Lillypilly, *Syzygium oleosum* (previously *Syzygium coolminianum*).

The fruits which can be eaten raw, are round and purple-blue when ripe and said to be delicious. They contain a single seed which rattles in the central cavity when ripe. Flowers are white and showy. The Blue Lillypilly is native to rainforest of New South Wales and Queensland.

**Growing Uncommon Fruits and Vegetables in Australia*, published by New Holland available from booksellers for \$19.95, by Keith Smith. As is my practice, I have reproduced a small section from the chapter on Australian Bushfoods so that you can judge its value yourself. In similar style, uncommon foods from other areas are described. A good reference on this subject

Robby or Durobby, *Syzygium moorei*.

The durobby has showy red flowers that grow on short stalks from thick old branches. The flowers follow the large, rounded, creamy, green-tinged fruits. In most lillypillies, red fruits follow the flowers. The flavour of the fruit is described as "juicy but bland". It is classified as a rare and endangered species, following the clearing of its native habitat, the "Big Scrub" in the Tweed River and Richmond River areas of northern New South Wales.

Riberry, *Syzygium luehmannii* Cherry Alder or Clove Lillypilly.

Riberries have been described as "captivating bright-pink fruits" with a "strong clove flavour". They are now popular in Australian bush food cuisine. Because of demand from restaurants and suppliers, there are 5,000 trees in commercial cultivation. Small, round red fruits, about 1.25 cm long, are added to fruit salads, jelly and muffins, and blended into sauces that flavour emu, kangaroo or quail dishes as well as ice-cream and puddings. They have a sweet-and-sour taste and a resinous but not unpleasant after-taste. Riberries are borne on a tall, weeping rainforest tree of coastal northern New South Wales to Cairns, Qld. In cultivation trees reach 10 m and produce fruit as far south as Melbourne. ■

Bushtucker plants, in fact all Australian plants that may be commercially developed have been a feature in many issues in the past. We also have a Food Plants Study Group for members. For those particularly interested contact Lenore Lindsay, 323 Philip Avenue, Frenchville, Qld, 4701.

Name changes in Rutaceae

from P. E. Bailey

Most species of *Eriostemon* have been transferred to *Philotheca* as given on page 100. Other changes made by Paul Wilson are given below. (Over the present flowering season will readers please take photographs, either prints or slides, of the plants listed and forward together with any they already have to the editor.)

***Phebalium ampliense* is now *Leionema ampliense*.** Similarly we now have:

Leionema bilobum, *Leionema carruthersii*, *L. coxii*, *L. dentatum*, *L. diosmeum*, *L. elatius*, *L. equestre*, *L. gracile*, *L. hillebrandii*, *L. lachnacoides*, *L. lamprophyllum*, *L. microphyllum*, *L. montanum*, *L. obtusifolium*, *L. oldfieldii*, *L. phyllifolium*, *L. ralstonii*, *L. rotundifolium*, *L. sympetalum* and *L. viridiflorum*. There will be 22 Australian species in *Leionema*.

***Phebalium ellipticum* is now *Nematolepis elliptica*.** Similarly we now have:

Nematolepis frondosa, *Nematolepis ovalifolia*, *N. rhytidophylla*, *N. squamea*, and *N. wilsonii*. The genus *Nematolepis* is now expanded to 7 species.

***Phebalium* now comprises 25 species.** All species previously known as *Phebalium* and not listed above, remain in that genus. Four new species and one subspecies have been named, *Phebalium appressum*, *P. elegans*, *P. festivum*, *P. glandulosum* subsp. *nitidum* and *P. laevigatum*. Other changes are: *Phebalium tuberculatum* subsp. *brachyphyllum* becomes *Phebalium brevifolium* and *Phebalium lepidotum* var. *obovatum* is *Phebalium obovatum*.

***Rhadinothamnus* will now comprise the following species in Australia,** *Rhadinothamnus anceps*, *R. euphemiae* *R. rudis* with its three subspecies.

Shrubby plants for the garden. The group of plants above include many that are hardy and very decorative and floriferous. See the photographs on page 129. Together with the other closely related genera *Microcybe* and *Chorilaena* we can have really colourful issues in the future, please take photographs and send notes on cultivation to the editor by the end of 1999, Editor. ■



△ **Butterflies in the garden.** *Melaleuca thymifolia* feeds a Tailed Emperor Butterfly, described on page 115, photography by Brian Faulkner.

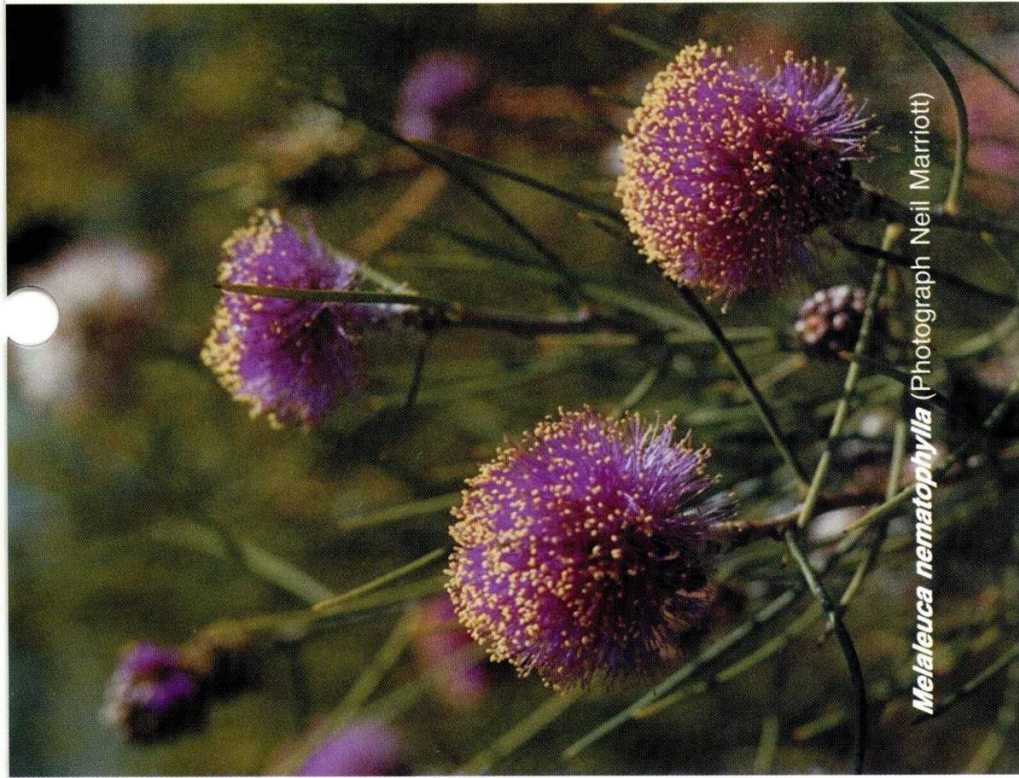
▽ *Melaleuca thymifolia*, a showy small shrub with heads of claw-flowers. Photo by Ilma Dunn.

Melaleuca as cut flowers. Ivan Holliday advises that vase life is a problem. Treated correctly and with clones selected for this purpose, they could last a week or more. Long stemmed species worth a trial are *Melaleuca megacephala*, (front cover), *M. nematophylla* and *M. exima* opposite. ▷





Melaleuca exima (Photograph Ivan Holliday)



Melaleuca nematophylla (Photograph Neil Marriott)

Tropical water garden

In Tasmania, in indoors

from Els Hayward

My 16-year-old son Erik has always had a passion for water plants and after a visit to the Austral Water gardens some years ago he hankered after a tropical lotus plant. After some persuasion from Erik we allowed him to mail order a rhizome of a *Nelumbo* hybrid which cost \$20. The salesperson was at first reluctant to send such a tropical plant to Tasmania as she feared it would surely die in our colder climate, however Erik assured her that it would be kept in an exceptionally warm spot inside our sunny living room facing north and east.

The rhizome arrived in October and Erik had prepared a round fibreglass planter tub, which is 60 cm in diameter and 40 cm deep, filling it with 10 cm of composted cow manure, then 10 cm loam and 2 cm of coarse potting sand to hold down the soil. In order to keep the water at the necessary constant temperature of 30°C Erik installed an aquarium heater which cost about \$25 at a brewer's shop (where they are cheaper than in aquarium shops!) He also installed an aerator. This was not necessary for the plant but it improved the water for the fish which he added to keep the water clear. Adding the fish helped to make the whole environment more balanced and natural as well as getting all the small, vulnerable baby guppies out of reach of the larger fish in his tropical aquarium! They certainly thrived and multiplied, their colourful, easily visible tails in the water adding interest to the shadowy depths beneath the leaves.

Well, the rhizome was only in the tub for a week when the first small leaves arrived on the surface. They looked like small waterlily leaves but perfectly round after unfurling from the central stem. Subsequent leaves became larger as they appeared very rapidly in a spiral around the tub. One leaf was 45 cm in diameter, larger than a dinner plate! Then the leaves became smoother and with undulating edges as they began to rise above the water on stems bristling with short, sharp hairs growing all the way up. We counted 38 stems rising up to a metre above the water! The plant looked magnificent in the sunny corner, adding a green coolness to the otherwise hot area. Where the leaves touched the windows, moisture droplets formed on the glass and sometimes ran down to the sill. This gave an indication of how much moisture the plant was putting out into the atmosphere. The water needed topping up every few days and each time took at least a bucket. The temperature of the water would also have contributed to the high evaporation rate.

Erik picked a leaf and discovered it was full of air ducts about 1.5 mm wide which ran up the stem and radiated from the middle of the leaf to the perimeter through veins. When he blew into the cut stalk, the air flowed freely through the stem and out through the leaf. He noticed that oxygen was bubbling out quite rapidly and for a long period from the cut stem in the water. As an experiment he managed to capture the oxygen inside a plastic bag which inflated to full size in about 10 minutes! He also managed to reignite a glowing paper. ■

Editor's note: A recent issue was devoted to growing wildflowers in Tasmania and this one got left out. For details on the native water lilies, refer to Volume 17, pages 141-165.

Lace flower

Melaleuca thymifolia

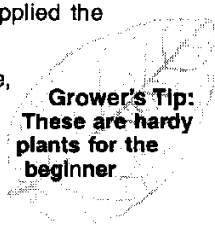
by Colin Cornford

Melaleuca and allied genera Study Group*

Melaleuca thymifolia grows in coastal heathland in sandy soils which are periodically quite wet. The standard or type form grows to about 1 m by 1 m and carries mauve-purple, occasionally white, flowers during spring and summer. There are a number of forms of this plant available all of which are easy to grow.

"They attract butterflies as shown in the photograph on page 112. This shows a Tailed Emperor Butterfly, *Polyura pyrrhus sempronius*. Its caterpillars mainly feed on leguminous plants, particularly Acacia species, so gardens that have plenty of wattles may attract this beautiful butterfly. It has also been recorded breeding on *Brachychiton* species. It is fairly common along the east coast of Australia, ranging from southern Victoria to far north Queensland. It is also found in the Northern Territory and north Western Australia. It likes open woodland areas and is fond of feeding on tree sap exuding from borer wounds, and on the juices of fermenting fruit." From Brian Faulkner who supplied the slide for page 112.

I have two plants in the garden here at Bracken Ridge, Queensland, which are tall-growing varieties. One of these grew to some 2.3 m with a very upright habit. This has been cut back to ground level and is coming away nicely from the base. The other tall-growing variety is kept pruned to about 1.3 m. Flower colour of these forms is mauve-purple.



Grower's Tip:
These are hardy
plants for the
beginner

There are a number of cultivars of *Melaleuca thymifolia* on the market:

***Melaleuca thymifolia* 'Pink lace'** grows to about 1 m and is a fairly open shrub. Flowers are larger than those of the standard form and are pale pink in colour.

***Melaleuca thymifolia* 'White Lace'** has similar growth habit to that of 'Pink Lace' except that the flowers are pure white in colour.

***Melaleuca thymifolia* 'Little Beauty'** is a small compact form, usually around 1.5 m high with mid-pink flowers.

***Melaleuca thymifolia* 'Cotton Candy'** is, to my mind, the best of the cultivars. It is a densely foliated plant to about 1 m in height (occasionally slightly larger) with a spread of about 2 m and bright pink flowers which are produced over a long period of the year. Flowers are produced in leaf axils along most of the branches and when fully in flower it is quite spectacular.

***Melaleuca thymifolia* "dark purple form"** is similar in growth habit to the type form except that the flower colour is a deep purple.

The type form and the various cultivars are hardy under most conditions in Brisbane. Are they being grown further south? If you have any growing, please let me know what degree of success you have had.

*Melaleuca Study Group is one of many study groups available to society members. These groups operate by correspondence supply advice, seed, etc. If you are interested contact the study groups through the secretary of the Society in your state.



△ Long-leaf waxflower, *Eriostemon myoporoides*, see page 101, photograph by Alan Morrison.
▽ Mountain form of *Eriostemon myoporoides*, all floriferous plants, photograph by C. L. Wheeler.





- △ **Pink Waxflower, *Eriostemon australasius***, see page 104, photograph by David Hockings. You may even see the three veins in the petals as in the photograph on page 105, big deal!
- ▽ ***Lionema coxii***, previously ***Phebalium coxii***, see page 111, photography by Neil Marriott.



Flora of Australia

Volume 1 — Introduction, second edition

The *Flora of Australia* series of books provides a description of all the plants of Australia, with keys to enable them to be identified, and with information on the distribution and ecology of each plant described. These descriptions use botanical language to describe the plants but are abbreviated to essential features and presented as simply as possible. Most people with very little botanical knowledge would be able to use these descriptions to identify a particular plant.

Volume 1 of this series has been so popular that it has been reprinted and enlarged in an exceptional manner. The emphasis has been on the principal audience, the scientists interested in Australia's botanical heritage, but for possibly the first time, much of their research of a general nature is now published in a way that the interested public can read and appreciate it, in the following chapters of Volume 1, 2nd edition.

A history of systematic botany in Australia, each state presented separately. Botanists, collectors and early voyages, a brief biography of hundreds of early collectors of the flora with a reference to biographical notes of many of the recent and correct crop of botanists.

Development of the *Flora of Australia* project, a summary of achievement in creating this series of books. The Australian flora and its classification, systems used and the one adopted.

Evolution of Australian environments, an excellent reference to the history and impact on the Australian continent of the natural forces since Gondwana-land (and many periods before), fascinating reading.

Present environmental influences on the Australian flora, factors that have made the unique flora what it is today.

Evolution of the Australian flora, fossil evidence and an interesting, informed description of the way our current flora evolved over relatively recent times.

Bio-geography of the terrestrial flora, the present flora in broad terms presented in related groups and regions.

Present vegetation types, a discussion of the various vegetation forms over the continent and the dominant plants.

The aquatic flora, terrestrial wetlands and water plants, mangroves and the nearby marine plants.

Utilization of the Australian flora, Aboriginal use, bush foods, medicinal plants, horticulture, forestry, pasture and fodder, essential oils, etc.

Conserving Australia's flora, from the government point of view. This view is typified by the following statement on page 476. "The National Strategy for the Conservation of Australia's Biological Diversity states in Chapter 7 (implementation). By the year 2000 Australia will have: (e) arrested and reversed the decline of remnant native vegetation; (m) avoided or limited any further broadscale clearance of native vegetation, consistent with ecologically sustainable management and bio-regional planning, to those instances in which regional biological diversity objectives are not compromised."

Please do not blame the book for such a ridiculous statement, only ridiculous because there is no management plan to save the Australian continent and no political effort to find one.

Flora of Australia, Volume 1, 2nd edition is a very commendable work of great value to our heritage, past and future. You may have a copy for \$79.95 from CSIRO Publishers, P.O. Box 1139, Collingwood, Victoria 3066.

Tropical legumes

Decorative shrubs/trees of the north

an introduction by W. H. Payne*

Plants producing seed as legumes, in a pod usually elongated and hanging off the plants after flowering like giant dark grubs, are widespread in the tropics and subtropics of the world. On page 59 of our last issue, we described how the botanists have divided the Australian plants into three families and described and illustrated those plants in the wattle group Mimosaceae. Here we will present those plants in the *Cassia* group known as the Caesalpinieaceae. These are plants with a more regular flower, usually the most prominent part being the yellow petals as in *Cassia* and *Senna*.

The evolution of this plant family to survive the rigours of change of climate over the ages has further divided it into two groups, the survivors of the hot dry desert conditions such as the *Senna* (this is what the Australian dry area *Cassia* are now called) and plants that prefer the tropical and subtropical conditions. *Cassia*, *Senna* and *Chamaecrista*, the desert survivors, will be described in an issue shortly, here we will confine our interest to those trees and shrubs of the north, mainly monsoonal (often dry) rainforest.** They are valuable plants for shade and specimen trees. A wide range is commercially available.***

Most tropical legumes in Australia have leaves divided first into pairs of pinnae and then each pinnae has many pairs of narrow leaflets as shown in figure on page 123. This group, the tribe Caesalpinieae, comprise the following genera:

Caesalpinia has eleven species as described on page 130. All are climbers or straggling shrubs armed with spines, not an attractive horticultural plant.

Yellow Flame Tree or Yellow Poinciana, *Peltophorum pterocarpum*, illustrated and described on page 123, is a spectacular shade tree even used as a street tree in Darwin, Longreach and Brisbane. A bonus to the shade is the masses of yellow flowers that almost cover the tree. It does not have spines and is distinguished by its leaves being opposite each other in pairs along the branches. A very valuable tree for horticulture in the north.

Ironwood or Cooktown Ironwood, *Erythrophileum chlorostachys*, illustrated and described on page 124, is of equal value in horticulture. It does not have spines and its leaves are alternate up the branches. It presents its individual flowers in a bottlebrush like head, not as showy but an attractive tree. The fruit is extremely poisonous, even the sawdust can kill. ■

*This report is based upon the descriptions in *Flora of Australia*, Volume 12, as prepared by the editor, and the excellent sketches by A. Barley, the descriptions in the flora were by J. H. Ross.

**Other plants in this group known as the tribe Cassieae are *Labichea* and *Petalostylis* which were described and illustrated in Volume 20, page 22, both dry area survivors and *Storkiella* described in Volume 13, page 307.

***Yuruga Nursery, P.O. Box 220, Walkamin, Qld 4872, phone 07 4093 3826, fax 07 4093 3869, has a wide range of plants native to northern Australia, including many of the legumes described here and in our last issue.

Want to know more? I will recommend *Australian Tropical Plants*, a compact disc available from the Yuruga Nursery, for \$40 plus postage \$3. An incredible, authoritative reference.



△ *Bauhinia carronii*

▽ *Bauhinia hookeri*



Legumes from the north with divided rounded leaves, tribe Detarieae.

Cynometra iripa occurs in northern Queensland from Cape York to Mackay on the edge of mangroves. It is illustrated and described on page 127. It is a shrub or straggly tree that does not display its groups of small flowers well as they are along the branches.

Crudia papuana, see page 126, is also from along creeks and rivers, in this case from the tip of Cape York. It does not display its flowers well.

Intsia bijuga, Kwila or Johnson River Teak, is a good shade tree the white to pink flowers having just one conspicuous petal but presented in spikes to 10 cm long. It is described and illustrated on page 125.

Maniltoa lenticellata from the rainforest and vine forests of Cape York is renowned for its exceptional display of drooping rusty coloured leaf buds as shown on page 128, and is well worth a place in a tropical garden.

Legumes from the north, leaves not divided, tribe Coricidae.

Barklya syringifolia is typical of many trees of the rainforest. Thrusting up for a share of the sun it will grow to 18 m tall but as a specimen plant for horticulture it can be a nicely rounded small tree to 3 m that covers itself in flower from October to January, the flowers presented in bottlebrush heads to 20 cm long, yellow turning orange in colour. The leaves 3–9 cm long and 2–5 cm wide. It occurs naturally from Rockhampton south to New South Wales. An excellent plant widely used as specimen shrubs, even as small trees.

Bauhinia is widely known a species from other lands are widely grown for their abundance of flowering. The Australian species have evolved in more rigorous conditions, not as showy a flower but still of great interest in the garden. A major feature is the unique form and colour of the foliage. My (editor) specimens of *Bauhinia* are happy in an open eucalypt forest area where they are kept to a bush of one metre high and wide. They never fail to produce comment from visitors on their unique and contrasting foliage.

Bauhinia malabarica (syn. *Piliostigma*, still recognized in Queensland) is unique as it has bilobed leaves. All the other species have two leaflets. *B. hookeri* has the largest flowers with petals 3–4 cm long and a calyx almost as long. *B. carronii* is distinguished from the others by its angular leaflets on the lower margin.

Bauhinia hookeri (syn. *Lysiphyllum*, still recognized in Queensland) is a spreading shrub or tree to 12 m tall often growing at the landward edge of tidal swamps or on stabilized coastal sand above the high tide level, but also on creek beds in vine thicket, woodland, dry rainforest or brigalow scrub in eastern Queensland. The paired leaves are quite separate, broadly ovate 2–5 cm long, 1–3 cm wide, each with 5–7 veins. The flowers are borne in short terminal racemes, the white petals 3.5 cm long, the 10 stamens white at the base, pink to red above, are slightly longer than the petals. The pods are flat, 6–22 cm long, 2–5 cm broad with up to 12 dark brown seeds.

Bauhinia binata (syn. *Lysiphyllum*) is similar to *B. hookeri* but with smaller flowers, white petals and red stamens. It occurs on mud banks, commonly behind mangroves in dune swales and in coastal vine thickets of northern Australia. It is a shrub to tree, occasionally to 7 m tall. The two free rounded leaflets with triangular stipules are 105 cm long and wide.

Bauhinia carronii (syn. *Lysiphyllum*) is a tree to 10 m tall that is widespread in Queensland, below Cape York. The grey, hard bark is furrowed. The twin curved dull green leaflets are 17–35 mm long, 6–15 mm wide, angular on the lower margin. It is apparently deciduous. The flowers are in groups, each with a pink, red, white or orange-pink petals, the longest 12–17 mm, others 10–15 mm long; 10 fertile, deep pink stamens 30–35 mm long, the pistil (ovary, style and stigma) 30–38 mm long; the thin pod is 3–14 cm long, 2–5 cm wide with dark brown seeds 9–11 mm long.

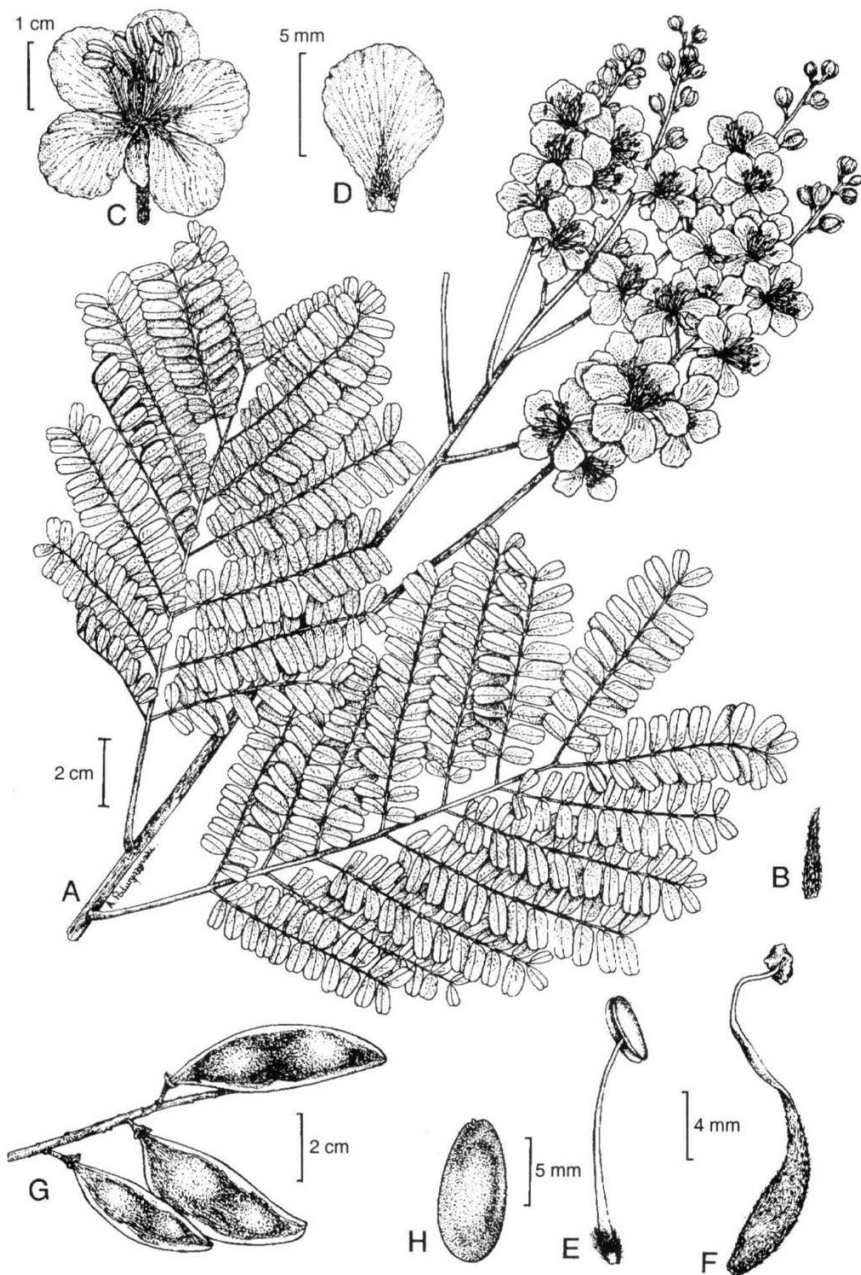
Bauhinia malabarica (syn. *Piliostigma*) is a small tree growing to 10 m tall in the Kimberleys across the north to Cape York beside watercourses in shrubland, grassland or forest or on rocky slopes in rainforest. It has corky or tessellated grey-brown to black bark. The leaves are wider than long and glabrous above, hairy and dull glaucous beneath, 3–11 cm long, 4–13 cm wide. The pale yellow flowers are in racemes 2–5 cm long with a densely velvety hairy calyx 9–11 mm long, white petals 11–16 mm long. The male flowers have 10 stamens alternately long and short, the female flowers with 10 minute staminodes, the pistil 14–16 mm long comprising a densely hairy ovary and a broad lobed stigma on a long style; the thick pod is 9–36 cm long, 1–2 cm wide, wrinkled longitudinally and corky, producing 10–30 dark brown seeds 4–5 mm long, embedded in pith.

Bauhinia cunninghamii (syn. *Lysiphyllum*) from across northern Australia (except Cape York) occurs on flats in woodland or vine thickets and on river banks. It sprouts from the trunk after fire. It usually flowers before the new leaves, the nectar providing a sweet drink. It is a deciduous shrub or tree to 12 m with tessellated or flaky, hard, grey bark. The two free leaflets are almost round, 1–4 cm long. The rusty-velvety ribbed calyx with triangular lobes is 9–14 mm long surrounding five dull red or pink velvety petals, the longest 15–17 mm, others 10–12 mm long; 10 red fertile stamens, 25–40 mm long; the pistil 33–43 mm long; the oblong thin red-brown pod is 7–21 cm long, 3–7 cm wide with 4 × 10 mm seed.

Bauhinia gilva (syn. *Lysiphyllum*) from the interior in the region of the NT, SA, Qld border in woodland on alluvial flats and creek lines in clay or sand, sometimes limestone and on slopes of dunes. A deciduous? tree to 10 m tall with a dense crown, the bark fissured or flaky, hard and dark grey; the two free leaves are rounded 17–37 mm long, 6–18 mm wide. The typically creamy white flowers (especially the calyx) are distinctive, of a similar size to those of *B. cunninghamii*. The petals are white or cream, sometimes pink or red, the largest 13–20 mm long. The pod is 5–11 cm long, 2–4 cm wide, the 1–4 seeds 11–15 mm long, a smooth shining brown.

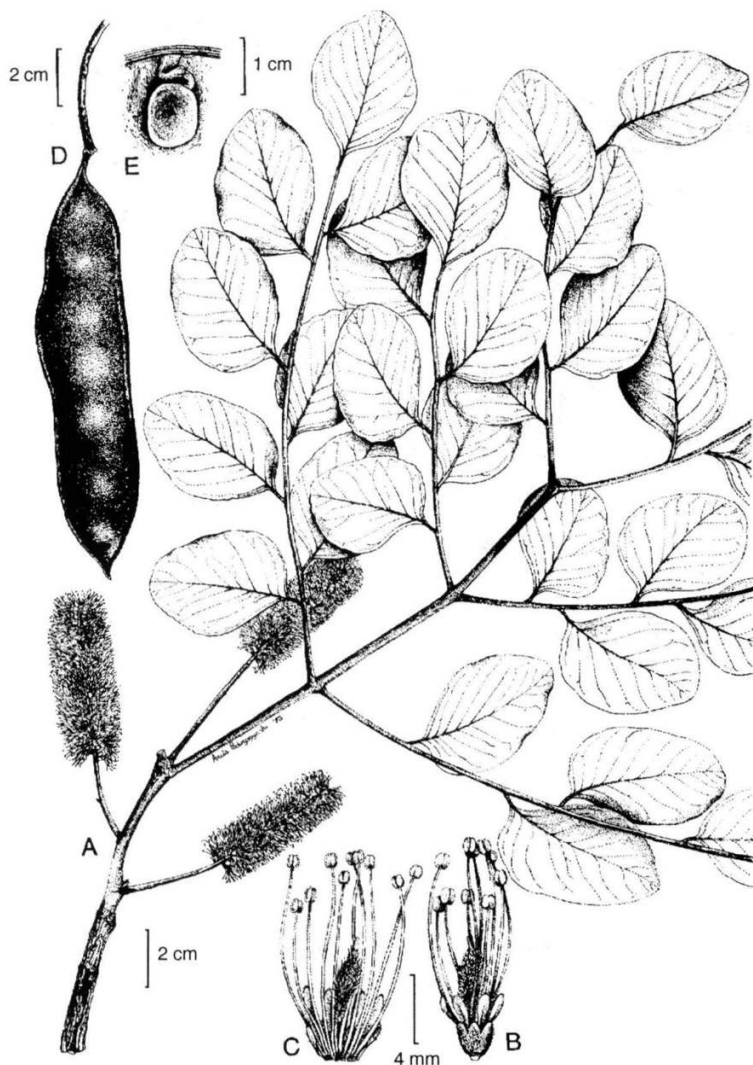
Peltophorum pterocarpum, Yellow Flame Tree or Yellow Poinciana, (opposite) is found on the coastal plains of Northern Territory. It is a spreading densely crowned tree 10–12 m high and is deciduous. The bright yellow flowers, 2–4 cm in diameter, are borne on large terminal panicles to 60 cm long, from August to January and then sporadically. It is a very hardy adapting to a wide range of soils and conditions. Fast growing, it is a good shade tree.

A, a flowering branchlet, with two leaves each with 7 (there can be up to 21) pairs of pinnae, each pinnae with 9–12 pairs of leaflets, a rusty colour when young; **B**, a stipule from the base of each leaf (it is deciduous); **C**, a five petalled flower, the yellow petals rusty hairy at the base as in **D**, with 10 stamens each as in **E**, with dense brown hairs at the base, the anthers at the top being attached in the centre back (dorsifixed), the central gynoeceum as in **F**, with dense short hairs on the ovary at the base, the flattened style rising to a lumpy stigma on top. **G**, flattened pods with a distinct wing along each side, 5–10 cm long, and seed **H** to 11 mm long. Sketch by A. Barley.



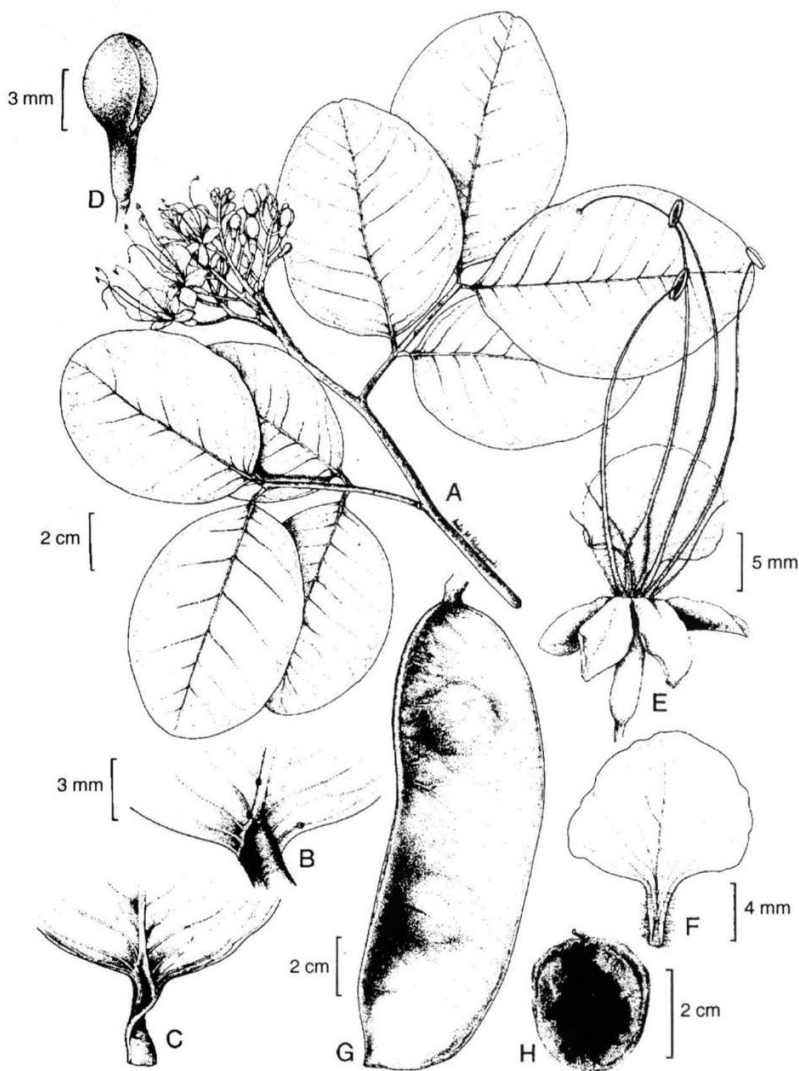
Peltophorum pterocarpum, Yellow Flame Tree or Yellow Poinciana.

Spreading densely crowned tree to 10–12 m, described opposite. Sketch by A. Barley.



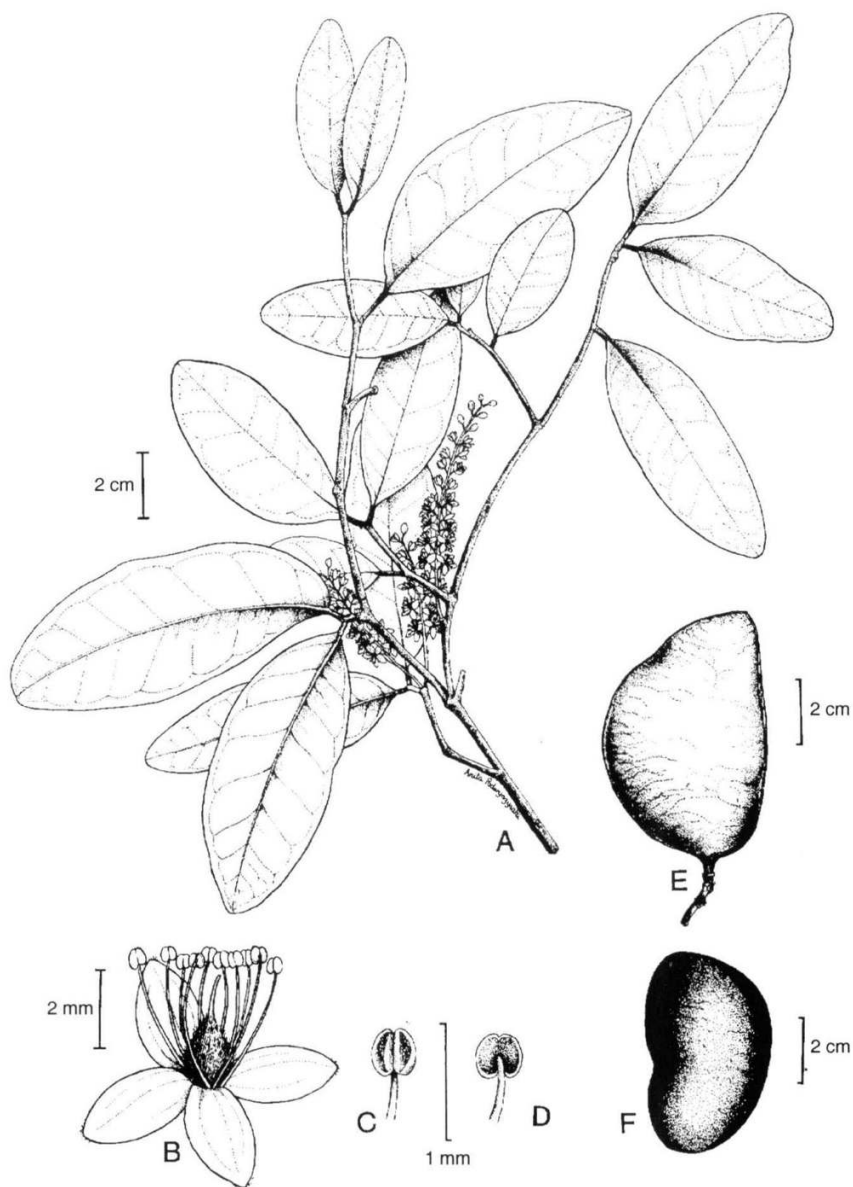
Erythrophloeum chlorostachys, Ironwood or Cooktown Ironwood occurs across the north from the Kimberley to north-east Queensland. It is a small to medium tree 8–15 m high with a spreading crown; it may be semi-deciduous in the dry season. A hardy tree for hot, dry areas, it may be propagated from scarified seed, suckers or root cuttings. The timber is extremely hard and resistant to termites so is widely used for fencing and sleepers. The foliage, even dry, is extremely poisonous to animals.

A, a flowering branchlet, the leaves with three pair of pinnae each with rounded 5–8 leaflets, 2–9 cm long, 2–8 cm wide; three heads of flower, inflorescences, in cylindrical spikes, each comprising many cream to greenish yellow flowers as shown in **B**, with 10 stamens, alternating long and short, the petals very short 306 mm long, contained in a lobed calyx or cup as shown; the hairy ovary in the centre elongating to the style then stigma; **C**, is an open flower. **D**, is the pod 11–20 cm long, a dark brownish black with seed attached as in **E**. Sketch by A. Barley.



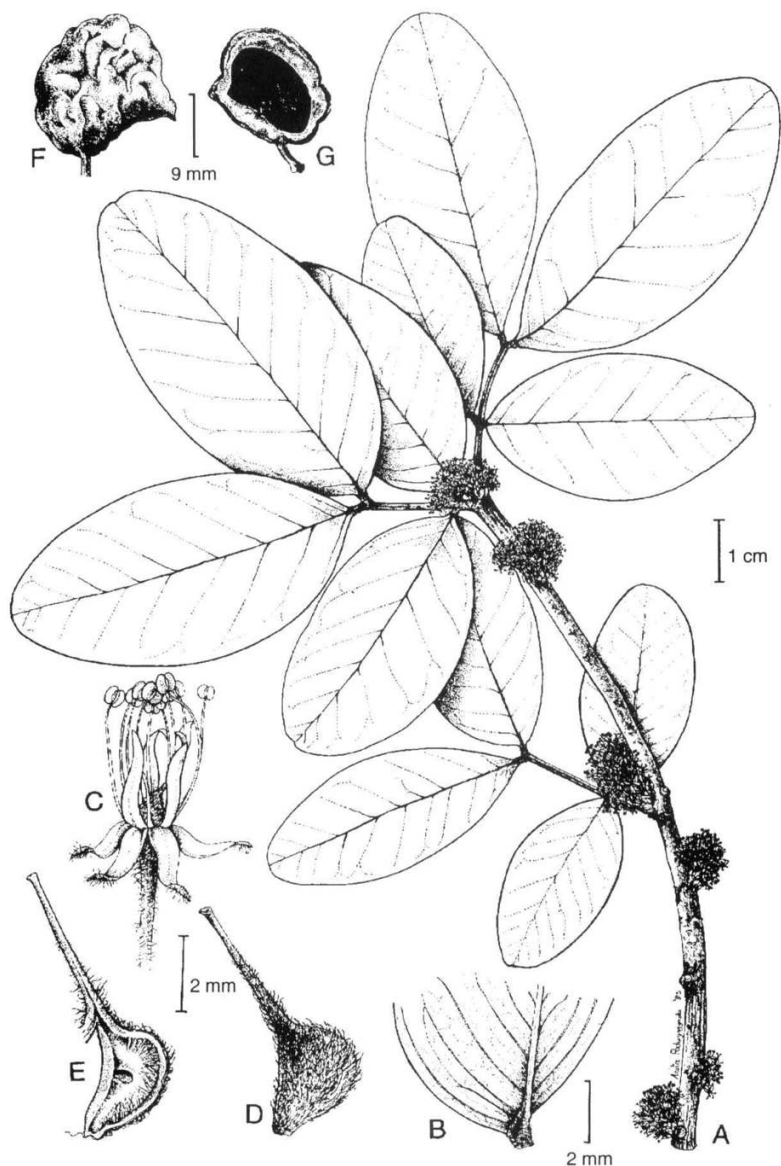
Intsia bijuga, Kwila, Johnstone River Teak, is from northern Australia extending north to India. It is a medium tree, 20–25 m high with a spreading canopy making it a good shade tree; briefly deciduous in late spring. The white to pink flowers have a conspicuous large petal to 3 cm long borne in spikes to 10 cm long often arranged in terminal panicles. It is a good shade tree in a sunny position and an abundance of water.

A, a flowering branchlet with two leaves each with two pairs of leaflets attached as in **B**, (lower surface showing glands) and **C** upper surface, 4–16 cm long, 3–11 cm wide, and a terminal head of flower in spikes to 10 cm long, the buds as in **D**, the flower enclosed in bracts, opening to the flower as in **E**, the conspicuous single petal to 3 cm long as in **F**, white turning pink, with three red stamens and a long style **G**, a flat pod 10–28 cm long, 4–7 cm wide, contains seed **H** 2–3 cm long. Sketch by A. Barley.



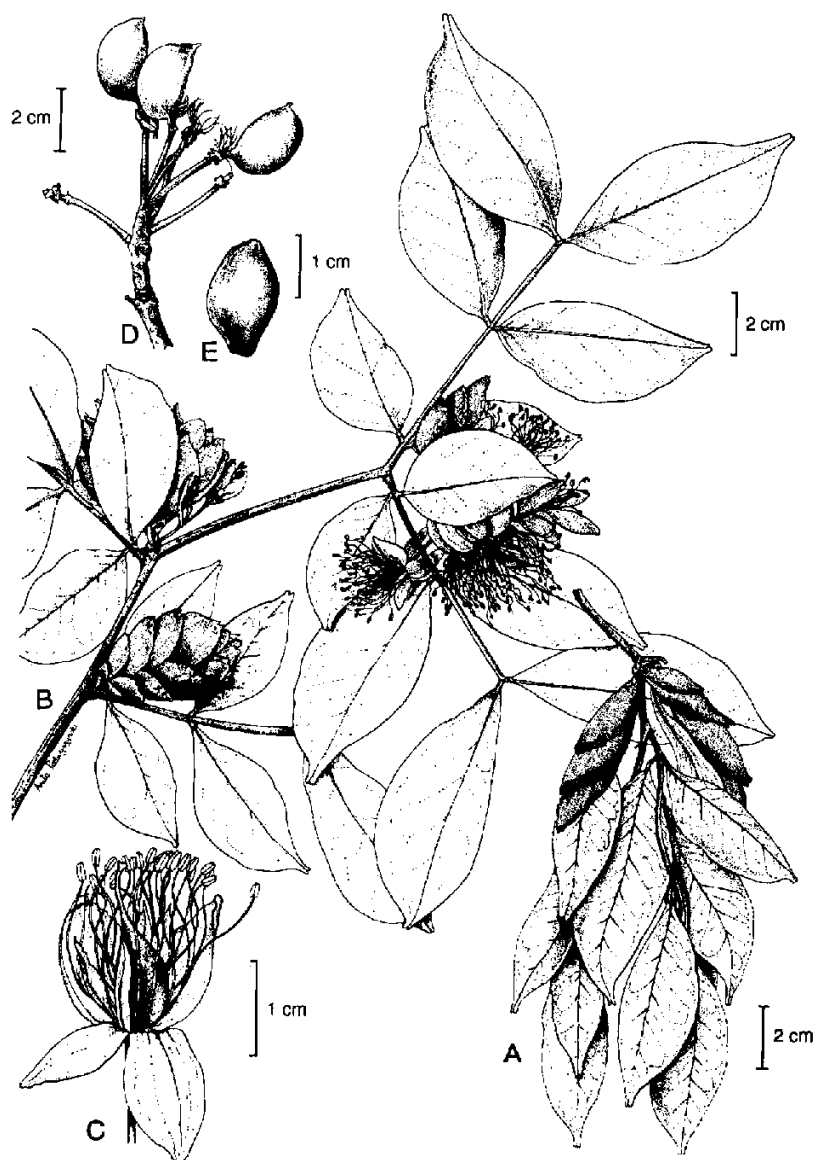
Crudia papuana is found along creeks and rivers at the top of Cape York extending northwards into New Guinea. It is a tree 10 m tall.

The flowering branchlet **A** has leaves 4–18 cm long, 2–5 cm wide, and two heads of small green to creamy white flowers in racemes to 7 cm long, each flower as in **B**, the 4 petals/sepals being to 3 mm long, the 8–10 stamens with anthers on the end as in **C** and **D**; the pod **E** is 8–10 cm long, 4–6 cm wide with seed to 5.5 cm long as in **F**. Sketch by A. Barley.



Cynometra iripa occurs in northern Qld from Cape York to Mackay on the edge of mangroves. It is a shrub or straggly tree to 8 m tall.

A branchlet as in **A**, the leaflets usually in 2 pairs being 2–10 cm long, 1–6 cm wide, each attached as in **B**, the flowers are in clusters along the branches, the individual flowers as in **C**, the 4 or 5 sepals/petals being to 3 mm long, the 10 stamens being longer, the pistil **D** has a slanting style on a rusty hairy ovary, the inside looking as in **E** where the fruit **F** is developing to a length of 4 cm with a seed as in **G**. Sketch by A. Barley.



Maniltoa lenticellata occurs in rainforest and vineforest on Cape York Peninsula, extending north.

It is a tree to 22 m tall in the forest renown for its display of drooping rust coloured leaf buds as shown in **A**, a branchlet as in **B**, the leaflets in 3–5 pairs 3–12 cm long, 1–5 cm wide. The young leaf flush droops as in **A**, is cream to bright pinkish brown, the cone-shaped leaf buds being to 9 cm long; the white to cream flowers are in heads 2–3 cm long, rusty coloured when young, each flower being as in **C** with petals to 2 cm long, 15–18 stamens to 2.3 cm long with the large ovary inside as shown; the thick pod **D** produces two seeds **E**, 2–4 cm long. Sketch by A. Barley.



Phebalium glandulosum, plant and flowers, see page 111. Photo by Neil Marriott



Caesalpinia

Compiled from work by Les Pedley

Published in Austrobaileya, Volume 5, No. 1, 1997

There are eleven species of *Caesalpinia* in Australia, sprawling shrubs or climbers. They usually have hooked thorns on the stems and leaf axis and for this reason are not usually cultivated. One group, described below has indehiscent and flattened pods with a wide wing along the dorsal suture as shown in B.

Caesalpinia erythrocarpa is a large scrambling vine with prickles along the stems, climbing over trees in rainforest of Cape York Peninsula. The leaves are as in 1D; yellow pea flowers are in dense terminal heads producing hairy pods.

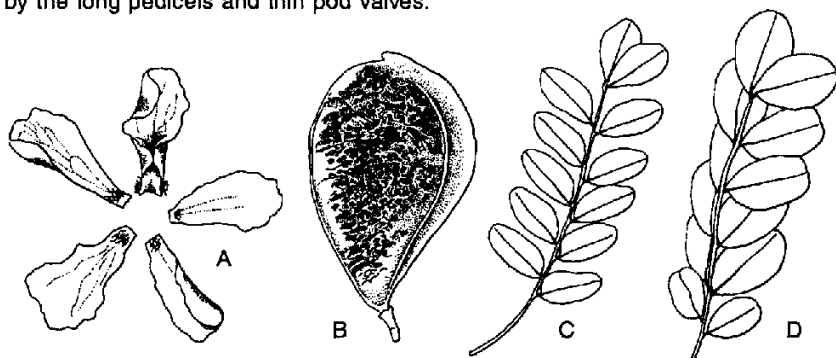
Caesalpinia scortechinii is similar but has smaller flowers and pods, a pubescent ovary and more elongated leaflets.

Caesalpinia traceyi is a large similar vine distinguished by the inrolled margins of the upper flower petal claw as shown below. It has prickles and glabrous pods.

Caesalpinia nitens is similar but has fewer leaves with fewer pinnae that are glabrous with shining upper surfaces and prominent veins in the lower surface.

Caesalpinia subtropica also has curly flanges on the stem but fewer, shorter and narrower leaves. Corky flanges on the stem develop at the base of the prickles.

Caesalpinia hymenocarpa is similar but with larger flowers. It is distinguished by the long pedicels and thin pod valves.



Caesalpinia traceyi A, the petals $\times 5$ of the peaflowers, the standard on top showing the characteristic inrolled margin; B, the seed pod with the flattened wide wing characteristic of the pods of this group of species, $\times 1.3$, glabrous for *C. traceyi*, similar but hairy for *C. erythrocarpa*; C, the leaf with pinnae $\times 0.8$ and D the leaf pinnae of *Caesalpinia erythrocarpa*

Caesalpinia crista is unique in the next group in not having prickles except at the base of the pinnae with leaflets in 2–5 pairs, the stems and flower pistil being glabrous. The remaining species have a hairy ovary.

Caesalpinia bonduc has an ovary that is prominently bristly as well as hairy, the pod also prickly, with two grey seeds. The leaflets are in 6–14 pairs.

Caesalpinia major is similar but has four grey seeds.

Caesalpinia robusta is similar but has leaflets in 4–5 pairs per pinna, the seeds a mottled purple or red and mauve.

Austrosteenisia

Compiled from work by D. J. Dixon

Published in *Austrobaileya*, Volume 5, No. 1, 1997

Lianas with pea flowers, distinguished by the leaf sketches, all to the same scale.

Austrosteenisia glabristyla has habit as in A1, mauve to pink and white flowers, A2, the stamens A3, the legumes A4 and leaves A5, 5–20 cm long. It grows in coastal rainforest from Frazer Island south to Dorrigo in New South Wales.

Austrosteenisia stipularis, leaves B, is confined to the wet tropical rainforest of the Atherton south to Innisfail, Qld. It is deciduous with pink and white flowers.

Austrosteenisia mollitricha, leaves D, has maroon-red flowers. It is confined to the very north coast of Cape York Peninsula.

Austrosteenia blackii, Blood Vine, (refers to red exudate that oozes from wounds) leaves as in C Found along the east coast rainforest south to northern New South Wales, it is vigorous and conspicuous when in flower, maroon-red.



Australian Plants — the future

Is the content of *Australian Plants* to your satisfaction? We are continually reviewing our approach to the content and your opinions would be appreciated. Write to the editor. The subject material comes under a number of main headings. Record your comments under these headings using the issues of 1998. **Conversation** policy and content will be defined in the next issue.

Beginner's content? We continue to get new readers. There is something for everyone. Most readers have been receiving *Australian Plants* for years and most will claim they are not beginners but very few will claim they are experts. Our presentation is for this range of interest. For instance, the last issue presented *Banksia* in a way that new readers can understand, but there is important content for growers with years of experience. Many important groups of plants were presented for the new reader but also as a valuable reference for us all.

Too technical! Because the Australian flora comprises many thousands of plants, it is only possible to refer to them by their scientific name which comprises two words, the first with a capital letter refers to a group of similar plants, the second word to a unique plant in the group. The best way is to use the first word as the common name and we are already doing this with a wide range of plants such as *Banksia*, *Grevillea*, etc. The correct pronunciation is often difficult for beginners to a strange word. Our book *Australian Plants Reference* gives the correct name and its pronunciation for hundreds of groups of plants.

Logical presentation — By presenting groups of plants (genera) one at a time, i.e., plants of special horticultural value on each genus we build up a valuable reference. New readers thus learn about one group of plants at a time gradually increasing their knowledge. As this practice has been going on for years those who want to learn more, quicker, can purchase sets of past issues as beautifully bound volumes. The content of *Australian Plants* since 1959 is indexed in *Australian Plants Reference* available separately for \$15 or free as a bonus, bound into Volume 18, hence Volume 18 would be a good one to start with. Volume 19 is also available bound; we are at present producing Volume 20 commencing with the issue dated, December, 1998. There are many books on the market that describe hundreds of plants, none as well as in *Australian Plants* and none give a clue as to how similar plants in a genus differ from one to another making the text meaningless after a while.

Presentation simple? We can be too logical, readers want to know pertinent details of interest, not a botanist reference. There are very valuable botanical references available, from the Flora of Australia, down to the floras of each state to plants of specific areas. This information is reproduced in *Australian Plants* in as simple a form as possible. Still too hard for you? Take a little time over it as, believe me, the botanical references mentioned are in botanical language. Want to know this language, wait until next year when a completely revised *Language of Botany* will be available.

Growers? Horticulturists? or just lovers of Australian wildflowers. There is a major emphasis on the cultivation of Australian wildflowers. The imported garden exotics were devised from wildflowers of other lands, many after many years of intensive development. We are learning to grow the very best forms of our wildflowers in horticulture. No where else can you learn about the cultivation of wildflowers in such a vast range of conditions; one of these will suit your local growing conditions.



Philotheca verrucosus, $\triangle$ the flowers, photograph by Ilma Dunn and
 ∇ the plant, photograph by Neil Marriott
 An ideal plant for the garden, see page 103.



We all enjoy the beautiful colour photographs of our wildflowers. *Australian Plants* is worth buying just for these. I need more support from readers with a camera, please go to the trouble of taking photographs of flowers, plants and gardens over the present season. Colour prints are just as good as colour slides using the latest technology, so flick away at every opportunity.

What to take? If it looks good photograph it. Composition? There are some excellent examples in this issue. The photographs on pages 129 and 133 are ideal with a photograph of a well flowered bush and a closer one of the flowers. If your camera is not quite up to the standard for close photography, you can still photograph the plant. Note that there is a background that does not blur the edges of the plant. The photograph on page 108 is a beauty and quite possible with a normal camera. The photograph of the garden on page 109 is also easily taken with a family camera, in fact this is the type of photograph needed most, pictures of a section of a garden featuring a well presented plant setting a pleasing scene.

The photograph on the rear cover was highly commended in a competition ran in NSW. We could have a friendly contest among readers for photographs taken in 1999, how about it?

Wildflower Nurseries in Queensland

Fairhill Plants and Botanic Gardens — Huge range; rainforest plants, grafted grevilleas, rare plants, wildflowers, ferns, orchids, revegetation trees. Extensive display gardens. Open every day 8.30 a.m.—5.00 p.m. Fairhill Native Plants, Fairhill Rd, Yandina, Qld 4561. Tel. (07) 5446 7088.

Nielsen's Native Nursery — Over 500 species including grafted grevilleas, eremophilas, eucalypts and brachychitons, also Foxtail Palms, cycads, rainforest, Bush Tucker plants. Display garden. Open 8.00 a.m. to 5.00 p.m. every day. 49-51 Beenleigh Redland Bay Rd, Loganholme, Qld 4219. Tel. (07) 3806 1414.

Wildflower Nurseries in New South Wales

Annangrove Grevilleas — 98 Annangrove Rd, Kenthurst 2156. Tel. (02) 9654 1380. Wide range of natives including hundreds of different species in tubes — many hard to get. Ten percent discount to SGAP members.

Bryants Native Plant Nursery — Cosy Camp Rd, Bex Hill 2480. Tel. (02) 6626 4323. 15 kms north of Lismore. Open 7 days (from 11 a.m. on Sundays). Extensive range. Excellent quality and service.

Dealbeta (cold climate) Aust. Plant Nursery — off Bloomfield St, Dalgely 2630. Tel. (02) 6456 5043. Specializing in alpine and dry Monaro plants — grown from locally collected material. Phone to arrange visit.

Illawamba Native Growers — P.O. Box 89, Cobargo 2550. Tel. (02) 6493 7398, mail order specialist. Send 2 x 45c stamps for catalogue of our large range including rare species.

Newcastle Wildflower Nursery — 260 Lake Rd, Glendale 2285. Tel. (02) 4954 5584. Extensive range of native plants including rare and endangered species.

Stocks Native Nursery — Lot 3, Simmonds Rd, Harden 2587. Tel. (02) 6386 2682. Plants for frost and dry weather suited to Canberra, Wagga Wagga, Orange type conditions.

Sydney Wildflower Nurseries — South at Heathcote (02) 9548 2818; West at Marsden Park (02) 9628 4448; North at Terrey Hills (02) 9450-1555. Excellent range of native plants. Open 7 days.

Wirrimpirra Native Nursery — Hume Hwy, between Bargo and Tahmoor E. side 2574 (3 km from Freeway entry). Wide range including unusual plants. Tel. (02) 4684 1112.

Wirreanda Nursery — End of Wirreanda Rd, Ingleside 2101. Tel. (02) 9450 1400. Growers of advanced and semi-advanced native trees and shrubs. Open 7 days.

Wildflower Nurseries in South Australia

Brenton Tucker Native Plants and Carawatha Garden — Placid Estates Rd, Wellington East via Tailm Bend. Tel. (08) 8572 7104. Wide range of tubestock and advanced plants. Extensive display gardens and picnic areas. Open weekends and public holidays March to November and by appointment — 10 a.m.—4 p.m.

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Kuranga Native Nursery — Australia's largest range of Australian plants. Delivery Australia-wide. Free stocklist on request. The Kuranga Handbook of Australian Plants now available RRP \$19.95. A comprehensive guide on plants stocked at Kuranga, 393 Marcondah Highway, Ringwood 3134. Tel. (03) 9879 4076. Open 7 days.

Australian Wildflower Seed Suppliers

R. Horner — 1 Grundy St, Alice Springs, N.T. 0870. Seed of trees and shrubs of Central Australia. Please sent 45c stamp for a list.

Wildflower Society of Western Australia (Inc.) — P.O. Box 64, Nedlands 6009. A range of seeds available, labelled and packed, at \$1.00 (plus postage) per packet. Send for a 1997/98 Descriptive Seed List (\$1.95 posted) to: The Seed Sales Officer, Eastern Hills Branch, 65 Swan View Road, Swan View, WA 6056. Also available a book "Hints on Growing Native Plants" \$4.00 posted.

The Grevillea Book, Volumes 1, 2 and 3 by Peter Olde and Neil Marriott, is the complete reference to all species of *Grevillea*. The Society supported the publication of the books ensuring that they were published to a very high standard with at least one large colour photograph of each of the 340+ species with a good clear, easily read description of each species and details of its occurrence and cultivation. The publishers recommended retail price was \$65 per book and the enthusiastic members and growers, paid this. Copies were later flogged for as little as \$25 causing much distress. The Society and the authors are now able to set a recommended retail price of \$39.95 per book by purchasing the entire stock of unsold copies. They will be available from Australian Plant Society, P.O. Box, Blacktown, NSW 2148 at \$39.95, and as an introductory offer they will be post free for orders received within Australia in 1999; overseas add \$A10, pay in \$A.

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Editorial Material: Editor, Australian Plants, 860 Henry Lawson Dr, Picnic Point 2213. Enquiries by mail only.

Email address: Ed@nectar.com.au

PUBLISHING COMMITTEE: D. G. Brooks (Chairman), Ms J. Caldwell, R. Daniels, W. H. Payne,

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Ptilotus rotundifolius, as a cut flower? Photography by Mary Hancock.