

# Australian Plants

The background of the cover is a photograph of a forest. The upper portion shows a dense canopy of trees with bright yellow and orange autumn foliage. The lower portion shows a darker, denser forest floor with green ferns and several large, spiky-leafed plants, possibly Pandanus or similar, growing in the undergrowth.

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# Australian wildflowers of/for colder areas

**Tasmanian Wildflowers**, prepared by society members in Tasmania, presents a small segment of the largely unique Tasmanian flora that has proved of value in horticulture. Just as gardeners have their problems in temperate areas, those in cooler climates may be excused for believing that their difficulties are more extreme. The restrictions imposed by frost, even snow, are frustrating enough but length of day, length of season and extremes of temperature and moisture are all hazards to be faced by the gardener. Previous issues give reports of experience in cold areas of Australia as well as England, America and New Zealand.

## Centenary celebrations for 2001

The Executive Committee responsible for the promotion of the celebrations for 100 years of federal government in the year 2001 was consulting with us but now politics has taken over. The position appears to be that each sitting member of parliament has a credit of \$200,000 to promote the "party", the celebration of 100 years of federal government, in his/her electorate. If you want a project approved, contact your federal representative for the guidelines. In a democratic society this ensures that the money is evenly spread across Australia. Gone are our dreams and hopes for our proposals for *Prosperity For Australia Beyond 2001* based upon sustainable development and conservation of our natural resources. Only local schemes may be approved.

There is little hope for a grand plan, for national leadership on any project regardless of how desperately it is needed to restore our ravaged continent. Our proposal for a chain of Australian Flora Botanic Gardens where we hoped to develop management practices to preserve our nations flora and fauna paid for by the tourist trade, now seems unlikely. The allocation for one area with such a garden could not meet the necessary expenditure on such a national project

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**COVER PLATE.** Tasmanian bush scene showing plants in this issue. The background trees are *Athrotaxis selaginoides*, King Billy Pines, understory trees are *Nothofagus gunnii*, a few *Richea pandanifolia* in the foreground with mostly *Diselma archeri*, Chestnut Pine. Photograph by Dick Burns.

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# Ferns in a Garden

by Jennie Lawrence, Burnie, Tasmania

Because I like my garden to remind me of the Tasmanian bush where I have spent so many happy days walking and climbing, I grow ferns as they are a conspicuous feature of the Tasmanian vegetation. In Tasmania we have about one hundred fern species, roughly a quarter of all the fern species in Australia. I grow some Tasmanian ferns in the garden in a sheltered position that do not get afternoon sun. The rest are in pots in a structure covered with shade cloth.

Leaf mulch prevents the ferns from drying out but they need extra water in the dry summer months. Compost is applied regularly and sometimes poultry manure. Of course I watch out for snails and slugs.

Eight of the nine Tasmanian *Blechnum* species are doing quite and are spreading. *Blechnum nudum* and *Blechnum penna-marina* are in photographs of my garden on the next page.

Doing well is the related *Doodia media* ssp *australis* with its beautiful bronze fronds and a small clump of *D. caudata*.

*Pellaea falcata* is a nice fern with spores all round the margins. It grows in my garden (photo on page 341) in a dark shady spot and as it can withstand fairly dry conditions I am going to transplant a piece of it to a more prominent spot.

Another beautiful fern in my garden is *Lastreopsis acuminata*, the shiny shield fern, with its lovely glossy fronds as shown in the photograph on page 340.

*Diplazium australe*, Lady Fern, is attractive with large triangular mid-green, soft fronds as shown in the photograph on page 341.

Ferns with long creeping rhizomes like *Hypolepis* have to be kept in check. I only have *H. muelleri* and *H. glandulifera*, easily pulled out when running wild. *H. distans* is rare and I have seen it only once in far north-west Tasmania.

*Rumohra adiantiformis*, hare's foot, is another fern that is easy to grow in the ground. It has leathery glossy fronds and prominent sori with black spores.

Bat's wing fern, *Histiopteris incisa*, may become invasive in shady areas but less so if planted in dry spots.

*Polystichum proliferum* a Mother Shield Fern, has attractive light green young fronds. It pops up in places all over the garden from bulbils on the end of fronds.

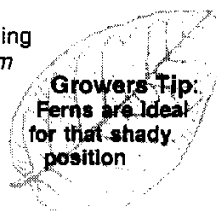
The kangaroo fern, *Phymatosorus pustulatus*, covers a large ground area and once smothered a *Richea* species before I became aware of it.

In sunny spots grow maidenhair fern (*Adiantum aethiopicum*), Rock Fern (*Cheilanthes austrotenuifolia*, photo on page 340), Fan Fern (*Sticherus tener*) and Coral Fern (*Gleichenia microphylla*); the latter two species like to have wet feet.

Treeferns, *Dicksonia antarctica* and *Cyathea australis*, as well as *Todea barbara* (photograph on page 341) are all well established.

In pots I have *Asplenium bulbiferum*, *A. flabellifolium*, *A. obtusatum* and *Calochlaena dubia*.

Growing ferns under trees and shrubs gives a pleasing, cool feeling.



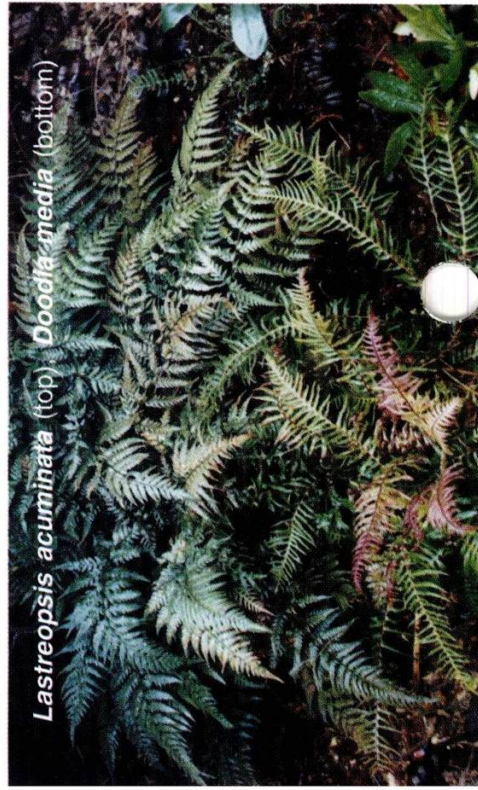
**Growers Tip:**  
Ferns are ideal  
for that shady  
position



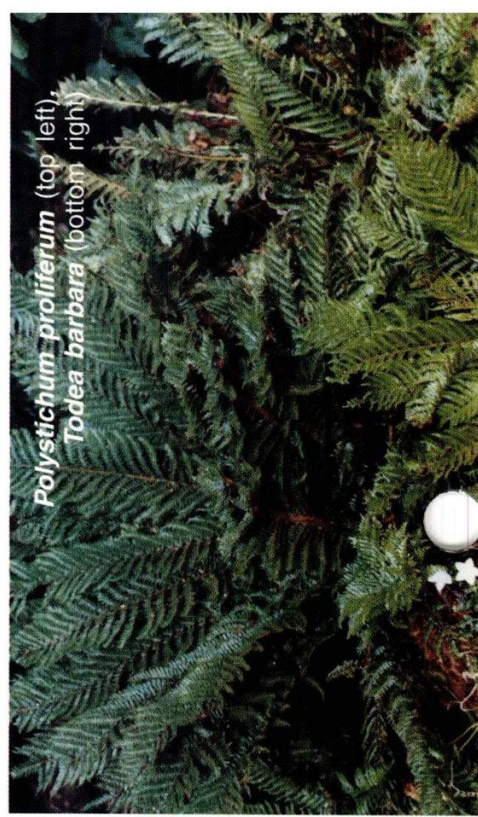
Rock Fern *Cheilanthes austrotenuifolia*



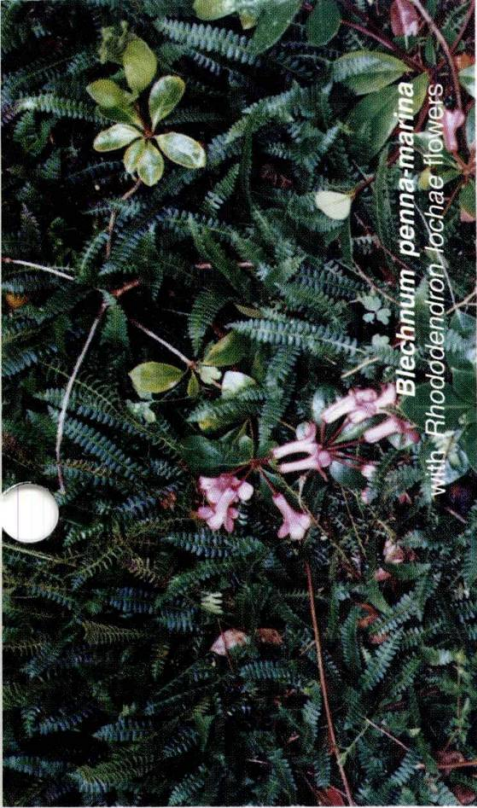
*Blechnum nudum*



*Lastreopsis acuminata* (top); *Doodia media* (bottom)



*Polystichum proliferum* (top left);  
*Todea barbara* (bottom right)



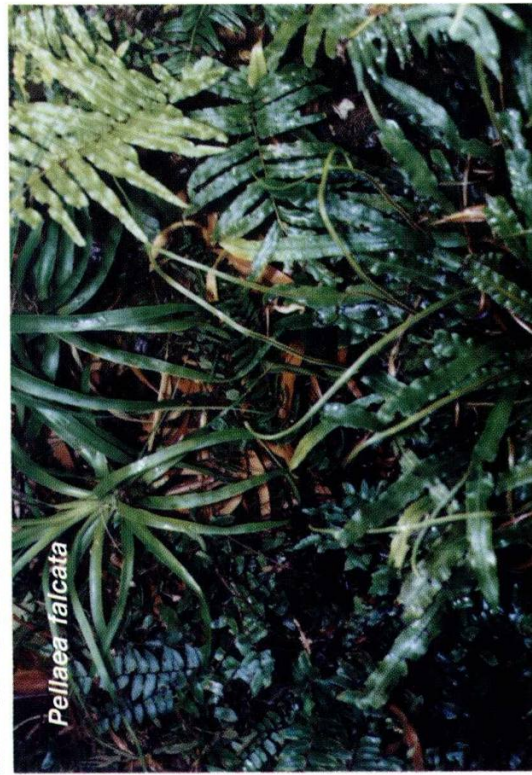
*Blechnum penna-marina*  
with *Rhododendron lochae* flowers



*Todea barbara*



*Diplazium australe* (from above)



*Pellaea falcata*

# Oldest tree in the world?

## *Lomatia tasmanica*

by Kay Geeves, Tasmania

At least 43,600 years ago a new plant was created. Unable to reproduce sexually, this plant adapted to its environment by growing very slowly, spreading vegetatively by underground rhizomes. This one plant, the only one in the world, has colonized an area of 1.2 sq. km. Dr. Rene Vaillancourt on a team project with the University of Tasmania confirms that it is likely that plants in the wild are from one clone. They grow from suckers and are infertile. They are triploid (i.e., have three sets of chromosomes instead of two) and this explains their sterility. The plants require heavy shade. When exposed to sun they go black.

One of my most exciting plant adventures took place when we organized an expedition, in 1976, of SGAP enthusiasts to locate the rare *Lomatia tasmanica*. We met up with the late Denny King of Port Davey fame and he showed us the small stand. We collected a small quantity of cuttings and my allocation was eight cuttings. Because the material was so precious I couldn't bear to discard any so planted the leaves as well. Five cuttings struck, some leaves made roots.

*Lomatia tasmanica* was described in 1965 by Dr. Winifred Curtis. It differs from the other Australian species of *Lomatia* in having red flowers arranged in pairs along a terminal inflorescence. This small slender tree, which may grow to about five metres in height, appears to develop from suckers on disturbed ground. The new growth is covered with reddish-brown hairs. The leaves are leathery 10 to 18 cm long and are crowded at the ends of the branches. They are fern-like, pinnately divided into 7 to 11 pairs of broad leaflets which are prickly toothed or lobed; the upper surface is shiny and the lower surface has scattered hairs.

When Brian Halliwell from Kew Gardens visited Tasmania I gave him one of my plants to take back to Kew and it thrived there and they have propagated from the original plant. This proved fortunate as I eventually lost my plants after flowering, one in the garden and one in a pot, with fungal infection to which they are prone. The leaves turn black and the plant dies rapidly. Certainly the plants at Kew have had royal treatment but they have not been affected by the fungus.

When she visited Tasmania recently, Margaret Stones told me that it flowers regularly at Kew. In her retrospective exhibition of botanical paintings held in Melbourne in 1996 she featured two paintings of *Lomatia tasmanica*, from Tasmanian material and from Kew.

Fortunately efforts are continuing to bring this beautiful plant into cultivation. Ken Gillanders of Woodbank Nursery has successfully grafted it on to *Lomatia polymorpha* stock which is good news and a major achievement. Mark Fountain of Bushgarden Nursery confirmed the need for shade. He finds it strikes readily.

Jocelyne Cambecedes who also worked on the project, has done successful experiments with tissue culture. She had great difficulty finding clean material and subsequently used material from one plant only. The report, and plants have gone to the Department of Lands, Parks and Wildlife for trial and sale to propagators as stock plants.

**Growers**  
**Tip: For details**  
**of propagation**  
**and cultivation**  
**of all *Lomatia***  
**Australian**  
**Plants vol.**  
**14: 7-15**

# Yellow Waratah

*Telopea truncata*, of Tasmania, a valuable form

by Essie Huxley

The Tasmanian Waratah, *Telopea truncata* is one of our most spectacular plants with its large rich red flowers. In 1934 my father gave me four plants of *Telopea truncata* about 4–5 inches high that he had collected on the slopes of Cathedral Rock in the Wellington Range for my garden. One produced lovely bright yellow flowers as shown in the photograph on page 365

When fire ravaged my garden in 1982 it was badly burnt but my neighbour, Ken Gillanders, pruned it back severely and it survived and still flowers profusely. I have propagated it from cuttings and aerial layering. ■

## Waratah as a commercial cutflower

The NSW Waratah, *Telopea speciosissima*, when grown in Tasmania, flowers from November to late December. This follows the flush of flowering on the mainland and could make this a major asset to an export crop extending the harvest period from August to January. The Tasmanian Waratah also has potential for an export cutflower. ■

**Growers Tip:**  
The best forms  
of NSW Waratah  
are shown in  
vol.18 no.147

# Tasmanian Trees

by A. M. Gray

Trees not mentioned in this issue and a feature of the Tasmanian landscape are:

## *Nothofagus cunninghamii*

Antarctic Beech, Myrtle Beech

This tree occurs very commonly in Tasmania and is also found in Victoria. It varies from a small stunted shrub at high altitudes in exposed situations, to a large tree in sheltered valleys often reaching 50 m. The leaves are small 7–15 mm long and wide, rhomboid in shape and dark green. The new shoots and leaves are reddish-bronze and most attractive. The flowers are unisexual and inconspicuous. The timber is reddish-pink and straight grained and is valued in construction and joinery. Most rainforest country in Tasmania is dominated by this species adding colour to the landscape, in season as shown in the photographs on pages 337 and 344. The background is Cradle Mountain, the green plants are conifers, Chestnut Pine in the foreground and probably young Pencil Pine further back.

## *Eucryphia lucida*

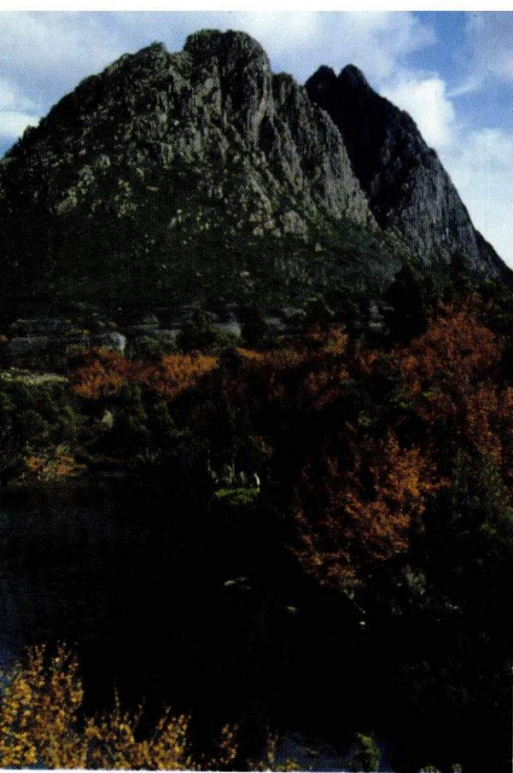
Leatherwood

Leatherwood is very common in wet forests in sub-alpine and lowland situations. It occurs as a tall shrub to a tree, fast growing and forming dense thickets along roadsides. In late spring and summer masses of large white flowers resembling small white roses cover the trees attracting innumerable insects. The flowers have a strong sweet perfume, very noticeable on warm days.

## *Anopterus glandulosus*

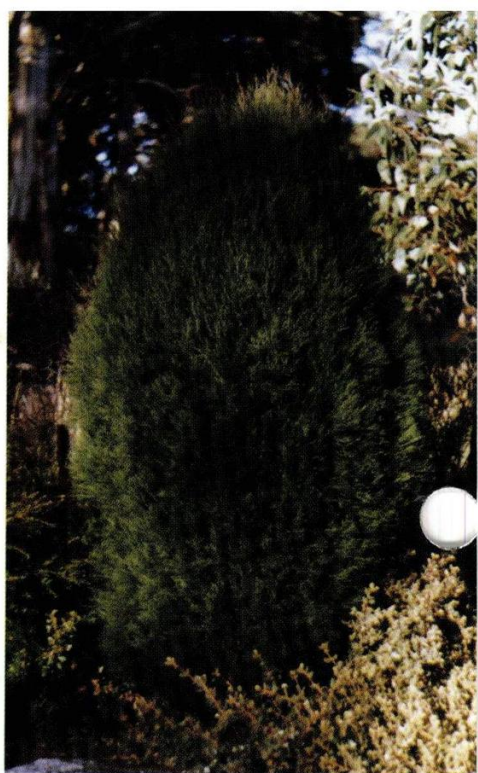
Native Laurel

This is one of the more prominent undershrubs or small trees in the rainforest. Growing to 4 m it is an untidy looking shrub but the large glossy deep green leaves to 20 cm long, 5 cm wide are most attractive. The older ones at the base of the cluster turn a bright red or yellow prior to dropping off. The white or pink flowers are borne in showy racemes to 15 cm long at the ends of the branches. ■

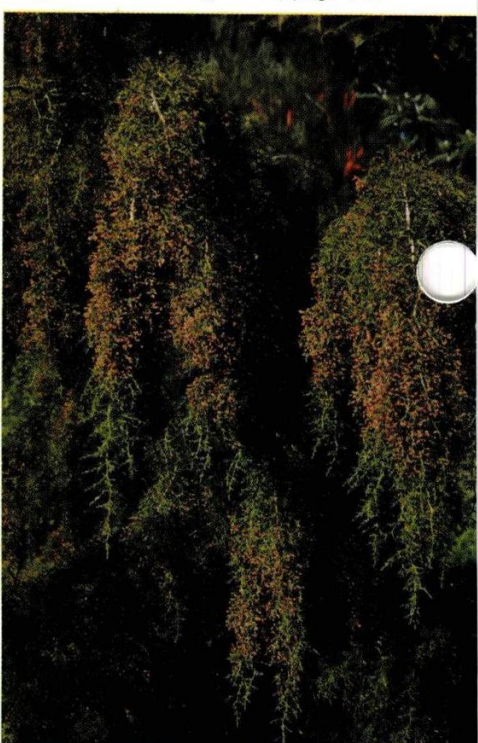


△ **Antartic Beech** provides colour, see page 343

▽ **Huon Pine**, *Lagarostrobus franklinii*, in a garden and fruiting cones, page 346



△ **Esk Pine** in a garden, page 350



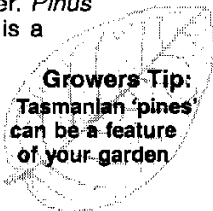
# "Pines" of Tasmania

by Alan Gray

It is of interest to note that none of our Tasmanian "pines" are really pines at all! So, "what about Tasmania's famous Huon Pine, King Billy Pine and Celery-top Pine, not to mention the Oyster Bay Pine?"

Technically speaking, the above statement is quite true, there are no native pine trees in Tasmania! The common and very widely used term "pine" is derived from the genus *Pinus*; a large genus of coniferous, or cone-bearing, trees of the Northern Hemisphere. One species of true pine — *Pinus radiata* — would be familiar to most Tasmanians, it being planted extensively as a wind-break tree or in large plantations as a fast growing source of long-fibred wood pulp, veneer or building timber. *Pinus radiata* occurs naturally in Monterey, California, where it is a slow growing tree and, surprisingly, quite rare!

But back to our so-called Tasmanian Native "pines". Let's not be so pedantic as to suggest that we find an alternative term for "pine". It is well accepted as part of the vernacular for our native species, and to suggest any change would be inappropriate.



**Growers Tip:**  
Tasmanian 'pines'  
can be a feature  
of your garden.

Our Tasmanian native "pines" and the true *Pinus* (pine) are actually related because they all belong to the world-wide group of plants which botanists classify as Gymnosperms, a word derived from the Greek language, meaning "naked seeds". These plants are also referred to as conifers. Simply explained, the Gymnosperms do not bear their seeds enclosed within an ovary (or pistil), an organ which is an important feature of the reproductive system of true flowering plants.

Instead of producing seeds in flowers, Gymnosperms bear specially modified leaves or scales, popularly known as cones. The scales forming these cones are usually overlapping and tightly clasped together and, in the female cone, the seeds are usually borne on the upper surface of each scale, tightly clasped — whilst still green — against the next scale, but not physically enclosed. Examine an "open" pine cone and you will clearly see the little impression in which the seed lay before it was released. Male cones, usually much smaller than the female cones, produce pollen — often in copious quantities.

So, although our native conifers are not true "pines" in the technical sense, they are, nevertheless closely related to that group. There are eleven species of coniferous trees or shrubs occurring in Tasmania, two on page 337. Although this might seem a small number, the interesting fact is that no less than eight of these plants are confined to Tasmania, i.e., they are said to be **endemic**.

Rather than taking the botanical approach and discussing our conifers by their family associations we shall divide them into two groups according to the size of mature plants. This makes matters easier from a horticultural use as well.

**The Large Pines.** There are seven conifers which may grow into distinctive, large trees, usually exceeding eight metres. One of this group is, perhaps, only just within this category, i.e., The South Esk Pine.

## Huon Pine

The first, and perhaps most famous, of the large pines is our venerable Huon Pine. This remarkable tree is known botanically as *Lagarostrobos franklinii* or, until recently, *Dacrydium franklinii*. The female cones of Huon Pine are very small, consisting of a few loosely arranged scales at the tips of the branchlets, and almost appearing to "drip" from the ends. Each is about 3 mm long. The male (pollen) cones are a little smaller.

This brings us to the meaning of those rather mysterious botanical names given to the Huon Pine. The new name, derived from Greek, is *Lagarostrobos*. This quite simply means "with the scales of the cones loose and scarcely overlapping". The earlier *Dacrydium*, again from the Greek, means "little tear-drop", — either referring to the tear-drop-like cones "dripping" from the twig end or, as some believe, referring to the tear-drop-like beads of the clear resin which may exude from trunk and branches if bruised or otherwise injured.

The Huon Pine is almost entirely confined to the banks of larger rivers in the west and south-west of Tasmania roughly from the Pieman River to the Huon River. Before the arrival of the European settlers quite extensive forests of this tree were to be found, some of the trees reaching almost 40 m high.

Whilst there is nothing particularly remarkable about the size of the trees there is certainly a good deal of interest with regard to the age that Huon Pine can attain. One tree, cut in the valley of the Gordon River prior to its damming for Hydro-electric purposes, was ring counted and shown to be at least 2,200 years old. It is difficult to imagine that this tree had begun life before the rise of the Roman Empire. However, that tree is a relative new-comer compared with a phenomenon recently discovered in Western Tasmania.

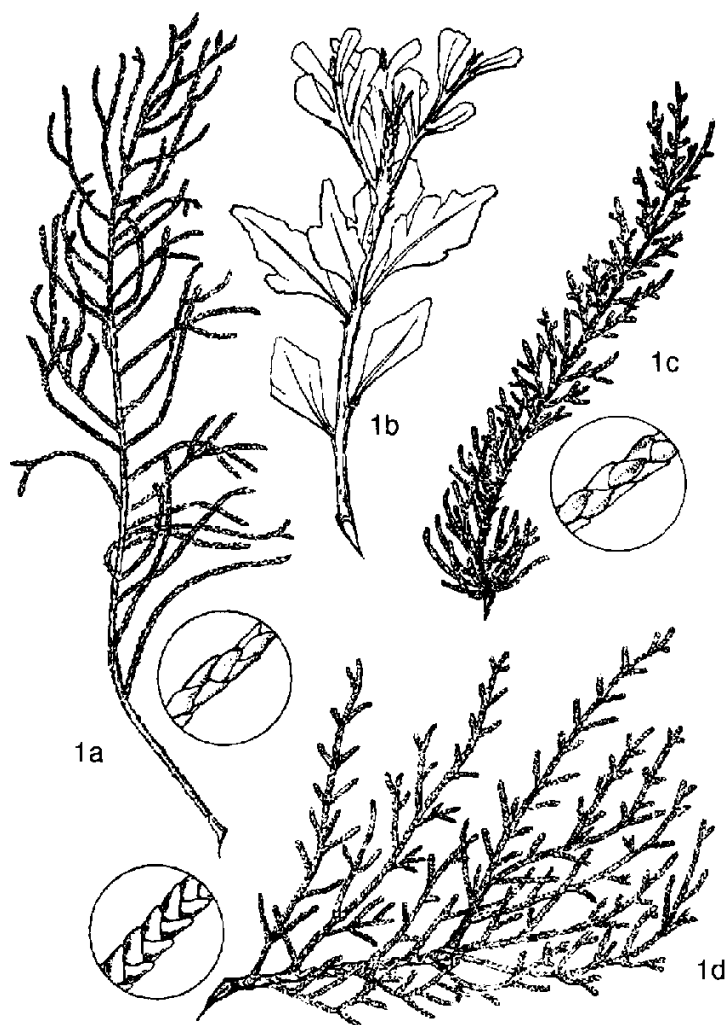
Mt. Read (1,157 metres), in the central west of Tasmania is somewhat renowned for its diversity of botanical treasures. In recent years a one hectare "stand" of Huon Pines was found on the southern slopes of Mt. Read, at about 950 m and a little upstream from a small glacial tarn, Lake Johnston. The locality is quite unusual for Huon Pine, its "normal" habitat being cool lowland rainforest, bordering rivers and estuaries in the west and south-west of Tasmania.

Subsequent studies of this "forest" have revealed that it is not a stand of the species but a single tree, a male tree at that! The evidence indicates that the one lone male tree — all material examined is genetically identical — has been reproducing itself vegetatively for the past 10–11 THOUSAND years.

Huon Pine grows readily from cuttings or layers and it is likely that heavy snowfalls have bent the supple branches to the ground during winter where, in spring, they have taken root and thus continued the species. It must be pointed out that the living tree of today is not 10–11,000 years old and still alive.

Sediment cores taken from nearby Lake Johnston have revealed pollen from this "tree" and with radio carbon dating and other scientific tests being undertaken, it is believed that this tree was present on Mt. Read following the last glacial period, 22,000 years ago, Before Present to 11,000 BP.

The nearest Huon Pine population to the Mt. Read phenomenon is more than 20 kilometres distant, over very mountainous country and seed dispersal over such distance and country is considered virtually impossible. Core samples have given an amazing record of our climate over an approximate 3,800 years. Indications are that since the early 1960's Tasmania's climate has been warmer than usual and that this warming episode had a parallel almost 2,000 years ago!



**Huon Pine**, *Dacrydium franklinii*, figure 1a, has small leaves tightly clasping the branchlets in regular pine fashion. On young trees the leaves may be spreading and more narrow.

**Celerytop Pine**, *Phyllocladus aspleniifolius*, figure 1b, does not have leaves that are obvious. What appears to be broad green leaves are known as cladodes, flattened out twigs that perform the function of leaves. They are green and leathery in texture and variously shaped as shown.

**Strawberry Pine**, *Microcachrys tetragona*, figure 1c, has small thick keeled, opposite leaves.

**Microstrobos niphophilos**, figure 1d, has tiny leaves crowded and overlapping as shown, arranged in an alternate spiral fashion. They are concave thick and blunt.

The early settlers soon discovered the excellent working and keeping qualities of the timber and it was exploited to the extent that, apart from a few reservations which have been lately set aside, little remains of the mature forests of this tree. Huon Pine does regenerate successfully from seed and, where left undisturbed, regrowth is occurring — but it takes a long time to attain tree status.

Huon Pine, especially “younger” specimens may be very graceful in appearance due to their pendulous outer branchlets. The fine foliage actually consists of very slender branchlets bearing tiny scale-like leaves which clasp and overlap one-another along the stem. In some instances a small Huon Pine may superficially resemble a weeping form of a Cypress or Juniper variety.

Our famous Huon Pine is not, as some people imagine, difficult to propagate or keep in a properly maintained garden, nor does it take “ages” to attain a size at which its ornamental attributes become appreciable. The Tasmanian ‘pines’ may be propagated easily by the home gardener or enthusiast. The method used is given at the end of this article. It is very pleasing that some of the larger, well-known Tasmanian nurseries as well as the specialist native plant nurseries are growing and selling Huon Pines. Well established specimens, some almost to 50 cm tall, are available from such outlets.

Huon Pine, as with all our native pines, will also grow well as a tubbed specimen. Of course, as with any plant selected for the garden, certain requirements will need to be met to ensure success and a happy plant.

### **Celery-Top Pine**

Celery-top Pine is related to the Huon Pine and “suffers” the botanical name *Phyllocladus aspleniifolius*. It is a very much more widespread and common tree than the Huon Pine, occurring from sea-level to about 750 m in rainforests and wet sclerophyll forests in the north west, central and south-west areas. There are even records of its being found on Bishop and Clerk Mountain on Maria Island! It occurs in other widely separated localities as in parts of the North East of the state and on south Bruny Island, the Central Plateau and the Tasman Peninsula.

As with all our native conifers, Celery-top Pine does not tolerate fires at all well and will be eliminated from areas suffering increasingly frequent bushfires. This accounts for the absence of Celery-top Pine from Mount Wellington where, once, it was presumably quite widespread! In areas of high rainfall and “no” fires, the Celery-top Pine may dominate understorey rain-forest species.

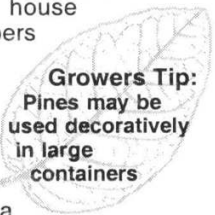
The name Celery-top is quaint and interesting! With a little imagination one can liken a stalk or bunch of celery to a Celery-top tree and yet, again, the irregularly shaped ‘leaves’ of the celery plant do resemble (somewhat) those of the ‘pine’ of the same name!

But, Celery-top Pine has no leaves, apart from some tiny, brownish, triangular scales on the younger twigs! So, what are those things that look like leaves? — green, leathery in texture, irregularly notched and more or less rhomboidal in shape, see page 347. According to botanists those leaf-like organs are actually small, flattened twigs technically known as **cladodes**. They perform the same functions as leaves but are altogether quite different organs. They may be used as cutting material for propagation.

Celery-top Pine does not bear cones in the accepted sense. Rather the tiny blackish seeds are surrounded (but not completely so) by a couple of pink, FLESHY scales and a fleshy white out growth of the seed called an ARIL. Those modified “cones” usually occur in clusters of 3–4 and appear at the tips or upper margins of the cladodes.

The timber, although not quite as durable as that of Huon Pine, is much used in boat building and furniture construction. Also it is now a popular, if expensive, durable and attractive cladding timber for house building purposes. In the past it was used for railway sleepers and mine pit-props.

Celery-top Pine is easily grown and maintained in all but the driest and poorest of soils. The branching arrangement of the young tree is regular and symmetrical with the evenly tiered branches held horizontally to the trunk. This form of growth will continue as long as the terminal bud is not removed or damaged. Celery-top is a pleasing tree, perhaps better group planted, with each specimen of different height. As well, it will thrive and please in a large container and does not seem to object to being somewhat “pot-bound”.



**Growers Tip:**  
Pines may be  
used decoratively  
in large  
containers

### King Billy and Pencil Pine

These two famous pines are restricted to highland areas in the west and south-west of the State. Botanically they are of particular interest because they belong to a large family of conifers which is entirely restricted to continents of the Northern Hemisphere — except for the three species found in Tasmania. Those species, as shown in the photographs on page 384, are *Athrotaxis selaginoides*, King Billy Pine, *Athrotaxis cupressoides*, Pencil Pine and another quite rare species, thought by some to be a hybrid between the former two, *Athrotaxis laxifolia*, Loose-leaf Pine. King Billy Pine is the background tree on page 337. The family to which our three *Athrotaxis* belong, TAXODIACEAE, includes the North American **Sequoias** (Redwoods) and the Japanese **Cryptomeria**.

Perhaps, of all the Tasmanian pines, the three *Athrotaxis* species, shown in colour on page 384, bear cones which most resemble “proper” pine cones! King Billy Pine bears many small, compact branches with narrow triangular leaves, 10–15 mm long and quite densely distributed. They are rather strongly curved upwards and each has two whitish bands on the upper surface. The tips of the leaves are hard and quite prickly to the touch. The male and female cones are borne on the same tree. The male cones are small and brownish, at the tips of branchlets. The female cones, also at the branchlet tips, are roughly spherical, between 15–30 mm in diameter, and consist of thick, broadly triangular, overlapping scales, at first yellow-green but becoming brown at maturity. The little seeds are narrowly winged.

The King Billy Pine is usually a large tree, mostly occurring in rainforests or sub-alpine forests in well drained locations in the west and south-west, from about 650–1,200 m altitude. One of the finest stands is an almost pure forest of the trees, 10–30 m high, on the NE. ridge of Mt. Anne. Specimens may be seen in the Mt. Field and Cradle Mt. — St. Clair National Parks and along the Lyell Highway.

**The Pencil Pine** differs from King Billy pine in the shape and arrangement of the leaves. These are 3–5 mm long, triangular and with each leaf closely overlapping and appressed against the next one above. The cones of the Pencil Pine are very similar to those of the King Billy though usually a little smaller.

**The Pencil Pine**, see the colour photographs on page 384, favours, or perhaps tolerates, less well drained soils than its relative, growing along the banks of sub-alpine streams and tarns. It can often be found growing alongside King Billy Pine. Lake Dobson in the Mt. Field National Park and just north of Breona on the Lake highway are two areas where it may be found growing in pure stands.

Where the two species grow in proximity to one another the other "species", *Athrotaxis laxifolia*, can sometimes be found. This tree, presumed by some authorities to be a hybrid between the other two, certainly appears to be midway, in many characteristics, between the other two species. Never found in large numbers or pure forests, it always occurs where the other species' ranges overlap.

The timber of the King Billy Pine and Pencil Pine is virtually identical. It is almost as highly valued as Huon Pine, however it is not nearly as durable as that species. It is light in weight, pale yellow to rich brownish pink in colour and cuts, planes, turns, bends and glues easily. It is much in demand for joinery and window framing, and is also used as planking for small clinker-built boats.

Both species may be propagated from seeds or cuttings. They are quite easily grown and make attractive tub and garden specimens provided the soil is deep and has plenty of humus incorporated within. If kept continuously moist and cool during the summer months it will tolerate full exposure.

#### **Oyster Bay Pine and Esk Pine**

Whereas nearly all of our conifer species are associated with the areas of high to moderate rainfall of the West, South-west and the Central Plateau, this well known pine, botanically known as *Callitris rhomboidea*, is a tree of the dry sandy soils of the East Coast of the State, from the Tasman Peninsula to St. Marys. It is also common on Flinders Island as well as Vic., SA and NSW.

The Esk Pine, *Callitris oblonga*, photograph on page 344, is restricted to a more easterly (nor'easterly) range, being found chiefly along the banks of the South Esk River and some of its tributaries, particularly the St. Pauls River, near Avoca. It is also apparently found in a few localities in Eastern NSW.

Both species belong to a section of the large family Cupressaceae that also includes the very well known ornamental Cypress species and varieties.

The Oyster Bay Pine bears tiny green scale-like leaves along the very fine, slender branches which, although held semi-erect, often have tips somewhat drooping, giving the tree a graceful, if not informal, shape. Older trees tend to be somewhat gnarled and become unevenly shaped. The cones of the Oyster Bay Pine are roughly spherical and are from 15–30 mm in diameter. The cones scales are thick and woody, dark brown and tightly closed in the unopen state. When dry, the scales draw back widely to release the small black seeds. The cones usually occur in clusters and may remain on the tree for a number of seasons. As mentioned, the Oyster Bay Pine favours dry sandy soils and grows in the open forests and shrubberies of the east coast. Well formed trees are pyramidal in shape and grow to between 3 and 8 m and, occasionally, up to 15 m high.

The timber of the Oyster Bay Pine has any commercial use. Larger trees were once used as telegraph poles, however it is rarely used now for this purpose. The timber is usually too knotty for building or joinery purposes.

**The Esk Pine** differs from the Oyster Bay Pine by having the tiny scale-like leaves and the branches covered with a glaucous "bloom". As well the branches are quite erect and closely arranged, giving this little tree a compact habit and a greyish appearance. The overall form of this tree is rather "top" shaped and it is quite distinctive amongst the shrubbery in which it grows along the river banks in North-eastern Tasmania.

The cones of this species are elongated-oval in shape, with the three outer smaller scales much shorter than the three inner scales. The cones, as with its relative, may persist on older branches for quite a few seasons. The Esk Pine usually grows to about 3 m but may sometimes reach 8 m or so.

Both plants are best grown from seed, which is easy to collect, and both species, particularly the Oyster Bay Pine, are widely sold as ornamental trees by many commercial nurseries. Both will tolerate dry, poor soils but may become unthrifty on clay or heavy, wet soils.

### The Shrubby Pines

There are four species of shrubby conifers in Tasmania. All, but one, are endemic to the state and all are plants occurring in sub-alpine areas of the west and south-west, particularly on dolerite mountains. Unfortunately only one of these plants has a regularly applied common name, and another a less well-known common name. So, for these four plants, the botanical names will come first. None of the four are commercial species, however, all are very amenable to cultivation and each has a particular worth as a native garden plant.



**Growers Tip:**  
Shrubby pines  
are ideal for  
landscaping

#### ***Podocarpus lawrencei*** Mountain Yew (Tas.) Mountain Plum-Pine (Vic.)

This plant is widespread on many Tasmanian mountains and it also occurs in the "Alps" of Victoria and southern New South Wales. In the majority of cases it is found, typically, spreading amongst the large boulders characteristic of the talus slopes of many Tasmanian dolerite mountains. It is often not easy to identify it as it blends and merges with other low or prostrate shrubs with which it may co-exist. *Podocarpus lawrencei* may also be found at lower, more sheltered sites, often as a small, distinctive tree. The author well remembers the small forest of *Podocarpus*, with trees 3–5 m high, which grew at Walters Marsh, in the upper Mersey Valley and now flooded by Lake Rowallan!

In its prostrate, spreading form the tough, often thick branches wind over and around the boulders, sometimes as a single plant or sometimes in groups and often spanning 5–10 m or more. See the photograph on page 353 where the plant is growing over quartzite rocks on Mt. Campbell.

The small leaves are 5–10 mm long, dark green and thick. The fruit is not a cone but is rather similar to that of Celery-top Pine, to which plant it is quite closely related. "Podo-carp" means foot-shaped fruit. It is succulent like all podocarps. The little single black seeds, just embedded in the fleshy, bright crimson bracts, scales and stalk are similar to the European Yew from which its Tasmanian common name is coined. The fruit are quaintly attractive. *Podocarpus* is quite easily propagated from cuttings and will spread quite well in a cool rock garden, some branches tending to grow in a prostrate habit whilst others may be a little more erect.

### ***Diseima archeri***

(sometimes called "Cheshunt" Pine)

A shrub mostly 0.5–3 m high and commonly found in thickets along the banks of mountain streams and small tarns, see photo on page 337. Tolerant of wet, boggy conditions it may even be found in sphagnum moss bogs. Usually the smaller branches tend to "crowd" together, with the tips drooping. The leaves are tiny, about 1–1.5 mm long and slightly keeled. They are crowded, overlapping and borne opposite one another, in two rows at right angles to each other, thus giving the branch a "square" shape in cross section. The leaves and branches on the light or sunny side are usually a bronze-green colour, especially during the autumn, whilst those on the shady side are mostly a distinct dark green.

The female fruit (cones) are borne at the very tips of the branchlets; they are little more than 2–4 mm in diameter and to the unaided eye they appear as slightly swollen, darkened, thick leaves right at the ends of the branchlets. The male "cones" are even tinier! The photograph opposite shows fertilized female cones that have ripened and contain mature fruit. Cheshunt Pine is easily propagated from cuttings. It makes a fine tub specimen or is ideal for a "cool" damp rockery where its spreading and slightly "drooping" habit can be displayed to advantage.

### ***Microstrobos niphophilus***

This plant is often difficult to tell apart from *Diselma*. It has no acceptable common name, therefore we should perhaps find out what a little shrub of the mountains does to earn such a big name. The first part (generic name) — *Microstrobos* — is a combination which, broadly interpreted, means "little cones" (MICRO = small or tiny and STROBOS = cone or cones). The male and female cones are quite small and somewhat similar; spherical, brown and each about 1.5–3 mm in diameter. When ripe the male cones, if shaken, shed copious clouds of yellow pollen.

The specific name of this shrub — *niphophilus* — means, simply, "snow loving". Indeed, this little conifer, like the other shrubby ones described here, may find itself buried deeply in snow drifts for most of the winter months. The tiny leaves of *Microstrobos* are crowded and overlapping, and arranged in an alternate spiral fashion, in contrast to *Diselma*, giving the stems or branchlets a "rounded" appearance in cross section. It favours slightly less boggy situations than *Diselma* but they are frequently found growing near one another in "neutral" territory. If there are no cones available, the "stem test" is an easy way to separate the two.

*Microstrobos* is not quite as easy to strike from cuttings as the other shrubby conifers but it is worth trying. Seed can be gathered for germination but this method is slow as moist stratification techniques are required for best results. In the garden, *Microstrobos*, with a habit similar to *Diselma*, can be used as a single specimen or planted in groups amongst boulders in a rockery.

### ***Microcachrys tetragona***

'Strawberry Pine'

Perhaps the most prostrate of all the world's conifers! This remarkable plant is found creeping amongst the cushion plant communities of the high moorlands of western mountains or draped over and down boulders or rock slabs. The photograph opposite shows mature fruits. They are edible with a 'piney taste'.

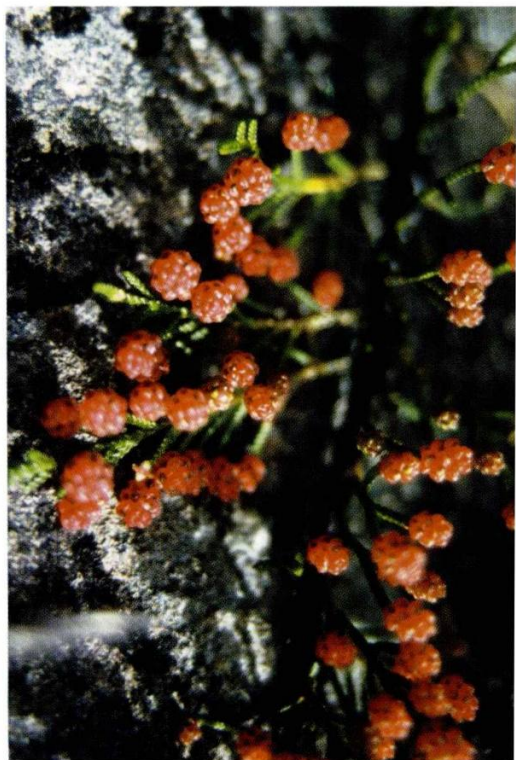
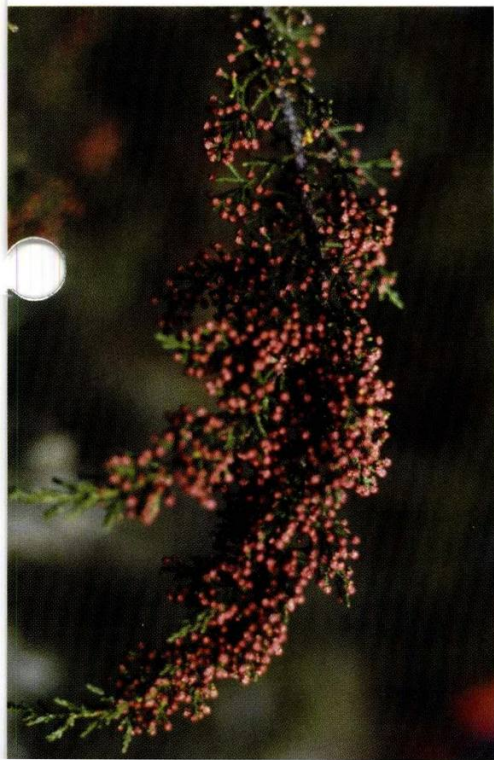
The rather long name is roughly translated as "small cones" (*cachrys* is another term for a cone or catkin) with "*gonia*" (a corner or angle) referring to the four angled branchlets, which are very similar to those of *Diselma* but larger and more clearly evident, and often pale rusty or yellowish in colour.



△ *Podocarpus lawrencii* in fruit, see page 351

▽ *Diselma archeri*. Photography by Dick Burns

▽ *Microcachrys tetragona*



Male and female cones are commonly found on the same plant. The male cones are roughly oval in shape, pale brown and occur at the branchlet tips. The female cones, also at the branchlet tips, are quite spectacular. The bract scales, rather than being dry and brown, are fleshy at maturity and bright crimson in colour. The mature female cones resemble a small, elongated raspberry. However, that is where the resemblance ends as the fleshy cones are astringent and "piney" in taste and quite inedible.

This plant strikes very easily from cuttings and is easily maintained as a tub specimen or garden plant. Its unique, prostrate, spreading habit makes it a beautiful plant for any cool rock garden where it will grow over rock slabs or embankments.

### **Propagation and cultivation of the pines**

All Tasmanian conifers, or "pines", are most conveniently grown from cuttings, except the Oyster Bay and Esk Pines, the seed of which is easily collected and germinated in a 3 to 1 mixture of peat moss and sand.

Although the remainder of the Tasmanian pines can be propagated from seed, collection and timing of collection can be difficult. Nevertheless this should not deter the keen native plant grower from experimenting with species such as King Billy and Pencil Pines, Celery-top Pine and *Microstrobos*, although these may benefit from 6-8 weeks of cold-moist stratification prior to germination. Another problem with these species is that seedlings are very prone to "damping-off" unless stringent precautions are taken.

Propagation by cuttings of all species is best effected by using tip cuttings, with or without "heels", and striking these in a 2:1 mix of peat moss and sand. Late summer is the best time to collect the cuttings. All of the Tasmanian conifers appear to strike more successfully if, after collection, they are stored in a plastic bag (with a little sphagnum moss for moisture) in the refrigerator at about 3-4°C for about 6-8 weeks prior to setting out. Hormone treatment does not appear to enhance root forming capacity of any of the species. Bottom heat and mist is beneficial, if available, or, in the absence of mist, a plastic bag over the pot. Care must be taken with bottom heat and mist to ensure that the atmosphere around the cuttings does not encourage fungal diseases, etc.

Note that with Celery-top Pine the actual cladodes (leaves) can be used as the cutting material.

All but the Oyster Bay and Esk Pines prefer constantly moist (well drained), humus rich soils with a "cool" root run, which do best in light but moist sandy soils, which are well drained but not allowed to become too dry in summer. With the right soil conditions all can be grown in the open, or if sufficient care is taken with soil conditions, in large tubs or similar containers.

The Tasmanian Conifers or "Pines" are all uniquely different and each has a definite place in any cool, temperate garden. All should be much more widely cultivated, and appreciated. A number of the photographs produced here are of cultivated plants to show how they can be used in horticulture to advantage.

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**Australian conifers.** It is proposed to present the remaining Australian conifers in an issue shortly. Will readers who can assist with experiences with cultivation of with photographs please forward them. Editor.

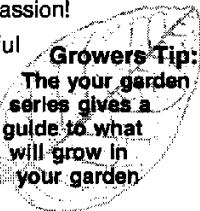
# Wildflower garden

In Legana, Tasmania \_\_\_\_\_ Our garden No. 30 by Marion Simmons

Our garden covers  $\frac{1}{2}$  hectare ( $1\frac{1}{4}$  acres) and when purchased about 35 years ago was fairly densely wooded with Black Peppermint (*Eucalyptus amygdalina*), Silver Wattle (*Acacia dealbata*), Black Wattle (*A. mearnsii*), Native Cherry (*Exocarpos cupressiformis*), blackberries and bracken fern. We retained as many of the original trees as possible, but the onset of Cinnamom Fungus (*Phytophthora cinnamomi*), common in many gardens, affected most of the eucalypts, causing the death of some.

After removal of surplus trees, planting out began but most of our early efforts were wiped out by fire. Two South Esk Pines, *Callitris oblonga*, a Smooth-barked Angophora, *Angophora costata* and a Lemon-scented Gum, *Eucalyptus citriodora*, are survivors of the fire and still flourishing today. The garden has been developed as an informal Australian plant garden with paths wandering through the trees and shrubs. We have grown the majority of the plants from seeds and cuttings, friends have been generous with others and a few have been purchased from nurseries. Plant growing still remains a passion!

One of the feature plants of the garden is a beautiful Tasmanian endemic *Richea dracophylla*, a white-flowered Epacrid, which has grown to 2.5 m tall and flowers prolifically each year. We grow as many Tasmanian plants as possible, although this is limited by climatic conditions. Lack of rainfall and dryness of the site limits the number of higher altitude plants we can grow for instance.



**Growers Tip:**  
The your garden series gives a guide to what will grow in your garden.

*Prostanthera*, *Acacia* and *Correa* feature rather prominently in the garden. The *Prostantheras* have seeded down prolifically over the years and now provide a beautiful background of colour to the other shrubs in October and November.

Because of my interest, *Acacia* play an important role in the garden; some of the more unusual ones include: *Acacia aphylla*, *A. raritensis*, *A. beckeri*, *A. flagelliformis*, *A. lasiocarpa*, *A. phasmoides*, *A. tetragonocarpa*, *A. williamsonii* and the three Tasmanian endemics *A. riceana*, *A. axillaris* and *A. pataczekii*.

Two huge, thirty year old *Banksia blechnifolia* have proved tough and reliable and have spread over three or four metres and flower spectacularly each year. Other Proteaceae include *Grevillea* and *Hakea*.

*Brachyscome* and *Leucochrysum* of different species have been planted in groups around the garden. Some have naturalized and now provide brilliant splashes of colour for long periods.

An area with plants of the lily family includes *Diplarrena latifolia* (endemic), *D. moraea*, *Thellonema caespitosum*, *Libertia paniculata*, *Thysanotus multiflorus* and from other groups species of *Lomandra* and *Conostylis* have crept in as well.

It has always been one of our aims to grow suitable native plants to attract native birds to the garden. *Grevillea*, *Hakea*, *Correa*, *Eremophila*, *Brachysema*, *Eucalyptus* and *Callistemon*, all are popular with the honeyeaters. Several ponds provide drinking and bathing facilities for the birds as well as a water feature to enhance the garden and provide a setting for several grasses and lilies.

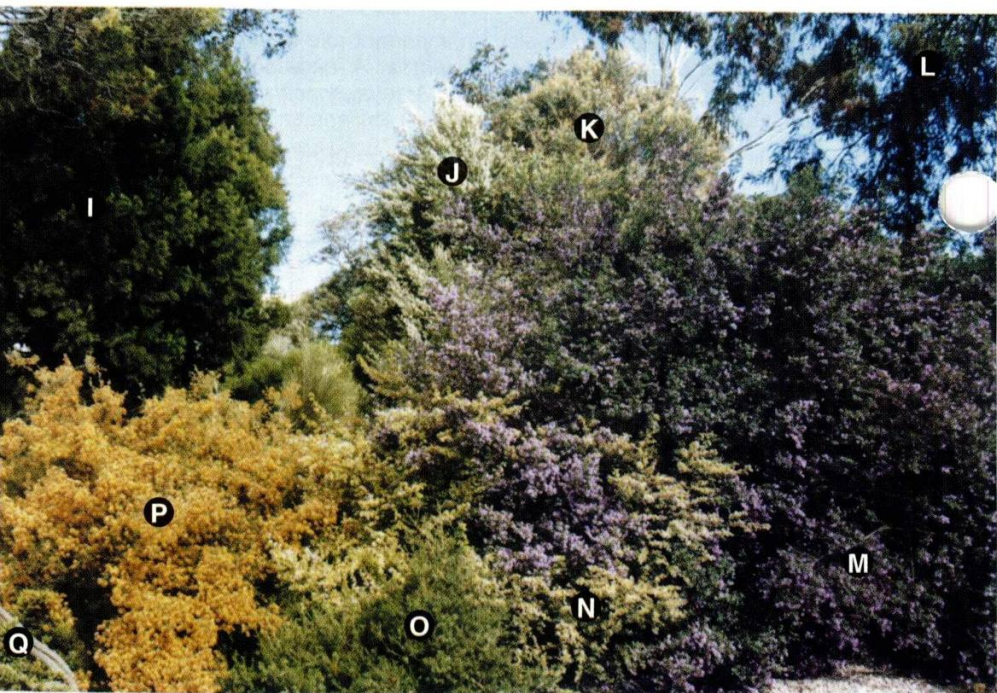
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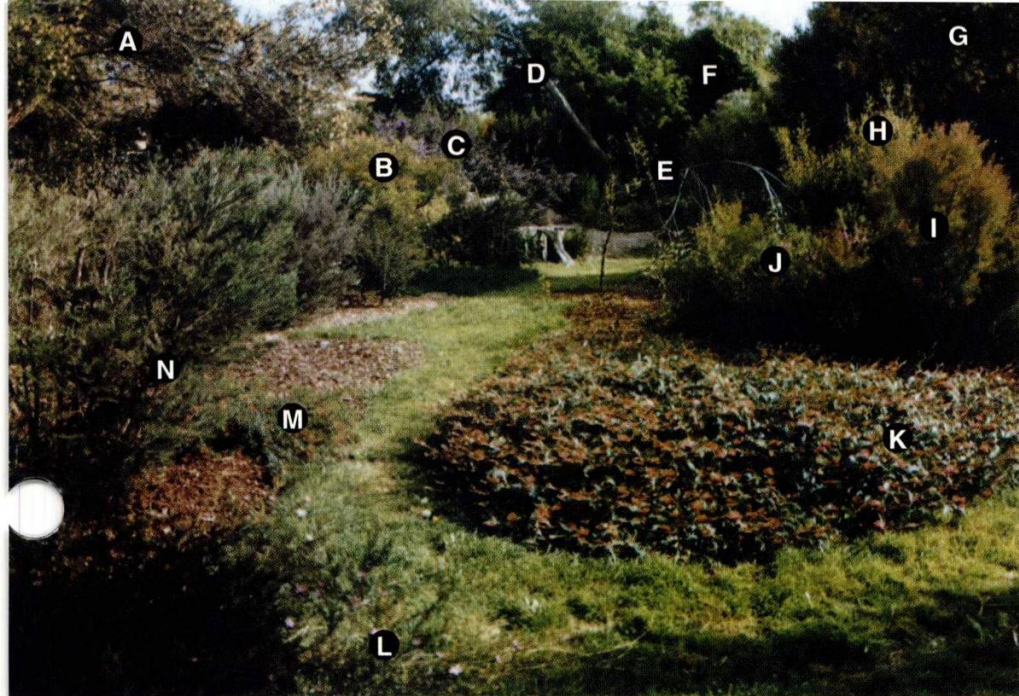
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The garden of Marion and John Simmons, see page 355

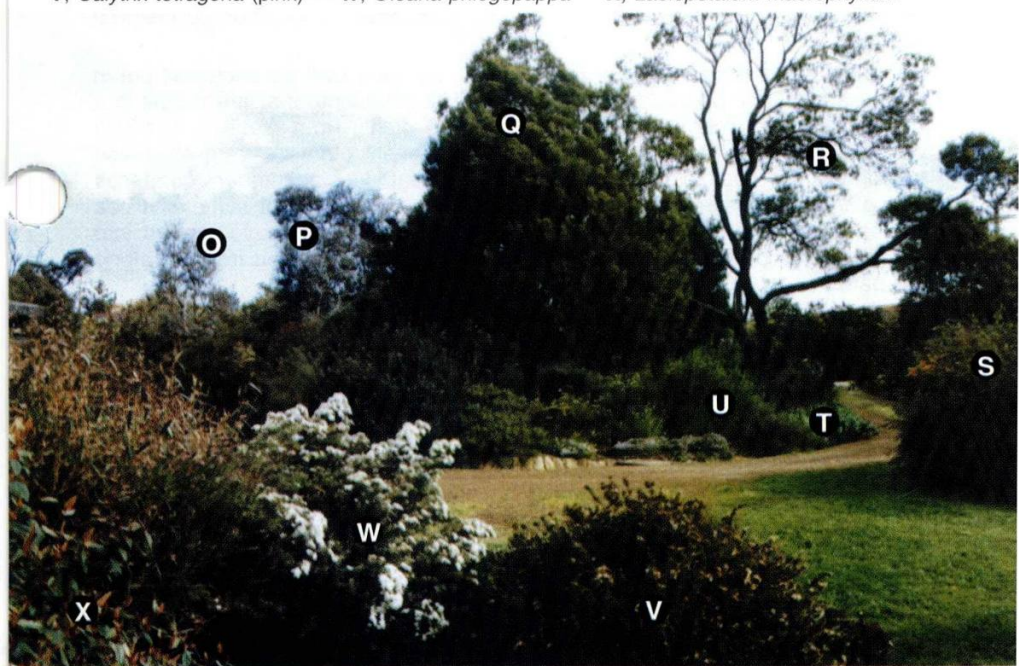
A, *Acacia verticillata* — B, *Prostanthera* species (self sown)  
 C, *Acacia pulchella* — D, *Lasiopetalum macrophyllum* — E, *Olearia phlogopappa*  
 F, *Scaevola albida* — G, *Calytrix tetragona* (pink) — H, *Dryandra arctotidis*  
 I, *Exocarpos cupressiformis* — J, *Phebalium squameum* — K, *Hakea laurina*  
 L, *Acacia howittii* — M, *Prostanthera* — N, *Prostanthera* (yellow leaves)  
 O, *Kunzea baxteri* — P, *Mirbelia oxylobioides* — Q, *Acacia semilunata*





The **garden of Marion and John Simmons**, see page 355

- A, *Melaleuca pustulata* — B, *Acacia acinacea* — C, *Prostanthera* species self sown  
 D, *Acacia howittii* — E, Weeping *Eucalyptus* — F, *Pandorea pandorana* — G, *Hakea salicifolia*  
 H, *Hakea trifurcata* — I, *Hakea dactyloides* — J, *Bauera sessiliflora* — K, *Grevillea prostrate*  
 L, *Crocea exalata* — M, *Grevillea rupicola* — N, *Agonis linearifolia*  
 O, *Eucalyptus risdonii* — P, *Eucalyptus cordata* — Q, *Exocarpos cupressiformis* (see page 375)  
 R, *Acacia mearnsii* — S, *Melaleuca hypericifolia* — T, *Derwenta perfoliata* — U, *Eremophila*  
 V, *Calytrix tetragona* (pink) — W, *Olearia phlogopappa* — X, *Lasiopetalum macrophyllum*



# A water feature

Our Garden No. 31A \_\_\_\_\_ by Jeanette Closs, Kingston, Tasmania

We left our lovely home and garden at Austins Ferry on the steep side of a hill, in 1991, to find an easier garden site for our later years. We found this pleasant spot at Kingston, which was a double block on a gentle slope with views of the mighty Derwent River. Kingston is well known for its friable sandy soil, but we didn't get that, we are on one of the rare spots in this area that has basalt loam over clay. With this water retentive ground, the first area planted was a Tassie rainforest where Huon Pines, *Lagarostrobos franklinii*, Tasmanian Laurels, *Anopterus glandulosus*, Leatherwoods, *Eucryphia lucida* and other rainforest species are doing very well against the western wall of the house. This area is watered regularly.

Below this area was an obvious place for a bog garden to receive the water that runs from the rainforest. We dug a hole about 2 m x 1.5 m across and about 0.5 m deep and lined it with heavy duty plastic. A roughly 50-50 mix of peat and loam was placed in the hole. The lower corner of this hole is so placed to enable any excess water to overflow into a small fern garden. Many years ago I was able to send a Buttongrass *Gymnoschoenus sphaerocephalus* plant to Kath Deery, a talented landscaper who lived at Ringwood in Victoria. Kath used this plant as a feature in her bog garden, and her garden was one of the loveliest gardens that I have ever visited. So the first plant to go into our bog garden was a Buttongrass and then we added the lovely wispy plant *Restio tetraphyllus*, also *Blechnum wattsi*, *Blechnum penna-marina*, and *Gunnera cordifolia* with other moisture loving plants. The latter two have joined to provide a delightful carpet and the *Restio* hangs its delicate tresses over this small garden. Between the bog and rainforest garden is a simple green painted slat fence and through this grows *Billardiera longiflora*, which in spring presents a display of pale lemon bells and in autumn is covered by luscious purple-blue berries.

Because of this very water retentive soil we have built up beds and put in lots of agricultural drains, but still we are limited to plants that are happy in a mostly moist environment. Many of the choice plants from Western Australia have been tried but although some have succeeded, others who resent these conditions are kept in tubs. We created two paths using timber rounds as 'stepping stones' surrounded by *Mazus pumilio*. Despite a hot summer it has stayed green and in some areas the pretty mauve flowers have strayed into the lawn. It is prevented from straying by a strip of galvanized iron set along the paths.

In 1996 we had the opportunity to acquire 11 huge dolerite and basalt boulders, some estimated to weigh 2 to 3 tonne, which were unwanted by the local council. My husband Don arranged for a truck and a low loader to transport the boulders to our garden. We luckily have double gates into our back yard, so this was not such a big problem. However it was quite an experience to see the operator haul these monsters and position them with the guidance of Sib Corbett, a talented landscaper, who some time previously had designed and landscaped the Tasmanian Garden at the Royal Tasmanian Botanic Gardens. The position chosen was an area above the house and just below the western corner of the block, which was the steeper area on our property.

Sib kindly agreed to build the two pools and the watercourse that links them. The pools were lined with sand over which was laid thick plastic. This was then covered with concrete and large river washed stones were set in place to resemble a creek bed. The result is very pleasing and with the help of a solar panel and a small bilge pump the water cascades gently down the watercourse and quietly drops into the lower pool. This, of course only happens when the sun is out, but at that time the water sparkles as it runs over flat slabs set into the watercourse at intervals. Goldfinches, sparrows and occasionally blue wrens delight in bathing in the shallow pools of the watercourse. Larger birds come to drink but they seem to prefer the bird baths throughout the garden in which to perform their ablutions. Plants such as *Vallisneria americana*, *Myriophyllum papillosum*, 'Dragonfly Red', *Marsilea mutica*, and *Ottelia ovalifolia* are planted in pots in the two deeper pools and they are reasonably successful, but we need to know more about their requirements.

The garden surrounding this feature is very roughly kidney-shaped and a mix of grasses, shrubs and groundcovers enhance the design with a few larger shrubs such as *Dodonaea inaequifolia*, *Boronia pinnata*, *Prostanthera ovalifolia* variegated form, *Richea dracophylla* and an unnamed slim form of *Zieria*. Planted at the back these will eventually hide the vegetable garden. Some of these shrubs are already dwarfing the boulders but the effect is pleasing.

One of my greatest pleasures is propagating plants for our garden and also many to share with friends. For this activity I have a glass house with an automatic bottom heat mist propagator and this has provided me with many hours of pleasant pottering, as well as producing many unusual and interesting plants. The lower side of the glasshouse was always ugly with slimy mossy stains on the concrete base. I overcame this by planting a row of *Restio tetraphyllus* alongside and this makes a lovely show and the moisture draining from the glasshouse provides the moisture required by these lovely monocots.

Despite the fact that we acquired a garden with heavy soil and not the friable sandy loam that we had hoped for, our efforts have been quite successful and we are enjoying our new garden as much as we did our garden at Austins Ferry. ■

## Wildflower garden in Legana, Tasmania

*Continued from page 355*

Native orchids have returned in recent times. There are two large grassed areas containing many hundreds of Sun Orchids, *Thelymitra pauciflora*, and Onion Orchids, *Microtis* species, which make a spectacular display in summer. Other patches include Small Greenhoods, *Pterostylis pedunculata*, and Bird Orchids, *Chiloglottis gunnii* and *C. reflexa*.

Plants which formed part of the original vegetation and are still here include Chocolate Lilies, *Dichopogon strictus*, Milkmaids, *Burchardia umbellata*, Yellow Bulbine Lilies, *Bulbine bulbosa*, Sundews, *Drosera peltata* ssp *auriculata*, Running Postman, *Kennedya prostrata*, Apple Dumplings, *Billardiera scandens*, Cranberries, *Astroloma humifusum* and Ants Delight, *Acrotriche serrulata*.

Many plants are hybridising in the garden, one in particular is an *Acacia*, a beauty with large bright yellow ball flowers 12 mm across and narrow bright green somewhat sticky phyllodes. We are watching this one with interest to see how large it will grow, so far it is about 4 metres tall. The parents are not obvious although we suspect *Acacia howittii* may be one of them.



The **garden of Jeanette and Gordon Closs**, see page 359

The bog garden as described on page 359

The water course created for a view from the house

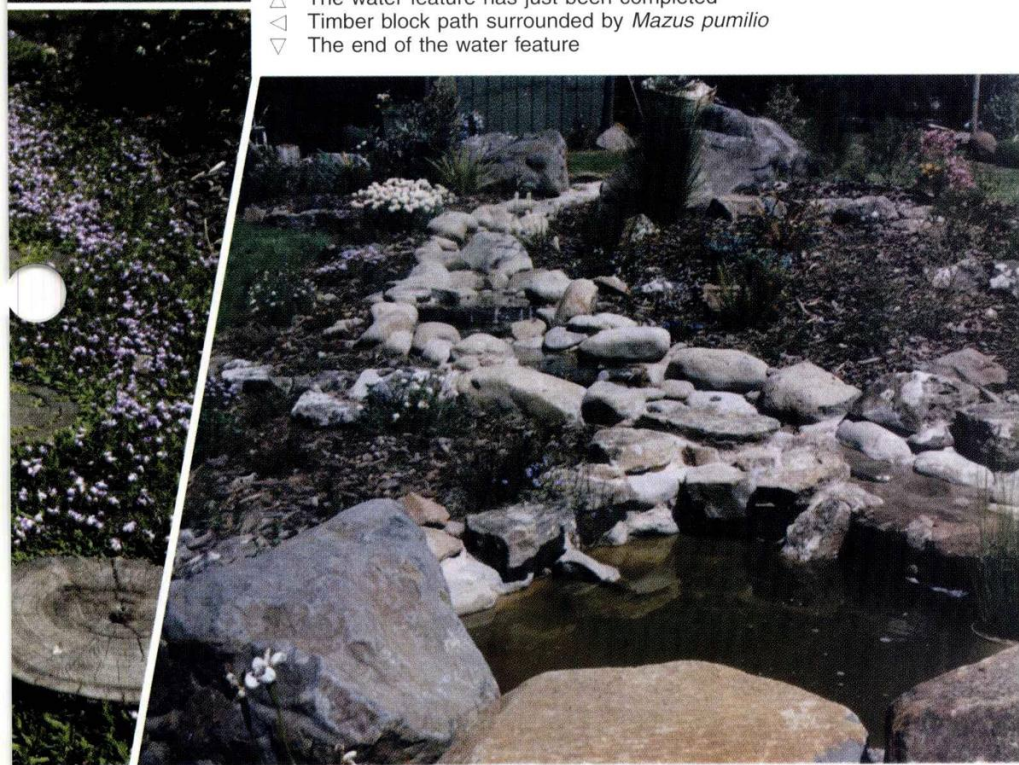
The water course, water trickles toward the house





The garden of Jeanette and Gordon Closs, see page 359

- △ The water feature has just been completed
- ◁ Timber block path surrounded by *Mazus pumilio*
- ▽ The end of the water feature



# Tasmanian plants

## in horticulture in Britain

by Jeff Irons

Over 500 different Australian plants can be bought in Britain as well as Eucalypts. These are some of the Tasmanian plants in my garden.

In the Royal Botanic Garden, Edinburgh, there are plants of *Richea scoparia* over 70 years old. Unusually they are white flowered and until recently most of the plants sold were propagated from Edinburgh stock. Seed-raised plants are now available. My own 16 year old specimen has reached 40 cm x 40 cm and is unflowered. I grow *Richea gunnii* and *R. sprengelioides* too. Commercially *Richea dracophylla* and *R. milliganii* raised from Arriell's seed are available. *R. dracophylla* is not really frost hardy though recent warm winters have given people false impressions about its toughness. The species' rapid growth and large size fit in with the vogue for architectural plants.

*Aristotelia peduncularis* (photograph on page 364) has been grown in special private collections in Britain. It was considered to be a tender difficult plant. Nowadays it is possible to buy plants which are hardy to  $-12^{\circ}\text{C}$  with the ground frozen to a depth of 15–20 cm. They come from seed collected at Neika by Tasmanian SGAP member Joan Wilcox and sent to me. Each spring this shrubby member of the *Elaeocarpaceae* bears profuse white bell shaped flowers with a red spot on the inside of each petal. Unfortunately I rarely see mature fruits. The summer is nearly always either too dry or too wet and they drop off.

*Boronia citriodora* is a super plant which spreads to form a low mat about 30 cm high. In early summer it is covered with pink/white flowers. This *Boronia* is found in parts of Tasmania which receive rain on nearly 300 days a year. It must not be allowed to dry out. (Photograph on page 365).

I've had *Diplarrena latifolia* for over 30 years. Each year in early summer its sober fans of leaves come alive with white flowers dancing atop slender stems. Close inspection reveals the beautiful marking of the inner segments. When in bloom it sells on sight yet this beautiful Irid is unknown in British gardens.

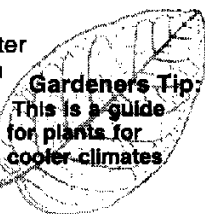
*Ozothamnus ledifolius* has received the highest award that any plant can get in Britain, the Royal Horticultural Society's "Award of Garden Merit." To gain this award a plant must be excellent for garden use in the open or under glass. It must have a good constitution; not be very susceptible to pests or diseases; not require specialized care; not revert to any unusual vegetative or floral characteristics; be either available commercially or for propagation. Seen on Tasmanian mountains as wind or fire pruned low shrubs, the species really comes into its own in our gardens. After 22 years in the garden my specimen is about 1.3 m high and across. I have it where our low winter sun can light up the yellow undersides of its leaves. Our commercial form is one with small closely packed leaves. Seedlings that I've raised (Tas. SGAP seed) have not been as good. In late spring the shrub begins to glow and by April it is like a giant mound of burnished terra-cotta. The colour is just that of the flower buds! Eventually they open to reveal creamy white flowers. On still sunny days the air around this fragrant bush reveals why it is called *Ozothamnus*. (Photograph on page 364.)

*Celmisia* are much loved in Britain. Unfortunately they fare best in the cooler northern part of the country. Australian *Celmisia* are "easier" in the south-east of England than are the New Zealand species.

*Gaultheria* are popular in Britain and I have all five of the Australian species. *Gaultheria tasmanica* is popular with alpine enthusiasts and forms with red, white and (claimed) yellow fruits can be bought. *G. hispida* delights us with large white flowers in spring while in late summer its white fruits are the first to ripen. *Pernettya lanceolata* are blooming now, their first flowering.

*Persoonia gunnii* is even smaller. Just one stem branched at the base and a total of ten growing points. I lost pot grown seedlings as I didn't realize that sun shining onto a black plastic pot causes the roots to be given a steam bath.

One of the hazards of British gardening is winter desiccation. Dewpoints as low as  $-25^{\circ}\text{C}$  have been recorded. When dry winds coincide with frozen soil plants are unable to replace the water evaporated from their leaves and they die. *Melaleuca squamea* from Mount Read is tolerant of both drying winds and cold. The purple flowered form can now be bought commercially. It grows to be about 1 m in height and is floriferous.



My *Leptospermum riparium* from southern Tasmania has reached 5–6 m in height. The tall narrow shape makes them a useful addition to the garden. Dick Burns sent me cuttings of *L. riparium* from the Arthur River. (Photograph of *L. lanigerum* on page 365. *L. riparium* is similar in appearance.)

British alpine gardeners drool over *Trochocarpa thymifolia*. It is supposed to be difficult and a flowering specimen is almost certain to win a first prize if exhibited in an Alpine Garden Society Show. The commercial clone has red flowers. Being monoecious it never fruits. My 14 year old specimens of this 30 cm high shrub have white flowers. They too never set fruit.

*Donatia novae-zelandiae*, (photo, page 364) unlike northern hemisphere cushion plants, needs wet conditions and very acid growing medium. Sky Lily, *Hempeliion novae-zelandiae* has pretty blue flowers and also lives in a pot.

Conifers are popular here and several Tasmanian ones can be bought from British specialist nurseries. I am pleased with *Diselma archeri* "Read Dwarf", Reputed to reach 60 cm in height, it has yellow young growth. A female plant of the 'ordinary' species has reached 1.3 m high and wide in its fifteen years in the garden. With drooping branch ends it is an attractive shrub.

#### Tasmanian plants on sale in Britain

Taken from 1997–98 Plant Finder

|                                 |                                 |                                 |                                |                                  |
|---------------------------------|---------------------------------|---------------------------------|--------------------------------|----------------------------------|
| <i>Acradenia frankliniae</i>    | <i>Callistemon viridiflorus</i> | <i>Eucryphia lucida</i>         | <i>Lomatia tinctoria</i>       | <i>ledifolius scutellifolius</i> |
| <i>Allocasuarina crassa</i>     | <i>Celmisia asteliifolia</i>    | <i>Gaultheria hispida</i>       | <i>Melaleuca squamea</i>       | <i>Pittosporum bicolor</i>       |
| <i>Anopterus glandulosus</i>    | <i>Clematis gentianoides</i>    | <i>tasmanica</i>                | <i>Microcachrys tetragona</i>  | <i>Richea dracophylla</i>        |
| <i>Aristotelia peduncularis</i> | <i>Coprosma nitida</i>          | <i>Grevillea australis</i>      | <i>Olearia erubescens</i>      | <i>milliganii scoparia</i>       |
| <i>Atherosperma moschatum</i>   | <i>Correa alba</i>              | <i>Hakea epiglottis</i>         | <i>glandulosa lepidophylla</i> | <i>Telopea truncata</i>          |
| <i>Athrotaxis cupressoides</i>  | <i>Dicksonia antarctica</i>     | <i>Lagarostrobos franklinii</i> | <i>obcordata</i>               | <i>Westringia raleighii</i>      |
| <i>laxifolia</i>                | <i>Diplarrena latifolia</i>     | <i>Leptospermum riparium</i>    | <i>Ozothamnus antennarius</i>  |                                  |
| <i>Bedfordia salicina</i>       | <i>Epacris paludosa</i>         | <i>grandiflorum</i>             | <i>hookeri</i>                 |                                  |



△ *Donatia novae-zelandiae*, Plants in Britain, see page 362. Photo by J. Simmons  
 ▽ *Aristotelia peduncularis* ▽ *Ozothamnus ledifolius*

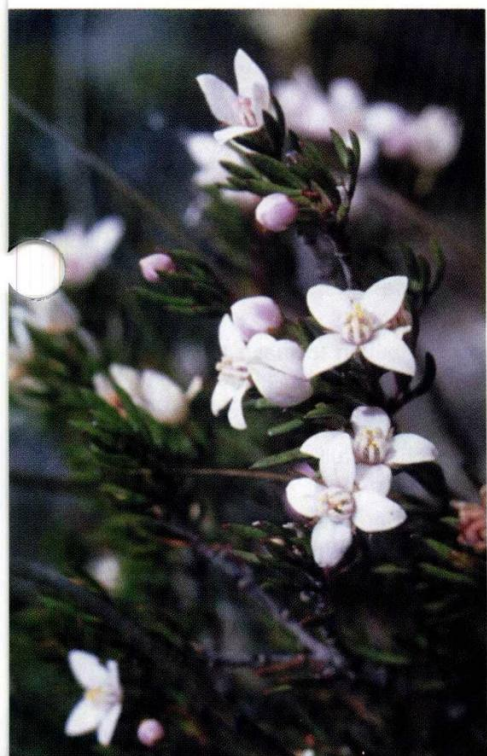




△ *Telopea truncata*, yellow form, see page 343

*Boronia citriodora* (centre) plants grown in Britain

▽ *Leptospermum lanigerum*



# A Tasmanian garden

## Tasmanian Rhamnaceae at Penguin, Tasmania

My garden, No. 32A Part 1

by Dick Burns

There are many factors that contribute to an enjoyable garden. The place should please all our senses with a diversity of sights, sounds, smells and touches. To achieve year-long variation, we depend on plant shape and the colour and form of the leaves: most flowers are seasonal delights only.

I'd like to share with you the species of Rhamnaceae I am growing (or have tried) in my garden. But first, you will need to know what it is like at Penguin (which is actually a synonym for "the Centre of the Universe"). Penguin is sighted on the northern coast of Tasmania; the only thing between our main street and Bass Strait is a grassy verge and the beach. Average summer temperatures range from 11°C to 21°C with winter temperatures ranging between 4.5°C and 13°C. Morning frosts are a regular winter occurrence on the local farm paddocks but uncommon in my shaded garden. Snow has fallen on Penguin twice in the twenty-one years of my residence but has melted immediately. We have a dry summer and wet winter, the average annual rainfall being around 1,000 mm. I live on the edge of town on a double block that has a moderate slope facing west. Because of the confines of the surrounding land, prevailing winds approach my block from the south, blowing across the slope. The bedrock is ancient basalt in some parts and chert in others. So the soil is either poor clay or a shallow gravelly grey pcdsol. It dries out immediately the season's rains stop. Soil "improvement" I have carried out is to build up an accumulation of twenty years of shreadings, prunings and leaf or branch litter or old newspaper.

Nowadays when I plant out, I may mix a bit of blood and bone into the dug hole, and I always scatter some slow release fertilizer around the new plant. After the initial watering, the plant is then left to fend for itself, apart from some judicious pruning or if I find the plant being attacked by a pest.

My main rule for plant selection is supposed to be "specialize in Tasmanian plants". But that idea collapses every time I visit an interesting nursery, or look through a catalogue, or someone gives me a plant, or... I guess I'm a collector rather than a garden designer: Dr Freud would have had something to say about me, I'm sure.

One plant family that has a unique contribution to make to the garden's mood is *Rhamnaceae*. Many species have furry leaves or stems and these hairs vary in density and in colour from white through to green or brown. Leaf edges tend to be entire and their size is often larger than is the norm for Australian plants. Plant sizes range through the full gamut from small trees to small olumping shrubs or ground huggers.

The *Rhamnaceae* family has a reputation for being difficult to propagate and my experience contributes nothing further to the current published knowledge. I've never tried seed propagation and only had occasional success with cuttings. most plants I have are either bush-collected or nursery stock.

## Tasmanian species in the plant family *Rhamnaceae* tried at Penguin

Tasmanian endemics are marked **e**, cutting-grown plants are marked **c**, those growing on a basalt soil are indicated with **b** and those on podsol with **p**.

*Pomaderris apetala* subsp. *apetala* **c**: Photograph on page 380. A self-sown plant grew vigorously as a vertical column to 6 m for some years until I decided to try out the new chain-saw. In the bush, this species grows in sheltered gullies in dense groves. My plant was not affected at all by the strongest of winds. The newly-described subspecies *maritima* which grows as a lower shrub on exposed coastal slopes would be a better choice for my garden.

*Pomaderris elliptica* var. *elliptica* **b**: Photograph on page 380. The large glossy deep green leaves of this species make it an eye-catcher. My large plant, a 3 m tree is a local form with cream-coloured flowers. I have recently acquired a cutting-grown yellow-flowering form. So the chain saw may strike again.

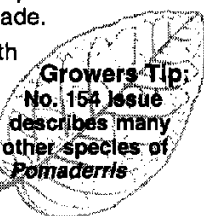
*Pomaderris oraria* subsp. *oraria* **b**: The first time I saw this plant on the leeside of a dune I was struck by the unusual crinkled leaf and its colour. The plant was an erect tree with adorned crown. Cuttings failed and I haven't found the plant again.

*Pomaderris paniculosa* subsp. *paralia* **b**: In Tasmania, this was until recently included in *P. oraria*. The more obvious differences are the sprawling habit and the glaucous upper leaf surface. Mine spreads its main stems along the ground and the green leaves growing off furry rusty-coloured stems make it stand out against other plants in the garden. Flowers are insignificant.

\**Pomaderris intermedia* **p**: With its grey leaves, this plant is special. It is recently acquired and slow-growing but in the bush it formed a shrub between 1 m and 2 m. Flowers are cream.

*Pomaderris plifera* **b**: Leaves are like *Pomaderris elliptica* and the flower is yellowish. The plant is growing happily in semi-shade.

*Pomaderris phyllicifolia* **p**: Based solely on my plant with its tiny brown-green leaves and insignificant flowers, you would rate this species as one for collectors. But there is one form that produces a profusion of yellow flowers. I have tried to grow it from cuttings. *P. phyllicifolia* grows as a small erect shrub in sunny or shaded spots, both at home and in the bush.



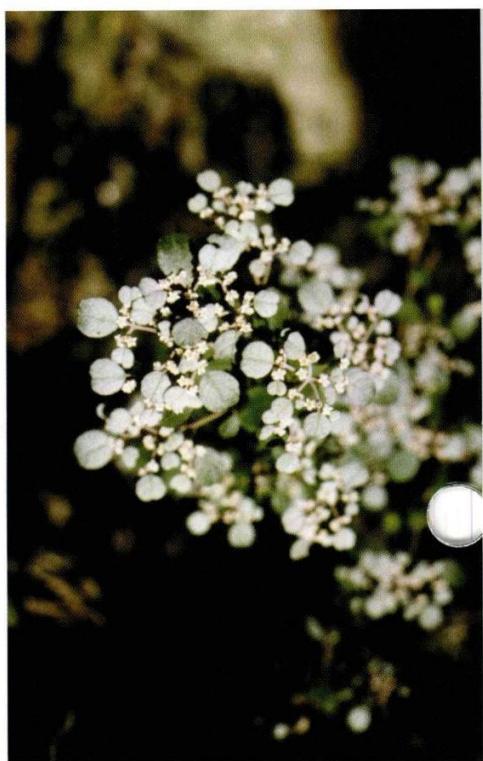
Growers Tip:  
No. 154 Issue  
describes many  
other species of  
*Pomaderris*

*Pomaderris elachophylla*: I've only seen this once in the wild and tried cuttings. I had no success but the look of the plant didn't inspire me to try again.

*Spyridium gunnii*: **e c b**: Photograph on page 368. This is a "must-have" species, as soon as it flowers you know why. Mine is an erect shrub to about 3.5 m after 18 years with a dense covering of 2 cm off-green leaves and masses of striking white floral bracts adjacent to insignificant flowers. The flowers are grouped into small heads each with its own white tomentose floral bracts. The heads are clustered in groups of 2-4. The species in the wild grows in only a few very specialized spots. In the garden it doesn't seem to have such special demands. The form growing in the south-east of Tasmania has markedly different leaves. They are rounder and glaucous with a rich green glossy surface, surface and would make an even better garden plant.



△ *Spyridium obcordatum*  
Photography by J. Simmons  
▽ *Spyridium obovatum*



△ *Spyridium parvifolium*  
Photography by Dick Burns  
▽ *Spyridium gunnii*

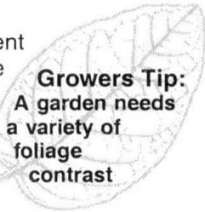


*Spyridium microphyllum* **e c b**: My cuttings came from the east coast and the plant has green glossy leaves larger than "micro", (3 mm long) but it is still a good plant. I have two plants, both of which are low-growing with long horizontal stems, dense and fast growing to 0.3 × 0.6 m. One is watered regularly, the other is not. The white floral bracts persist for most of the year.

*Spyridium obcordatum* **e c b**: This species has been in nursery catalogues for a large number of years. I had two plants growing well in different parts of the garden but one died after 10 years. The remaining one grows happily as a low domed ground-cover in shade with some summer watering. Leaves are deep glossy green, 5 mm long.

*Spyridium obovatum* var *velutinum* **e p**: Within most of its range along the east coast, this species grows as a small understorey tree often on river banks. On high cliffs of the south-east peninsulas it can be found as a low spreading bush a few centimetres off the ground. My plant is growing densely and vigorously erect to 2 m in dry soil. It has furry new stems and roundish dull green leaves 1.5 cm long. Flowers are yellow (5 mm) clustered in dense heads lacking floral bracts

*Spyridium ulicinum* **e c**: I have two plants from different sources one growing on clay, the other on podsol. Both are dense well-shaped eye-catchers, about 2 m tall. Leaves are tiny (5 × 1 mm) and create a contrast with the furry rust-coloured stems. In springtime, the foliage plants light up with masses of starry white flowers. It (and *S. obovatum*) does not produce white floral bracts.



**Growers Tip:**  
A garden needs  
a variety of  
foliage  
contrast

*Spyridium parvifolium* var. *parvifolium* **b**: In the wild this plant can form groves of misty grey-green. It grows as a 1 m shrub, but my plant is misshapen due to borer attacks. The variety *molle* (**c p**): has grey leaves to 1 cm long, put it on the "must have" list. My plant has grown rapidly to a 1 m erect shrub.

*Spyridium vexilliferum* **p** and **b**: The east coast form is a small erect shrub with narrow linear leaves to 1 cm and persistent white floral bracts. The west coast form is a small sprawling plant with slightly triangular leaves. I like both.

Almost all my *spyridiums* have been attacked by borers at some stage. The larvae dig into finger-thick stems and when I find one, I either give it a dose of methylated spirits or of household insecticide. Sometimes I lose the branch but the plant always recovers. The borers prefer younger plants, and to be close to the ground.

*Cryptandra alpina* **e**: An insignificant plant in exposed alpine areas until it flowers, then it is a delight with a hand lens. See the photograph on page 380. The terete leaves are 1.5–3 mm long on stems like black fuse wire.

*Cryptandra exilis* **e**: I was given a plant that sadly died quickly.

*Cryptandra amara* **b**: This is a recent acquisition that is growing happily in a sunny, dry spot. It has 4 mm leaves and startling white flowers the same size.

*Stenanthemum pimeloides* **e**: Photograph on page 380. Mainlanders may call this a *Cryptandra* but we are staying with the more distinctive name. Its prostrate form and rounded bright glossy green (to 6 mm) and large floral bracts make this plant most desirous. Like many *Stenanthemum* the true flowers are tiny (2 mm in diameter) but are clustered in compound terminal heads; 2 or 3 powdery white bracts surround each flower. I have struck it easily a few times and have tried nursery stock but I cannot keep it going in the ground or in a pot.

# Eucalypts of Tasmania

by Mary Page\*

Tasmania is an island of mountains and valleys, open plains and moorlands with a coastal surround. The variation in altitude creates climatic and soil changes which in turn affect vegetation. Eucalypts are the dominant trees and appear in particular environmental situations suitable to their species. Some are possible remnants of earlier eras. There are twenty-nine eucalypts in Tasmania, seventeen of which are endemic. The Eucalypts are divided into two categories, the Stringy-barks, Ashes and Peppermints (known as the sub-genus *Monocalyptus*) and the Black Gums and the White Gums (known as the sub-genus *Symphomyrtus*). The latter are further divided into sub-groups of White Gums, Yellow Gums, the Blue Gum and the Alpine White Gums.

The flower buds of the *Monocalyptus* sub-genus are club shaped with a single operculum and those in the sub-genus *Symphomyrtus* have two opercula. The outer operculum sheds early in the bud development and the other when the flower is opening. The buds are diamond shaped or pointed.

## Stringy Bark and Ash

*Monocalyptus* series *Obliquae*

The Ashes include *Eucalyptus regnans*, Giant Ash, a stately tree with a creamy trunk and long strips of decorticated bark. It is the tallest flowering tree in the world and grows in the north and central south of the state but not in the west.

*Eucalyptus obliqua*, Browntop Stringybark, is widespread and can grow to huge proportions.

*Eucalyptus delegatensis*, Whitetop or Gumtop Stringybark, has fibrous bark which often covers most of the trunk. It is widespread and endemic and takes over from *E. obliqua* on the higher slopes. Photograph on page 381.

*Eucalyptus sieberi*, Tasmanian Ironbark, has deeply furrowed dark grey bark and is found on the east coast from St. Helens to the Freycinet Peninsula.

*Eucalyptus pauciflora*, Cabbage or Weeping Ash, is prevalent on the east coast and central plateau. Sometimes it is a large tree but is often small and twisted.

## Peppermint

*Monocalyptus* series *Piperitae*

The Peppermints are varied in appearance and general leaf structure.

*Eucalyptus amygdalina*, Black Peppermint, is perhaps the most widespread eucalypt in Tasmania from the north and central plateau to the south-east coast. The leaves are lanceolate and the bark fibrous up to the small branches.

*Eucalyptus nitida*, Smithton Peppermint, spreads from the central plateau to the west and north-west. It is a similar tree to *E. amygdalina* but sheds bark from the upper limbs and is usually a medium sized tree although taller in wet areas.

\*Mary Page has published a unique little book, *The Eucalypts Of Tasmania*, available from the author, 149 George Street Launceston, Tasmania 7250 for \$21.20 including postage. Twenty-nine species are presented, each with a page of simple description opposite a coloured reproduction of a painting showing a leafy twig and leaves at various stages of maturity as well as the fruits so useful in the identification of a eucalypt. They are presented in groups used in this article following a colour photograph of the tree trunk types in the group. For walkers in Tasmania this book would be a very valuable reference. Editor.

*Eucalyptus coccifera*, Snow Peppermint, is found in alpine regions but occasionally in lower locations, from the central plateau to the east and south-east. The broad seed capsules are the largest of the peppermint species.

*Eucalyptus tenuiramis*, Silver Peppermint, is found towards the east and south of the state and is a graceful tree with green or glaucous drooping foliage.

*Eucalyptus pulchella*, the White Peppermint is another attractive east coast peppermint, noted for its fine leaves throughout from juvenile to adult.

*Eucalyptus risdonii*, the Risdon Peppermint is an 'ornamental' tree with small bluish foliage, see photo on page 381. It grows in limited areas near Hobart.

*Eucalyptus radiata* ssp *robertsonii* has very fine fibrous bark and glaucous or green leaves. It is found in small pockets near the Forth River's upper reaches in the north-west, the only peppermint in Tasmania considered not to be endemic.

**Gums** — Forestry reserve the term 'gums' for a group of eucalypts having smooth bark with sometimes a stocking of rough bark at the base. We should call our eucalypts 'eucalypts'. 'Gum trees' is a misnomer since eucalypts do not produce gum, but exude a resinous substance containing tannins, often formed after an injury to the living bark of the tree.

### **Black Gum**

*Symphyomyrtus* series *Ovatae*

*Eucalyptus ovata*, Swamp Gum, grows mainly in the north, east and south and has broad shiny leaves.

*Eucalyptus barberi*, Barber's Gum, is a rare endemic occurring near Cranbrook in the east and a little toward the south. It is a small mallee-type tree with red twigs and branchlets.

*Eucalyptus brookeriana*, Brooker's Gum, from north-west and east of the state, has green and ochre patches on its trunk and delicate crenulate juvenile leaves.

*Eucalyptus rodwayi*, Black Swamp Gum, is scattered throughout inland areas, north, north-east and east. Its seed capsules are the smallest of the Tasmanian eucalypts. *E. ovata* and *E. rodwayi* prefer damp conditions. *E. barberi* and *E. brookeriana* usually grow in rocky dry mudstone areas.

### **White Gum**

*Symphyomyrtus* series *Viminalis*

There are three **White Gums** in the White Gum sub-group, all have similar leaves and seed capsules but the juvenile leaves are distinctly different.

*Eucalyptus viminalis*, White or Manna Gum, is prevalent in the north and east, south-east and central districts but only in scattered areas in north and north-west.

*Eucalyptus dalrympleana*, Mountain White Gum, is a tall tree with white straight trunk with bluish markings and is found on the central plateau and in the east.

*Eucalyptus rubida*, Candlebark, also has a white trunk but the bark has pink or red patches and is found in the east and on central plateau.

In the sub-group White Gums there are three **Yellow Gums**.

*Eucalyptus johnstonii*, Yellow Gum, is a forest tree found on south-east mountain slopes and plateaux. It prefers wet conditions and when wet the trunk shows bright yellow patches.

*Eucalyptus subcrenulata*, Alpine Yellow Gum, is a medium sized tree and grows well in exposed rocky areas on the central plateau.

*Eucalyptus vernicosa*, Varnished Gum, is a very small tree or dwarf shrub growing in very exposed sites in high alpine areas on mountains of the west and south-west. An interesting tree with small shiny leaves and which can be mature with seed capsules at less than knee high. All three Yellow Gums are endemic.

*Eucalyptus globulus*, the well-known **Blue Gum** sub-species, grows on King and Flinders Islands and east and south-east Tasmania. Named Blue Gum because of its blue juvenile leaves unlike its green mature leaves. The single bud produces a large showy flower when the cap is shed.

In the sub-group, **Alpine White Gums** is:

*Eucalyptus archeri*, Alpine Cider Gum, which prefers high altitudes in and around the mountains of the north-east including Ben Lomond. It is a smallish tree capable of withstanding harsh alpine conditions.

*Eucalyptus gunnii*, Cider Gum, is a similar tree but favours lower altitudes and damper sites, mainly on the central plateau. It is particularly noted for its orbicular blue-green juvenile leaves much sought after for floral arrangements.

*Eucalyptus urnigera*, the Urn Gum, which grows on the southern central plateau and south-east, has greenish areas of bark and sometimes numerous branches from low on the trunk. It is found on Mt. Wellington. The seed capsules are urn-shaped hence its name.

*Eucalyptus morrisbyi*, Morrisby's Gum, is rare and restricted to South Arm in the south. Leaves are glaucous and the cream trunk has patches of pink and grey.

*Eucalyptus cordata*, the attractive Heart-leaved Silver Gum, is included in this group and is also considered a rare species. It is found in scattered areas in the south and south-east. It is used extensively for ornamental planting. The above five species are endemic. See photograph on page 357.

*Eucalyptus perriniana*, Spinning Gum, grows in two specific areas near Tunnack and Strickland in central-south midlands. Its almost circular glaucous juvenile leaves, when dried, spin around on the stem in the wind. Photograph, page 357.

Early explorers collected seed from Tasmanian trees and soon they were planted and growing in many parts of the world. During one of Cook's voyages seed from a Stringybark, now known as *Eucalyptus obliqua*, was collected from Bruny Island in 1777 by botanist David Nelson and taken to Kew where eventually it was described by French botanist M. L'Heritier, thus making it the first of any of the species to be published. ■

**Everlastings as decorative plants.** Our last issue introduced the everlastings with a description of how they comprise a center of many small blowers surrounded by papery bracts. One is shown in the photo on page 377. Just as they decorated the grasslands of Tasmania so can they liven up your garden with a very long display. There will be more articles daisy flowered plants.

**Olearia** are daisy's of the non-everlasting kind but very floriferous in the garden. Will readers who have grown them or have photographs please contact me.

**Cassia**, many of which are now known as *Senna*, and their related genera in the plant family Caesalpinaceae, will be featured in an issue shortly. Many people have grown them as they are reliable and very showy. Please send reports of successes and failures and any photographs so we can make this a good issue.

**Alpine plants** are mentioned briefly in this issue. I hope to produce another featuring these plants and others suited for a rockery in southern and temperate areas. Will readers please help with reports and photographs. Editor.

## An indoors tropical

# Water Garden

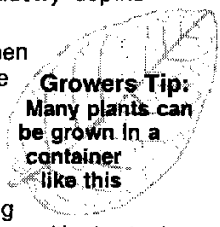
by Els Hayward

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. He ordered by mail a rhizome of a *Nelumbo lutea* hybrid, cost \$20. The salesperson was reluctant to send a tropical plant to Tasmania as it would surely die in our colder climate. 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 such as 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.

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 managed to reignite a glowing stick. ■



**Growers Tip:**  
Many plants can  
be grown in a  
container  
like this

**Terrarium gardens** are a unique alternative to the above. They are described in our volume 1, page 358 and in volume 18, page 119 where many quaint small plants are described for this form of attractive display. Editor.

# Southern Sassafras

## Its Early Discovery

by Mark Geeves

*Atherosperma moschatum* occurs in forests often in association with *Nothofagus cunninghamii* where they form the dominant trees in the canopy. It is widespread in Tasmania and is often dominant in fern gullies. It can reach a height of 12 metres with a short-grained, black, aromatic bark. It has entire leaves 4–8 cm long, with entire or irregularly toothed margins, shining above, greyish-green beneath and tiny cream-coloured flowers, pistillate or staminate, each enclosed in two pink bracts. Some flowers have stamens and pistils. After the flowers die the sepals persist round the several single-seeded reddish shining fruits. It flowers from August to October. All parts of the plant are aromatic. The leaves have been used to flavour tea and the bark was used in the past to produce Sassafras beer. Plants are long lived and many may be quite ancient as the main trunk may die but the plant continues to grow by suckering. If grown in the open the plant maintains a beautiful shape. It is also found in mountain gullies in Queensland, New South Wales and Victoria.

*Atherosperma moschatum* was first described by Jaques Julien Houtou de la Billardiere (1755–1834) in his 'Relation du voyage a la recherche de la Perouse', published in 1800. *Novae Hollandiae Plantarum Specimen* was published in parts from 1804 to 1807, in all describing 287 species of Australian plants.

Allan Cunningham was one of Australia's first and most distinguished resident botanists. He came to New South Wales in 1816, at the age of 25, to collect for Kew Botanical Gardens and accompanied and led many expeditions. He visited Van Diemen's Land with Captain King in 1818–19, and recorded in "Journal of Botany" Vol. IV, 1842: Referring to Maquarie harbour "in no situation did I find the botany so novel and otherwise interesting as on the shores of a little bight, about nine miles up from the entrance, called Pine cove, from the abundance of Huon and Adventure Bay Pines, which its humid shaded woods afford". With the Huon pine (which may well be a *Dacrydium*, or altogether a new genus) and that named Adventure Bay Pine (*Podocarpus aspleniifolius* Labill.) I detected the *Anopteris* of Labillardiere in flower; the *Cenarrhenes* of that same author in fruit; the beautiful *Carpodontos* (*Eucryphia lucida* Lab.) and the Sassafras-scented *Atherosperma*.

Another early collector of *Atherosperma moschatum* was Ronald Campbell Gunn F.R.S., F.L.S. Gunn arriving in Van Diemen's Land in 1830. Introduced by letter he collected for Sir William Hooker and his son Joseph.

In a letter dated 29th March 1845, Gunn writes: "My Dear Hooker, Plants from my trip towards the Franklin River have now been in their Wards case for upwards of a month; and although the Coniferae do not look so healthy as I could wish, I yet trust many will survive. The Plants in the case are of Huon pine, *Fagus cunninghamii*, *Anopteris glandulosus*, *Telopea truncata*, *Richea pandanifolia*, *Anemone crassifolia*, *Atherosperma moschatum*, *Prionotes cerinthoides* and another 18 species". ■

# Native cherry tree

## The tree with the stone on the outside

by Philip Milner

The Tasmanian tree known locally as the Native Cherry looks nothing like a cherry tree; it has more the appearance of a cypress or *Casuarina* but it is not related to these trees either. It is also a partial parasite on other plants but it is not a mistletoe, although it is a distant relative. *Exocarpos cupressiformis* is a member of the Santalaceae family, along with Sandalwoods and the Quandong, a tree of arid Australia with the edible fruits of some commercial potential. The family is widespread in temperate and tropical regions throughout the world.

There are 10 *Exocarpos* species in Australia and all but one is endemic. Tasmania has 5 species but *E. cupressiformis* is the most widespread and obvious species. It is an understory tree of open Eucalypt forest and woodland in the eastern two-thirds of the state, often in the drier and better drained situations. If you are fortunate enough to live in a wooded area with existing *Exocarpos* trees, protect and keep them, and value them as they are quite beautiful and ornamental trees. You will be unlikely to re-establish them once they are gone.

In appearance it is very cypress-like, hence the specific name 'cupressiformis'. It has many upright branches but the outer branchlets become pendulous in mature trees giving a soft graceful appearance. The branchlets are usually a yellowish-green often with bronze toning but the actual leaves are reduced to small scales. The cream flowers are minute, in short spikes.

An unusual characteristic is that although the fruit is a globular nut about 0.5 cm in diameter, the stalk of the fruit swells, becomes succulent and turns bright red and this has led to the common name of Native Cherry. It is said to be a tasty little morsel which was much sought after by the local aboriginal tribes and the early settlers and is still eaten by a number of native animals and birds. The generic name *Exocarpos* means — 'exo' outside, and 'carpos' fruit, referring to the nut or stone being outside the fleshy part of the fruit.

*Exocarpos* is a root parasite as are many members of the Santalaceae family. The roots develop a specialized organ called a haustorium which grows out from the root and attaches by means of suckers to the roots of nearby host plants. It penetrates the roots of the host without causing damage or injury and obtains nutrients direct from the host. It uses other woody plants as hosts and not non-woody plants such as grasses or lilies. *Exocarpos* is not an obvious parasite and does not usually adversely affect the surrounding vegetation that it is using as hosts. This is no doubt due to its wide host range; its roots appear to attach to many trees and shrubs including Eucalypts. If *Exocarpos* was transplanted along with an accompanying host plant it usually survived, but those transplanted without a conjoined host plant usually died within a few months.

They have great potential as ornamental plants but problems of propagation have to be overcome. Sowing fresh seed must be done with a suitable host plant. There has been limited success with stem and root cuttings. This is an ideal project for plant propagators. Native Cherry can then be grown as a specimen tree or a multi-trunked copse encouraged by a little root pruning. ■

# Native grasslands

## \*Conserve the lowland grasslands of Tasmania

by Neil R. Marriot, Stawell, Vic.

As in the south-east Australian mainland, grasslands and grassy woodlands were the first areas in Tasmania to be settled for grazing and farming. As a result, very little of these habitats were set aside as Crown Reserves; the vast majority is privately owned. Grassland communities in Tasmania are mostly found in the east of the state, particularly in the Midlands valleys, on hilltops in areas such as the Eastern Tiers, as well as along the east and south-east coasts. For a number of reasons the clearing of these communities was never as extensive as on the mainland. Large areas are still being cleared, primarily for 'improved' pasture because of the pressures on farmers to increase productivity.

Public lands protecting grassland communities are small and fragmented, and include many roadsides, rubbish tips, cemeteries and areas of State Forest. Fortunately a number of reserves and National Parks such as, Township Lagoon Nature Reserve at Tunbridge, Maria Island National Park and Schouten Island in Freycinet National Park protect grassland communities.

Grassland communities are termed as such due to the dominance of a variety of native grass species. In Tasmania these are usually *Poa labillardierei* Common Tussock-grass, *Themeda triandra* Kangaroo Grass, *Ehrharta stipoides* Weeping Grass, and *Poa rodwayi* Velvet Tussock-grass. These are enhanced by the extensive variety of daisies, lilies, orchids, herbs and other small plants that occur amongst the grass tussocks.

Many of these plants are rare or threatened on a national or statewide basis such as *Carex tasmanica* Carex Sedge, *Glycine latrobeana* Clover Glycine and *Leucochrysum albicans* ssp. *albicans* var. *tricolor* Grassland Hoary Sunray. Reasonably common on the mainland, but are now threatened in Tasmania are *Ajuga australis* Austral Bugle, *Arthropodium minus* Small Vanilla-lily, *Arthropodium strictum* Chocolate Lily, *Brachyscome rigidula* Leafy Daisy, *Calocephalus lacteus* Milky Beauty-heads, *Dianella longifolia* Pale Flax-lily, and *Tricoryne elatior* Yellow Rush-lily.

Finally there are those species that are nationally endangered as they are rare in Tasmania, but are found nowhere else. These include *Colobanthus curtisiae* Curtis' Colobanth, *Schoenus absconditus* Obscure Bog-rush, *Spyridium obcordatum* Creeping Dusty Miller, and *Stackhousia gunnii* Gunn's Mignonette.

It is vital for the long term survival of these plants and their grassland communities that proper management procedures are put in place for each particular remnant. This will include the propagation of rare and endangered grassland species and the restoration of depleted communities. In particular, local and state governments need to be lobbied to protect public remnants, particularly roadsides, and to compensate landholders for conserving native grasslands on private property. If for no other reason than this purely selfish motive, we should save the remnants of this, our most threatened ecosystem.

**Grassland plants of south-eastern Australia**, a field guide to grassland and grassy woodland plants is a new book by Neil and Jane Marriott, see page 382 for details.



△ *Leucochrysum albicans*, an everlasting daisy from **Grassland Plants**  
▽ **Fruit of the Native Cherry**, *Exocarpos cupressiformis*, see page 375



# Orites

Orites of Tasmania by Kay Geeves

Tasmania has four species of *Orites* and all are endemic to the state. All are attractive plants with horticultural potential.

***Orites diversifolia*** is the most widely dispersed occurring as a large shrub to 2 m in wet sclerophyll forests or as a low, dense shrub in montane habitats. It has wide, flat leathery leaves from 2–12 cm long, variable even on the same plant, entire or coarsely toothed. Odorous woody follicles remain clustered with erect spikes of small cream, honey-scented flowers. It strikes readily from cuttings and fresh seed germinates well.

***Orites acicularis***, Yellow Bush, figure B1, lends colour to our mountain landscapes. It is a dense, rounded bush to 1 m, the foliage yellow-green. Unique in the genus with its needle shaped leaves are up to 4 cm long and sharply pointed. Younger parts of the bush are covered with brown, felted hairs. Flowers, B2, are creamy yellow and produced in small spikes and partly hidden by the leaves. Due to its colourful foliage and mounded shape this plant draws attention at all times. Grow from cuttings or fresh seed. Growth is slow.

***Orites revoluta***, figure C1, is a dense bushy shrub of mountain plateaux. The crowded leaves to 2 cm are tough and leathery with rolled margins that almost cover the tomentose under-surface. Flowers, C2, are creamy-yellow and produced in short spikes that are well displayed. Both *Orites acicularis* and *Orites revoluta* are widespread in Tasmania alpine areas.

***Orites milliganii*** is a dense shrub usually 0.5–2 m but may be higher in sheltered positions. It has a more limited distribution and is found on some west coast mountains. The leaves are ovate to obovate (unique in this genus) thick and rigid, coarsely toothed and sharply pointed. The scented cream flowers are produced in terminal spikes. It is a handsome plant. It may be propagated from cuttings. Fresh seed will germinate but is quite difficult to find due to infestation by a small grub.

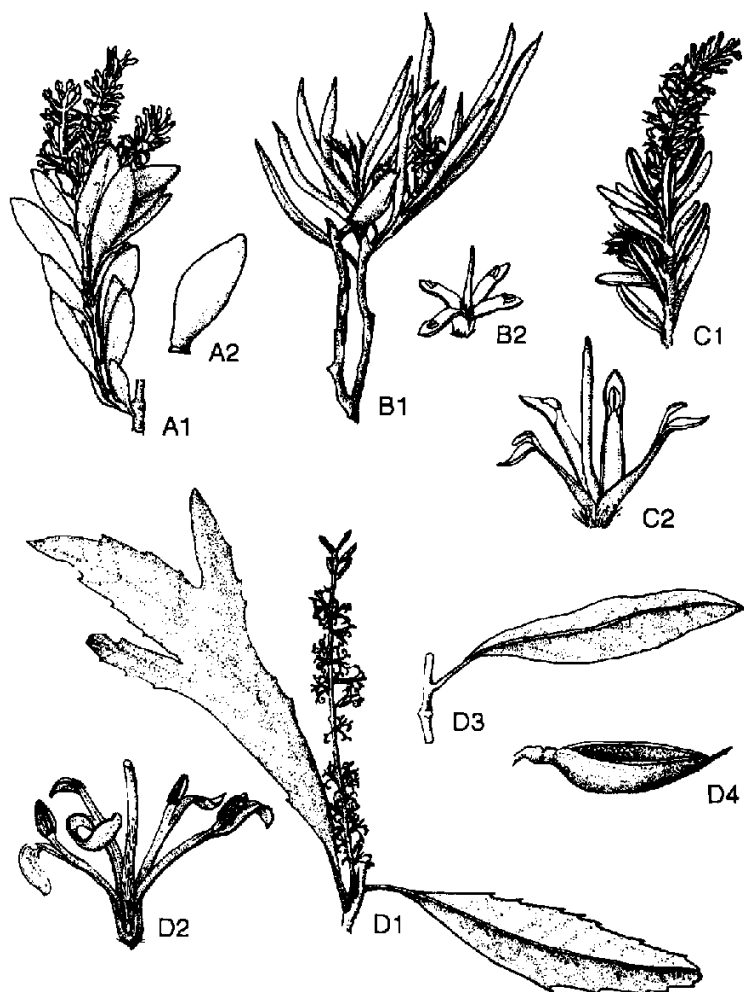
## The other Australian *Orites*

notes by W. H. Payne\*

***Orites excelsa***, figure D1, is a tree to 30 m tall although it occurs also as a bush. The valuable timber is similar to Silk Oak, *Grevillea robusta*, and the tree has been variously known as Prickly Ash, White Beefwood and Southern or Mountain Silk Oak. The adult leaves are mostly simple with toothed or entire margins, to 15 cm long; the juvenile leaves are, deeply lobed with secondary lobes with prickly, toothed margins as in D1. The young growth is reddish giving it potential as a decorative plant, even for indoors. The fragrant white flowers, D2, are in axillary spikes to 10 cm long in early spring. From the ranges of northern New South Wales (previously known as *Orites fragrans*) and into Queensland with small population in the peaks near Cairns, Qld.

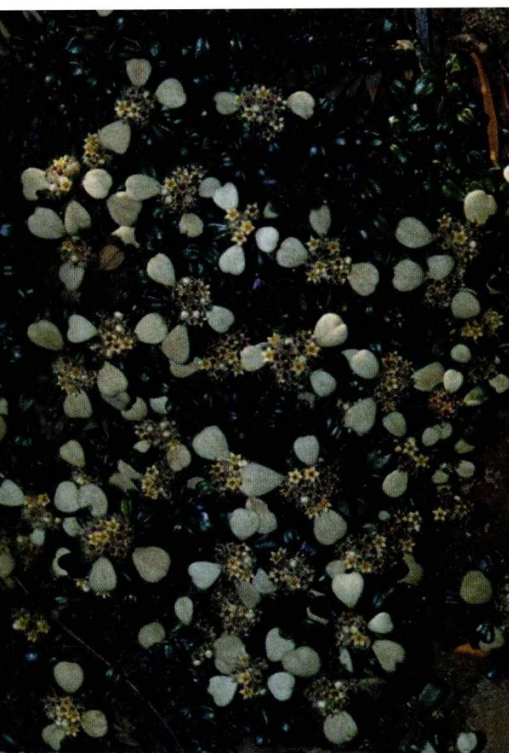
***Orites megacarpa*** is a canopy tree to 25 m confined to the mountain peaks near Cairns. It is similar to *O. excelsa* being distinguished by its villous (hairy) perianth and longer seed capsule to 44 mm, that open flat and are not boat-shaped. Leaves are less than 12 mm wide with short conflorescences to 5 cm.

\*Based on available literature, sketch by D. Boyce reproduced from *Flora of Australia*, Vol. 16.



*Orites lancifolia*, figure A1, is common in alpine heaths on the high mountains of south-east Australia. The light green oblong to lanceolate leaves are up to 30 mm long. The white to pale yellow spikes of flowers show above the bush decorating alpine areas in early summer following the snow thaw. Fruit as in A2.

Note that the *Orites* flower differs from many common Proteaceae where the flower head features a prominent style from each of its cluster of flowers as in the *Banksia* or the toothbrush or spider of *Grevillea*. In *Orites* the flowers, the floral tube (the perianth) is symmetrically tubular at the base, the 'petals' spreading with the ends drooping. The anthers are attached near the ends with free filaments. The central style is thread-like and straight scarcely thickening into a definite pollen presenter. The fruit is leathery and boat-shaped follicle producing 2 seeds winged at one end.



△ *Stenanthemum pimeloides*  
(page 369 for descriptions)



△ *Cryptandra alpina*



▽ *Pomaderris elliptica*



▽ *Pomaderris apetala*



△ *Eucalyptus risdonii*  
Photography by J. Simmons

▽ *Eucalyptus perriniana*  
See page 371 for descriptions



△ *Eucalyptus delegatensis*

▽ *Eucalyptus cordata*



# *Grassland Plants of South-eastern Australia*

This new book by Neil and Jane Marriott is really a field guide to the plants of grassland and grassy woodland communities in NSW, Victoria, SA and Tasmania. It has been produced to enable land managers, government agencies and students to identify the grasses, lilies, daisies, etc., of areas of grassland that may have been degraded but may, with informed management, be restored. 170 species have been illustrated in full colour, with details about the plant illustrated. Good value for \$21, send to the authors, P.O. Box 107, Stawell, Victoria, 3380.

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△ King Billy Pine, *Athrotaxis selaginoides*, a tree in a garden, leaves and cones



▽ Tasmanian Pencil Pine,  
*Athrotaxis cupressoides*

▽ Loose-leaf Pine,  
*Athrotaxis laxifolia*

