

Australian Plants

Registered by Australia Post
Publication No. NBG 1592

September, 1983
Vol. 12, No. 96

\$1.50



Australian Wildflowers of/ Colder Areas

Tasmanian Wildflowers

This issue, principally prepared by society members in Tasmania, presents a small segment of the largely unique Tasmanian flora that has proved of value in horticulture. This has been the subject of many issues of Australian Plants in the past and readers are urged to refer to them for a broader colourful reference. Here we have the benefit of many years experience of keen home gardeners and bush wonderers. The plants recommended will also do well in the Victorian scene.

Australian Wildflowers In Cultivation In Cooler Climates

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 even extremes in temperature and moisture are all hazards to be faced by the gardener. The experiences as published by the New England Group of the Society, page 150, are a valuable record.

Of interest also is the publication of experiences in England, America and New Zealand in this issue.

Rain Forests In The Garden

Different forms of rain forest have survived in a wide range of climates in Australia as classified in one of our previous issues. The article on page 147 is the first of a new series of articles to supplement the many already published.

Rockeries With Wildflowers

A rockery is the ideal way to grow many of the small dainty plants in a confined area. The articles on pages 161 and 164 are the first of a new series of articles and readers are invited to advise of their experiences.

CONTENTS

Tasmanian Alpine Flora	Heather Gulline	143
Rain Forest and Austral-Montane Plants In The Garden — N. F. Combe		147
Australian Plants For Northern Tablelands of N.S.W.ew England Group		150
Proteaceae Endemic To Tasmania	Jeannette Closs	151
Tasmanian Shrubs For Gardens	Carmel Statham	155
Nematolepis Pheballoides	Geoff Butler	160
The Small Rockery	Philip Milner	161
Rockery Construction	Geoff Butler	164
Australian Native Cut Flowers	J. Benyon	166
Lomatia	Jeanette Closs	167
Western Australian Eucalypts In Tasmania	J. E. Walters	169
Australian Plants In California	Lester Hawkins	174
Australian Plants In England	Bruce Austin	178
Australian Plants In New Zealand	Colin Henderson	183

COVER PLATE: *Epacris longiflora*

Photography by M. Fagg

The repeated displays of the white-tipped red tubular flowers of *Epacris longiflora* brighten up many spots in the garden. Occurring naturally on sandstone ledges and cliffs, particularly in moist places, this species is suited to planting in a rockery.

AUSTRALIAN PLANTS No. 96 issue of Volume 12, comprising issues 93-100. International Series Index ISSN 0005-0008. A National publication in 16000 copies. Published by The Society for Growing Australian Plants. For details see last page.

Available to members or by subscription of \$A6.00, including postage to your address. Send to the Editor, 860 Henry Lawson Drive, Picnic Point, N.S.W., 2213.

Publication date of previous issue. No. 95 was 9th August, 1983.

Tasmanian Alpine Flora

Heather Gulline, Hobart

To begin by stating the obvious, the plants which are native to alpine regions are those which are best suited to withstand the rigours of the climate above the treeline. Fortunately it is not necessary wholly to reproduce this climate in order to cultivate such plants successfully, but some understanding of it will help us to provide their essential requirements.

Those who have not experienced the alpine environment for themselves probably imagine, fairly correctly, that it is very cold, and covered with snow in winter. More importantly, it is often wet and windy, and even more often shrouded in damp mists.

In Tasmania, we have few detailed records of alpine weather conditions. We do know that at the summit of Mt. Wellington (1250 metres) it rains on an average of from 13 days per month (February) to 18 days per month (December) with an overall average of 16 rain days per month, and an annual total averaging 1500 mm. On the Western Tiers (N-W Tasmania) at Lake Macintosh the annual total is about 3000 mm. We have no data for wind on Mt. Wellington, but at sea level in Hobart, at the foot of the mountain, wind is rarely absent and gusts of 100 k.p.h. or more may occur at any time of year. On the mountain tops it must be very much more windy. Much of this wind is cold and south-westerly, driving rain, snow and sleet viciously against exposed areas. Snow lies in depressions for weeks or months in winter. Frosts are frequent in summer as well as winter.

When the clouds roll away, the sunshine is brighter and richer in ultra-violet radiation at altitude than at lower levels, thanks to the rarefied and unpolluted atmosphere. The combination of sun and wind rapidly dries out the surface soil causing brief local droughts in summer.

The heavy precipitation naturally drains away very quickly down the slopes, taking with it dissolved nutrients and small particles of surface soil and organic material leaving only a thin acid skeletal topsoil, whose pH may be as low as 4.0 on siliceous soils. In less steep areas, and on plateaux, some of the solids collect to form alpine humus soils which may be from only moderately acid (pH 6.5 on doleritic soils) to strongly acid. Skeletal soils are very poor in nitrates and phosphates.

In response to this range of severe conditions, our alpine flora has to be tolerant of wind, heavy watering, surface dehydration, low temperatures, strong light and poor soils. They are therefore mainly xeromorphic — rounded or ground-hugging shrubs or herbs with wiry stems, deep roots and tough leaves which may be woody, succulent, leathery or hairy and often narrow and sharply pointed. In the wild they have only a short growing and flowering season, and increase in size very slowly. For instance, a 2.5 cm diameter stem of a 1 metre high shrub, *Helichrysum ledifolium*, from Mt. Wellington, showed about 50 annual growth rings. As many such shrubs are multi-crowned, they must be literally hundreds of years old.



Bellendena montana

Photography by D. Wade

This small shrub from subalpine habitats in Tasmania bears the common name of mountain rocket, from the brilliant red, flattened and hanging, fruits. *Bellendena montana* bears cream flowers in pyramidal racemes in December-January, and the fruits illustrated persist well into autumn. See the description on page 151.



Cyathodes glauca

Photography by D. Wade

Another Tasmanian endemic plant which bears colourful fruits is the cheesebush, *Cyathodes glauca*, of the family Epacridaceae. Common and widespread on wet hillsides, *Cyathodes glauca* bears white flowers in the summer. The fruits illustrated are flattened drupes, and may be coloured pale-deep pink, mauve, purple or white.



Parahebe formosa

Parahebe formosa is a perennial shrub which occurs widely in Tasmania on rocky hillsides and along river banks. Pale to lilac-blue flowers in loose axillary racemes are borne towards the ends of branches. Further details are given on page 187. A species suited to the rockery, see page 161.

Photography by M. Fagg

On the relatively smooth open moors which are exposed to the full force of the storms, shrubby members of the Proteaceae and Epacridaceae are the dominant plants. Wind-pruning shapes them to give as little resistance as possible and they usually grow to only about 1 metre in height. Common species include *Orites acicularis* and *O. revoluta*, *Epacris serpyllifolia*, *Richea scoparia* and *Richea sprengelioides*.

Among large rocky outcrops, taller shrubs such as *Olearia pinifolia* and *Coprosma nitida* gain a foothold. These develop more rigid trunks than the moorland shrubs. Small rockhugging shrubs including *Exocarpos humifusus*, *Leptospermum rupestre*, *Monotoca empetrifolia*, and the conifers *Microcachrys tetragona* and *Podocarpus lawrencii* (= *P. alpina*) develop around low exposed rock surfaces.

The taller coniferous shrubs, *Arthrotaxis cupressoides*, *Microstrobis niphophilus* and *Diselma archeri*, interesting relict species, occur in areas of higher rainfall. They have small rigid scale-like leaves and wiry branches.

One of the most remarkable communities of plants are those comprising the "microshrubby". Commonly known in Tasmania as "cushion plants", these multibranched shrubs form low compact masses adjacent to flowing surface water. In time, as branches spread out, the water becomes dammed or diverted, lowering the rate of surface erosion. The species are vegetatively very similar to one another, a striking example of parallel evolution. *Abrotanella forsterioides* is the commonest with *Donatia novae-zelandiae* and *Dracophyllum minimum* also very frequent in the South-West, with *Pterygopappus lawrencii* and *Phyllachne colensoi* increasing in frequency toward the north and *Pygmaea ciliolata* (only discovered in Australia recently. Previously known from New Zealand) restricted to Ben Lomond in the north-east.

The "cushions" are frequently colonised by mat plants and herbs such as *Drosera arcturi*, *Gentianella diemensis*, *Plantago gunnii*, *Pentachondra pumila*, *Euphrasia diemenica*, *E. striata* and *E. hookeri*.

Many small herbs fill niches in rocks, gravelly screes and patches of better soil, *Isophysis* (formerly *Hewardia*) *tasmanica* is one of the most notable of these.

In discussing the various species of plants found in Tasmanian alpine areas, I have mentioned many species which are endemic. Of Tasmania's approximately 300 "austral-montane" species, about half are endemic. The closest relatives of many of these are to be found in other southern lands — New Zealand and South America. Our cushion plants for example, are similar in form and floristics to the "vegetable sheep" of New Zealand and the hummocks of the Magellanic moorlands of Tierra del Fuego.

Most alpine plants seem happy to grow in the civilised conditions of lower altitudes. Many can be propagated from seeds or cuttings with as much success as lowland plants. The only troublesome diseases I have encountered in cultivating alpinists have been fungal ones. Damping off affects seedlings, especially of Proteaceae, and powdery mildew attacks soft-leaved herbs such as *Wahlenbergia*. ■

Rain Forest and Austral-Montane Plants in the Garden

by Nell Frankcombe, Hobart

Ever since I first saw temperate rainforest with its greens of leaf, moss, lichen and liverwort, its flowers and its cool dampness, I have wanted to have some of the species growing in my garden. In 1965, the opportunity came. The garden is situated at Bellerive, fairly close to the River Derwent, and planting commenced on the south side. The western side was fortuitously shaded by trees, and has also been planted.

Rainforest and austral-montane plants seem to tolerate a wide variety of soil types, so to the sand was added copious quantities of brown humus that had, in the rainforests, been in the making for centuries. This simulation of nature's way has, with an annual sprinkling of blood and bone, and with a top dressing of more humus, been sufficient to grow healthy plants. The other general requirement is for sufficient water, especially in hot weather. The only shrubs that do not mind poor drainage appear to be *Callistemon viridiflorus* and *Melaleuca* species, and some of the *leptospermums*.

The shadow of the house had to make do for the usual canopy found in the forest. First was planted *Atherosperma moschatum*, *Nothofagus cunninghamii*, *Anopterus glandulosus*, *Eucryphia lucida* and *E. milliganii*; these were expected to grow quickly and they did. Then were planted the conifers: *Dacrydium franklinii*, which droops its head when growing well, *Phyllocladus aspleniifolius*, *Podocarpus alpina*, *Microcachrys tetragona*, *Microstrobos niphophilus*, *Diselma archeri*, and *Athrotaxis laxifolia*, *A. selaginoides* and *A. cupressoides*. *Callitris tasmanica* and *C. oblonga*, not being rainforest plants, were planted in another part of the garden. Nine of these conifers are endemic to Tasmania.

Prionotes cerinthoides, the climbing heath, was established by splitting a treefern trunk, inserting the roots well packed with humus and wiring the trunk halves together again.

Many plants have grown from seeds contained in the humus introduced into the garden, notably *Cenarrhenes nitida*, *Pimelea drupacea*, *Acacia riceana*, *Phyllocladus*, *Anopterus*, and *Billardiera longiflora*.

Phebalium squameum makes a slender column of white when in bloom and *Lomatia polymorpha* flowers every year. *Notelaea ligustrina* has produced no berries, and from some six plants there should be both male and female plants.

Richea dracophylla, about three metres high, bloomed this year, but *R. pandanifolia* has not flowered yet. *R. scoparia* is growing very slowly, and *R. sprengelioides* is no longer present.

Coprosma nitida produces dark orange berries from which now grow more plants. Several *Anopterus* plants have flowers, from white to pink. *Callistemon pallidus* and *C. viridiflorus* produce masses of flowers; the latter was grown from a piece of trunk that had made roots along one side, A



Billardiera longiflora

Photography by D. Wade

Flowers of *Billardiera longiflora* are pendulous, greenish-yellow (sometimes flushed purple) and tubular bell-shaped. Following flowering in October-January, the attractive fleshy and spongy berries illustrated here are formed, and are a most attractive feature of the slender, woody, twining plant. See page 159 for further description.



Gentianella diemensis

Photography by M. Fagg

Flowers of the alpine or subalpine herb, *Gentianella diemensis* may be either pure white or more usually striped with purple. As illustrated above in the Brindabella Ranges, the stems are often coloured purple-green to black.

hedge of *Melaleuca* and *Leptospermum* forms the street boundary, and these bloom prolifically.

The recently planted *Aristotelia peduncularis* has dropped its berries when they were small. *Drimys lanceolata*, *Gaultheria hispida*, *Boronia citriodora*, *B. pilosa* and *B. anemonifolia* grow well.

Celmisia longifolia, *Podolepis* spp., *Olearia phlogopappa* (white and blue flowered forms), *Helichrysum bracteatum*, *Brachycome* spp. are among the Asteraceae that bloom regularly and grow in the sun, where also are *Correa*, *Leucopogon*, *Epacris*, *Monotoca*, *Isophysis tasmanica* (no flowers yet) and *Tetratheca*.

Blandfordia punicea which is in a well-drained, sunny position, refuses to bloom. *Dianella* carries its lovely blue berries, but *Drymophila cyanocarpa*, in shade, has none.

Last year seeds of *Pittosporum bicolor* were scattered and covered with a little humus, and by December many little plants had grown sufficiently to be recognizable. *Westringia* grow quickly in the sand-humus mixture, and flower well.

On the tree-shaded western side, several *Prostanthera lasianthos* are about 3 m tall and form a canopy for *Dicksonia*, *Eucryphia*, *Telopea truncata* (both the red and yellow forms), *Cyathodes* and other Epacridaceae.

At ground level *Blechnum* and *Phymatodes* vie as ground cover. There is one plant of *Todea barbara* growing in the shade of a 3 m *Dicksonia*. Sphagnum appears to be established in a tiny pool shaded by the ferns.

There are many other plants from the forest and the mountains that I hope to grow, but lack of space will preclude most of them. However, I also enjoy in the garden *Kunzea ambigua*, *Ricinocarpos pinifolius*, *Banksia serrata*, *Leptospermum grandiflorum*, a number of *Grevillea* and *Hakea*, and even exotics.

Grow What Where!

This is the first of a series produced by the Australian Plant Study Group, the following one being "Grow What Wet". Each of these books is available from the Editor for \$18.00 incl. postage. We still have some of the original printing of "Grow What Where" available for \$6.00. One problem facing all of us is "What wildflower will grow in that position"? The original book "Grow What Where" does not seek to confuse the issue with descriptions of plants or numerous letters that are supposed to help you, but simply lists species of plants by name that will grow in a particular situation. At a cost of \$6.00 this first printing is excellent value.

Australian Plants For The Northern Tablelands Of N.S.W.

A New Book

An 80 page book with 17 large colour plates, produced by the Northern Tablelands Group of the Society in N.S.W., a book that is a credit to honest effort and competent observation. This group decided that the best way to serve their members and publicise Australian wildflowers was to publish a book especially for their conditions. The chapter headings are a good guide to the content — The Northern Tablelands, Relief, Soil, Climate, Rainfall and Temperature — Cold Climate Gardening — Town Garden Design, Landscaping Rural Properties — Site Preparation and Maintenance — Acquiring Plants — Propagation — The Native Flora of the Tablelands.

Of much wider application is the chapter on "Cold Climate Gardening". So very capably written it gives positive advice on how to counter the many losses of plants during cold winters. The book may be obtained by sending \$6.00 plus \$1.50 post. to SGAP — New England, P.O. Box 735, Armidale, N.S.W. 2350.

Proteaceae Endemic to Tasmania

Jeanette Closs, Hobart, Tasmania

Soon after coming to live in Tasmania, from the mainland, I became interested in the native flora, and the family which attracted me most in those days was the Proteaceae.

Tasmania has some interesting and not generally well known members of this family. Some are quite rare and found only in remote areas, whereas others are quite widespread. I determined to seek out and try to grow all the Tasmanian Proteaceae, especially the endemics.

Probably the most well-known member of the family is the Tasmanian Waratah, *Telopea truncata*. This is a shrub or small tree from 1-8 m, high with stout spreading branches. The red flowers are beautiful but less spectacular than *Telopea speciosissima* and appear to be cut off, as the name implies. Not so well known is the yellow form of *Telopea truncata*, which was collected in the bush by Mr. Huxley and which has been growing and flowering ever since in the garden of his daughter, Essie Huxley at Longley. It is a delight to all visitors to this unique garden.

A mythical 'white' Waratah has been recorded as being seen in the Maydena (central south-west of Tasmania) forests, but this was allegedly burnt in bushfires some years ago. However a member of SGAP who works in forestry, believed that he had found this plant and volunteered to lead an excursion to the area. His accurate sense of direction led us to the 'white' waratah, but we found that it was very similar in colour to the one in Miss Huxley's garden — a beautiful pure yellow. Plants growing nearby were intermediate in colour, being a pale rather washed-out red, then further away were the typical red flowered forms.

Agastachys

A most beautiful and unusual plant found in areas of high rainfall mostly on the margins of buttongrass plains, is commonly called 'White Waratah' but the flower is quite different to *Telopea*. *Agastachys odorata* has an inflorescence which resembles white or creamy-white feathers grouped together. As the name implies, this is a perfumed flower and keeps well indoors, when picked.

However, it is a very slow-growing plant in my experience. Seedlings after three years are 5-7 cm high and cuttings not much larger, although strong roots develop quickly. I don't know of any mature plants growing in cultivation. (See Australian Plants, Vol. 5, page 108, for photograph.)

Bellenden

Bellenden montana or Mountain Rocket as it is commonly known is the smallest member of the Proteaceae family growing in Tasmania, although there have recently been reports of a prostrate *Persoonia gunnii* being found in south west Tasmania. It is only 10-60 cm high. However, it makes up for its size, in producing not only a very attractive white-palish pink conical inflorescence but also a spectacular head of red seed capsules. This also appears to be slow growing in the home garden. It has rarely been grown from seed, but strikes readily from cuttings.



Anopterus glandulosus

Photography by M. Fagg

Dark green glossy leaves are an attractive feature of the Tasmanian laurel, *Anopterus glandulosus*, from shady places in high rainfall forests. The terminally borne racemes of 2 cm diameter flowers may be white or pink flushed. Flowers in spring.



Pimelea ligustrina

Photography by M. Fagg

The almost spherical inflorescences of small white flowers of *Pimelea ligustrina* are eye-catching, as are the distinctive orange anthers. This species is reasonably fast growing in well-composted soil, and enjoys heavy shade.

Persoonia

Tasmania has two *persoonias*, but *Persoonia gunnii* is the only one which is endemic to the state. This can be found in sub-alpine shrubberies and also down to sea level in the high rainfall areas of the south and south-west, where it attains the height of 4m. It has small fragrant creamy-yellow flowers and oval shaped fruit, which are purplish-black.

Cenarrhenes

Closely allied to this is *Cenarrhenes nitida* or the Native Plum, which grows in rain forests of the central plateau, south-west and west coastal areas. The fruit of this species is larger than *Persoonia gunnii*, but is also purplish-black. Clusters of cream or white flowers are formed in the axils of the leaves near the ends of the branches.

Orites

Tasmania can boast four *Orites* species, all of which are endemic. *Orites diversifolia*, *Orites revoluta*, *Orites acicularis* and *Orites milliganii*. The first three species are common on mountain plateaux. *Orites diversifolia* is also common at lower altitudes in rain forests. It is an erect shrub growing to 2 m high and bears axillary spikes of creamy-white flowers. *Orites acicularis* is known as Yellow Bush — the palish yellow-green colour of its terete leaves giving an outstanding yellow appearance against the dark green of the surrounding bush. *Orites revoluta* has smaller revolute leaves and terminal spikes of creamy-white flowers. *Orites milliganii* is rare and found only above 4,000' (1,200 m) on mountains near the west coast. The thick tough leaves have coarsely toothed margins and the flowers are white in terminal spikes. I haven't as yet seen this plant in its natural state, but I was given a plant and it seems to be doing well but is slow growing, like other species of this genus.

Hakea

Of the 9 *Hakeas* growing in Tasmania, only one is endemic. This is *Hakea epiglottis* which grows to 4 m high. The pale yellow flowers make a spectacular show and the fruits are small S shaped with a short beak. This plant is widespread ranging from sea level to about 1,000 m.

Lomatia

All three *Lomatia* are endemic and *Lomatia tasmanica* is found only in a very small area in the remote Bathurst Range in south-west Tasmania. It is a small spindly tree growing to about 5 m, branching at the top. The beautiful glossy dark-green leaves are pinnate and each pinna is irregularly toothed. The inflorescence is a dull red resembling a small *Telopea* flower. It is thought that this plant has lost the ability to reproduce itself sexually, but it appears to layer itself by fallen branches.

Lomatia tinctoria, known as the Guitar Plant for its guitar-like fruit, is widespread from sea-level to 1,000 m. The leaves are variable, some being almost entire and others bipinnate and fern-like. The loose terminal racemes are creamy-white and perfumed. This makes a small delightful garden shrub.

Lomatia polymorpha, as its name implies, also has variable foliage, mostly entire but sometimes irregularly toothed or lobed. The creamy-white flowers are formed in dense terminal racemes. This plant is widespread on mountains to 1,000 m but found at sea-level on the west coast. ■

Tasmanian Shrubs for Gardens

Carmel Statham, Canberra

Introduction

Tasmania has a temperate Oceanic climate, and its flora is interesting and varied because of a mixture of Australian and Southern Ocean components and because the environment provides a wide diversity of habitats. In general terms, the island state may be divided into the wetter western half where the annual rainfall ranges from 1000 to 3650 mm, and the eastern region with annual rainfalls from 360 to 1500 mm which is predominantly Australian in character.

The vegetation of Tasmania falls into three main formations — austral-montane, temperate rain forest, and sclerophyll forest. In considering Tasmanian plants suitable for garden plantings, species from the austral-montane habitat are most suitable as rockery plants; those from the temperate rain forest formation may require special conditions if grown in cultivation, e.g. good supplies of water or shading; while those from the sclerophyll forest should be able to be brought into cultivation easily, at least in the temperate areas of Australia.

Comparison of Tasmanian plants with those from mainland Australia would perhaps show a lack of bright colours in the flowers, with some notable exceptions such as the Waratah, *Telopea truncata*, but there are other ranges of variety available. Tasmania has very many white-flowered plants which produce deeply coloured fruits, e.g. species of the family Epacridaceae.

For the most part, plants discussed in this article are shrubs. There are very many interesting tree species present in the Tasmanian flora, (half of the Tasmanian eucalypts are endemic), but large numbers of trees cannot be grown in a suburban garden. Thus, it was decided to mention mostly those which can be grown without interference to the general services provided to suburban blocks.

Selected Shrubs

Clematis gentianoides. A dioecious, perennial plant with a stout underground stem, and aerial branches in tufts from 15-50 cm high. Flowers are very attractive in spring and summer, being solitary and terminal, followed by the attractive woolly fruits. It is found naturally on poor soils and well drained slopes.

Stackhousia monogyna. Species of *Stackhousia* are known locally as Native Mignonette or Candles. *S. monogyna* is an annual or perennial herb with an erect rootstock, erect branches 30-80 cm high. The leaves are rather thick, narrow and 1-4 cm long. Plants of this genus are very easy to handle in the garden because of their clean lines, and non-spreading habit. The flowers have a strong, sweet scent, and are white or cream. This species is widespread, and found in S.A., Vic., N.S.W. and Qld.

Spyridium obcordatum. An endemic member of the family Rhamnaceae. Prostrate or decumbent shrub with numerous slender, wiry branches spreading 15-40 cm. The flowers, c. 3 mm in diameter are in small dense heads, and



Gaultheria hispida

Photography by M. Fagg

The aptly named snow berry is another plant having distinctive and attractive fruit. The calyces of *Gaultheria hispida* enlarge after flowering to form fleshy white or pinkish-white globes around the dry fruit capsule. Leaves are glossy, dark green, and the branches bear coarse brown hairs.



Dianella tasmanica

Photography by M. Fagg

Dense clumps and tussocks of hard, linear leaves arising from underground rhizomes are the habit of *Dianella tasmanica*. Blue lily flowers in spreading panicles are borne in spring-summer, followed by blue-purple ovoid berries, as illustrated.

very attractive. All members of the genus are known as Dusty Miller, due to the presence of numerous hairs often rust coloured, on the leaves, stems and bracts.

Spyridium ulicinum. Also an endemic. Shrub is much-branched, from 1-3 m in height.

Grevillea australis. Only *Grevillea* found in Tasmanian flora. While not as splendid as some of mainland species, it can be of use in the garden. It is polymorphic, with 7 varieties recognised in Tasmania, ranging in size from 30 cm-2 m in height, and having a good range in form and leaf shape. Flowers are white and small.

Parahebe formosa. Formerly *Veronica formosa*. 50 cm-2 m. Tasmania's only endemic Speedwell. Readily propagated from cuttings, it has been used extensively by local authorities in urban landscaping. Neat, semi-dense vegetative form, and deep to pale lilac-blue flowers. A giant form of *P. formosa* has been found on the east coast of Tasmania, and this could possibly be a tetraploid — as all parts of the plant are large and the flower colour is much deeper. This large form has proved stable in propagation and cultivation.

Parahebe derwentiana has annual flowering stems to 1 m arising from perennial rootstock. It bears pale blue or sometimes white flowers in terminal sprays. Requires well watered and shady situation. Old flowering stems should be removed at season's end.

Parahebe nivea is a perennial herb with stems branching from the base, to 15-50 cm. Leaves are deeply divided or finely lobed. Flowers are usually pale lilac-blue.

Ericaceae

Gaultheria hispida. Mostly this shrub reaches 1 m in height, but is sometimes found to 2 m. Again an endemic, of the family Ericaceae, and known as the Snow Berry. Branchlets and midribs are reddish in colour, with glossy dark green leaves. Flowers are normal for family, pinkish-white, but the plant is perhaps most attractive in the fruiting stage in the autumn. Sepals become enlarged and succulent, are snow-white, with diameter being 8-10 mm.

Pernettya tasmanica is a small shrub with creeping branches forming a dense mat. Fruits are succulent; red, yellow or white and are surrounded by succulent, enlarged calyces the same colour as the fruit. *Pernettya lanceolata* has erect stems to 30 cm. Fruits similar to *P. tasmanica* but are usually deep rose coloured only.

Epacridaceae

The family Epacridaceae contains many members bearing large, fleshy and brightly coloured fruits which persist on the plants well into the winter. Cuttings have proved a successful means of propagation provided care is taken when handling the very fine roots produced. In cultivation, the epacrids appear to do best with well composted, well-drained soils, and require ample moisture.

Cyathodes glauca (Cheeseberry) forms a medium sized shrub, 1-3 m high by 1 m diameter. Leaves are rigid and pointed. The small white flowers are followed by pink or mauve fruits.

Cyathodes parvifolia (Mountain Berry) produces a small rounded shrub. The drupes are pink or bright red in the autumn.

Trochocarpa typically have bluish-purple fruits. In the case of *T. thymifolia*, the flowers are pink or red, and the fruit persists through to the following flowering season, making for a spectacular display.

The Tasmanian endemic *Epacris* are worthy of further notice, for the snow-white, well displayed flowers, e.g. *E. exserta*, *E. virgata* (both local in the north of the state, near the Tamar River), *E. stuartii*, *E. marginata* and *E. barbata*.

Perhaps the most interesting of the epacrids is *Prionotes cerinthoides*, a climbing or epiphytic plant with long, slender branches, and crimson flowers.

Other spectacular epacrids are *Richea*, but only those with finer foliage can be attempted from cuttings, e.g. *R. sprengelioides*, *R. procera* and *R. gunnii*.

Asteraceae

Helichrysum ledifolium is a shrub to 1 m high, with a sweet aromatic smell, the young stems and the lower revolute leaf surfaces are covered with a yellow exudate. The terminal flower heads are dense and some of the phyllaries are coloured red or yellow-brown.

Helichrysum lycopodioides. Again a Tasmanian endemic plant. Much branched, spreading shrub to 100 cm high. Leaves of this plant are a light green colour, and the regular branching pattern gives this species a very good shape. The terminal flower heads are not very conspicuous, but the species is floriferous, and does well in cultivation.

Helichrysum obcordatum forms a shrub to 1.5 m with branches spreading from the base. Its dense flower heads are bright golden yellow and the dark green rounded leaves are shiny on the upper surface.

Helichrysum rosmarinifolium grows 1-3 m high. The long, closely revolute leaves, and young parts of the plants are covered with short bristles or hairs, which give a good grey colour for the plant.

Helichrysum scutellifolium. Another endemic of the Asteraceae. Much branched, 30-100 cm high with densely hairy, spreading branches. The leaves are numerous, small, with shiny upper surfaces. They appear to float in a mass of cotton wool. The flowers are not very obvious, but the plant is more useful in the garden for its vegetative features.

Olearia glandulosa normally grows to 2 m high, with slender, green, erect branches, bearing glandular tubercles, giving the plant a spicy aromatic smell. The flower heads are small and terminal. Ligulate florets are white, but often the non-ligulate ones appear purplish.

Olearia ledifolia. Often a straggling shrub, 30-60 cm high, with stout branches. In vegetative characters it closely resembles *Orites revoluta* of the family Proteaceae, which often grows in the same localities. The flower heads for *Olearia ledifolia* are solitary in the axils near the ends of branches. The florets are white, and about half in each head are ligulate.

Olearia persoonioides. Endemic member of the Asteraceae. Under-surfaces of leaves and young branches tomentose with white or brown hairs. Upper leaf surfaces shiny dark green. Flower heads form leafy panicles which overtop the leaves. A mauve flowered form is now available in nurseries.

Olearia pinifolia. Endemic, rigid shrub with stout branches. Leaves rigid and pungent pointed. This plant comes very well armed, and would be

useful in landscaping as a hedge plant for preventing access to particular areas.

Bedfordia salicina. Grows as a shrub or small tree, with young branches and leaves being densely hairy. In fact it is this feature which makes this plant attractive for the garden — particularly as these organs appear silvery in, for example, the headlight beam of a car. Would be useful in a dense planting to the side of a driveway.

Pimelea filiformis. Endemic. Small, spreading shrub, branches very slender and often prostrate, up to 40 cm long. Flowers white to deep pink, small, but present over long periods. Plant successfully cultivated in gardens and hanging pots.

Pimelea lindleyana. Another endemic *Pimelea*, found in regions of high rainfall. Here the attractive feature is the greenish-crimson colour of the floral bracts.

Pimelea nivea. Endemic, which is widespread from sea-level to 1100 m. Somewhat straggling in habit, 60 cm-2m high. All parts of the plant, except the upper leaf surface, are white with a dense covering of cottony or woolly hairs. Leaves are dark, glossy green by contrast. Flowers may vary from white to cream to rosy-pink.

Billardiera longiflora. The Climbing Blueberry, also found in Vic. and N.S.W. Seed of this plant has been offered for a long time by N.Z. nurserymen, but it is not well known by Tasmanians. It forms a mass of slender twining stems, very suitable for trailing over a trellis or fence, and in summer bears masses of greenish-yellow tubular flowers, followed by fleshy berries. Most often the berries are a deep, dark blue, but pink and white forms are known in nature and in cultivation. It is not yet known whether the berry colour is stable in plants sown from seed.

Aristotelia peduncularis. Heart Berry. Endemic from the family Elaeocarpaceae, common in shady places particularly in high rainfall areas. It forms a weak straggling shrub, but can be kept tidy by pruning. Leaves are shiny, dark green; flowers pendulous. Fruits are heart-shaped berries, and may be coloured dark purple, blood red, pink or white. This plant is readily propagated from cuttings, but must be grown in a cool, shady situation. In drier situations, it is susceptible to insect attack.

Bauera rubioides. A member of the family Cunoniaceae, as is the famous Horizontal, *Anodopetalum biglandulosum*. In natural habitats, both these plants are rather wild, in forming dense, often impenetrable understoreys, but *Bauera* can be attractive under cultivation, where judicious pruning can overcome its wandering propensities. Although the specific name suggests reddish flowers, this is very variable, even over short distances in nature, and quite often has white flowers. Several double forms have been found, but have not yet been stabilised in cultivation.

Drimys lanceolata. Mountain Pepper. Forms a much branched shrub or small tree, varying from 0.2-5.0 m, and has an extensive range of habitats. The crimson colour of young stems is a feature. Flowers are followed by black berries.

Bursaria spinosa. Prickly Box. Is found in all Australian states, but is rarely seen in cultivation. It flowers in summer, and the white flowers are fragrant, being followed by flat, dry, brown conspicuous fruits, which persist through the winter.

The three Tasmanian endemic acacias are all useful plants in cultivation. *Acacia axillaris* and *A. riceana* form tall shrubs, somewhat sparsely branched, with pungent phyllodes. Some forms of *A. riceana* are pendulous in habit, while one form developed in New Zealand is quite small and has a vase-shaped habit. *A. pataczekii*, the most recently recorded, is confined to several small areas of the N.E. highlands. It is mainly a small shrub, with blue-grey, broad phyllodes and it suckers freely.

Acacia genistifolia. Although this species is widespread and abundant, especially in dry places and on roadsides, there is also a low, somewhat straggling form of the species, which has proved stable under cultivation from seed. The form is most useful when grown on a bank where the flowers can be appreciated. It is also useful as a deterrent to animals on the garden. ■

Nematolepis phebaloides Turcz

by Geoff Butler, National Botanic Gardens

In the mallee thickets and heaths between Israelite Bay and Lake Grace in Western Australia grows an extremely attractive plant called *Nematolepis phebaloides*.

Nematolepis is a monotypic genus of the family Rutaceae. It grows from 60 cm to 1 m in height and has a rigid, erect form of growth. Even when not in flower the foliage is very attractive. The leaves are a glossy green on the above surface and a pale colour on the underside. Elliptical to oblong in shape, they are from 1 to 3 cm long.

The flowers are bell like 15 mm long and very similar to another genus in the family Rutaceae, the correae. The bright red petals of *Nematolepis* contrast vividly against the foliage. The flowers are axillary and are in no way hidden by the foliage of the plant. The petals are tipped with yellow or yellow-green.

This species, which grows in clays, loams or laterites in nature, requires very sharp drainage in cultivation. A rockery would be a very suitable area to attempt to grow it.

Nematolepis would also make an excellent pot plant. While a semi-shaded position is best, it does grow well in full sun positions.

This species is not common in cultivation, and this may be because it is a little difficult to establish. I have never seen plants in a nursery though it could be available from some of the specialist Australian plant nurseries. For those who do have some access to material of *Nematolepis* propagation can be carried out from cuttings, though the percentage strike is not always high. Half hardened material 50-75 mm long should be used. Set cuttings normally, using a hormone treatment on the base of the cutting. Keep in humid (but not overwet) and warm conditions. Bottom heating would be an advantage. Seed growing has not been attempted but, as for most of the Rutaceae, would probably be extremely difficult. ■

Plants In Containers

Notes by Ms Lyndal Thorburn, A.C.T.

We cultivate natives in containers in our east-facing sheltered courtyard getting sun in winter but no frost as it is covered in shade cloth. *Dampiera trigona* is growing happily in an enamelled cast iron cooking pot. In a large "dragon-pot" ceramic tub nearly one metre high and 50 cm diameter we have a white flowering *Brachycome multifida*, a *Lechenaultia larcina* and a *Dillwynia sericea*. All are flourishing. The *Darwinia*, pink-flowered has buds all over it, 30-40 cm high but spreading so as to weep over the sides of the tub. A recently planted *Dampiera diversifolia* is also doing well in this large community container.

The plants are growing in a soil mixture of equal parts of coarse sand and potting mix and have been fertilized once with a weak solution of Aquasol.

The Small Rockery

by Philip Milner, Devonport, Tasmania

The high cost of suburban land is one of the factors which has caused a reduction in area of more than 6% in town and city building blocks over the last 20 years. Over a similar period the demand for space within the modern home has increased its area by an average of 20%. By comparing the two it is found that there has been a corresponding reduction in the area of garden surrounding a 1977 home of more than 10%.

But, people are using their gardens much more these days. Of necessity, the vegetable plot is part of the garden once again, regular family barbeques are in fashion and there is an ever increasing number of swimming pools which devour much of the back garden. Still more area is taken with the planting of screening trees and shrubs to provide the privacy required for outdoor activities.

At the same time more people are moving into flats and units which have extremely small garden plots if any at all. A garden that is ornamental and compact, yet having something of interest throughout the year is needed to complete today's home landscape.

To fill these requirements, a well planted rockery can form a most attractive addition to any home garden. A rockery can be any size, even in a container and there are native plants which will suit most situations.

References

There are a number of good books available with guidelines for rockery construction and if planned beforehand a disappointment may be avoided.

Also refer to Australian Plants Vol. 3, pages 98, 101, 102 and Vol. 7, page 383.

Rockery plants can be divided into four general groups: matting and carpeting plants, dwarf and prostrate shrubs, tufting and clump plants and perennial herbs. A more balanced effect will be achieved if some plants from each group are selected.

These groups are listed individually, with suggestions of suitable plants for the smaller rockeries.

Matting or Carpeting plants are ground huggers that form roots as they spread over the ground. They make very effective rockery plants especially where they are able to spread around and over rocks.

Isotoma fluviatilis has starry mauve-blue flowers over spring and summer. It appreciates moisture and will spread to more than a metre under suitable conditions.

Scleranthus biflorus forms a most interesting mound of bright green, especially where it can 'devour' rocks. It grows in a moist position to a width of 0.75 m.

The Native Violet, *Viola hederacea*, will flower year round in a moist rockery pocket with summer shade.

Most attractive is *Goodenia lanata* with bright yellow flowers on erect stems. It will grow well in a sunny, well drained position.

Myoporum parvifolium likes a similar situation and has erect, rich green leaves and white starry flowers during summer.

Other recommended mat plants are *Pratia pedunculata*, *Scaevola hookeri*, *Veronica calycina* and *Wahlenbergia saxicola*.

Dwarf and Prostrate Shrubs suitable for rockery planting.

When selecting plants in this group some thought should be given to the size they may grow, particularly with the prostrate plants, as many can spread over a considerable area.

The low growing *Grevilleas* make excellent rockery subjects but most are somewhat vigorous for the small rock garden. Exceptions could be the Grampians form of *G. alpina*, *G. diminuta* and the small forms of *G. australis*.

Astroloma humifusum, the Native Cranberry with fine grey-green leaves and red tubular flowers likes a moist but well drained pocket.

Baeckea ramosissima prefers similar conditions with light shade. There are some excellent prostrate forms of this attractive *Baeckea* and flower colour varies from pink to white.

Brachysema latifolium appears to be adaptable but requires good drainage. It has roundish leaves and orange-red pea flowers and although it can spread up to 1.5 m it is well worth growing.

Hibbertia procumbens is well known for its bright yellow flowers and it would appreciate a sunny rockery pocket.

Hemiandra pungens is a beautiful plant with pinkish lipped flowers, prostrate and spreading to a metre or so. It needs perfect drainage and tips can be damaged in frosty areas.

There are many more that could be included but a few others are *Correa decumbens*, *Frankenia pauciflora*, *Kunzea pomifera*, *Pultenaea pedunculata*, *Calocephalus brownii*, *Prostanthera cuneata*, *Kennedya prostrata*, *Baeckea gunniana* and *Hovea heterophylla*.

A rockery doesn't appear quite right without a few **Clump or Tufting plants** with erect strap or grass-like foliage and usually taller flower spikes.

They offer a lift for the mat and prostrate plants and highlight the rocks.

The Long Purple Flag, *Patersonia longiscapa* is most striking with rich purple flowers on long stems. It is quite adaptable.

Stylidium graminifolium, the well known Trigger Plant has shorter foliage but forms an effective clump, with spikes of bright pink flowers. It can be quite variable in plant and flower size.

Not as easily grown and requiring more patience are the Christmas Bells, *Blandfordia punicea*. They prefer a moist position but can be slow to grow and flower.

Orthrosanthus multiflorus forms a grass-like clump, and has bluish-mauve flowers in Spring and is easily grown.

Dichopogon strictus, *Stypania glauca*, *Patersonia glauca*, *Arthropodium milleflorum* and *Diplarrhena moraea* are other clump or tufting plants suitable for the small rockery.

Perennial Herb-like Plants will suit the small nooks and crannies left after the main planting is complete. They are small, interesting plants usually

quite at home in a rockery pocket or growing up through the less dense prostrate plants.

Brunonia australis has light blue pincushion-like flowers; it prefers a moist situation and can be a little difficult to grow on.

The well-known Snow-Daisy, *Celmisia longifolia* has 'white-white' daisy flowers and although an alpine plant it seems to adapt well to the lower altitudes.

Helichrysum scorpioides is one of many Paper Daisies that will add a splash of golden yellow to the rockery. Most are easily grown, but snails and slugs can be a problem.

Another daisy-like plant which is actually in the carrot family is the Flannel Flower, *Actinotus helianthii*. The unusual white flowers and silvery divided leaves make it a most attractive plant. It prefers a moist, well-drained position and although usually a biennial it will seed itself down.

An article on rockeries from Tasmania would not be complete without mentioning some **Endemic plants** which would be most suitable as rockery plants in other temperate areas of Australia.

Pimelea filiformis is a beautiful, dainty little plant with fine foliage, prostrate and spreading to 0.75 m under garden conditions. It is inclined to sucker and will fill a rockery pocket without being invasive. The flowers are in small heads, white tinged with pink and often quite red towards the base. It seems to be quite adaptable to sun or light shade and requires good drainage. It is found growing naturally in only a few areas of Northern Tasmania.

The prostrate forms of *Leptospermum rupestre* and *L. humifusum* found growing at the higher altitudes make very good rockery plants, as they seem to retain their prostrate habit in the lower areas. They can spread to more than a metre and have masses of white, typical tea-tree like flowers. An occasional pink flowered form is found.

The main requirement under cultivation is a moist but well-drained position.

Ewartia catipes is found growing among rocks in exposed situations on the high mountains.

It forms a very attractive cushion with unusual silver-grey foliage which is broad and blunt.

Flowers are in terminal leaf clusters, usually white but can be crimson or rusty-brown.

It requires an open sunny position with plenty of draught and air movement, with ample moisture but good drainage and a surface mulch of gravel or crushed bluestone as it resents soil or mud being splashed onto its leaves.

Another alpine plant, which seems to do well in the rockery is *Rubus gunnianus*, the Alpine Raspberry. It is an attractive matting plant with glossy-green, divided leaves, in rosettes at the ends of the stems creeping just below soil level.

It has creamy-white flowers about 15 mm across followed by small berry-like fruits which are shining red and edible.

In time it will cover an area 0.75 m across and it grows well in full sun and prefers a moist but well-drained position. ■

Rockery Construction

Geoff Butler, National Botanic Gardens, Canberra

Many very desirable species of Australian plants are difficult to grow. In almost any type of soil that we try to establish these plants they usually perish. Considering their potential for garden culture there is no doubt that persons keen on their cultivation will continue to persevere to establish one or two of those species that constantly frustrate us.

In this article I hope to be able to give you some information that may inspire you to place an order with your nearest sand and gravel yard for two items that will help you in your efforts to grow some of these plants — rocks and an artificial soil medium. Reginald Farrer, one of the most knowledgeable rock gardeners of recent times, said in one of his texts, "... in telling of his experiences (of cultivation) one must remember that they are simply an individual's experiences, and must never be offered as any real basis of conduct to other individuals, but solely as an isolated chain of observations that may or may not be suggestive at best". In explanation, it must be understood that this article is drawn up on my experiences in Canberra, and certain aspects of climate and environment will naturally differ from area to area within Australia.

Rock gardening immediately conjures up visions of alpine plants to most of us, and indeed this form of gardening was originally used for the purpose of growing alpine species. There was one gentleman in Europe who took his alpine collection so seriously that the rockery he built was a miniature version of the Matterhorn! With the widespread opening up of the world through exploration during the late 1600's and 1700's a lot of plant material from around the world was being imported to Europe. As this material was propagated and became more available large sums of money were being paid for it by collectors, and the only means of growing many of these plants was either in pots or rockeries. Another quote from Farrer, who must have been a real gardener at heart, who said: "What is an alpine, for gardening purposes? Well, my own definition includes everything that will look well in a rock garden". This, I guess, is a definition that most of us would accept today.

By mentioning European rock gardens the impression should not be gained that the Europeans were the first to use rocks in gardening. The Chinese and Japanese used rocks as an art form in gardening for many centuries.

European rock gardens do not follow the usually quite formal and neat style of the Japanese. They are usually constructed in a far more naturalistic style.

Advantages Of Rockery Culture

The advantages of a rock garden can be many. Of prime importance is the provision of drainage. This is achieved by two means. Firstly, an artificial soil medium can be used which provides extra drainage. Secondly most areas within a rockery are built above the existing ground level, thus raising the plants' roots above the existing drainage pattern.

Rocks themselves can provide certain advantages. Large rocks can provide some shade in crevasses for tender species. They act as an insulator

against the sun's warming effect, providing a cool root run. They can act as a trap for moisture, particularly if more porous rocks such as sandstone are used. Some minor benefit can also be gained in nutrition (iron from sandstone and calcium from limestone). Rockeries can also add extra interest to flat or fairly featureless sites.

During the day a certain amount of heat is absorbed by rocks. At night, this heat is reradiated. Plants that may be slightly tender to frost or cold can be positioned close to rocks. The reradiated heat can be sufficient to enable the more tender species to survive through the winter months.

Generally, most rockery plants are smaller than average garden plants, so the other advantage bestowed by the rockery is that many more species can be grown in a limited area. Smaller plants, that sometimes would go unnoticed are planted in the built up beds of the rockery bringing them closer to the eye, where their beauty can be appreciated.

Rockeries can also make good use of what may otherwise be difficult sites and by using various materials, growing media can be made up to suit plants from different soil types.

One disadvantage of using artificial soils in any area, not only rockeries, is windblow. As artificial media are usually much lighter, and more friable, plants may become unstable if they grow too rapidly, due to the wind rocking them. This can lead to the plant blowing over or to the cambial tissue being worn away from the collar of the plant, ultimately leading to its death. To help eliminate this, quick growing plants should be kept pruned until the root system develops and takes a good hold in the soil.

Siting Of The Rockery

It is very important to give this careful consideration before beginning construction. To begin with, maximum advantage should be made of any existing features that may be included in a rockery. Existing rock outcrops may provide a very good base from which to build a rock garden. Aspect is also very important, a northerly aspect providing the best position. Always try to site rockeries away from artificial features such as fences or walls. If this is unavoidable these features could be softened with shrubs or creepers. Try to establish the rockery in an open position that is clean and clear of any weeds or rubbish. Weeds may become a problem in lighter soils if not eliminated before construction begins. Provide some protection from cold, hot or excessive winds, and wherever it is sited make some allowance if possible for future extensions. Once you see what can be grown in your rockery, you will doubtless want to extend it!

Rockery Materials

Before construction of your rockery can begin, an assessment will have to be made of what type of material is available for construction. This will depend greatly on the area you live in. Sedimentary rocks are usually far more suitable, not being quite so angular or as hard to work with as igneous material.

As far as soils are concerned compost, peat, sand (sharp), well-rotted manures, etc., are all useful. Sandy loams may also be useful. These materials can be used in varying percentages depending on what type of plants are to be grown. Mix all artificial soils thoroughly and allow up to 20% for settling. Make sure that all soils or other materials used are weed free.

Construction Of The Rockery

The actual construction of the rockery is common sense. It is a good idea to mark out the bounds of the rockery with a garden hose or a rope. Begin with the largest rocks you have and gradually build up, using smaller rocks towards the top. If cement is used to stabilize the rocks it can be coloured to match the rock material. Try to establish some pattern of horizontal and vertical jointing to ensure the rocks look more natural. Create some nooks and crannies as the rocks are laid to enable plants to be placed in them afterwards.

Other Features

Consideration should be given to other features that may be included in the rockery. It may be desirable to incorporate a pond feature, combined with waterfall and running stream. Bog areas may also be incorporated in shallow parts of a pool or in moist areas around the base of the rockery where excess moisture seeps away.

River stone can be used in these areas, tying the ponds and streams into the structure of the rockery as a whole.

Rock gardens can play a distinct part in the cultivation of our native Australian plants. If you do happen to construct one, I am sure that you will not be disappointed with the results. ■

Australian Native Cut Flowers

by J. Benyon, Canberra

There is plenty of information available in books on flower arranging, about the use of exotics as cut flowers, but not very much on Australian natives. Members of the Society for Growing Australian Plants have recently begun experimenting with various conditioning treatments for native flowers to help prolong their life as cut flowers. The work is only in the very early stages at present, but it seems as though, not unexpectedly, native flowers respond to the same sorts of treatments as do exotics.

They benefit from being picked in the early morning or late evening, and given a good drink for 2 to 12 hours before being used. Take a bucket of warm, not cold, water into the garden with you and put the flowers straight into it. In some cases very hot water seems beneficial. This applies to flowers with woody stems, which also should be split, crushed or peeled if you have time. If not, just hold them in very hot water for a minute or two, before putting them into the bucket of warm water.

In the past, native pea flowers have been found to wilt very quickly when picked. The only one so far to have been tried with the very hot water treatment is *Hardenbergia* (Native Lilac). The pieces were held in very hot water for about a minute and then placed in warm water. The flowers stayed fresh for a week.

Acacia, which don't last well at all if just put into warm or cold water, respond very well to treatment with almost boiling water. They don't even seem to mind being left in the hot water, but then the flowers should be protected from the steam by wrapping them in newspaper with just the stems poking out. The flowers will stay fluffy for days after this treatment. Acacias also dry remarkably well and keep their colour beautifully. Just give them the hot water treatment, a good drink, and hang them upside down in a cupboard for about two weeks. Some of the more delicate ones such as *Acacia cardiophylla*, are fragile, but the heavier ones, such as *A. cultriformis*, and *A. podalyriifolia*, are quite robust. ■

Lomatia

Jeanette Closs, Hobart, Tasmania

On looking up the Index to 'Australian Plants', I could find no reference to Lomatias. This prompted me to research this interesting and possibly neglected genus. For many years I have grown *Lomatia tinctoria* and delighted in its attractive leaves and the creamy perfumed inflorescence it holds above its foliage.

The name Lomatia means bordered and refers in this case to the winged seeds. The word is taken from the Greek word 'loma' meaning a fringe or border. They are often called Guitar Plants which is a reference to the shape of the follicle. Lomatias are found only in Chile and Eastern Australia. Nine species are to be found in Australia and three are endemic to Tasmania.

The leaves on these trees or shrubs are arranged alternately up the stem. They can be entire, toothed or pinnately divided and are frequently very variable.

The flowers are hermaphrodite (having male and female parts on each flower) and they are borne in pairs in terminal or axillary racemes. The four petal-like sepals are usually cream or white (dull crimson in *L. tasmanica*) and are joined in the bud, which opens along the dorsal side of the flower. The style protrudes from the perianth slit until it is released. The stamens are joined to the petals, which are spreading and recurved when open. The long protruding style remains on the fruit when it is formed.

The fruit is an attractive pod-like leathery follicle, which splits on one edge to expose several winged seeds arranged in two rows. These are lightly covered with a yellow powder.

L. arborescens L. Frazer et J. W. Vickery

This species occurs over a wide area from Southern Queensland to mid New South Wales. It commonly grows on the fringes of rainforest or subalpine woodlands. Its usual height is around 2 m but has been recorded up to 4 m tall. It is very closely related to *L. ilicifolia* and *L. fraseri* but can be distinguished from these species, as the inflorescence is simple and shorter and the undersides of the mature leaves are glabrous.

L. fraseri R.Br. is known as the Tree or Forest Lomatia. It is a shrub or small tree growing from 2-5 m. in open forests and gullies of mountains of Victoria and N.S.W. below 1,400 m. It has ovate or lanceolate leaves to 10 cm, entire, toothed or divided and sometimes velvety beneath. The creamy inflorescences are 10-15 cm long and on erect stems and are formed in the upper axils. These trees are often found growing in association with *Nothofagus moorei*.

L. fraxinifolia F. Muell. A tree to 20 m found in Northern Queensland. The pinnate leaves are arranged alternately. The inflorescence is clothed in rust-coloured hairs, and is situated at the ends of branchlets. It consists of several or numerous branches composed of large spike-like racemes of creamy-white flowers. Fruit contains about 12 seeds.

L. ilicifolia R.Br. is a shrub 1-2 m tall and 1 m wide found on dry hills in heathy or scrubby understories in Victoria, Queensland and N.S.W. The

holly-like leaves are ovate-oblong to lanceolate 10-18 cm long. The veins are distinctly reticulate on the upper surface; the margins coarsely serrate or deeply lobed. The upper surface is dark and green and glabrous and silky-downy on the under surface. The creamy inflorescence is held above the flowers.

L. myricoides (J. Gaertn) Domin. (syn. *L. longifolia*) bears very fragrant cream flowers in summer, which are good for flower arranging. It is a tall graceful shrub or small tree which sometimes grows to 5 m and is found along streams and on slopes in the mountain forests of Victoria and N.S.W. to 1,000 m. The leaves are linear to narrow lanceolate, tapering gradually into a very short petiole or sometimes sessile 5-20 cm long and up to 2 cm wide. Margins are serrate or toothed towards the apex. Inflorescence, usually shorter than the leaves, is in terminal or axillary racemes; the perianth being greenish-yellow to creamy-white. Follicle thinly woody 2-2.5 cm long.

L. polymorpha R.Br. — the specific name means 'variable forms in different species' and refers to the variation in leaf shape. It is an erect shrub to 3 m high by about 1 m wide. The leaves are narrow to elliptical and up to 8 cm long. Often the margins are toothed or lobed at the ends. The terminal racemes of cream flowers are short and dense and appear in summer. It is usually found on the mountains from 500-1,000 m but is to be found at sea level on the west coast of Tasmania.

L. silaifolia R.Br. has stiff leaves mostly twice or thrice pinnately divided, 10-30 cm long, similar to the Parsley family from which its specific name is derived. The flowers are in loose terminal racemes or panicles much exceeding the leaves and 20 cm or more long. The perianth is creamy white. It is a shrub 50-150 cm high and is widespread in dry sclerophyll forests on sandstone in N.S.W. and Queensland.

L. tasmanica W. M. Curtis is a rare plant found only in a small isolated area on the southern end of the Bathurst Range in south-west Tasmania. It is a tall very slender tree to 5 m. The leaves are shiny dark green and pinnate or irregularly and sharply toothed. These are crowded at the ends of the branches. The flowers are dull crimson, resembling a small faded waratah, but do not set seed. The only way this plant regenerates is by natural layering. *L. tasmanica* must be one of the most rare and threatened plants in Tasmania.

L. tinctoria R.Br. can be found on dry rocky hillsides from sea level to 1,000 m and is an erect shrub from 0.5-1.5 m high. The specific name means 'dye producing' and *L. tinctoria* is often used for this purpose in Tasmania. It usually has attractive divided leaves up to 8 cm long, however these are variable and occasionally the leaves are simple. In summer the loose terminal cream inflorescence is held well above the leaves and often on pinkish coloured stems.

I have been given a plant of *L. polymorpha* and I have cuttings of this species in my cutting frame. I collected seeds of *L. silaifolia* whilst in N.S.W. last year and I now have some healthy seedlings. However I have been unable to locate either seed or cuttings of any other species. ■

Western Australian Eucalypts in Tasmania

by J. E. Walters, Hobart

Undoubtedly, the Western Australian eucalypts have the most spectacular flowers of all eucalypt species. The difficulties in growing these trees outside their native habitat are many, but these can be overcome by careful selection of species to suit their adopted habitat and by using appropriate propagation and cultivation techniques.

Over the last five years I have successfully grown a number of Western Australian eucalypts in my garden near Hobart in south-eastern Tasmania. This article describes the techniques I have used and the problems I have encountered with these plants.

Propagation

Seeds are sown in a soil mix of 60% sand and 40% peat moss, with a higher ratio of sand in winter for extra drainage. Soil is sterilised when possible. Plastic seed trays with drainage holes are used and are filled with the soil to 1 cm from the top. Seeds are sprinkled as sparsely as feasible on the surface in rows 5 cm apart and then sprinkled lightly with sand until they are just covered. The trays are misted 2-4 times daily in summer, once daily in winter, in a large glasshouse which has heating in winter (18°C). I once tried to grow seed in a Sarlon cloth shadehouse (50% shade), but rain dripped through the Sarlon and uprooted the seedlings.

Germination takes place 1-6 weeks after sowing and may take up to three months to reach a maximum. Table 1 shows the results of germination of some of the species I have tested. As might be expected, seed 10-13 years old gave poorer results than fresh seed.

The species from inland areas with very low rainfall (e.g. *E. macorcarpa*, *E. kruseana* and *E. erythrocorys*) were susceptible to damping-off (*Pythium* sp.) when over-watered. In general I have found the W.A. species need relatively little watering and after the cotyledons have appeared, it is most successful to water only when the surface of the soil has dried out. In winter, seedlings are affected by Grey Mould (*Botrytis cinerea*) which is encouraged by cold, moist conditions and over-crowding. Both damping-off and Grey Mould can be treated with fungicides like Terrazole, Benlate or Captan. Generally, I find that seedlings grown in winter have smaller root and shoot systems than those germinated in spring or summer.

Potting And Planting Out

Seedlings are potted out when 2-8 cm high and after the first true leaves have appeared. Usually this is within three months of sowing. Pots 7.5 or 10 cm in diameter are used, again with a 60/40 sand/peat mix in summer and a higher ratio of sand in winter. Gravel is put in the bottom of the pots. They are kept in the glasshouse for a few weeks until new growth is noticeable and then removed to a shadehouse with about 30% shade. They are spray misted once or twice a day in summer and once a day in winter.

Once, I used a 50% Sarlon shadehouse instead of 30% shade. Several species (*E. ficifolia*, *E. burdettiana*, small (4 cm) *E. macorcarpa*, and one or two each of *E. crucis*, *E. torquata* and *E. erythrocorys*) died from *Botrytis*

during winter at this level of shade. I have never had this problem with the 30% shadehouse and *E. burdettiana* of the same age and height planted out in the garden in March survived the same winter without this problem. I have concluded that more than 30% shade is undesirable for W.A. species during winter, although there are no such problems during summer. I generally plant the eucalypts in the garden between September and March when they are 10-30 cm tall. This is usually within one year of sowing. They are watered for four to five weeks after planting out.

For best results in planting out, a large hole is dug and filled with water. When the water has drained out, soil is put in the bottom of the hole followed by the plant, which has had its roots teased out. Soil is then pressed around the plant and it is watered again thoroughly.

TABLE 1. Germination of W.A. eucalypts grown in a glasshouse in south-eastern Tasmania

SPECIES	APPROXIMATE DAYS TO MAXIMUM GERMINATION	GERMINATION*
SEED 10-13 YEARS OLD (SOWN IN OCTOBER)		
<i>E. stricklandii</i>		Nil
<i>E. leptocalyx</i>		Nil
<i>E. incrassata</i>		Nil
<i>E. sp. affin. youngiana</i>	12-25	Adequate
<i>E. pyriformis</i>	12-25	Adequate
<i>E. macrandra</i>	12-25	Adequate
<i>E. leptopoda</i>		Nil
<i>E. platycorys</i>		Nil
<i>E. orbifolia</i>	25-40	Adequate
<i>E. woodwardii</i>		Nil
<i>E. ebbanoensis</i>	12-25	Adequate
<i>E. flocktoniae</i>		Nil
<i>E. macrocarpa</i>	12-25	Poor
<i>E. oleosa v. glauca</i>		Nil
<i>E. laeliae</i>	12-25	Adequate
FRESH SEED (SOWN IN AUGUST)		
<i>E. macrocarpa</i>	12-18	Poor†
<i>E. erythrocorys</i>	18-30	Poor†
<i>E. kruseana</i>	18-30	Poor†
<i>E. lehmannii</i>	18-79	Adequate
<i>E. tetraptera</i>	30-79	Adequate
<i>E. calophylla</i>	16-55	Adequate
<i>E. stoatei</i>	42-67	Poor†
<i>E. crucis</i>	34-67	Poor†
<i>E. occidentalis</i>	10-34	Adequate
<i>E. steedmanii</i>	10-42	Good
<i>E. lansdowneana</i>	10-34	Good
<i>E. caesia</i>	10-34	Adequate
<i>E. tetragona</i>	7-25	Adequate‡1
<i>E. caesia</i>	6-25	Good‡2

* Poor — less than 25% germination
Adequate — 25-75% germination
Good — over 75% germination

† Over-watered causing damp-off
‡1 Sown in July
‡2 Sown in October

Cultivation In The Garden

Our garden is at Carlton Beach, facing Storm Bay on the south-east coast of Tasmania, about 700 metres inland, with an annual rainfall of 593 mm spread evenly throughout the year. The soil ranges from pure quartz sand with a top soil of sand with humus to very wet peaty clay. Usually, there are two or three severe frosts (-4°C) in July and August plus several lighter ones.

Generally, I have persevered with and found greatest success with Western Australian eucalypts which come from natural habitats with a similar climate to that of south-east Tasmania. The south-west of Western Australia, east to Esperance, falls in this category. For descriptions of the natural habitats of these eucalypts, I find G.M. Chippendale's "Eucalypts of the Western Australian Goldfields" (1973) invaluable. For every species, the rainfall, temperature, soil type and frost frequency of its habitat is given, together with a taxonomic description (including cotyledon and seed descriptions useful for checking that seed is correctly labelled) plus a general description and cultivation notes.

I water the garden only 2 or 3 times in summer although I think it would be preferable to do so a little more frequently. If any particular species seems to suffer from drought stress I try another of the same species in a different situation in the garden where the soil is more water retentive and has a higher nutritional value. *E. nutans*, *E. stoatei*, *E. platypus*, *E. tetraptera* and *E. caesia* have all died in the dry sandy soil, and new trees of these species seem to be doing well in a slightly heavier soil.

The species from drier arid habitats I plant in deep sand, which is kept dry all year round, and are watered only if they appear stressed. Although these are very slow to grow (mainly due to our possums' "help" in doing a bit of eucalypt pruning), I have had comparatively few losses. Some that have been lost have been nibbled by possums when small (less than 30 cm high) leaving only one or two leaves. Subsequently their developing epicormics were also chewed and with a lack of water in summer and cold conditions in winter, they eventually succumbed.

Frosts have proved to be a major problem with some species. Those which encounter frosts only rarely, or not at all, in their natural state, according to Chippendale, I surround with plastic bags with the ends cut out for the winter period. The tubes allow the rain in but prevent frost forming on the leaves. There may also be a danger from burning of frost-covered leaves by early morning sun. I have had *E. ficifolia* as old as four years die from frost when planted in an easterly aspect. Yet one growing in a westerly aspect and shielded by scrub has never been covered and is very healthy. *E. caesia* has died of frost at three years of age when uncovered. Of the nine Western Australian species in the EAA group (as defined by L. D. Pryor and L.A.S. Johnson in "A Classification of the Eucalypts" (1971)), I have grown *E. erythrocorys*, *E. tetragona* and *E. ebbanoensis*, all of which proved particularly susceptible to frost, suggesting particular care should be taken with this group. Several species suffer from leaf tip burn but recover readily or grow out of their frost tenderness, e.g. *E. burdettiana*, *E. crucis*, *E. preissiana*, *E. landsdowneana*, *E. rhodantha*, *E. cladocalyx* var. *nana* and *E. lehmannii* (very frost tender when young).

Fertilizers

I generally feed my plants two or three times in summer with Maxicrop and have one spring and autumn application of blood and bone mixed equally with dried seaweed powder and sprinkled over the soil surrounding the plant. With the infrequent watering my plants get, they tend to be slow growing for two or three years until they have well-established and deep root systems, when their growth rate increases steadily, e.g. *E. kruseana* in part shade grew a total of only 10 cm over the first two years, but is now flowering and suddenly shooting vigorously.

Leaf-eating Insects

I find that using a garlic spray on my plants seems to keep most leaf-eating insects away. It has to be used regularly, otherwise it tends to wash off the foliage after heavy rain. It is also a good deterrent to possums but new shoots have to be sprayed as they open otherwise they disappear very quickly. I obtained the following recipe for garlic spray from an article by Ray Best in the "Good Gardening" magazine, Spring 1976, p.27. It is quite harmless to pets or humans.

You will need: 3 ozs garlic bulbs

2 teaspoons kerosene

1 pint water

¼ oz. good oil based soap (as spreader).

Chop garlic bulbs, mix with kerosene, leave to soak 48 hours. Add water and mix well with soap (I use biodegradeable detergent), filter and store in a plastic or glass container, not metal. I use a dilution of about 1 part insecticide to 25 parts water which is a rather strong solution but seems to do no harm.

Fungi

The only fungal problems I have had in the garden is with 'Smothering Disease' (*Thelephora terrestris*) which is associated with *Pinus radiata*. This fungus sometimes grows around young plants and results in collar rot and then death. The only action I take is to keep a careful eye on the ground around the eucalypts and pull away any fungal body as it appears. So far the only species that has died from this fungus is a young *E. steedmanii*.

Results

Some species have started flowering from two years onwards, although the buds are slower to develop and flowering time is shorter than in Western Australia. All my plants are five years old or less, and so far *E. caesia*, *E. torquata*, *E. kruseana*, *E. lehmannii* and *E. burdettiana* have flowered or developed buds.

Species which are growing well after two or more years in the garden are *E. torquata*, *E. kruseana*, *E. cladocalyx* var. *nana*, *E. preissiana*, *E. lehmannii*, *E. steedmanii*, *E. megacornuta*, *E. rhodantha*, *E. platypus*, *E. erythronema*, *E. forrestiana*, *E. macrocarpa* (kept in pots), *E. eremophila*, *E. orbifolia*, *E. occidentalis*, *E. macrandra*, *E. tetraptera*, *E. spathulata*, *E. lansdowneana*, *E. caesia* and *E. crucis*. I have another thirteen species from Western Australia which are only 1 year old and growing well at the moment but are too young to be assured of success.

In general, eucalypts from southern Western Australia will grow and flower in Tasmania with careful cultivation. However, their development is usually considerably slower than in their own, much warmer environment, especially in the process of establishment. But with patience and care they eventually reward all efforts. ■



Nematolepis pheballoides

Photography by M. Fagg

This little known member of the Rutaceae is described on p.160. Its similarity to the eastern *Correa* of the same plant family is evident. The bell like flowers are to 15 mm long. An excellent plant for a rockery as shown in the colour photograph on page 181.

Australian Plants in California

by Lester Hawkins, California

There are more Australian plants growing in California than you may imagine, but they have not all been wisely planted. If you travelled by highway through our state, you would often think you were in some extremely odd and unknown part of Australia. There are miles and miles of *Acacia longifolia* and *Eucalyptus sideroxylon rosea*, and more plants of *Callistemon lanceolatus* than you could imagine would ever exist; there are literally millions of them. Equally ubiquitous is the Tasmanian blue gum, *Eucalyptus globulus*, which many Californians think is our principal native tree and which is an anathema to the members of our Californian Native Plant Society. The fact is that some Australian plants conveniently resist the effects of our long summer drought and are far easier to grow than our own native trees.

However, in addition to these monotonous and banal plantings there are also a number of very memorable and beautiful ones. Outside Santa Barbara, for example, there is a stand of majestic old specimens of *Eucalyptus citriodora*. Looking one way, you see the ocean through their graceful trunks, and, on the other side are the green, brush-covered hills.

San Francisco is a very windy and, in the winter, a very cold city, but *Eucalyptus ficifolia* thrives. Near Ft. Mason are old trees about forty feet high, but very wide and densely bushy. They bloom throughout the year. Western Australian plants are evidently fooled by the Californian coastal climate for some of them bloom almost continuously. A wind blown plant of *Dryandra praemorsa* in a garden on the coast was only about three feet high but easily twenty feet across; it was never out of bloom. The same was true of a large *Banksia grandis*, which the wind finally blew over, but which lived on as a giant mat on the ground, sending up here and there, its enormous spikes of flowers.

Many Californian farmsteads have beautiful old specimens of *Eucalyptus viminalis* and *E. camaldulensis*, as large as any I have seen in Australia.

Grevillea paniculata has proved to be a most useful subject in landscaping, spreading to nearly twenty feet in four years. Such plants are high enough and dense enough to crowd out and shade out weeds, but low enough to make a good foreground for taller shrubs. When not in flower, the shrub forms a large and ferny, light green mass.

G. aquifolia has many of the same qualities, as do *G. crithmifolia* and *G. lanigera*.

Two of my favourite small-growing types are *G. alpina* and *G. lavandulacea*. The sun is too hot in most of California for European, indeed for our own alpine when brought down to low elevations. Many smaller Australian plants take our rock garden conditions very well. Four other prize rock garden plants for our climate are *Clematis gentianoides*, *Thysanotus multiflorus*, *Hibbertia procumbens* and *Prostanthera aspalathoides*.

Neat, well behaved shrubs of *Melaleuca violacea* take our heat and drought most successfully. They can serve roughly the same function in the landscape that clipped boxwoods do for the English but without the

labour of clipping and with the added bonus of a light frosting of jewel-like flowers in early spring.

Another good weed-suppressing shrub for the verge of 'island' plantings is *Chorizema ilicifolium*, which quickly takes off and spreads eight feet in all directions.

Three of my favourites among the smaller acacias are *Acacia pulchella*, *A. boormanni* and *A. inophloia*. The latter, when not in bloom has extraordinary golden new growth above the glaucous older foliage. When mature, it also has a most beautiful reddish trunk with peeling bark — altogether a most colourful plant.

Although callistemons are very common in California, I use the Harkness hybrid and 'Reeve's Pink' in my landscaping, as well as *Callistemon speciosus* and *C. pinifolius* var. *viridus*, which is small enough for the rock garden, if trimmed occasionally.

Other specimens that do well in California are *Melaleuca wilsonii*, *M. steedmanii* and *M. pubescens*; *Isopogon formosus*; *Leptospermum nitidum* and *L. rotundifolium*; *Kunzea pedunculata* and *K. recurva* var. *montana*; *Prostanthera stricta* and *P. lasianthos*; *Grevillea speciosa*, *G. glabella*, *G. aspleniifolia* and some chance grevillea hybrid seedlings.

In a landscaping project where islands were mounded and set with rock to provide a rocky terrain effect and to give the plantings extra drainage, *Eucalyptus coccifera* and *Acacia pendula* put on amazing growth in the first five years. In a corner of another project where the plants are almost all Australian, the mintbush has been a pleasant surprise in that it remains good looking when not in bloom. *Grevillea* 'Canberra Gem' is treated as a clipped hedge. Planting a narrow bed around one of those featureless, stark white buildings, I used the yellow flowered form of *G. juniperina*. By keeping the side branches trimmed, the result was a tall, narrow curtain of deep green that has given the building style.

I am devoted to the art of gardens. I think it is an excellent idea to create gardens using one's native plants, but I also think that this is not enough. I know badly planned gardens of California natives that succeed only in looking ill-assorted. We ought not to despise Marjorie Fish, Gertrude Jeckyll and other past masters of the art. They may have overdone phrases like 'foliage contrast' and have been too little aware of the natural ecology of plants, but they nevertheless succeeded in accomplishing that small miracle — the creation of small areas of great and captivating charm in our world. The fact that we are busy discovering the horticulture of our natives does not excuse us from using the same extraordinary care that made the best English gardens great. ■

The *Callistemon* Study Group

"Selection of the best cultivars and forms". This is the theme for the group at the moment. *Callistemon*, more widely known by the common name of "bottle brush", are a very rewarding and easily grown wildflower. One problem is the correct and reliable naming of plants but the major one is brought about by one of its seeming advantages. It sets seed in great quantities and holds the seed on the plant for easy collection. Unfortunately it will mate with any nearby shrub of the same genus and the plants from the seedlings can vary considerably in size, colour and proliferation of flower, etc. The group has taken positive action on these problems.

The *Callistemon* group is fortunate to have such a competent and energetic organiser as leader, Harry Infield, Demesne Farm, Coomba Road, Coomba Park 2428. You would enjoy working in this group but even if you do not want to join the group but can help with notes on what plants you know or have grown, it would be appreciated. The annual fee for this group is \$4.00 at present, twice as much as other groups, but excellent value because of the advice, publications, etc.



Spyridium parvifolium

Photography by M. Fagg

Spyridium parvifolium forms a medium shrub which may be of interest in the garden as a background plant. The white flowers are insignificant, but are surrounded by pale floral leaves. These are borne in spring and early summer.



Rockery — National Botanic Gardens

Photography by M. Fagg

Very aesthetic effects can be obtained by building a rockery in the garden. In the National Botanic Gardens, very large rocks have been used in rockery construction, but a smaller scale is generally required in a suburban garden. Deep soil pockets provide drainage and cool root runs.



Blandfordia punicea

Photography by J. Simmons

Tasmanian Christmas bells occur naturally in wet heaths, on moors and hillsides in high rainfall areas. The spectacular robust orange-red flowers would provide a focal point in any rockery, during the flowering period October-March.

Australian Plants in England

by Bruce Austin, Leicestershire, England

This article reports the progress of an experiment to grow Australian plants in England; it may facetiously be described as coming from the honorary secretary (and sole member) of the Leicestershire Branch of SGAP.

How It Started

The qualifications of the experimenter are a Sydney upbringing, during which he acquired the skills of a botanist *manqué* and a gardener's labourer, and a Leicestershire domesticity, during which he established a conventional suburban English garden. Some years ago a packet of mixed eucalyptus seeds from a local seedsman awakened nostalgic thoughts and yielded several sturdy saplings requiring winter protection. During a visit to Europe an old family friend, Charles Napier Thomson, asked the question, 'If you want to remind yourself of the Australian countryside, why not grow plants which live on higher ground and naturally withstand cold winters?' Since that time some dozen and a half seed packets have arrived, mostly collected by him and many of them in his own garden. Many disappointments have followed but several interesting results are beginning to emerge.

The Setting

Rothley is a village in Leicestershire situated 52°40'N, 1°10'W, just off the London-Manchester trunk road A6, some 50 m above sea level. It lies in the valley of the River Soar, which flows northward to its confluence with the River Trent, 20 km from Rothley and 10 km SW of Nottingham. Immediately to the west of Rothley village lies a volcanic region of higher ground, extending 20 km east-west and 10 km north-south, with the highest point nearly 300 m at the western extreme of the volcanic region, known as Charnwood Forest. The climate of the country is temperate and rather dry, as it lies in the rain shadow of the Cotswold Hills, some 60 km to the west.

Sowing Conditions

For the first batch of seeds in the spring of 1980, two identical series were sown, in the optimistic hope that one or other of the two seed composts might show a better germination rate. The two composts used were:

- (1) a Levington soil-less compost, which is peat-based and treated with sufficient nutrients to sustain growth for six weeks;
- (2) a John Innes sandy loam compost.

Germination rates generally were so low that the idea of comparing two composts was abandoned. New sowings in the summer of that year were in Levington compost, because of its greater consistency and ease of handling. Sowing continued until mid-summer (July) but was then abandoned because any seedlings could not be adequately looked after during a four-week absence in Australia.

Sowing during 1981 has been in the sandier John Innes compost. This was because of a suspicion that seedlings in 1980 tended to be too sappy, possibly because a high peat content is not typical of their native conditions. Individual pots rather than seed trays were used in 1981 to facilitate moving individual species around as their progress dictated. Pots were placed on capillary matting for watering and all sowing this year was in the greenhouse. The greenhouse itself, cedar-framed, 2½ m x 2 m, was double-glazed with

sheets of clear polythene until end-April and was kept frost-free in the coldest weather with electric tubular heaters. Before any seedlings were planted out in the open garden, they were hardened off in their pots in a cold frame for a time.

Progress Report

Bulbine bulbosa — sown April, 1980. Of 24 seeds 13 seedlings were pricked out into a tray to grow on and 12 were eventually planted out into different situations in the garden, during June and July. By the summer of 1981, 2 of 3 planted in a semi-shaded corner of a sunny bed had survived a fairly mild winter, 1 being rather overgrown but the other flowering in August; the 2 planted in a dry corner of a south-facing brick wall both flowered, 1 in June, the other in July; of the 4 weakest planted against a north-facing fence with little sun but plenty wind, 1 survived the winter and became a healthy, if flowerless plant by mid-summer. A second sowing of the original seed was made in July, 1981; 3 of 10 germinated and 2 of these, still in pots in the greenhouse, are now 5 cm high. Seed has been saved.

Linum marginale — sown June, 1981. Virtually 100% germination in about 10 days; transplanted into sunny garden early July where they branched and flowered well. A second and third sowing in July in open ground was less satisfactory — 2 only from the second sowing growing on and flowering. Seed has been saved.

Abutilon oxycarpum — sown July 1981; a thread-like shoot in early September reached 1½ cm but then disappeared. Sown again September — no result.

Pavonia hastata (seeds had been incorrectly labelled and identity is probable, not certain) — sown July, 1980. Of 12 seeds sown 2 germinated and were potted up individually in August, kept on capillary matting in the greenhouse; these were brought into the house for the winter at 16-18 cm, 8-10 leaves; some leaves were lost but both were planted out in May, 1981, 1 in open ground, the other in its pot sunk to the brim; the first reached 50 cm, with some branching and axillary buds, the other 40 cm with axillary buds only. Both have been left in the garden for the winter 1981-82. A second sowing was made July, 1981, yielding 3 seedlings, the smallest being still in its pot in the greenhouse with 2 pairs of leaves, the others planted out are now 15 cm and 6 cm high.

Clianthus formosus — soaked in hot water and sown July 1981; 1 only germinated but this seedling flourished in greenhouse until July; planted out mid-August in lightly shaded rose bed where it had developed by end September 8 compound leaves, reached 18 cm in height and looked very healthy.

Daviesia latifolia — soaked in hot water and sown June, 1981; only 1 out of 12 germinated and grew on in the greenhouse to 3 cm with 4 leaves by end August; by end September, the 2 leaves were wilting and the terminal shoot had disappeared and by October the seedling had died. It is possible that capillary matting watering made the pot too wet, for the seedling had the appearance of being waterlogged; although the pot was removed from the matting when this was noticed, this may have been too late.

Goodia lotifolia — soaked in hot water and sown July 1981; only 1 germinated out of 12 sown but this reached 6 cm by mid-August; planted out in lightly shaded rose bed early September, reaching 15 cm and branching well by end September. Sown again September, 1981, with 2 seeds germinating out of 12; growth has now almost stopped with 1 having 2



Lomatia tinctoria

Photography by M. Fagg

This species also has attractive foliage, pinnately divided into long slender leathery lobes, seen in close range in the plate opposite. White or cream flowers are in long terminal racemes, and the woody fruits open to a guitar-shape.



Lomatia tinctoria

Photography by M. Fagg

Lomatia are excellent for rockeries as they provide foliage variation and the white provides contrast and background to plants with brighter colours. The flower and leaf detail of this plant is shown in the colour plate opposite.



Rockery — National Botanic Gardens

Photography by M. Fagg

This illustration of a rockery at the National Botanic Gardens shows massed flowering of *Boronia microphylla*, *Hibbertia pedunculata*, *Tetradlea thymifolia*, *Nematolepis phebaloides* and *Darwinia purpurea*.

whorls of leaves (possibly a self-seeded weed?) and the other with cotyledons and terminal shoot only.

Indigofera australis — soaked in hot water and sown April, 1980; 60% germination but seedlings and compost quickly developed white fungus and had all died within 2 weeks of sowing. Second sowing July, 1980, yielded 50% germination, all seedlings potted individually and left on capillary matting in greenhouse; degree of growth varied, the biggest with 4 sets of pinnae; 4 were over-wintered in greenhouse, 2 being brought into the house, but all finally died back and rotted. Third sowing June, 1981 — no result. Fourth sowing July, 1981 — 2 germinated out of 12, 1 of which never released its seed-cap and died, the other developing 4 compound leaves by September and reaching 10 cm in height; a sharp frost in November withered all leaves (even with the greenhouse heaters on overnight) so its survival chances are low.

Swainsona galegifolia — soaked in hot water and sown July, 1981; 3 out of 12 germinated and two of these, having reached 15 cm, have been planted out but have made no growth since.

Eustrephus latifolius — sown July and September, 1981 — No result.

Banksia canei (from 1200 m on Mount Wadbilliga) — sown April, 1980; 1 germinated but reluctant to release sail and died after a few weeks. Sown again July twice (including once on blotting paper) and in July 1981 — no result.

Banksia marginata — sown June, 1981; after 3 months 1 seedling appeared from the 6 seeds sown; by end September this had 3 pairs of leaves up to 3 cm long. Second sowing (seed from Upper Cudgegong River) — 8 sown July, 1981, yielding 1 seedling after 3 months which now still has 1 pair of leaves. Both pots produced weeds before the banksia emerged; their growth may have reduced the chances of the banksia seeds.

Grevillea floribunda — all 6 seeds sown June, 1981, and 1 seedling emerged within two weeks; this robust seedling was re-potted and the whole pot was sunk in the soil of a sunny garden, by end August the sprays were 30/40 cm long and covered with buds; the plant became overgrown while we were away on holiday so no flowers were seen; the November frost severely damaged the foliage and the plant was brought into the greenhouse showing some green only in the stems.

Telopea speciosissima (seeds from Clarence) — sown April, 1980; 2 seeds out of 10 germinated and the two seedlings were potted up individually; 1 looked frail after potting and was brought into the house where it revived slightly but died within weeks; the other became too hot in the greenhouse and was moved to a cool corner of a cold frame; after several weeks blotches appeared on the leaves which lost their bright colour, although the cotyledons remained and retained their colour; by October the cotyledons finally withered and the plant died, not having grown to more than about 4 cm. Sown again July, 1980 and July, 1981 — no result.

Final Thoughts

Speaking botanically this whole experiment could be described as ham-fisted. From the gardening point of view the picture is better, although there have been many disappointments, there have been successes also and lessons have been learned. As these lines are being written the garden is under 5-10 cm of snow which has lain for two weeks — the most severe pre-Christmas weather for 50 years. It will be interesting to see whether anything survives.

Australian Plants in New Zealand

by Colin Henderson, P.O. Box 3118, Tauranga, New Zealand

Australian plants grow in New Zealand from North Cape to the Bluff and in fact they figure prominently in the ornamental plant offerings of New Zealand nurserymen. Several cultivars have been selected in New Zealand over the years but some are really unworthy of continued propagation. Among the best are *Acacia riceana* 'Rewa', *Callistemon viminalis* 'Red Clusters', *Grevillea* 'Hawera' and *Phebalium squameum* 'Illumination'.

There is one difficulty in acquiring Australian plants in this country in that many are incorrectly labelled. The grevilleas and prostantheras are terribly muddled up and we need a few experts over here to sort them out.

In some areas, particularly in Northland, hakeas and acacias have naturalised themselves to pest proportions. Some of the eucalyptus plantings by farmers and forestry workers late last century are among the finest stands of timber you would see anywhere.

It is not only our plants that have originated from Australia. Our weather is determined by a succession of anti-cyclones separated by depressions which pass more or less regularly from west to east across the Tasman Sea. Hot air masses from the Australian interior and freezing air masses from the Antarctic are usually modified by long ocean passages and our temperatures are generally quite moderate. Rainfall is generous and inland frosts are common in winter. However, where we live in Tauranga in the Bay of Plenty, 150 km south of Auckland, about five frosts per year can be expected.

Winds, mainly on the westerly quarter are common, and it is wise to site young plants carefully or stake carefully. Incidentally *Casuarina cunninghamiana* is used extensively in this area as an orchard windbreak tree. Soil types are too varied to detail in this article but in the Bay of Plenty we have free draining, acid loam of volcanic origin which is suitable for many Australian plants.

Selection Of Plants

As a generalisation we can grow many Australian plant species in New Zealand very well provided they are selected with some thought for ability to withstand wind and resistance to frost. Unless drainage is excellent or artificially modified the plants selected need to be tolerant of our higher rainfall. (Annual rainfall in Tauranga would be about 1300 mm whereas I understand Sydney has approximately 1100 mm and Melbourne 750 mm.) There are also some plants that are 'out' because of their susceptibility to disease — for example *Pittosporum undulatum* is attacked by a disfiguring native psyllid and many *Callistemon* species are rendered of no ornamental value because of thrips.

I will now indicate some of the plants growing well in New Zealand by listing some of those growing in our own garden. Briefly we operate a wholesale nursery on a six acre site specialising primarily in Australian and New Zealand plants. The ornamental gardens cover approximately half an acre but the area is increasing as planting continues. No plant is older than six years.

We have one garden that is especially prepared. It is a rockery where the area has been built up mainly with gravel. Australian plants in this area, including the larger background plants, are as follows: *Acacia floribunda*, *A. riceana* 'Rewa', *A. conferta*, *A. polybotrya*, *Agonis flexuosa*, *Alyogyne huegelii*, *Anigozanthus flavidus* (including red forms), *Anigozanthus pulcherrimus*, *Atriplex nummularia*, *Brachycome multifida*, *Brachysema lanceolatum*, *Boronia heterophylla*, *B. denticulata*, *Banksia speciosa*, *B. ashbyi*, *B. praemorsa*, *B. occidentalis*, *Bauera sessiliflora*, *B. rubioides*, *Correa reflexa* (pink flowered form), *C. alba*, *Calocephalus brownii*, *Cassia odorata* prostrate, *Callistemon* 'Violaceus', *Crocea exalata*, *C. 'Ecstasy'*, *Dampiera linearis*, *D. diversifolia* (both doing extremely well in the raised gravelly conditions), *Eremophila maculata* (protected from frost), *Grevillea thelemanniana*, *G. biterinata*, *G. fasciculata*, *G. 'Poorinda Peter'* (to illustrate naming problems I recently saw this offered as *G. 'Peter Pan'*), *Goodenia hederacea*, *Hakea erinacea*, *Hibbertia* sp., *Helichrysum bracteatum* 'Diamond Head', *H. apiculatum*, *H. baxteri*, *Isopogon roseus*, *Hardengergia violacea* var. *alba*, *Melaleuca squarrosa*, *M. incana*, *Myoporum debile*, *M. parvifolium*, *Prostanthera nivea*, *Pratia* sp., *Pittosporum undulatum*, *Sonya heterophylla* (as a shrub), *Thryptomene paynei*, *Thysanotus multiflorus*.

Along a fence near the nursery we have several different *Grevilleas* including *G. rosmarinifolia*, *G. 'Canberra Gem'*, *G. diminuta*, *G. 'Poorinda Leane'*, *G. aquifolium*, *G. rivularis*, *G. pinaster*, *G. 'Clearview David'* and one we call *Grevillea 'Robin Hood'* which is presumably of 'hookerana' parentage, but I don't know if you know it by that name in Australia. *Grevilleas* figure prominently throughout all the gardens as they are so versatile and attractive. These include *Grevillea acanthifolia*, *G. alpina*, *G. arenaria*, *G. longifolia* (still known as *aspleniifolia* here), *G. banksii*, *G. baueri*, *G. dimorpha*, *G. glabrata*, *G. x gaudichaudii*, *G. lanigera*, various *G. lavandulacea* forms, *G. 'Poorinda Queen'*, *G. robusta*. There are also several *Grevillea rosmarinifolia* forms grown including 'Desert Flame' and one called 'angustifolia'.

We have established several climbers many of which are less vigorous in New Zealand. These include *Hardenbergia comptoniana*, *H. violacea*, *H. violacea*, *Eustrephus latifolius*, *Pandorea jasminoides* (including white flowered form), *P. pandorana* (including white flowered form), *Sollya heterophylla* and *Hibbertia scandens*.

A recently planted woodlot at the rear of the property will feature many different *Eucalyptus* species. *Eucalyptus cinerea* was a very popular plant in New Zealand until recently when it obviously became too big for urban gardens. Another popular *Eucalyptus* has been *E. nicholli* and *E. ficifolia* is an outstanding tree in northern areas of New Zealand. Most of the *Eucalyptus* species from cooler areas do well in New Zealand — not so many inland species. We have a few *Eucalyptus torelliana* planted on the property but they are only 4 m high after five years which is nothing like their Queensland growth rate.

I have included my full address at the top of the article. S.G.A.P. members planning on visiting New Zealand are welcome to contact us. We live approximately one hour's drive from the thermal areas at Rotorua. ■

(Mr. Henderson listed some 113 other species as also growing in his garden. —Ed.)

Cold Area Gardening

Gardening in cold frost prone areas can be a very real obstacle course. The book advertised on page 150 is of very real value. The choice of plants is also important. For Tasmanians and those in the South East of Australia, "A Guide To Flowers and Plants of Tasmania" (cost \$25.00 from the Editor) or "Kosciusko Alpine Flora" (cost \$25.00). The best guide for all wildflower gardening or references is the series of this publication Australian Plants, available in bound form as defined on page 187.

Flowering Plants In Australia

A new book by Dr Brian Morley, Director, Botanic Gardens, Adelaide, and President of the Australian Flora Foundation, and Dr H. Toelken, is available by mail from the Editor for \$65.00 plus \$2.00 postage. It is, however, good value comprising 416 pages (22 x 29 cm) and is illustrated in colour by Ron Adams, June Morley with line drawings by Ludwik Dutkiewicz. The book is the work of 70 contributors, scientists specialists in their field and presents 253 families of flowering plants with keys to identification of the many hundreds of generic groups of plants.

Further details in coming issues of Australian Plants of this magnificent new book to be released in September, 1983.

Wildflower Nurseries in Queensland

Fairhill Native Plants — Fairhill Road, Yandina. Native plants for every situation including superb rainforest plants, seaside plants and a wide range of Grevilleas. Extensive display gardens with picnic facilities. Book and craft shop. Open every day 8.30 to 5.00 p.m. Catalogue — Native Plants for Sub-tropical and Tropical East Coast Gardens, \$2.00. P.O. Box 100, Yandina 4561. Telephone: (071) 46-7193.

Lakkari Native Plant Nursery — Specialist growers of Australian Plants, retail & wholesale. Large range available. Browse through our display gardens. Many selected natives unique to Queensland as well as new cultivars and hybrids. Grevilleas, and rainforest species our speciality. Catalogue \$1.50 posted. Open 7 days. 477 Redland Bay Road, Capalaba, Queensland. Tel. (07) 206-4119.

Utingu Native Plant Nursery — (Bob and Glynis Dawson) — 37 Sorbiston St., Wellers Hill, 4121. Tel. (07) 397-5706. Open 7 days. Wholesale and retail, specialising in Australian native plants with a large variety of Grevilleas and other indoor and outdoor species.

Australian Wildflower Seed Suppliers

Nindethana Seed Service — Largest selection of native seed in Australia. Nindethana, Narrikup, W.A. 6326. Available in 50c pks. gram lots or kgs. Send 27c stamp for free catalogue. Tel. (098) 46-2205 in business hours.

H. Grant — 2 Sandra Pl., Dubbo, 2830. West N.S.W. a speciality. Two stamps for a catalogue posted.

Wildflower Nurseries in New South Wales

Bundara Native Nursery — 37 Carters Road, Dural, Sydney, 2158. Tel. 651-1962. Specialising in *Grevillea*. Open weekends. Weekdays please ring first.

Cranebrook Native Nursery — R23 Cranebrook Road, Cranebrook, N.S.W. Tel. (047) 77-4256. Four miles north of Penrith, between Tadmire and Taylor Roads. Open 10.00 a.m.-8 p.m. Closed Sundays.

Denovans Nursery — 188 Marco Ave., Panania, 2213. Tel. 77-8891.

Sydney Wildflower Nursery — (part of the Forest Native Nursery Group) — 9 Namba Road, Duffy's Forest. Tel. (02) 450-1785. We specialise in a wide range of native plants. Catalogue \$4.50 posted. Open 7 days.

Floralands — Parry's Nurseries Pty. Ltd. Kariang via Gosford, 2250. Tel. (043) 40-1142. Preservation by cultivation. Send \$1.50 for descriptive catalogue.

Kentlyn Native Plants — 96c George's River Rd., Campbelltown, 2560. Tel. (046) 25-1583. Open 7 days.

Telopea Valley Nursery — George Downes Drive, Kulnura, 2250, 1.5 km past Kyola Road. Rare and unusual natives. Phone: (043) 76-1318 (best at 9.00 a.m.). Send S.A.E. (230 x 100 mm) for list. Mail orders taken. Closed Tuesdays.

Wirrimbirra Native Nursery — Hume Hwy, between Bargo and Tahrmoor, 2574 (3 km N. from Freeway entry on E. side). Wide range. Tel. (046) 84-1112.

Wirreanda Nursery — end of Wirreanda Rd., Ingleside, 2101. Tel. (02) 450-1400. Growers of advanced and semi-advanced native trees and shrubs. Open 7 days.

Deanes Orchid Nursery — Specialist in Australian Native Orchids, 29 Hemers Rd., Dural, 2158. Tel. (weekdays) (02) 651-1798. Nursery closed Friday. Plants sent anywhere. Please send for descriptive list.

Wildflower Nurseries in Tasmania

Banksia Nurseries P/L — Waratah Hwy., Elliot 7325. Tel. (004) 36-3128. Open 7 days, 9-5. Grower of rare and common Australian native plants. Available in most sizes at certain times of the year. Advanced and tube lines a speciality. Send S.A.E. for list.

Wildflower Nurseries in Victoria

Austraflo — The nursery with the "Native Know How" — Belfast Rd., Montrose 3765. Tel. 728-1222. Mon.-Sat. 9-5.00 p.m. Sun. 10-5.00 p.m.

Australian Plant Genera

A Review by Dr. R. Boden, Director, National Botanic Gardens, Canberra

'*Australian Plant Genera*' by James A. Baines was, to me, pleasant surprise not only for its subject matter but also the price: nine dollars for 406 pages of small type is certainly excellent value!

'*Australian Plant Genera* — An Etymological Dictionary of Australian Plant Genera' is Volume 1 of Australian Plant Study Series.

James Baines had previously written '*The Origin of Generic Names of the Victorian Flora*' and '*The Origin of Generic Names of North Queensland Rainforest Trees*' and this most recent title extends the coverage to all Australian genera.

Readers may be familiar with the late Dr. Nancy Burbidge's '*Dictionary of Australian Plant Genera*' published in 1963. This pioneering work was designed primarily for botanists and under generic entries provided family, authors, original place of publication and numbers of species in each genus. In 1978 Mr. F. A. Sharr wrote '*Western Australian Plant Names and their Meanings*' which provided derivations for both generic and specific names of Western Australian plants. Baines has acknowledged both Burbidge and Sharr as sources in preparing his dictionary.

'*Australian Plant Genera*' has been written very much with the general SGAP member in mind although the professional botanist will undoubtedly welcome it. In addition to the derivation of the generic name, Baines provides a recommended pronunciation which is designed to help with those he describes as 'jawbreakers'. The name of the botanist who established the genus, the year of publication of the generic name, the family to which the genus belongs and the approximate number of species in the world and in Australia are also given. Species are listed with common names where these are well accepted, distribution on a state basis and in some cases growth habit. Finally, references are provided. There are almost exclusive SGAP publications in particular '*Australian Plants Index*' which provides an index to the first eight volumes of Australian Plants.

Plant generic names have many different origins, as a quick browse through *Australian Plant Genera* will reveal. For example some such as *Byblis* and *Hebe* are derived from classical mythology whilst others such as *Atalaya*, *Corokia* and *Casuarina* are Latinised versions of vernacular names. Others are based on geographical place names (*Cooperookia*, *Emilia* and *Harpullia*) and some refer to habitat (*Gypsophila* and *Ammobium*). Many genera such as *Banksia*, *Boronia* and *Alexgeorgia* are named by botanists to honour friends and colleagues and the original collectors. In some cases botanists combine a knowledge of the classics with a wish to honour colleagues and produce whimsical generic names such as *Brunonia*, after Robert Brown and *Nigromnia* after W. E. Blackall. Many other names describe particular botanical characteristics and a knowledge of the derivation assists in remembering important identifying characteristics (*Eucalyptus*, *Leucopogon*). Others such as *Carex* and *Poa* may be the original Latin or Greek for the particular plant.

There are a few anagrams such as *Sinoga* a Myrtaceous genus related to *Agonis*. Finally there are complete nonsense names such as *Epimeredi* which do nothing to assist the amateur or professional. Fortunately relatively few of such names exist.

Clearly a work of this nature would take years to compile and may not cover the results of the latest taxonomic revisions; these can always be included in future editions. It is sad indeed that James Baines died before his work was published and we will have to rely on others to prepare future editions. Undoubtedly there will be someone to come forward to ensure the James Baines' major contribution keeps pace with the dynamic nature of taxonomic botany.

If you have ever selected the five books on Australian plants you would take with you to a desert island you will need to think again after reading *Australian Plant Genera*; it is a must. It is sure to become the standard reference for those who have abandoned television in favour of botanical Scrabble.

Books On The Flora (Some including fauna) of Discrete Areas

Flora Of Australia — Vol. 1, Introduction...\$15.00 — Vol. 8...\$35.00 — Vol. 29	\$25.00
Australian Plant Genera — The only botanical reference to all genera	\$11.30
For N.S.W.	
"Flora of the Sydney Region" — The well known Beadle Student's Flora	\$45.00
"Plants of Western N.S.W." — 752 pages, colour illustrated	\$60.00
"Plants of N.S.W." — A census of Cycads, Conifers and Angiosperms	\$20.00
"Kosciusko Alpine Flora" — Costin, Gray, Totterdell and Wimbush	\$29.00
For Queensland	
"Native Plants Of Queensland" by Keith Williams	\$32.00
For Victoria	
"Flowers and Plants of Victoria and Tasmania"	\$26.00
For South Australia	
"Flora of South Australia", Black — Part 1, \$20.00. Parts 2-3 and 4 each	\$9.00
For Northern Territory	
"Flora Of Central Australia" Aust. Systematic Bot. Soc.	\$37.00
For Western Australia	
"West Australian Plants For Horticulture" — Part 1 and Part 2	\$10.00
For Tasmania	
"A Guide To Flowers and Plants Of Tasmania", Ed. M. Cameron	\$25.00

On The Cultivation Of Australian Plants For All States

Australian Plants For Small Gardens & Containers — Gwen Elliott	\$16.00
"Encyclopaedia Of Australian Plants" — Elliott & Jones Vol. 1, \$36.00, Vol. 2	\$45.00
"Australian Native Plants" — Wrigley & Fagg	\$37.00
Native Gardens — Create An Australian Landscape — Molyneux & Macdonald	\$26.00

Past Issues of "Australian Plants"

Because of the vast wealth of our flora there is very little repetition, each volume becoming a valuable reference book in itself. Each volume has a separate abridged index. A composite index of volumes 1-8 is available for \$2.00 plus 60c postage. Bound in hard-cover form, beautifully presented with gold-lettered green vinyl covering, each volume has bound with it another Society book as indicated below and is available for \$15 plus \$1.50 per volume postage.

- VOLUME Nos. 1 and 2, out of print.
- VOLUME No. 3. Issues 21-28, bound with "Catalogue of Cultivated Australian Plants".
- VOLUME No. 4. Issues 29-36, bound with "W.A. Plants For Horticulture—Part I".
- VOLUME No. 5. Issues 37-44, bound with "The Language of Botany".
- VOLUME No. 6. Issues 45-52, with "West. Aust. Plants for Horticulture—Part II".
- VOLUME No. 7. Issues 53-60, bound with "North Australian Plants".
- VOLUME No. 8. Issues 61-68, bound with "The Cradle of Incense".
- VOLUME No. 9. Issues 68-76, bound with Australian Plant Genera.
- VOLUME No. 10. Issues 77-84. Individual issues only available at \$2.00 post free.
- VOLUME No. 11. Issues 85-92. Each issue to date available at \$2.00 post free.

Binders for separate issues of Australian Plants \$4.00 each plus \$0.60 postage.

Other Books Published by the Society:

- "WEST AUSTRALIAN PLANTS FOR HORTICULTURE", Parts 1 & 2, by K. Newby, each \$9.00 plus \$1.00 postage. A valuable guide to the plants with horticultural potential.
- "CRADLE OF INCENSE", The Genus *Prostanthera* by G. W. Althofer, \$15.00 plus \$1.40 postage. The only reference to our Mint Bushes, the genus *Prostanthera*.
- "THE LANGUAGE OF BOTANY", by C. N. Debenham, \$7.20 plus \$1.00 postage. An outstanding reference to botanical terms with examples from Australian flora.
- "AUSTRALIAN PLANT GENERA", by J. A. Baines, \$9.90 plus \$1.40 postage. The only reference to the whole of the flowering plant flora of Australia.
- "AUSTRALIAN PLANTS INDEX—Vols. 1-8". A comprehensive index to all species authors, etc. \$2.00 plus 60c postage.
- "A HORTICULTURAL GUIDE TO AUSTRALIAN PLANTS" — Single sheets with a large colour plate on the front, desc. on rear. Sets 4 & 5 @ \$3, sets 6 & 7 @ \$6 ea.
- "ACACIAS OF NEW SOUTH WALES", by I. Armitage. All N.S.W. wattles described and illustrated by sketches and colour. \$10.00 plus \$1.00 postage.
- "FRIENDS AND FOES IN YOUR GARDEN" — D. Hocking, \$24.95, post free.
- The best guide on pest and disease control of plants in your garden.
- "GROW WHAT WET" — The Australian Plants Study Group — \$16.95 post free. A guide to the use of water or for wet areas in the garden.

The Society for Growing Australian Plants

The Society is for people interested in the Australian flora, its preservation and cultivation in the wild, in parks, and in public and private gardens. Preservation of our magnificent flora will, in the long term, depend on the knowledge accumulated, on its cultivation under a wide range of conditions. We hope to learn more about this by cultivating wildflowers in the garden, encouraging research on this aspect, and to record this in "Australian Plants". Enquiries for membership should be directed to:

SOCIETY FOR GROWING AUSTRALIAN PLANTS—N.S.W. REGION:

President: Mr. Ray Page, 2 Edgar Street, Baulkham Hills, 2153.
Secretary: Mrs. Glen Harvey, 5 Ellesmere Road, Gymea Bay, 2227.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—CANBERRA REGION:

President: Dr. Carmel Statham, 128 Kalgoorlie Street, Fisher, A.C.T. 2611.
Secretary: Ms Marylyn Board, P.O. Box 207, Civic Square, A.C.T. 2608.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—QUEENSLAND REGION:

President: Mr. David Hockings, P.O. Box 809, Fortitude Valley, Q. 4006.
Secretary: Mrs. Eunice Clark, P.O. Box 809, Fortitude Valley, 4006.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—SOUTH AUSTRALIAN REGION:

President: Mr. Fred Hall, P.O. Box 34, St. Agnes, S.A. 5097.
Secretary: Mr. John Porter, 3 Barcroft Street, Pasadena, S.A. 5042.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—TASMANIAN REGION:

President: Mrs. Jeanette Closs, 7 Vyella Court, Austins Ferry, 7011.
Secretary: Mrs. J. C. Wilcox, G.P.O. Box 1353P, Hobart, 7001.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—VICTORIAN REGION:

President: Mr. David Davie, 29 Pope Avenue, Boronia, 3155.
Secretary: Miss E. R. Bowman, P.O. Box 393, Hawthorn, 3122.

WEST AUSTRALIAN WILDFLOWER SOCIETY (Inc.)

President: Mrs. Clare Welsh, P.O. Box 64, Nedlands, W.A. 6009.
Secretary: Mr. Wayne Clarke, P.O. Box 64, Nedlands, W.A. 6009.

PUBLISHED BY THE N.S.W. REGION, SOCIETY FOR GROWING AUSTRALIAN PLANTS

Managing Editor: W. H. Payne, assisted by Ray Page, P. D. Leak, B. Kennedy, P. Ovens, J. Aston. Do not telephone or call private home. Enquiries by mail only.

NON-MEMBERS: You may receive the next 4 issues direct to your home by forwarding an annual subscription to The Editor, "Australian Plants" 860 Henry Lawson Drive, Picnic Point, N.S.W., 2213. For 1983 it will be \$6.50 for despatch within Australia and \$8.00 for overseas.

COPYRIGHT — All material copyright as directed by authors.



Helichrysum bracteatum

"Golden Everlasting" is an annual herb perennial that occurs quite widely. This colour plate is from the cover of "Australian Plants for the Northern Tablelands of N.S.W.", produced by the Northern Tablelands Group of The Society For Growing Australian Plants. This small book is an excellent guide to cold area gardening and is available from the SGAP — New England, P.O. Box 735, Armidale, N.S.W. 2350.

Previous issues of Australian Plants have described and illustrated numerous horticultural forms of *Helichrysum bracteatum* that are excellent garden plants.