

Australian Plants

Registered by Australia Post
Publication No. NBG 1592

September, 1987
Vol. 14, No. 112

\$1.50



The next problem is, where do you obtain good reliable plants and advice on their cultivation? Go to the specialist wildflower nurserymen. All, especially those listed opposite the rear cover as supporting this publication, are competent and dedicated to the horticultural application of the Australian flora. These men stock the best plants and the most reliable plants and will give you detailed advice on how to grow them.

While many wildflowers are easy to grow with a minimum of care, others are not so easy. One way to get over this problem is to propagate only from plants that have been grown in gardens for years. Propagation (certainly not by seed) from plants that have not only survived but have proven attractive, and rewarding in flower produces more reliable plants. This method of selection by competent horticulturalists over many years has been the way mankind has developed all his garden plants and this applies equally as well to plants developed from the Australian flora. Go and have a chat with your nurseryman.

This issue presents many plants for the beginner to grow. I suggest you turn to page 166 following the description of many plants in the myrtle family, Myrtaceae (whoops, those big scientific names again), plants ideal for the beginner. ■

CONTENTS

<i>Grevillea</i> 'Merinda Gordon', The Australian Cultivar Registration Authority per W. H. Payne	143
Australian Plant Cultivars	W. H. Payne 146
<i>Eucalyptus pachyphylla</i>	Dave Gordon 147
Australian Wildlife Paintings	Dorothy Gordon 147
The Ornamental <i>Eucalyptus</i> Project	W. H. Payne 147
Flower Arranging	Barbara Coates 149
<i>Melaleuca nematophylla</i>	Ivan Holliday 150
Myrtaceae in Adelaide Soils	Ivan Holliday 150
Fern Cultivars of the fern genus <i>Blechnum</i> 'The Australian Cultivar Registration Authority	151
Myrtles, the genera <i>Angasomyrtus</i> , <i>Homalospermum</i> , <i>Malleostemon</i> and <i>Pericalymma</i> of the plant family Myrtaceae	Greg Keighory and Robert Dixon 154
Similar Genera in Myrtaceae (genera mentioned above)	P. E. Bailey 160
Myrtaceae in Victoria	Alison Pearce 162
Myrtaceae in Hobart	Norma Ali 164
Wildflowers for Home Gardens — Notes for beginners	W. H. Payne 166
Flora of Australia — A review of recent publications	W. H. Payne 167
Australian Perennial Grasses for Home Landscaping	Dermott Kelly 168
Australian Daisies for Gardens and Floral Art	The Australian Daisy Study Group 172
Australian Daisies	The Australian Daisy Study Group 173
Pests, Diseases and Ailments of Grevilleas — Review of book by David Jones and Roger Elliott	174
Nature Conservation — The Role of Remnant Vegetation	W. H. Payne 175
The Waratah	Paul Nixon 176
Bush Peas, The Genus <i>Pultenaea</i> , Part 6	C. E. and D. T. Woolcock 179

COVER PLATE

Melaleuca filifolia, previously known as *Melaleuca megacephala*, a magnificent shrub in the garden and very easy to grow. See the article on page 150. This bush is twelve years old and only 1.2 metres high.

AUSTRALIAN PLANTS No. 112 issue of Volume 14, comprising issues 109-116. International Series Index ISSN 0005-0008. A National publication in 12000 copies. Published by The Society for Growing Australian Plants NSW Ltd. For details see page 187.

Available to members or by subscription of \$7.00, including postage to your address. Send to the Editor, 860 Henry Lawson Drive, Picnic Point, NSW 2213.

Publication date of previous issue. No. 111 was 30th June, 1987.

GREVILLEA

'MERINDA GORDON'

A new cultivar registration by
The Australian Cultivar Registration
Authority — Report by W. H. Payne

The whole horticultural industry is well aware of those magnificent cultivars *Grevillea* 'Robyn Gordon' and *Grevillea* 'Sandra Gordon'. These were developed by Dave Gordon on his wildflower plantation property at Glen Morgan, west of Toowoomba, Queensland. Now we have another, 'Merinda Gordon' named after another of his children.

The horticultural industry is approaching this new, very spectacular cultivar with some caution and for very good reason. Both the parents are spectacular plants, horticultural gems in their own right but both are from Western Australia. Many have found to their sorrow that a large proportion of western plants have not been hardy in the Eastern States. Many also wonder that *Grevillea* 'Robyn Gordon' was such an exceptional horticultural freak and that mankind could surely not be blessed with such a magnificent, hardy, spectacular plant again from the same stable. Do not underestimate the judgment of such a fine field horticulturalist and Australian as Dave Gordon. Good luck Dave with your new release.

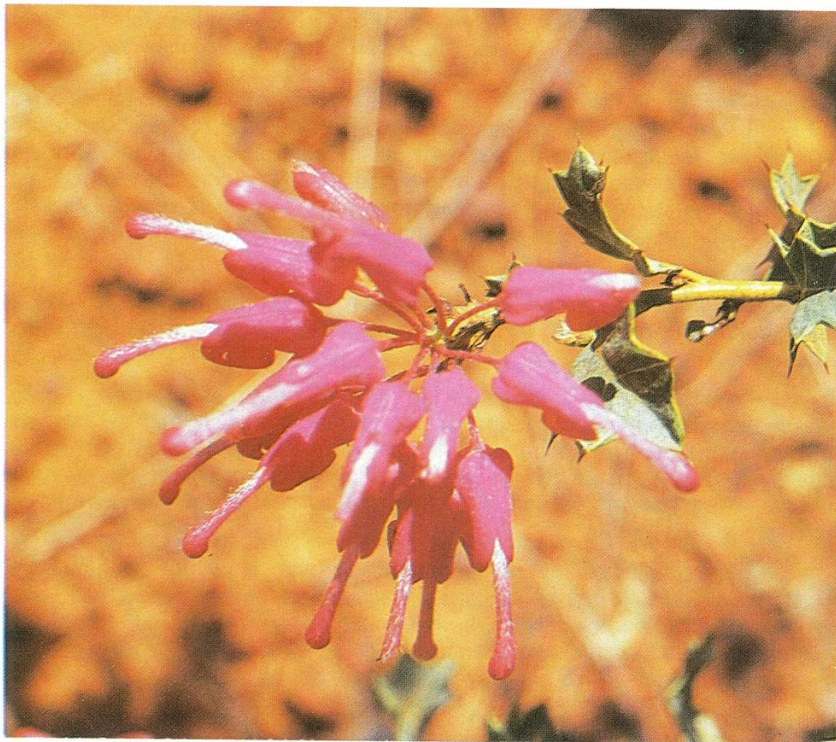
Before describing *Grevillea* 'Merinda Gordon' it would be wise to have a good look at the parents to this new marvel, *Grevillea insignis* and *Grevillea asteriscosa*.

Grevillea insignis is a dense prickly shrub to three metres with rigid holly type leaves. The leaves are roughly ovate and undulate with dentate margins and a pungent tip. The stems are glabrous with a mealy bloom. The pendant clusters of glowing pink waxy flowers are a delightful sight among the unique foliage. A real gem as yet largely untried mainly because plants have been hard to get.

Grevillea asteriscosa is another rigid upright plant to two metres high from Western Australia. It has small prickly star shaped leaves, deeply trifid with pungent lobes, joined closely on the hairy stem. The flowers are in bright red clusters and with the attractive open foliage make quite a sight. Another garden gem worthy of many trials and development for hardiness.

Grevillea 'Merinda Gordon' is an upright shrub to three metres tall. In some situations this could be an eye-catching specimen shrub but in others it is probably possible to keep it back to a more convenient size by tip pruning the new growth at the ends of each branch starting when the plant is quite young. The leaves resemble those of *G. insignis* but are smaller, 2.5 to 3 cm long by about 2.5 cm wide. They are stiff and leathery with the midrib of the leaf strongly curved back. The leaves have a dentate margin with pungent points on each lobe (see the colour plate). The venation is prominent, being yellow-green in colour, the veins standing out from the underside leaf surface. The leaves are more crowded on the stems than with *G. insignis*. The stems are not hairy and do not have the mealy bloom of those of *G. insignis* or the hairy stems of *G. asteriscosa*. The flowers are intermediate in size between the parents, a rich pink to red with a dense coat of silky hairs on the style and flower stalk. The main flowering is late winter to early spring with some flowers throughout the year.

Time will tell whether the caution noted above because of its parentage of two Western Australian *Grevillea* species, or as Dave Gordon reports "this seems to be a long lived plant that has proven extremely drought hardy and resistant to frost. It grows well in heavy subsoils". After all *Grevillea* 'Robyn Gordon' had one parent, *G. bipinnatifida*, that came from Western Australia, and the other, *G. banksii*, from Queensland, a plant with a very variable record of consistency. Maybe Dave Gordon's property has some mystical ingredient that "cooks up" the hardiest and best in the hybrids it creates, or is it just that only the hardiest survive? ■



***Grevillea* 'Merinda Gordon'** (above)

Photography by Neil Marriott

Unfortunately we could not get a colour slide worthy of the plant but this shows how it differs from its parents.

Grevillea asteriscosa (opposite, top)

Photography by Alan Gibb

The typical *Grevillea* flower is shown well in clusters attached to the stem above the unique prickly star shaped leaves. The fine hairs on the stem give it a silver/grey appearance. The plant is shown at its normal size.

Grevillea insignis (opposite, bottom)

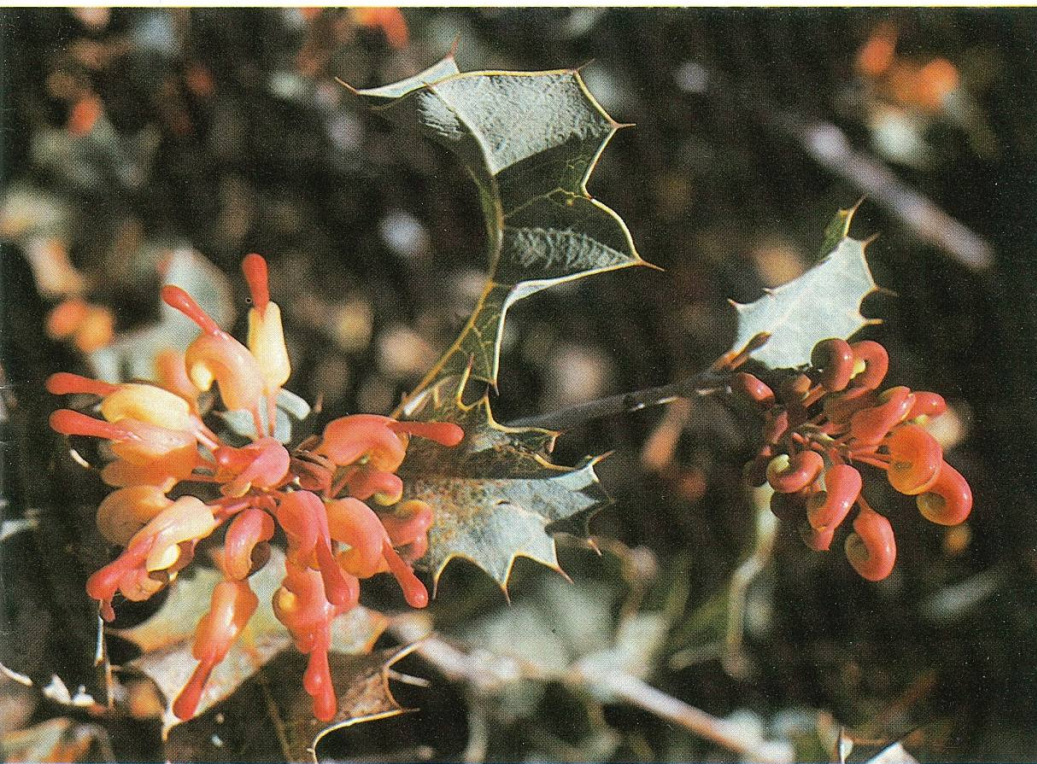
Photography by John Simmons

A dense prickly shrub with rigid holly type leaves and pendant clusters of glowing pink waxy flowers. If any reader knows where there are attractive plants of either of these species more than three years old growing near the east coast, will they please advise the Editor, Australian Plants.



Grevillea asteriscosa ▲

▼ *Grevillea insignis*



All the plants generally sold for use in the garden, Azalea to Roses, are plant cultivars. A cultivar is a plant that has been selected as having a particular feature that makes it distinct from other similar plants. This is often flower size and colour but it may be because of the pleasing appearance of the plant as a whole, or solely because it is more reliably grown.

Australian plant cultivars have been selected usually by competent horticulturalists, as the best forms for cultivation. They may be a true species, a plant generally recognised by the scientific world as having evolved naturally in the wild. A particular clone of this native species may have developed certain characteristics that make it outstanding from other plants of the same species and the only way to reliably market this good form is using a cultivar name. The Dwarf Eucalyptus Project mentioned opposite requests the help of all readers to look around them, in the wild and among cultivated plants, for exceptional specimens of *Eucalyptus* that may have horticultural potential.

This is what a cultivar is, a plant especially selected for your use in horticulture. This issue presents some cultivars, *Grevillea* 'Merinda Gordon', the result of a cross between two species of *Grevillea*, and *Biechnum* cultivars, the result of nature's evolution and the observation of a competent observer.

The introduction of Plant Variety Rights has given security to those horticulturalists who take the considerable trouble to develop a plant cultivar. Previously anyone could buy a plant from him, propagate in numbers, and market the plant without the need to meet development costs. This may have had the effect of keeping the price down but it discouraged the development of better plants. There is concern that Plant Variety Rights will allow commercial interests to purchase rights to all the best plants and hold prices high. The hope is that the competition will develop better plants at competitive prices. There is a real danger that the power of promotion by commercial interests will be able to maintain some inferior plants on the market suppressing the superior plants of a competitor with less market investment.

While there is an organisation like The Society For Growing Australian Plants and a periodical like Australian Plants, there will be a measure of control. We provide the opportunity to express opinions unbiased by commercial interest.

Grevillea

We Need Your Help

We are preparing the most fabulous book ever produced on the Australian Flora. The book will describe all species of *Grevillea* with sketches of botanical features and with a large colour plate of each species. There is one problem. We need good colour slides of the following species:

Grevillea berryana from inland western W.A.; *G. calcicola* a white flowered species from Cape Range, W.A.; *G. elbertii* from The Celebes, Indonesia; *G. gillivrayi* from New Caledonia; *G. integrifolia* ssp. *ceratocarpa* from Southern Cross, W.A.; *G. nematophylla*, both the S.A. and the W.A. forms; *G. papuana*, from New Guinea; *G. seabrida* from Paynes' Find, W.A.; *G. striata* from inland N.S.W. north to Queensland; *G. spinosa*, a species on the Canning Stock with a spiky leaf and large tooth-brush flowers; *G. secunda*, a red-flowered species from Queen Victoria Spring, at the eastern end of the Nullabor; *G. obtusifolia*, ssp. *kedumbensis*, from Kedumba Valley, N.S.W.; *G. varifolia*, a plant with red flowers from Cape Range, W.A.

Will readers who can help or know of anyone who may be able to help say in The Celebes, New Caledonia or New Guinea, please contact The Editor, Australian Plants. By the time you get this issue it will probably be too late for this season's flowering but for the 1988 season, who can go to Cape Range, etc. of W.A. or travel the Canning Stock Route?

Please help us with the above few species we need to complete this historic work. — Editor

Eucalyptus pachyphylla

by Dave Gordon

Of the hundreds of *Eucalyptus* species, *Eucalyptus pachyphylla* may have the greatest future as a horticultural plant. It is one of the smallest trees, it has large flowers and it blooms several times a year. A plant at Myall Park, southern Queensland, at 41 years of age is still only two metres high with a lignotuber 12 cm in diameter. The young fruits, 2.5 cm in diameter are very ornamental and adorn the plant between flowering periods. Though native to the hot desert areas of Australia, it is frost hardy and could be grown in deep southern areas against the wall of a building facing north.

Flat dwellers wishing to possess a 'gum' tree could probably flower *Eucalyptus pachyphylla* in a large pot. Give it a sunny aspect and take it indoors when it rains or in foggy or prolonged cold weather. Take it into an air conditioned room beside a sunny window during periods of high humidity.

This unique small tree is shown on the next page in full colour, a reproduction of a painting by my late wife Dorothy. A full set of her paintings may be obtained in book form as follows:

Australian Wildflower Paintings

by Dorothy Gordon

For those of us privileged to have known Dave Gordon's wife, Dorothy, we remember her as a wonderful refreshing personality of many talents one of which was as an artist. Forty-eight of her paintings of Australian wildflowers have been reproduced as full page colour plates in a book. The text opposite the plates has been written by Dave Gordon. The text highlights the artistic beauty of each flower and describes the growth stages and environmental requirements. Limited copies of this 104 page (297 x 210 mm book), book available with a hard linen cover, dust jacketed are available at a pre-release price of \$39.00, plus \$5.00 postage, from Nita Lester, "Talbragar", Glenmorgan 4423. (Boxed copies and Special collectors copies in genuine leather are available to order).

The Ornamental *Eucalyptus* Project

Previous issues have introduced this project where readers are invited to participate in a long term research project to develop, from the very best forms of naturally occurring *Eucalyptus* species, plants of outstanding horticultural value. Please go out and look around you and see if you can find an exceptional plant we can breed from.

We have found a number of truly magnificent specimens that nature has evolved. We plan to propagate by tissue culture from these plants to ensure the progeny retain the desirable characters of the original plant, something that cannot be assured by propagation from seed from these plants. We propose to go further, growing on the first generation of young plants to maturity and propagating again only from the best 1% to produce a second generation, etc. Techniques used to develop other plants such as roses, over the ages, will also be used. From the very first selection each generation will carry cultivar names.

Meanwhile, those who have joined the *Eucalyptus* Study Group and are keen to grow small attractive *Eucalyptus* trees, purchase some plants from your wildflower nurseryman, grow them and report results.

Growing Better Wildflowers

With the introduction of tissue culture, we are now able to reproduce from the very best plants of any species. The facilities at a number of laboratories have been offered to us. If you know of an exceptional plant of any species, advise The Editor, Australian Plants. Readers, look around you this season.



Eucalyptus pachyphylla, as painted by Dorothy Gordon.

Flower Arranging

by Barbara Coates

The arrangement below uses easily grown *Grevillea* flowers with foliage from any of the rush plants and contrasting leaf from *Eucalyptus*. All of these are easily grown in all parts of Australia as described in recent issues of *Australian Plants*. Add beauty to your garden and bring it into the home.



Flower Arranging Australian Natives

Book Review

The colour plate above was reproduced, with permission from this book. Page 34 gives detailed instructions on how to create this pleasing piece. The photography is by Bruce Devine.

It is time that a book on this subject was published. The use of the Australian flora in flower arrangement has been recognised for some time, especially overseas. Our flora is unique and ideal for this purpose. Barbara Coates is obviously a competent professional in the art of decoration using flowers. Much of the book is devoted to the general art of preparing and presenting flowers for any occasion. A particularly good chapter is titled "The Natives Dried" and advises when to pick, air-drying, desiccants, glycerining, pressed flowers and arranging dried flowers. A 112 page (24 x 17 cm) book with 30 colour plates, it is available from The Editor, *Australian Plants*, for \$20.00 post free (recommended price \$22.95). What a lovely Christmas present.

Melaleuca filifolia

by Ivan Holliday

This species was previously, incorrectly, known as *M. nematophylla*. Good forms are one of the most delightful native shrubs, when in flower. It is found growing naturally in the northern sand heaths of Western Australia, from the Murchison River to Lake Brown. The floral beauty of the shrub, however, is rarely seen in the wild, most plants having become very woody due to the lack of pruning after flowering.

As garden specimens, pruning can be carried out each year immediately after flowering, to ensure profuse flowering in the following year and a handsome shrub all year round. The plant on the front cover is 12 years old but only 1.2 metres high. With the annual pruning, *Melaleuca filifolia* forms a compact bush to 2 m high, with smooth, terete, needle-like, but not prickly, leaves, 4-10 cm long, which normally curve upwards. If left unpruned the bush may reach 3-4 metres.

Flowers are normally produced early in October, when the whole bush is well-covered by terminal and conspicuous pink, or mauve, globular flower heads, 2-3 cm across, for about 2 weeks. They turn white as they age. In bud, the flower heads are attractive also, when they appear as reddish-green, shining, diamond-like heads. A hardy shrub under temperate conditions, *Melaleuca filifolia* prefers sandy, or well-drained loam, but succeeds in most other soil types. It is readily propagated from seed or cuttings. ■

Myrtaceae in Adelaide soils

by Ivan Holliday

Like most soils, the soils of the Adelaide plains are complex and may vary from street to street. For example, *Banksia ericifolia* is successful in my next door neighbour's garden without any special treatment, yet the species will not grow in my place. The thing, however, that many of these soils have in common, is that they are, or were originally, alkaline, due to the presence of lime in their composition. As Adelaide has expanded into near hills areas more gardens with acid/neutral soils have emerged.

The Myrtaceae family is large and diverse, and it is not possible to generalise as to its success or otherwise, as a whole, when applied to Adelaide's soils. The family does include some genera in which many species are hardy and successful in the Adelaide area. These include, *Agonis*, *Callistemon*, *Calothamnus*, *Eucalyptus*, *Melaleuca*.

Of the many other genera within Myrtaceae, some species can be selected which are generally hardy, e.g. *Chamaelaucium uncinatum* (Geraldton Wax), but most are not. *Beaufortia*, for instance, with one or two specific exceptions, is particularly difficult. The same can be said for *Baeckea*, *Calythrix*, *Darwinea*, *Hypocalymma*, *Micromyrtus*, *Pileanthus*, *Scholtzia*, *Verticordia*. *Astartea*, *Eremaea*, *Kunzea*, *Leptospermum*, *Regelia* and *Thryptomene*.

Editor's Note: Seeking to bring to special notice, especially for beginners, those wildflowers that have proven quite hardy and are spectacular in flower. I chose Ivan Holliday's photograph of *Melaleuca filifolia* for the front cover and asked him to provide the article on the plant as above. As I had good articles on the cultivation of Myrtaceae in Tasmania and Victoria I asked him also to provide the additional notes on cultivation of Myrtaceae in Adelaide soils. You will note that many will be successful including the bottlebrushes, *Callistemon* and *Melaleuca*, in fact most of those that are successful in Hobart see page 104, but there is a note of caution. Some Myrtaceae are not so easy. Consult with your wildflower specialist nurseryman when purchasing plants for any situation.

Fern Cultivars

A new registration by the
Australian Cultivar Registration Authority
Reported by W. H. Payne

Blechnum nudum 'Forcett Feather'

Blechnum nudum 'Forcett Feather' is a form of the species which was selected from the wild at Copping, near Forcett, about half way between Hobart and Port Arthur. The selection was made by Mr Michael Garrett of Tasmania.

Blechnum nudum 'Forcett Feather' is a bipinnatifid form of the species. It grows to a height and width of about 60 cm with an upright, slightly arching habit. The outstanding features of this cultivar are the featherlike fronds. They are irregularly bipinnatifid; in the upper half of the frond the pinnae margins have reduced crenate divisions for about $\frac{2}{3}$ of their length then become more deeply lobed towards the tip. The pinnulae in the lower half of the frond are wider and more obtuse with irregular lobes extending as much as 1.5 cm further than the others. The "fertile" fronds have much the same characteristics but are smaller, "skeletonized" versions and do not produce spores.

Blechnum nudum 'Forcett Feather' is a smaller plant than the usual *B. nudum* which can grow up to 1.2 m tall. The pinnae of *B. nudum* are entire whereas *B. nudum* 'Forcett Feather' is distinctly bipinnatifid. Sometimes *B. nudum* becomes lobed under ideal conditions but this character is not easily retained in cultivation. *B. nudum* 'Forcett Feather' retains the character when propagated from stolons. It does not produce spores. Tissue culture may also be used. It is frost hardy but will not tolerate drought. *Blechnum nudum* 'Forcett Feather' has been in cultivation since 1980. It grows well and retains lobing even in full sun.

REFERENCE SPECIMEN: Accession number 302. (CBG 8405579) Cultivar first received by the Australian Cultivar Registration Authority in June 1983. The applicants are Mr C. Allen and Mr M. Garrett, Berriedale, Tasmania 7011.

Blechnum minus 'Hellyer Fountain'

Blechnum minus 'Hellyer Fountain' is a form of the species which was selected from the wild near Hellyer Gorge in West Tasmania. The selection was made by Mr Michael Garrett of Berriedale, Tasmania.

Blechnum minus 'Hellyer Fountain' is a bipinnatifid form of the species. It grows to a height and width of about one metre. The outstanding feature of this cultivar is the bipinnatifid fronds. They are irregularly lobed, each of the pinnae being more deeply lobed in the lower $\frac{2}{3}$ of the frond then becoming more or less crenate towards the tip. The lobes are rounded with minutely and irregularly crenate margins. Occasional irregular lobes extend up to 2.5 cm further than the others. The "fertile" fronds have much the same characteristics but are "skeletonized" and do not produce spores.

Blechnum minus 'Hellyer Fountain' differs from the usual form of *B. minus* in its bipinnatifid form. *B. minus* usually has divided pinnae with minutely serrate margins and the fertile fronds become curled and thickly laden with spores.

This cultivar does not produce spores but may be propagated from stolons. Tissue culture may also be used. It is frost hardy but will not tolerate drought. *Blechnum minus* 'Hellyer Fountain' has been in cultivation since 1981.

REFERENCE SPECIMEN: Accession number 301. (CBG 8405580) cultivar first received by The Australian Cultivar Registration Authority in June 1983. The applicants are Mr M. Fountain and Mr M. Garrett, Berriedale, Tasmania 7011.



***Blechnum nudum* 'Forcett Feather'** (above)

Photography by Michael Garrett

***Blechnum minus* 'Hellyer Fountain'** (opposite top)

Photography by Michael Garrett

***Blechnum minus*, the natural species** (opposite bottom)

Photography by Alan Gibb



Blechnum minus 'Hellyer Fountain' △

▽ *Blechnum minus*



Myrtles

The Genera *Angasomyrtus*, *Homalospermum*, *Malleostemon* and *Pericalymma* (of the plant family Myrtaceae)¹

by Greg Keighery and Robert Dixon

¹ The Plant Family Myrtaceae

Currently there is considerable interest in revising the generic limits of the Australian Myrtaceae, which have for the past century been accepted largely as fixed by Bentham in his massive work, *Flora Australiensis*. Studies are currently being undertaken on the genera *Baeckea* — *Scholtzia* — *Astartea*; *Thryptomene* and *Micromyrtus* (already segregated from this group is the genus *Corynanthera*) *Leptospermum*-*Kunzea* and *Eucalyptus*-*Angophora* will eventually result in a radically different taxonomy to that accepted by Bentham.

This article notes some recent changes which have occurred in *Leptospermum* (Thompson, J. "Redefinitions and nomenclatural changes within the *Leptospermum* suballiance of Myrtaceae." *Telopea* 2: 347-353), *Micromyrtus* (Green, J. W. "*Malleostemon*, a new genus of Myrtaceae from south Western Australia." *Nuytsia* 4: 295-315) and a new genus *Angasomyrtus* (Trudgen, M. and Keighery, G. J. "*Angasomyrtus*, a new genus of Myrtaceae from Western Australia" *Nuytsia* 4: 435-439).

Recent scientific research has resulted in plant name changes in the genera *Leptospermum*, and *Micromyrtus* with descriptions of new species, even new genera. Many are of great horticultural value. This article may alert people as to what has happened to some familiar names.

ANGASOMYRTUS

This single species genus is distinguishable from *Kunzea* in having the stamens shorter than the petals, solitary flowers and opposite leaves.

Angasomyrtus salina Trudgen et Keighery is an open spreading shrub to 40 cm tall and 2 m across. Flowers are borne singly towards the ends of branchlets. They are small, 4-6 mm across, very pale pink to white. Flowering occurs from December to February. The species grows on white sand dunes over clay at the margins of small saline lakes north-east and north-west of Esperance.

Having small flowers *A. salina* is probably of limited horticultural value, however, it may be a useful rehabilitation species for slightly saline soil. It can be propagated by seed or cuttings.

PERICALYMMA

Another small genus, endemic to south western Australia. *Pericalymma* differs most strikingly from *Leptospermum* species in the difurcate shoot branching pattern and the often swollen basal stems. Other more botanically important differences include the flowers being borne on shoots where the transition from leaves to bracts is gradual not abrupt. The ovules are peltate and the seed has a surface pattern of minute protuberances not striate or reticulate.

Thompson considered that only one species should be recognised in the genus, however, field experience, especially the co-occurrence of *P. crassipes* and *P. ellipticum* on the Scott River, indicates that several species occur.

***Pericalymma crassipes* (Lehm.) Schauer et Lehm.**

Previously known as *Leptospermum crassipes*, this is a dwarf sub-shrub, to 20 cm tall, with a swollen stem base. Flowers are small, 3-5 mm across, insignificant, with a pinkish tinge to the petals. Flowering occurs between October and February. The species occurs on winter wet sandy clay soils between the Scott River and Albany.

The cultivation of this plant in Western Australia, in the past has been quite limited, due mainly to its insignificant flowers. However, it makes an excellent pot plant and has adapted well to bonsai culture.

Propagation is best by seed sown in spring or autumn, or by semi-hardwood cuttings taken from autumn to late spring.

***Pericalymma ellipticum* (Endl.) Schauer**

Previously known as *Leptospermum ellipticum*, this is a slender shrub, to 1 m tall, often with a swollen stem base. Flowers are white, rarely flushed pink, 6-10 mm across. Flowering occurs between September to December. The species occurs on winter wet peaty sand or sandy clay swamps between Colliie, the Stirling Ranges and east to the Fitzgerald River.

This species is rarely cultivated in the home garden in Western Australia, however, some forms are certainly worthy of cultivation especially if your garden is very wet during the winter. This species also makes a good bonsai subject. The size, colour of the flower and size of the leaves vary considerably, therefore, plants are best selected and then raised by semi-hardwood cuttings, which are sometimes difficult to strike. Plants are easy to grow from seed sown in autumn or spring, under ideal conditions germination may take only 13 days.

***Pericalymma floridum* Schauer in Lehm.**

Previously known as *Leptospermum floridum* this is a slender erect shrub, to 2 m, very rarely with a swollen stem base. Flowers are generally pink, large, 10-15 mm across. Flowering occurs from September to December. The species occurs on winter wet sandy swamps, or rarely edging granite between the Moore River and Margaret River (i.e.: largely the Swan Coastal Plain).

This "species" differs from *P. ellipticum* chiefly in having larger more widely spaced leaves, larger (generally pink) flowers, and a more open habit (less densely branched). Its status as a separate species is doubtful, and field surveys of variability are needed (Thompson, pers. comm.).

As the description suggests, this "species" is perhaps more worthy of cultivation in the home garden than *P. ellipticum*. It is more attractive (although beauty is in the eye of the beholder) and grows under similar conditions, but generally on drier sites. This plant grows easily in containers in Kings Park. Propagate as for *P. ellipticum*.

As with all other species this plant should respond well to light pruning, if required. Hard pruning is best carried out using the method described for *Malloestemon tuberculatus*.

HOMALOSPERMUM

Until recently placed in *Leptospermum*, the only species in this genus differs in having the flowers borne singly in successive leaf axils, each anther with two thickened ridges on the back (on either side of the filament), having peltate ovules and disc shaped seeds with a central point of attachment.



Homalospermum firmum

Photography by Greg Keighery

Since we have no specific information on propagation we suggest growing the plant from seed sown in the autumn or spring and trying soft or semi-hardwood in the autumn through late spring.

A slender erect shrub to 2 m, flowers white sometimes pink tinged, flowering September to November, on yellow or red sand. South West. Irwin. Unfortunately this plant is not in cultivation in Kings Park. It appears to be a less horticulturally desirable plant than most of the other species described because of its smaller flowers. It should grow well in a full sun position in a free draining soil.

Malleostemon hursthousei (W. V. Fitz) J. W. Green

This new genus comprises six species, the first five species described below being previously placed in the genus *Microgynus*. They differ chiefly in having hammer-like stamens (the large connective gland is situated at a right angled bend at the top of the filament giving them a mallet-like shape hence the generic name), and often an eccentric style base. *Malleostemon tuberculatus* was previously placed in *Thryptomene*. They are endemic to south Western Australia.

MALLEOSTEMON

Although the plant is not generally available in nurseries, a selected form, which is being promoted as a good cut flower, is available from at least one wholesale nursery in Western Australia.

Plants require a moist, full sun but not exposed position. We have been unable to establish this plant in the Kings Park Botanic Garden due mainly to our free draining sandy soil. However, they grow well in containers, or in a position where they receive regular spring, summer and autumn watering.

This plant is very easy to propagate from seed sown in the autumn or spring; germination takes approximately 30 days or more depending on growing conditions. As the plants are so easily raised from seed, vegetative propagation is not usually used but plants can be raised from semi-hardwood cuttings taken during autumn to late spring.

Often *Homalospermum firmum* occurs as a dense population, forming the dominant cover of winter wet swamps between Gingin and Mount Many Peaks in southern Western Australia. It is frequently the same swamps containing Albany pitcher plants, *Cephalotus follicularis* which often grows on the soil built up around the roots of *Homalospermum*. The most inland occurrence is on Coganerup Peak in the Stirling Ranges. Soils in these habitats are black peaty sands or sandy clays (especially beside streams).

Homalospermum firmum Schauer (previously *Lepidospermum firmum*) is normally a very floriferous shrub to 2 m tall, although plants growing along Gingin Brook are recorded as being small trees to 8 m tall. The flowers are large (10-15 mm wide) single white, occasionally flushed pink and found near the ends of branches, during spring (commencing August, peaking October-November, finishing December).

***Malleostemon minilyaensis* J. W. Green**

A dense erect spreading shrub, to 1.5 m, flowers white, sometimes tinged pink, flowering August to September, on sand. South West to Carnarvon, W.A.

This plant has only recently been described and may not be in cultivation. The flowers are variable in size, and although described as a dense shrub, some forms appear to be more open. Seek a dense large-flowered selection.

***Malleostemon pedunculatus* J. W. Green**

An erect spreading shrub, to 1.7 m, flowers white sometimes pink, flowering August to Oct., on sand. South West: Irwin, Eremaean: Carnarvon, W.A.

Once again this species may not be in cultivation. White flowered forms tend to have small flowers; some pink flowered forms produce larger flowers and are more floriferous. Propagation as for *M. hursthousei*.

***Malleostemon peltigera* (S. Moore) J. W. Green**

Previously known as *Micromyrtus peltigera* this is a straggling spreading shrub, to 2 m, flowers white, rarely pink, flowering August to November, on yellow or red sand. South West: Irwin, Avon, Interzone, W.A.

A very attractive species producing masses of flowers it should be more widely grown. Plants are easily raised from seed sown in autumn or spring. Germination takes 39 or more days according to our nursery records. If you require a particular form, it can be easily raised from semi-hardwood cuttings taken during autumn to late spring.

Plants grow well in cultivation, as long as they receive full sun, and are planted in a free draining soil.

***Malleostemon roseus* (E. Pritzel) J. W. Green**

Previously known as *Thryptomene rosea*, this is either a spreading erect shrub to 1.5 m $\times$ 1.5 m, to almost 3.5 m tall or almost prostrate, flowers pink, rarely white or cream, flowering July to December on red, yellow or lateritic sands or sandy clay. South West: Irwin, Avon; Eremaean: Carnarvon, Austin.

The most commonly grown species of the genus, it is a very attractive shrub and has adapted well to cultivation. Plants are easily raised from semi-hardwood cuttings taken from autumn to late spring. Kings Park nursery records indicate that this species has only been raised once by seed, which took 29 days to germinate. Seedlings are very prone to damping off disease.

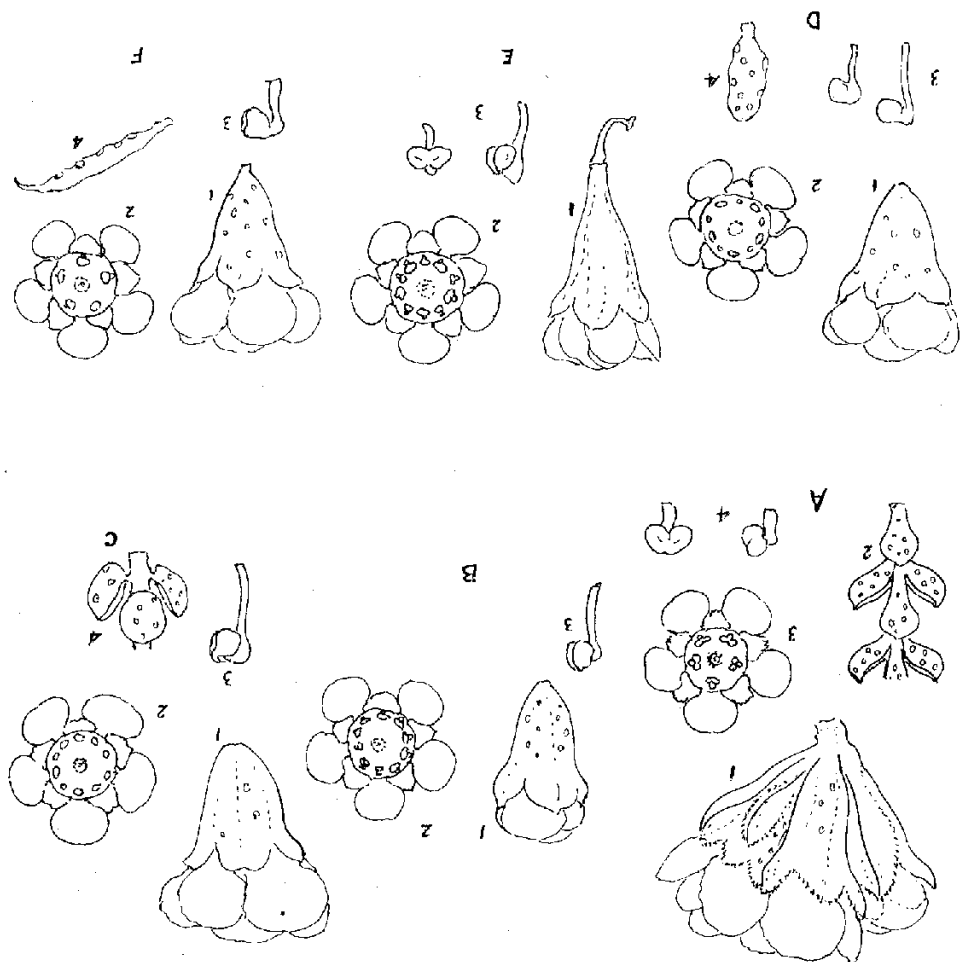
Plants require a free draining, preferably sandy soil, and should be grown in full sun. As the plants age they become woody with poor growth and need to be pruned in a manner described for *M. tuberculatus*.

***Malleostemon tuberculatus* (E. Pritzel) J. W. Green**

Previously known as *Thryptomene tuberculata*, this is a slender erect shrub to 2 m, flowers white or pink, flowering July to November, on sand, sandy clay, laterite or granite. South West and Eremaean, W.A.

The thin wispy growth habit of this plant makes it an attractive subject for the home garden. The leaf and flower size vary considerably. Therefore, it is recommended you propagate selected forms from semi-hardwood cuttings taken from autumn to late spring. The plant grows well in cultivation in sandy to loamy or gravelly free draining soils, in a full sun position.

- A. *Malloestemon hursthousei*:** 1. A 3 flowered inflorescence; 2. Leafy stem, leaves, broadbased and sessile; 3. Flower from above; 4. Stamen.
- B. *Malloestemon miltiaensis*:** 1. Flower bud without stalk; 2. Flower from above; 3. Stamen.
- C. *Malloestemon peltigera*:** 1. Flower bud without pedicel; 2. Flower; 3. Stamen; 4. Leaves almost spherical and 1 mm thick.
- D. *Malloestemon roseus*:** 1. Flower bud; 2. Flower; 3. Stamen; 4. Leaf.
- E. *Malloestemon pedunculatus*:** 1. Flower bud with pedicel (stalk); 2. Flower; 3. Stamen.
- F. *Malloestemon tuberculatus*:** 1. Flower bud; 2. Flower; 3. Stamen; 4. Leaf.



Pruning Myrtaceae

As with most of these types of plants, e.g. *Thryptomene*, *Baeckea* and *Astartea*, we find they respond well to regular light pruning, if required, however, hard pruning can be fatal if carried out incorrectly. A technique developed by Mr Russell Blake (a former foreman of Kings Park Botanic Garden), was to prune out two or three main stems of an old plant a few centimetres above ground level from a shrub containing six or more main stems. In a few months time new shoots are produced from just below the cuts, after a few year's growth, the remaining shoots are removed, and further growth would result from below the latter cuts. Experience has shown that many native plants can be pruned by this method.

Key to the species of *Malleostemon*

1. Stamens 10
 2. Inflorescence pedunculate
 3. Floral tube campanulate to urceolate; leaves plano-convex, not conduplicate, thick, less than 1 mm wide, oil-glands raised when dry; stamens 5 or 10 5. *M. roseus*
 3. Floral tube turbinate to obconic; leaves concavo-convex, more or less conduplicate, mostly 1.5 mm wide, oil-glands immersed; stamens 10 3. *M. pedunculatus*
 2. Inflorescence sessile
 4. Leaves peltate, almost spherical, 1 mm thick 4. *M. peltiger*
 4. Leaves basifixed, concavo-convex, 0.5 mm thick 2. *M. minilyaensis*
1. Stamens 5
 5. Leaves 1-3 mm long, plano- or concavo-convex, lacking a terminal mucro; stamens antepetalous; inflorescence 1-several-flowered
 6. Leaves shortly petiolate; stamens above 0.7 mm long; bracts or bracteoles deciduous; flowers solitary or occasionally in triads; stamens 5 or 10
 7. Inflorescence 1-3-flowered, pedunculate; leaves elliptical to oblong, plano-convex; oil-glands raised 5. *M. roseus*
 7. Inflorescence 1-flowered, sessile; leaves orbicular, concavo-convex 2. *M. minilyaensis*
 6. Leaves broad-based, sessile; stamens below 0.6 mm; bracts or bracteoles prominent, persistent; inflorescence mostly a triad; stamens 5 1. *M. hursthousei*
 5. Leaves 3-5 mm long, terete, apex with a recurved mucro; stamens antepetalous; inflorescence mostly a triad 6. *M. tuberculatus*

The Myrtle Family of Plants for Beginners

Editor

There are so many hundreds of plants spread over such a large number of botanical groups known as genera, that it is most confusing to the non-botanist. We are attempting to simplify the identification problem perhaps making it an exercise for children. See our last issue.

The accepted system of classification of plants into families, grouped into genera comprising of a large number of species, is largely based on the reproductive system which is the flower. The unique arrangement of the parts of a flower, the position of bracts, petals, stamens, etc., can be readily determined by a close look at a flower.

As a simple guide for the identification of plants at the generic level we propose to produce an amateur's guide along the following lines. Down the left-hand side of a page will be a series of sketches showing the various combinations of arrangements of petals and stamens around the rim of the flower and against each will be a list of the genera that have flowers of this type. It is likely that some arrangements will apply to more than one genera and in this event we may go to a further stage later in addition to the notes against each sketch. The order of arrangement of these sketches will be that indicated by Dr L. A. S. Johnson and Dr B. Briggs as the probable evolutionary pattern followed, in their world famous paper "Myrtales and Myrtaceae — A Phylogenetic Analysis, Ann. Missouri Bot. Garden 71: 700-756, 1984.

To do this we need flower specimens from all parts of Australia of all genera in the plant family Myrtaceae to be sent to Mr Peter Bailey, 969 Ferntree Gully Road, Wheelers Hill, Victoria 3150. Do not worry about the name, Peter may help you identify it. Please help us help you. ■

The sketches above give flower details of 4/5 genera of plants in Myrtaceae, that are very similar. As will be seen from the view of the flower from above, in each genus, they all have five complete petals with five sepals (calyx lobes) peeping up between the petals. The side view in each case shows the calyx tube cupping the petals with its five lobes or sepals. It is the number and position of the stamens that distinguish the different genera:

A. *Micromyrtus*: The five stamens (one is shown enlarged, both front and back view) are located opposite the petals (antepetalous). To confuse the issue some *Micromyrtus* species have ten stamens but in this case the petals are decid-

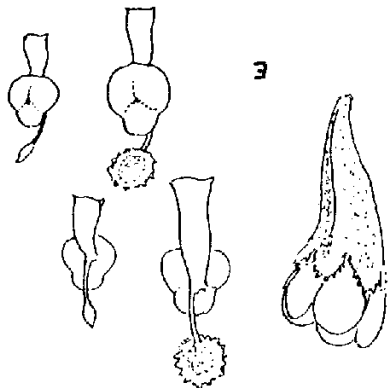
B. *Thyptomene*: The sketch above shows that these species have ten stamens but there may be more. Note the confusion with species of *Micromyrtus*, that have ten stamens though the petals of *Thyptomene* stay on.

C. *Paryphanthe*: The sketches also show a *Thyptomene* with five stamens and it has been predicted that these species may be separated out to become *Paryphanthe*, a genus erected by Schauer many years ago based on the type species *P. mitchelliana*.

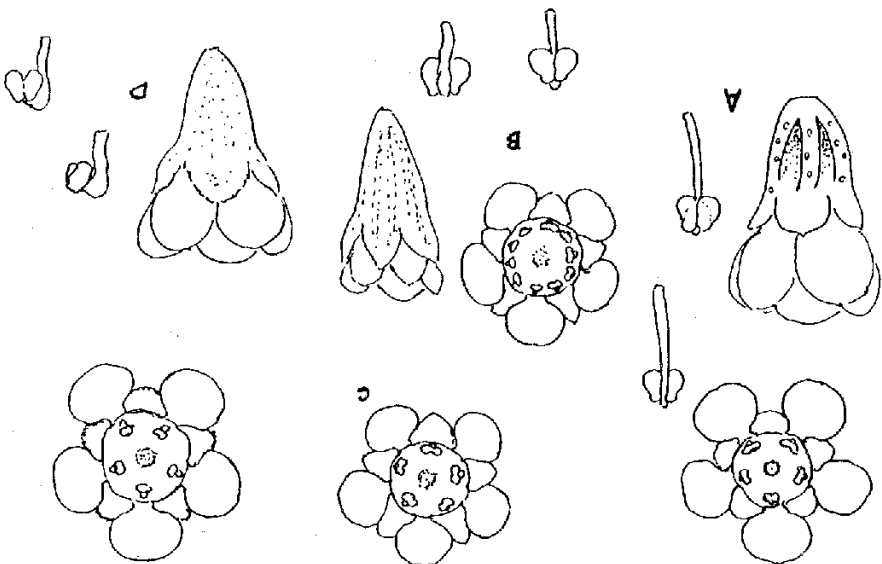
D. *Malileostemon*: Here there are five stamens

show that some species have ten stamens also.

E. *Corynanthera*: The flower detail of the single species *C. flava* shows ten stamens. The five antepetalous stamens being larger and with a fringed globular appendage and the five smaller stamens not opposite the petals do not have this appendage. Who has grown this plant?



E



A

B

C

D

Myrtaceae in Victoria

by Alison Pearce, Bacchus Marsh, Victoria

I have many representatives of this family planted in my garden. *Eucalyptus*, *Melaleuca*, *Callistemon* and *Leptospermum* plants are all thriving, mostly on neglect! The smaller *Melaleuca* are given extra water in summer. The silver/blue-grey leaf *Eucalyptus* are checked for caterpillars or eggs, though in most cases the birds have already finished off the caterpillars for me!

Growing *Calytrix*? May I first answer your recent request for details of successful cultivation? I have one *Calytrix sullivanii* in my garden. The plant is about seven years old and for the first five years was in a 10 inch plastic pot with *Melaleuca diosmifolia*. The pot received afternoon sun, the soil was a commercial potting mix and was fertilized with Osmocote every second year. It thrived, flowering profusely every year.

In May 1985, I moved to Bacchus Marsh. The land was part of a market garden that had been in use for over 50 years. Most of the block had very rich terra-rosa soil except for a large upsloping part that was very rocky. It had been ripped and dug over to rid it of box thorn which was burnt. This soil contains wood ash and is very loose.

My *Calytrix* (with its *Melaleuca*) was planted out into terra-rosa soil in an open position receiving full sun but dappled by the *Melaleuca*. Last winter, after four -3°C frosts the *Melaleuca* was killed. The *Calytrix* was unharmed and came through the summer even though its "umbrella" was gone. It would have received three or four deep soakings each summer, and like most of my other 300 natives has not been fertilized. It is only 40 cm high by 30 cm wide and still flowers profusely.

Calothamnus, eight different varieties, are planted in the rocky area and are growing well. This area, apart from being very dry, is very windy as well.

Beaufortia sparsa and *Angophora hispida* are making progress though much slower than I thought. Of three *Agonis* planted, only *A. linearifolia* still survives. *A. flexuosa* and *A. juniperina* were planted two years ago in an open position. They lingered, getting sicker and sicker, until succumbing to frost last winter. *A. linearifolia* was not bothered by the frosts but by wind and so was moved to the rocky area and planted under a young *Eucalyptus sideroxylon* for protection. It rewarded me by flowering and is still flowering nearly six months later.

Metrosideros queenslandica, despite being a tropical species, has grown well in my garden. It is planted against a fence facing east, getting morning sun only and some protection from wind, in terra-rosa soil. During its first summer it received some additional water. Frost has not worried it, though some tip growth was burnt last winter. Its survival is due, I'm sure, to the fact it was field grown for two years at a nursery in Bowen, where it experienced some savage frosts.

Kunzea baxteri, *K. pomifera* and *K. ambigua* are also making slow progress. Planted in various locations they have needed much additional watering and are considerably bothered by frost.

One major difficulty I have experienced with my soil has become evident when trying to grow some members of Proteaceae. Years of adding superphosphate to the soil has made the growing of these plants quite a problem. Many plants seem unaffected but others, namely *Gravillea* and *Protea* are producing calcium nitrate and considerable improvement has been observed. I have been told that superphosphate breaks down fairly quickly so hopefully the problem will diminish just as quickly.

When planting in August and September 1985, a batch of 35 *Gravillea* varieties did not have the 'Agrisol' treatment, while another 40 odd *Gravillea* and 200 odd native and exotic plants did. *Bacchus Marsh* received much higher than normal rainfall in that spring, particularly in November. Twenty-eight of the untreated *Gravillea* succumbed to root rot, while only three treated ones did. It may have been a coincidence but I'm not game to stop using the 'Agrisol' and find out! Both the cost and effort to treat each plant is minimal, so I will continue its use.

When planting any plant I follow the same procedure. The hole is dug and part filled with sand and then filled with water containing 'Agrisol'. When the water has drained away the plant is put in and the hole filled with original soil. It is then watered in with 'Plant Starter' and a small amount of liquid fertilizer. While I doubt 'Agrisol' can break up clay soils it does greatly improve drainage, something I had proved to me at considerable cost!

I have two plants of *Darwinia rhadinophylla*, both in for two years and thriving though in two totally different locations. One is planted in the rocky mounds in full sun and receives no additional water. The other is planted in the terra-rosa soil beneath *Acacia myrtifolia* in a shady, damp position. Both plants are about 12 inches high and 12 inches wide and have flowered. Neither has been fertilized. *Darwinia purpurea* is also planted in my Azalea bed and is doing well. It flowered this year.

Now for my successes! *Baeckea virgata* (Dwarf form) is in full sun in a built up bed of terra-rosa soil which is for roses. The plant has been there for two years, is six inches high by 12 inches wide and is thriving. The bed is very well watered all year and is fertilized with Comocote in spring and autumn. *Baeckea ramosissima* (white form) is planted in a built up bed of terra-rosa soil which contains mainly Azaleas. The bed is well watered in hot weather and faces directly south, receiving sun only in mid-summer and then for only an hour in early morning and late afternoon. This bed is also fertilized with Comocote in spring and autumn. The plant is one metre high and flowers for most of the year.

My failures have been with *Astarea fascicularis*, *Baeckea crenatifolia*, *B. linifolia*, *Darwinia fascicularis*, *Homoranthus darwinoides* and *Thryptomene* 'Payne'. I have tried various situations, soil types, and water requirements in the last two years only to fail every time.

I have given up trying to have *Chamaelaucium* in my garden as they can't survive the frosts here. I tried underplanting so as to give them protection but they were resentful of the loss of sunlight (at least I think they were!) and died anyway. So, no wax flowers!

MYRTACEAE in Hobart

by Norma Ali

My four acre (1.6 hectare) property is situated at Sandy Bay, 4 miles (6 kilometres) south-east from the Hobart G.P.O., with a north-easterly aspect. The slope is 1 in 3. According to the Lands' Department the soil is **PODZOLIC SOIL ON MUDSTONE** = loamy surface over dense poorly-drained clay. This soil is developed on mudstone rock.

The climatic conditions as advised by The Bureau of Meteorology are:
Rainfall: Average 626 mm per year. December 1985 and January 1986 were exceptionally wet.

Temperatures: Summer 16°C – Autumn 5°C to 12°C – Winter 5°C to 8°C – Spring 12°C

Sunlight: Varies from 112 hrs in June, to 235 hrs in January.

Frosts are infrequent and do little damage, except once, during the past 18 years. The garden is only watered every 2-3 weeks, usually from October to March, but depending on conditions. One area, where the damp-lovers are planted, is watered weekly during the summer, and over a longer period if conditions are dry. Trickle irrigation is the main method of watering, and also low-pressure sprinklers.

Mulching consists of layers of newspaper covered with sawdust/buzzer chips, pinebark or bluemetal. Bluemetal has been the most successful mulch as it is permanent. It does not have to be replaced like the others, which are continually being scratched or kicked off by blackbirds, rabbits, dogs, and most beds are on a slope!

Some raised beds, using coarse bush sand have been established for the more exotic species. As well as tolerating the poorly-drained soil, all plants have withstood periods of drought and high rainfall, and many are growing under, or in the vicinity of, large trees.

The following plants are "hardy" in my garden, as they have lived for five years or longer, and flowered, although they may be slow in growth. All are planted in the local soil, unless otherwise stated. Heights are given first x width or spread, and were taken at the beginning of June, 1987.

Angophora: *A. costata* (1974 — 15 m — maximum sun) did not flower until its eighth year, but since then has flowered each year — mainly on the northern side. It is a magnificent tree.

Astartea: *A. fascicularis* (1977 — .6 x 1.5 m — morning sun). Flowers throughout the year.

Beaufortia: I have tried many species, but most are short-lived. However, *B. decussata* (1981 — 1.5 x .4 m — morning sun) flowered last year, and is in bud now, and looking very healthy.

Callistemon: Plants with bottle-brush-like flowers, they are very slow, probably due to the lack of water. The best specimens are a group of four — *C. violaceus* (1977 — 4 m x 3 m overall, sun all day). They receive run-off from a septic tank. A great sight in spring with their carmine, tipped gold,

brushes. *C. citrinus* (1971 — 2 m × 2 m — sun most of the day and on a dry bank). Flowers well each year. *C. macropunctatus* (1980 — 1.6 × 2.5 m), *C. pallidus* (1980 — 3 m × 1.6 m), *C. rigidus* (1980 — 2 m × 1.5 m). All of these receive morning sun only and weekly watering in the summer. *C. 'Tinaroo Falls'* (1977 — 1.3 × 1.3 m) is in a very dry area and receives dappled shade all day.

Calothamnus with their one-sided bottle-brush-like flowers, usually red, like the dry conditions and heavy soil, although they do not reach their maximum dimensions. *C. quadrifidus* (1980 — 1.6 × 2.6 m) and *C. gilesii* (1980 — 1.2 × 1.5 m) both flower well throughout the year, and are in sunny positions.

Darwinia: Many species have been grown — not all successfully. *D. diosmoides* and *D. rhadinophylla* were both planted in 1980, receive morning sun only, flower sparsely and are very slow. *D. carnea* planted out in a raised bed of coarse sand, two years ago, is looking very healthy. It will be interesting to see how long it lives in this situation with the morning sun. *D. citriodora* (1980 — .9 × 1.8 m — morning sun only) is slow and not a good flowerer, but is looking healthier now.

Eucalyptus: What garden is complete without a "gum tree". *E. burdettiana* (1980 — 8 m — afternoon sun) is one of the more successful mainland eucalypts in this garden. It has flowered very well over the past two years. *E. citriodora* (1980 — 4 m — sun most of the day) is in bud for the first time. *E. lehmannii* (1971 — 3 m × 3 m — sun most of the day). Originally it was taller but has suffered much "wind breaking", and is living up to its common name of "Bushy Yate". *E. obliqua* (1980 — 8 m — afternoon sun) has flowered for the past two years. *E. strotai* (1977 — 2 m — sun most of the day). Although not a big tree it seems to have flowers on it for most of the year.

Kunzea: Lovely small shrubs with pom-pom-like flowers. *K. ambigua* (1971 — 2 m × 2.5 m — sun most of the day) is planted on a very dry bank. It flowers well each year. *K. pomifera* (1978 — 1 m wide — morning sun) has been slow to grow and flower, but looks healthy. Perhaps it needs more sun? *Kunzea ericoides* previously known as *Leptospermum phylloides* (1971 — 5 m × 1.5 m) is my favourite as it is so reliable, and attractive.

Leptospermum: Tea Trees are easy to grow. *L. juniperinum* var. 'Horizontalis' (1978 — 2 m × 3 m — partial sun). This plant is watered weekly in the summer and is very floriferous in the spring. *L. nitidum* (1978 — 3 m × 3 m — partial sun). This plant is also watered weekly in the summer, but is growing in the vicinity of large trees. Most of my plants grow in dappled shade; flower profusely, and have even self-seeded. *L. scoparium* var. *rotundifolium* (1978 — 70 cm × 1 m faces N.E.) although slow to grow, has a good cover of pale pink flowers each year.

Lhotzkyia: *L. acutifolia* (1981 — 1.2 × 1 m — full sun). This was planted out in a shallow raised bed, but would be well through to the clay now. Each year it is a great sight, with its masses of white star-like flowers along the stems.

Melaleuca: *M. acuminata* (1980 — 2.5 m × 1.5 m — maximum sun). *M. armillaris* (1971 — 5.6 m × 8 m — a group of five were planted to hide an old

shed — maximum sun). They all flower well during the year. *M. decussata* (weeping form) (1980 — two together covering an area of 1.5×2 m — mainly morning sun. They are not profuse flowerers, but have a good appearance and weep to form a ground cover. *M. gibbosa* (1971 — 1.5×1.5 m — morning and some afternoon sun). A very adaptable plant. Flowers well. *M. hypericifolia* (1971 — 2×2.5 m — dappled sun most of the day). Sparse flowering, but in a very dry area. *M. lateritia* (1980 — 1.6×1.2 m — morning sun only). Watered weekly in summer, and over a longer period if the season is dry. *M. micromera* (1977 — 1.6×1.3 m — partial shade all day). This is a very adaptable plant, considering the lack of sun and water. *M. nesophylla* (1971 — 4×1.5 m — dappled sun), as photographed on the cover of this issue, three plants, in dry areas. *M. pulchella* (1971 — $1 \text{ m} \times 1.5 \text{ m}$ — sun most of the day). Planted in a very dry raised bed, and not watered for about two years. *M. radula* (1980 — $1.6 \times 1.3 \text{ m}$ — morning sun only). Watered weekly in the summer, and over a longer period if necessary. *M. raphiophylla* (1981 — $2.5 \times 1.5 \text{ m}$ — maximum sun). *M. spathulata* (1971 — $3 \times 2 \text{ m}$ — late morning to early afternoon sun). Another remarkable plant in the dry, raised bed, which has not been watered for about two years. Beautiful in flower. *M. violacea* (1980 — $.7 \times 1.6 \text{ m}$ — morning sun only). Watered weekly in summer, and longer if necessary. Looks very healthy but sparse in flowering.

Micromyrtus: *M. ciliata* (1971 — $.4 \times 1 \text{ m}$ — sun for most of the day). Planted in the very dry, raised bed and not watered for about two years. *M. minutiflora* (1981 — $.3 \times 1 \text{ m}$ — sun for most of the day). Planted in a shallow raised bed, and watered infrequently.

Thryptomene: *T. saxicola* (1970 — $1.2 \times 2 \text{ m}$ — sun, late morning and early afternoon). The father of many progeny and still going in the dry, raised bed, and not watered over the past two years.

Verticordia: Although now getting past their best, they have flowered and looked good. All are planted in a shallow, raised bed, with their roots well through to the clay by now. They receive maximum sunshine, and are watered infrequently. The bed was mulched with blue metal. *V. densiflora* (1981 — $.7 \times 1 \text{ m}$), *V. floribunda* (1981 — $.6 \times 1 \text{ m}$), *V. oxylepsis* (1981 — $.6 \times .6 \text{ m}$), *V. pennigera* (1981 — $.4 \times .3 \text{ m}$), *V. plumosa* (1981 — $.5 \times .5 \text{ m}$), *V. wilhelmii* (1981 — $.9 \times .8 \text{ m}$). ■

Wildflowers for Home Gardens

Notes for Beginners

If you are a beginner and you have struggled through Australian Plants this far you have no doubt decided that the Journal is too technical for you. I hope to show you that this is not so. The major factor is the use of scientific plant names. We do this for a vital reason. There are so many outstanding plants in the Australian flora, literally thousands, and most only have scientific names. Common names have led to considerable confusion. Hence we urge you to be patient with us and accept the first part of the scientific name known as the generic name. This name is applied to a number of similar plants. Hence *Melaleuca* pronounced Mel-al-u-ca refers to a number of plants with bottlebrush-like flowers or with pom-pom-like flowers such as on the front cover.

Who would not like a plant of *Melaleuca nematophylla*, a shrub as shown on the front cover, a shrub of $1\frac{1}{2}$ to 2 metres high depending on pruning. So, forgive it for having such an ugly name as '*nematophylla*' and us for using the name out of desperation. Look again at the previous articles by two ladies who, not so long ago, were beginners also and persevered with scientific names.

Flora of Australia

Book Review

Scientific descriptions of all plants native to Australia are being published in a series of volumes by The Australian Government Publishing Service. The papers are prepared by assigned professional botanists from all parts of Australia and compiled for the Bureau of Flora and Fauna by the Executive Editor, Alexander S. George.

The descriptions, while scientific in the sense that they are in botanical language, are not fully detailed scientific descriptions, but are in sufficient detail to identify the species using a glossary of botanical terms. This has been done to assemble this vast amount of knowledge into a work of reasonable size and for the benefit of the non-professional. Even then the work will cover at least 51 volumes of which eight are now published.

Vol. 1 The introduction - a reference of value	\$19	Soft bound	Case bound	Post
Vol. 4 Phytolaccaceae to Chenopodiaceae	\$25			\$5
Vol. 8 Lecythidales to Batates	\$33			\$6
Vol. 22 Rhizophorales to Celastrales	\$29			\$5
Vol. 25 Melianthaceae to Simaroubaceae	\$16			\$5
Vol. 29 Solanaceae	\$26			\$5
Vol. 45 Hydatellaceae to Liliaceae	\$45			\$5
Vol. 46 Iridaceae to Dioscoreaceae	\$26			\$5
The most recent volume published is Volume 45 and details of its content are given below. This is not meant as an alternative to the purchase of this valuable series of reference volumes but a guide to content.				

Hydatellaceae comprising the genera *Hydatella* with species, *H. filamentosa*, *H. australis*, *H. leptogyne* and *H. dioica* and *Trithuria* with species, *T. lantera*, *T. bibracteata* and *T. submersa*, which are small aquatic herbs.

Sparganaceae with one genus, *Sparganium* and one Australian native, *S. subglobosum*, in ditches, swamps, or coastal and highland regions, Brisbane to Victoria.

Typhaceae with one genus *Typha*, two native species, *T. domingensis* and *T. orientalis*. Perennial aquatic herbs forming large stands in fresh or brackish water, all states.

Bromeliaceae with naturalised species *Ananas comosus* and *Tillandsia usneoides*. Musaceae with one Australian genus, *Musa*, *M. banksii*, *M. fitzalanii* and *M. jackeyi*. Bananas are from cultivars of *M. acuminata* and *M. textilis* yields Manilla Hemp.

Zingiberaceae with six genera in Australia, *Glozza marantina*, *Curcuma australasica*, *Etingera australasica*, *Homstedtia scottiana*, *Amonum queenslandicum* and *A. dalrymplei*, *Alphitonia arctiflora*, *A. arundinacea* and *A. coerulea*, *A. hylandii*, *A. modesta* and *A. racemigera*. Herbs with aromatic cells.

Costaceae with *Costus potterae* and *Tapinanthus ananassae* in Australia. Rhizomatous herbs lacking aromatic oil cells, both from North Queensland.

Philydaceae with all three genera in Australia, *Philydrium lanuginosum*, *Philydrella drummondii* and *P. pygmaea* and *Helmholtzia acortifolia* and *H. glaberrima*. Erect rhizomatous or cormous herbs known best in horticulture by *Helmholtzia glaberrima* described and illustrated in colour in Australian Plants.

Pontederiaceae with one native genus, *Monochoria* with four species, *M. australasica*, *M. cyanea*, *M. hastata* and *M. vaginalis*. Perennial aquatic herbs, *Monochoria cyanea* being described and illustrated in colour in North Australian Plants, page 108.

Haemodorumaceae with seven genera and 84 species native to Australia. They are perennial herbs with rhizomes, bulbs or tubers, that have found wide acceptance in horticulture.

Anigozanthos, the Western Australian Kangaroo Paws, have been extensively described and illustrated in colour in Australian Plants. New sub-species of *A. bicolor*, *A. humilis*, *A. manglesii* and *A. viridis* are described.

Conostylis have also been described and illustrated in colour in our No. 82 issue. Vol. 45 of the flora describes new species *C. albescens*, *C. angustifolia*, *C. argentea*, *C. canteriata*, *C. hiemalis*, *C. latens*, *C. lepidospermoides*, *C. mirantha*, *C. resinosa*, *C. rogeri*, *C. seminuda* and *C. tomentosa*.

Haemodorum has 20 native species, some of horticultural value. Six new species are described.

Blancoa with one species *B. canescens* is described and illustrated in colour in Australian Plants, Vol. 10, No. 81.

Macropidia with one species, *M. fuliginosa*, known as the Black Kangaroo Paw and illustrated in Australian Plants in colour, Vol. 10, No. 81.

Phlebocarya, tufted herbs, *P. ciliata*, *P. filifolia* and *P. pilosissima* all of Western Australia.

Tribonanthes, with five species, *T. australis*, *T. brachypetala*, *T. longipetala*, *T. purpurea* and *T. violaceae*. Attractive herbs from Western Australia, *T. uniflora* being illustrated in colour in Australian Plants, Vol. 10, No. 81.

Liliaceae, a family well regarded in horticulture with 66 genera and 266 species native to Australia. They include many well known genera such as *Blandfordia*, the Christmas Bells, *Thysanotus*, the Fringed Lily, etc. which have been described and illustrated in colour in Australian Plants. The introduction to the family is by Professor H. T. Clifford and he will be introducing a whole issue of Australian Plants on this family. The volume includes descriptions of 78 new species in the family as well as many sub-species and these will not be listed here but presented in the issues of Australian Plants in preparation. ■

GRASSES

In Home Landscaping
by Dermott Kelly, Prospect, S.A.

Australian grasses, for me at least, satisfy a sense of diversity and completeness, and their neglect suggests unrealised potential and application in landscaping, revegetation and agriculture. Certainly some genera have been of particular interest to New South Wales agronomists and the CSIRO Division of Plant Industry (ref. 1, 2, 3).

Low seed production, the tendency for Australian grasses to drop their seed or "shatter" at maturity (unlike the cereals) and/or because the grass species occur only in small stands or in areas inaccessible to harvesting machinery, make the harvest of commercial quantities of seed impossible. This is unfortunate, as there is good market potential for Australian grass seed, both locally and overseas (ref. 2). The CSIRO Division of Plant Industry is currently concentrating its efforts on several *Danthonia* species but commercial seed production is still some years away (ref. 3).

Australian perennial grasses have a number of desirable advantages over introduced grass species, namely, they generally use less soil moisture, tend to be more drought resistant and will grow in nutrient-poor soils though many species will respond to fertilizer (ref. 4).

It must be realised that a grassland is inherently untidy, unlike a lawn and for this reason would be unacceptable to many people. However, a grassland is intrinsically Australian, in contrast to the European lawn, and accepts the

Such a mixture of perennial grasses (and herbaceous component) provides what Loder et al. (ref. 2) call "a sense of seasonality", the different cycles of growth, flowering and new foliage colour giving an indication of season and providing beauty and interest throughout the year.

Danthonia racemosa var. *racemosa* is an erect, slender, tufted perennial, 30 cm high and the inflorescence changes from pale greenish to straw-coloured and contrasts well with the taller, coarser *Stipa* and *Themeda*. *Stipa elegantissima* is a very handsome grass, about 50 cm high, with stiff, slender stems, narrow leaves and a very beautiful silver, feathery inflorescence.

The foliage colour of kangaroo grass varies from green to blue-green, some leaves turning brown in the colder months. The inflorescence is particularly attractive, tall flower stalks to a metre or so bearing green seed spikes which turn glossy brown and have shiny black awns. The spent flower heads turn grey and remain on the plant over winter. Kangaroo grass flowers from January whereas the other two species flower and shed their seed earlier, in December.

Australian perennial grasses can also be used to good effect in difficult situations, for example, I have a narrow frontage (4.5 m x 11 m), south-facing and shaded at least six months of the year, in addition, the front is bordered by two large street trees (*Melia azedarach* or white cedar) which compete heavily for nutrients and water, in summer particularly. A grassland of *Themeda triandra* (kangaroo grass), *Danthonia racemosa* var. *racemosa* (wallaby grass), *Stipa elegantissima* (spear grass) and herbaceous component is consolidating quite nicely where before there was bare ground in summer. The tussocky kangaroo grass grows below eye level but provides sufficient vertical dimension to keep pedestrians to the paths provided.

A grassland will never replace the lawn in home landscaping but many front lawns could certainly be replaced with the more interesting and attractive combination of perennial grasses and herbaceous component (assorted groundcovers and small plants). Generally speaking, front lawns rarely see any use and are often more trouble than they are worth. The same could be said for those parts of the back lawn that are not used for entertaining, barbecues or other forms of recreation.

Australian grasses also provide food and habitat, contributing to the diversity of insect and small animal life in the garden.

In general, too, Australian grasses require less maintenance in terms of mowing and weed control — they compete with weeds, are slower growing than introduced grasses and apart from an occasional fire or mowing (see "grassland" then, requires less inputs of time and energy for its continued maintenance, providing a low cost alternative to the frequent mowing and weed control associated with your average lawn. Most Australian perennial grasses are green in summer and if properly managed (see below) constitute no more of a fire hazard than any other grass.

local landscape as it is, or was. Many natural grassland types containing certain mixtures of grasses and herbaceous plants, are poorly conserved in southern Australia even though many of the grass components are common.

Perennial grasses also complement plantings of Australian trees and shrubs, providing contrast in form, texture, colour and movement. Many grass inflorescences are quite beautiful and will enhance any flower arrangement.

In South Australia, species of *Themeda*, *Stipa* and *Chloris* (windmill grass) are most common (ref. 5). *Poa* (tussock or snow grass) and *Bothriochloa* (red grass) also contain a number of common widespread species, each with its own beauty and effect. Lodder *et al.* (ref. 2) classify Australian perennial grasses as either warm-season, year-long-green or cool-season species, according to their major growth periods. *Themeda* and *Bothriochloa* are warm-season species, whereas *Danthonia*, *Poa* and *Stipa* are year-long-green.

Grassland Establishment from Seed

Seed is sometimes available from the SGAP seed bank with private collection the next option. Hopefully, seed will become more readily available when the Australian Grasses Study Group gets going. I have been using tubestock to establish my grassland but for establishment from seed, Hogan *et al.* (ref. 1) make the following recommendations:

- Fresh harvested seed must be stored at room temperature for several months before sowing because of dormancy factors, for example, 3-4 months for *Danthonia*, and 11 months for *Themeda* and *Stipa*.
- Prepare seed bed as for a lawn. Sow *Danthonia* in March, April; *Themeda* and *Stipa* in November. First remove the awns (*Themeda*, *Stipa*) or the husks (*Danthonia*) from the seed. This will prevent clumping or entanglement of the seed, and, in the case of a seed spreader, ensure an even flow of seed through the apparatus (see ref. 1 for details). Rake over/roll to provide good seed soil contact. Prior control of winter and summer weeds is essential.
- Rates of sowing for pure, dense stands of *Danthonia* or *Themeda* are 5 gms per square metre, and 10 gms per square metre for *Stipa*. For mixed stands (*Danthonia* or *Stipa* with *Themeda*) the species should be in equal proportions i.e. 50:50, and the sowing rate for each species halved accordingly.
- Mulch the prepared seedbed (paper or straw mulch @ 340 gms per square metre) and keep moist until emergence occurs. Germinating seeds of all the above species are sensitive to moisture stress, *Themeda* in particular and *Stipa* less so.

Management

The grasses are mown or burnt when they are dormant, usually in winter and according to the litter load carried (every three years or so for *Themeda*, by my own experience). Lodder *et al.* (ref. 2) recommend a minimum mowing height of 100 mm, as this allows the survival of the herbaceous component of the grassland. The cut grass is left where it falls, to act as a mulch. Following burning, green shoots will cover the black stumps within several days.

I think some "weeds" actually complement a grassland situation and enhance its overall condition. Plants such as plantain (*Plantago* spp.) and volunteer medic species (*Medicago* spp.) contribute a biological balance.

References

1. Hogan, M. W. *et al.*, 1975. "Establishing native grasses in urban parklands", Australian Parks and Recreation, November, 1975.
2. Lodder, M. *et al.*, 1986. "Native grasses — the missing link", Landscape Australia, January, 1986.
3. Lodder, M. Pers. comm., 1986. CSIRO Division of Plant Industry, Canberra, December, 1986.
4. Crofts, Frank. Pers. comm. 1987. Farm Consultant. Bathurst, New South Wales, January, 1987.
5. Australian Plants, Volume 6, page 311.

Australian Indigenous Orchids

The first volume by Alick Dockrill covers all Australia's tropical orchids. This is being revised and will be available in 1989. We need good colour slides. Volume 2 which describes and illustrates all the terrestrial orchids other than those in the tropics and other than those in Western Australia, is also well in preparation. We need good colour slides and we urge photographers to get out in the field this season and help us. Slides of the following species are needed, as well as any others you come across.

Acianthus amplicaulis, *A. fornicatus*.
Bulbophyllum aurantiacum, *B. bracteatum*, *B. crassifolium*, *B. elisae*, *B. exiguum*, *B. globuliforme*, *B. johnsonii*, *B. minutissimum*, *B. tuberculatum*, *B. weinthalii*.
Caladenia alba var. *picta*, *C. arenaria*, *C. auranfiaca*, *C. concolor*, *C. audasii*, *C. patersonii* var. *magnifica*, *C. pumila*, *C. tessellata* — *Calanthe triplicata*, *Calochilus grandiflorus*, *Cheilosylis ovata*, and all forms of *Chiloglottis reflexa* from Tasmania and Queensland, *Corybas* aff. *limbratus* (Old), *Cymbidium madidum*, *C. suave*.
Dendrobium aemulum, *D. beckeri*, *D. x delicatum*, *D. gracilicantae*, *D. x gracililium*, *D. monophyllum*, *D. mortii*, *D. pugioniforme*, *D. schneideriae*, *D. x suffusum*, *D. tenuissimum*, *D. teretifolium* and its various forms, *D. tetragonum* — *Diuris bracteatum*, *D. brevissima*, *D. goonooensis*, *D. punctata* forma *striata*, and forma *sulphurea*, *D. secundiflora*, *D. aff. pedunculata* orange form near Melbourne.
Epipogium roseum.
Galeola foliata, *G. cassythioides*, *Genoplesium baueri*, *Geodorum densiflorum*.
Liparis coelogynoides, *L. habenanina*, *L. simmondsii*.
Malaxis latifolia.
Oberonia muelleriana, *O. palmicola*.
Papilioleum beckeri, *Peristeranthus hillii*, *Phaius australis*, *Phreatia crassiuscula*, *Plectrotriza breviflora*, *P. tidentata* — *Prasophyllum albigianum*, *P. anatum*, *P. apes-tasioides*, *P. brachystachyum*, *P. eriochilum*, *P. exiguum*, *P. hopsonii*, *P. laminatum*, *P. longispalum*, *P. mucronatum*, *P. nicholissianum*, *P. nudiscapum*, *P. obovatum*, *P. parvicallum*, *P. plumosum*, *P. reflexum*, *P. transversum*, *P. trifidum*, *P. unicum*, *Pteroceras hirticallae*, *Pterostylis x congloussa*, *P. hildae*, *P. laxa*, *P. reflexa*, *P. whitei*.
Rimacoola elliptica.
Sarcocilius australis, *S. dilatatus*, *S. hillii*, *S. fitzgeraldii*, *S. olivaceus*, *S. weinthalii*, *Schistostylis purpuratus*.
Taeniophyllum glandulosum, *Theilmithra mathewii*, *T. mackibbii* and *Townsonia viridis*.

Also required are slides of interesting unnamed hybrids, probable unnamed species and shots of pollinating insects on orchids.

The Banksia Book — Second Edition

by Alex George

The first edition of this excellent book sold out quickly. The book is the only reference to all the species of *Banksia* found in Australia. The second edition contains two new species and two new varieties recently described. A feature of the book is the easily followed descriptions, detailed sketches and large colour plate of every species of *Banksia*. A sign of the times, the second edition retails at \$35.00 per copy. Until the end of 1987, it will be available from the Editor, Australian Plants for \$30.00, post free.

Australian Daisies For Gardens and Floral Art

The Australian Daisy Study Group

Produced by The Australian Daisy Study Group of the Society, this book, 224 pages (23 x 16 cm) with 17 colour plates, is a valuable reference. It is to the credit of the Society that such a group of enthusiastic lovers of the Australian flora are able to work as a group, share their experiences, both achievements and failures, and add to the knowledge of us all. As with all group achievements, there are the leading workers, and not to detract from the effort and support of other members of the group, special credit must go to Maureen Schaumann, Judy Barker and Joy Greig and to the principle sketch artists, Gloria Thomlinson and Kath Alcock.

All aspects of the cultivation of Australian daisies are presented in a simple, very clearly, in fact painstakingly practical manner, in Chapters such as:

- Chapter 1: Growing Daisies — Soil preparation and planting out with reference to difficult species.
- Chapter 2: Maintaining Daisies — Moisture, fertilizing, nutritional factors, pruning and weeding.
- Chapter 3: Pests and Diseases — Leaf and stem eaters, sap suckers, diseases and the control methods.
- Chapter 4: Propagating Daisies — From seed collection, sowing and care, vegetatively by cuttings, division or layering, natural regeneration and potting on.
- Chapter 5: Daisies in the Garden and in Containers — The species to grow as bedding plants, ground covers, edging plants, boarder plants, rockeries, for pockets of colour in a landscaping scheme, coastal gardens, boggy conditions, alpine gardens, inland gardens, tropical gardens, alkaline gardens, and species to grow in containers.
- Chapter 6: Daisies in Floral Art — Species to use as fresh flowers or as dried flowers and advice on how to prepare them, preserve them, press them and arrange them.
- Chapter 7: History of Australian Daisies — They have been used in England, etc. since 1791.
- Chapter 8: What is a Daisy — A very interesting section for the beginner using sketches.
- Chapter 9: Daisies to Grow — Sixty-two species of horticultural value are each given a full page of notes on cultivation, flowering period, flower preservation, where found and a description. The description simply gives the outstanding features that any one can observe and relies on a full page sketch of the plant on the opposite page to enable easy identification.

This valuable book is available to the end of 1987 for the special price of \$18.00, post free, from Wildflower Publications, 11a Bray Street, North Sydney 2060. Check the cost of packaging and posting these days to realise what a bargain this offer is.

Growing Acacias

by Marion Simmons

Marion Simmons has already published a major book, *Wattles of Australia*. She is the leader of The Acacia Study Group. A very competent and charming lady who has spent many years and travelled many miles in the study of our Australian wattle trees. This small 72-page book (with 103 colour plates) contains a wealth of knowledge and is ideal as a guide to the choice of a wattle for cultivation and how to care for it. Normally \$12.95, this book is available until the end of 1987 for \$11.00 post free from Wildflower Publications, 11a Bray Street, North Sydney 2060.

An Australian Dream Lost

Or has it been?

Steven Pearson has prepared a book, a work of careful study and unique value. Who is Steven Pearson? He is the ranger at Blackdown Tablelands National Park. Who is in a better position to study and report on flowers? What is the book about? It presents practically the entire Central Queensland flora in colour, full colour, large colour plates. Herein lies the problem. The creator does not want to compromise his dream. He wants to illustrate the entire flora of the area, not just a few popular already published plants. Such a venture costs a lot of money, \$30,000.00, even if done at cost by the Society. Of course, if produced and marketed at cost you will get the money back in a few years, but who will find this kind of money?

Australians! Is there anyone concerned enough about our flora or our national heritage to make a significant contribution to the realisation of this dream? Or is it a dream rather than a national shame?

Australian Daisies

The Australian Daisy Study Group
A Report to Australia on the use of Daisies

Australian daisies have been grown around the world for garden display, edging plants and especially for the indoor scene in flower arrangement, dried art, etc. We are now able to present to you all that you need to know about their propagation, cultivation and application.



Helipterum anthemoides, the chamomile sunray, with photography by Judy Barker. I have chosen this colour plate from the book as an example of a good border plant shown growing in the garden, edged by a timber sleeper. Other photographs in the book show colourful species ablaze in yellows, oranges, reds, etc., but the desperate need for white in the garden is well known to horticulturalists. In this case the grey-green aromatic foliage developing red buds producing these "fried egg" flowers make as appealing garden plant - Editor.

"Pests, Diseases and Ailments of Australian Plants" by David Jones and Roger Elliott.

The environment in which we live today has changed from the original bushland. We have created parks and public gardens and our own private plots. Each of these is full of insects and other small creatures. Most of these are harmless to us and our plants while many may be directly beneficial.

Even those that are pests have a special niche in the environment and as gardeners and horticulturists we tend to forget this natural relationship among living creatures. We have changed the environment and introduced foreign plants which we wish to grow. It is not surprising that we have upset nature's balance. We must be careful not to over react by spraying to kill all creatures indiscriminately. This also kills the natural enemies of pests.

The theme of this book is the accurate identification of an insect before the safest techniques of control are employed. It is possible to achieve a three-way balance in any garden between the pests, their natural enemies and the plants. Sporadic outbreaks of damaging pests will occur but with a little observation, reference to the recommendations in this book and a tolerant attitude the situation will probably return to normal without the use of sprays.

Previous issue of "Australian Plants" presents *Grevillea*, a magnificent plant for horticulture, so let us summarise what the book has to say about *Grevillea*. On page 305 it lists pests found on *Grevillea* and a section in the book describes these pests and how to control them. Also listed are 24 commonly grown species and the usual pest problem they suffer. These pest problems may be briefly summarised:

Passion Vine Hopper — a sap sucker that leaves papery patches of tissue on the leaves and a sooty mould on the exudates. Help the birds and control only by a fierce jet of hose water.

Cottony Cushion Scale — soft-bodied reddish scale 0.5 cm long on underside of leaves and branches. Predators such as lady birds clean this up given time but a jet of water relieves a plague.

Toxic Scale or Latania Scale — flat rounded scales 0.1-0.15 cm long, white to pink. A damaging difficult pest to control. The section on scales recommends measures to be taken if nature's creatures such as birds and insects are losing the battle and you have discouraged the ants (by a band of sticky substance around the trunk) that often protect scale. White oil at half strength may be needed.

Common White Fly — small, white and moth-like, 0.1-0.2 cm followed by yellowish eggs then greenish scale. Sooty mould grows on the copious exudates. Strong jets of water disrupt colonies.

Caterpillars and Grubs — a key together with a sketch will help identification. They are good food for birds but usually are easily removed by hand and squashed. *Grevillea* host the Brown Tufted Caterpillar, the brown caterpillar of the Cissus Hawk Moth, the hairy caterpillar of the Painted Apple Moth, the Variegated Caterpillar, the Tube Caterpillar, the Large Bagworm and the *Grevillea* Looper, and *Grevillea* Leaf Miner.

Root Knot Nematode — causes irregular swellings and galls on the roots and severe stunting of growth. The best control is to remove the plant and burn it.

Cinnamon Fungus (Phytophthora) — will cause collapse usually during hot weather and after rain. If a repeated problem after you have checked for good drainage, select those species of *Grevillea* that are tolerant to this fungus, as listed in the book.

Black Leaf Spots — if troublesome, use copper sprays. Book lists most sprays.

Sweating — A number of species, as listed are susceptible to sweating, the leaves rapidly blackening or browning and remaining moist or slimy. Remove weed growth and help circulation of fresh air by thinning this or adjacent shrubbery.

Grow *Grevillea* by understanding the few pests and encouraging the birds. ■

Nature Conservation — The Role of Remnants of Native Vegetation

Editor

The Western Australian Government asked the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to carry out research to help provide a scientific basis for the management of the many small nature conservation reserves in the agricultural areas of the south-west of the State. Staff of CSIRO arranged a workshop on the above topic and the papers presented by scientists from many parts of the world on this international problem are published in a book of the above name edited by D. A. Saunders, et al. This book (410 pages) is available by mail for \$60 plus \$9 certified postage from Surrey Beatty & Sons, 43 Rickard Road, Chiping Norton 2170. The above report is based on excerpts from the book and seeks to alert the community to its responsibilities in preserving Australia. It remains to be seen if the scientists are as big on action as they are on words but it is up to John and Jane Citizen to initiate action.

Remnants are small and not necessarily representative of the pre-existing range of plant or animal communities. They often occupy the less arable soils or areas totally unsuitable for agriculture and development, perhaps consisting of rock outcrops or saline flats. Since plant communities are generally closely linked with soil types, certain communities or species have been favoured.

Although remnants are generally isolated from one another, some are connected by corridors of native vegetation. The value of these corridors in the Australian landscape is particularly important. Each may be apparently of little value but their contribution to the whole system of conservation could be vital.

In an area of 1760 km² near Kellerberrin (Western Australia) there are 531 remnants totalling 5.7% of the area and ranging in size from less than 1 ha to 1100 ha (see LANDSAT photograph on frontispiece of this volume). Only 16 of these are vested in the Crown and only six are reserves set aside for the conservation of flora and fauna (20% of the area of uncleared vegetation). By far the greatest proportion of naturally vegetated land (particularly woodlands) is in private ownership so that effective conservation will hinge on the co-operation of the farmers. The 600 km of roads in the district have verges that range from possessing no native vegetation to well vegetated corridors 20 m wide linking remnants.

Remnants can be important for the conservation of the regional biota solely because they provide representative or selected samples of communities that were once more widespread.

Remnants may involve conserving individual species and their gene pools, and the right of all species to exist. As a result of fragmentation of native vegetation, remnants now contain many species of plant and animal that occur nowhere else and are thus a repository of irreplaceable genetic material.

Remnants provide a focus for the development of an improved relationship between man and nature that is central to conservation. Social values related to recreation, aesthetics, and, most importantly, public education may be a deciding factor.

The magnitude of the task of managing remnants of native vegetation for nature conservation is clearly beyond the resources of most nature conservation agencies. To succeed in the long term a management plan must involve the general public actively. In particular, it should draw members of each local neighbourhood; many are privately owned.

These neighbours and owners must be encouraged to participate in all aspects of remnant conservation from research through planning and management to monitoring. To achieve this level of involvement, however, will require a concerted public education campaign that must begin with a clear demonstration of the important role of remnants. If a catch-cry is necessary, perhaps 'Adopt a remnant today' might appeal.

There is a remnant in your area, why not do something about it! Contact the Society or your local conservation body.



This colour-banded male *Malurus splendens* lived in one of the study areas reported on in the book, for more than ten years. In this time he fathered 23 fledglings, five of which became breeders in the population. He is shown here on a *Hakea* bush that grows near the grass tree that is his home. Plants, birds, people, we can all live together but it is up to people to manage our remnants of bush. We made it a remnant of a whole. There is a remnant near you. What are you doing to preserve it?

The Waratah by Paul Nixon

Book Review

The colour plate opposite is reproduced from the new book "The Waratah". This photograph has special significance as mentioned on page 178.

The Sydney University, Department of Agronomy and Horticultural Science, commenced research on the horticultural application of the NSW Waratah, *Telopea speciosissima*, at its Camden field trial annex many years ago. Paul Nixon is Senior Technical Officer at the field station. This book is the result of many years of study and practical trials backed by professional direction and research. The 80 page (24 x 17 cm) hard covered book is available from Wildflower Publications, 11a Bray Street, North Sydney 2060 for the special price of \$19.00 post free. The normal price is \$19.95 and the postage cost would add substantially to this.



The Waratah

The Parry's Dream

It is a pleasing coincidence that a book "The Waratah" (see review on page 176 and the colour plate of their new cultivar, *Telopea* 'Parry's Dream' on page 177) should be published shortly after the death of Percy Joseph Parry and his wife Olive Parry. They were pioneers in the promotion of preservation of the Australian flora and did much to get the Society started by their motto "preservation by cultivation". They were both awarded the Order of Australia Medal for their work.

Percy Parry's favourite plant was the Waratah and spent much of his life in its cultivation and the development of the best forms for the cut flower trade. The colour plate on page 177 of *Telopea speciosissima* 'Parry's Dream' is of his selection of the best form. Why not grow one. "The Waratah", the book tells you how to grow them and the plants are available from Parry's Nursery, "Floralands", Kariang, near Gosford, New South Wales.

Olive and Perc, we will remember you always and find some of the pleasure we knew in your company, when we look at a fine specimen of Waratah. — Editor.

Lechenaultia

Notes from David Morrison

The photograph, in the last issue of Australian Plants, labelled *Lechenaultia longiloba* is quite obviously of a hairy plant and consequently is a photograph of *L. hirsuta*. The colour Plates in Australian Plants, Vol. 12, No. 84, page 57 show a full plant of *Lechenaultia longiloba* and of *L. hirsuta* as they will grow naturally.

The photograph of a plant called *Lechenaultia striata* is quite interesting as I have never seen one. The flower colour and plant size are correct for *L. striata*, but the habit looks very much like *Lechenaultia lutescens* (which is not blue and does not get that big). Perhaps some readers may be able to get a colour slide of both these species (together with any others not illustrated in colour) and send them to me via the Editor.

Anthotium

I am preparing a paper on the genus *Anthotium* in the plant family Goodeniaceae. I have a good slide of *Anthotium rubriflorum* but need to see some of the other two species *A. humile* and *A. junciforme*. *Anthotium humile* is scattered throughout inland and coastal areas from Pemberton and Narrogin to Cape Grande, Western Australia, while *A. junciforme* is found in woodland and especially winter-wet depressions along the coast from Perth to Busselton — D. Morrison.

PATERSONIA — The Native Iris

Editor

We are preparing an issue featuring our native Iris. I need your help over the current flowering season. Please go into the field in your area, collect a flower with its stalk right to the ground and send it together with a leaf to Peter Bailey, 969 Ferntree Gully Road, Wheelers Hill, Vic., 3150. He will identify the species for you. We also need good colour slides! We need the specimens for sketches to illustrate the issue. The species occur in the following areas:

Northern Territory: *Patersonia macrantha*.

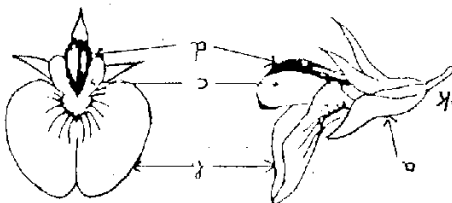
Queensland to SA: *P. occidentalis*, *P. fragilis*, *P. giabrata*, *P. Sericea*.

Western Australia: Murchison River south, *P. drummondii*, *P. graminea*; Stokes Inlet, *P. inaequalis*; Gairdner Ra., *P. argyrea*; Eneabba to Stirling Ra., *P. juncea*; Darling Ra. and Coolgardie, *P. tudis*; Darling Ra. to Stirling Ra., *P. pygmaea*, *P. babianoides*; Jarrah and Karri Forest, *P. umbrosa*; Stirling Ra. to Cape Avid, *P. limbata*, *P. maxwellii*; Two Peoples Bay, *P. lanata*.

Bush Peas

The Genus *Pultenaea* —

Part 7 by C. E. & D. T. Woolcock



a — the calyx cupping the flower
b — the corolla
c — the standard
d — two petals — covering keels

This group of species has cuneate leaves, leaves shaped like:

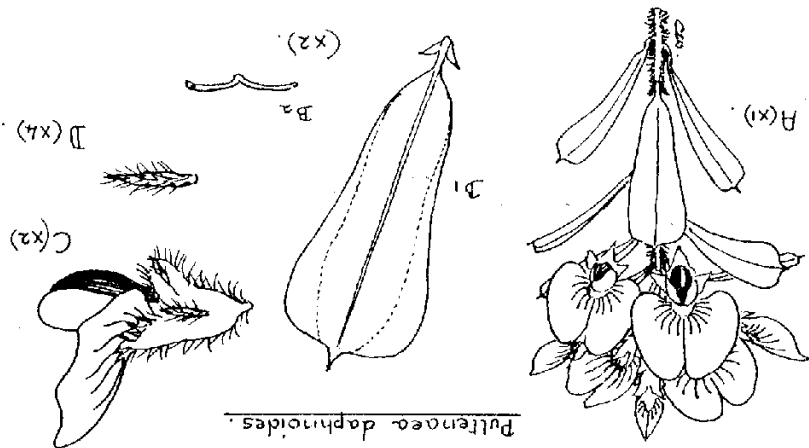
They are readily recognised even by an amateur. If you come across a yellow pea-flowered plant with the pea-flower as in the details above, then it is a *Pultenaea*. If it has cuneate leaves as above or in any of the following sketches, then check leaf detail against these sketches will tell you which species it is.

If you know nothing of botany or would like a child to learn, what better way than to start at the beginning of this series and have a ramble through the bush. These plants are also easy from seed. The series is like many features in Australian flora. With a little patience and observation you can learn much about the Australian flora.

Pultenaea daphnoides Wendl.

Large-leaf Bush-pea

- Habit:** Erect, much-branched handsome shrub, 1 – 3 m high, branches pubescent. (A). Colour plate on page 185.
- Leaves:** Cuneate, large (10–30 mm long), flat, mainly glabrous, definite soft mucro; some variation in width of leaves; prominent midrib below.
- Flowers:** Large, in dense terminal sessile heads. Floral bracts prominent Petioles and stipules small (B₁, B₂).
- Bracteoles:** Linear, small, silky, inserted about halfway up calyx tube. (D). August – November.
- Distribution:** Widespread on open forested hills. S. Aust., Vic., Tas., NSW.



Pultenaea daphnoides.

***Pultenaea hartmannii* F. Muell.**

Stanthorpe Bush-pea

- Habit:** Small to medium erect leafy shrub – hairy branches. (A).
Leaves: Oblong to cuneate, crowded, villous both surfaces, flat with recurved margins and mucro, c. 8 mm long. Petioles 1.5 – 2 mm long and stipules about the same size. (B_1 B_2 B_3).
Flowers: Single in axils towards ends of short branchlets, sub-sessile. Calyx tube and lobes sparsely hairy, lobes subulate and longer than the tube. Keel dark red. (C).
Bracteoles: Lanceolate, dark-brown, shorter than the calyx tube, sparsely hairy. (D).
Flowering: Spring – August/November.
Distribution: Tablelands of northern NSW and SE Qld.

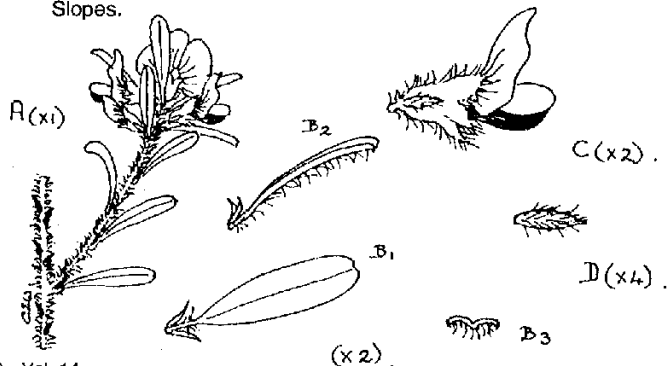
Note: Undescribed spec. affin. occurs in Gibraltar Range, NSW.



Pultenaea* sp. affin. *hartmannii

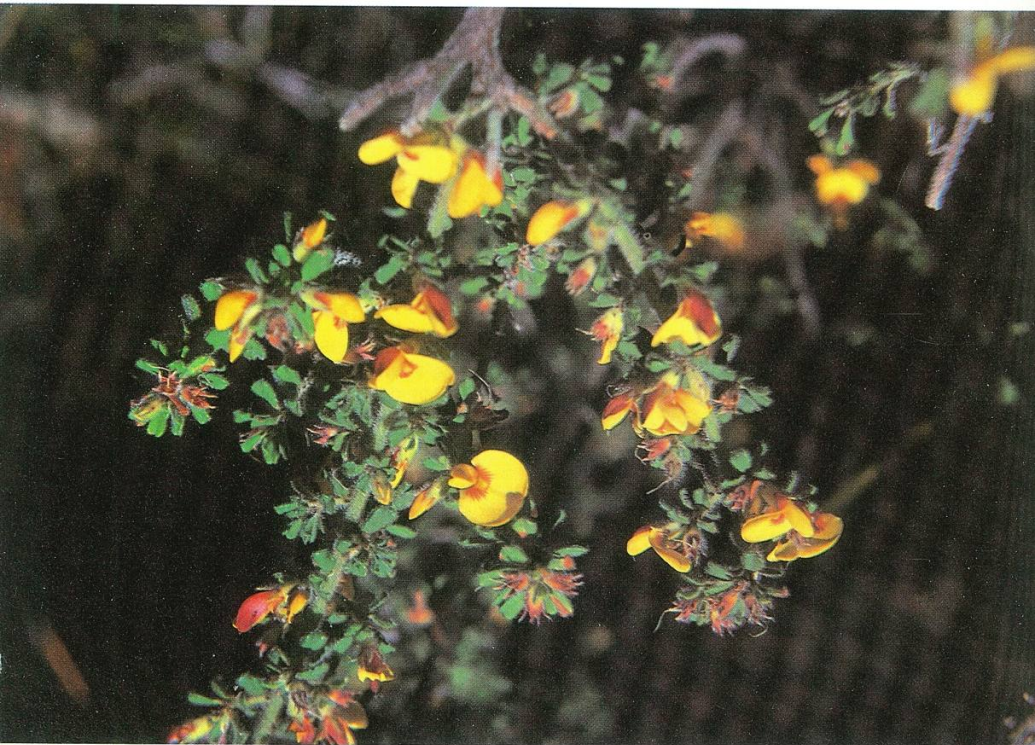
(Unnamed species)

- Habit:** Upright shrub to 2 m high. Branches hairy. (A).
Leaves: Oblong-lanceolate, obtuse to slightly emarginate with a tiny recurved mucro, usually 10 – 15 mm long, with recurved margins, glabrous above, villous below. Petioles 1 – 2 mm long and fine stipules of similar size. (B_1 B_2 B_3).
Flowers: Axillary, near ends of branchlets giving appearance of terminal heads, subsessile. Calyx hairy, with lobes shorter than the tube. Keel dark red. (C).
Bracteoles: Linear-lanceolate, almost as long as the tube, hairy, attached at base of calyx. (D).
Flowering: September – November.
Distribution: Northern NSW – on Tablelands (e.g. Gibraltar Range) and Western Slopes.





▽ *Pultenaea* sp. affinites *P. hartmanii*

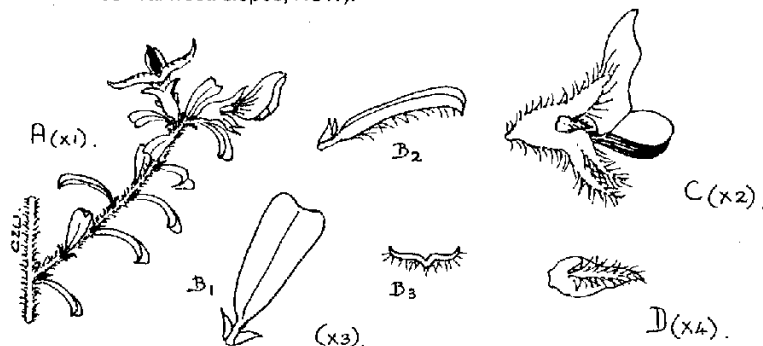


▽ *Pultenaea hartmanii*

***Pultenaea largiflorens* F. Muell. ex Benth.**

Twiggy Bush-pea

- Habit:** Rigid twiggy shrub up to 1 m high; smaller branches often pubescent. (A). Colour plate on page 185.
- Leaves:** Cuneate, scattered, recurved tip, pubescent undersurface, 4–10 mm long, sometimes in threes. Petioles and stipules c. 1 mm long. (B₁ B₂ B₃).
- Flowers:** Mainly terminal but sometimes axillary, sub-sessile. Calyx silky, lower lobes acuminate, longer than tube, upper lobes strongly curved. Keel red to dark red. (C).
- Bracteoles:** Lanceolate, small, affixed near summit of tube, hairy on midrib. (D).
- Flowering:** August – October.
- Distribution:** In moderately dry places – S. Aust., Vic., NSW.
(e.g. Flinders Ranges, S. Aust.; W. goldfields and N. central Vic.; central west. slopes, NSW).



***Pultenaea maidenii* Reader**

Wedge-leaf Bush-pea

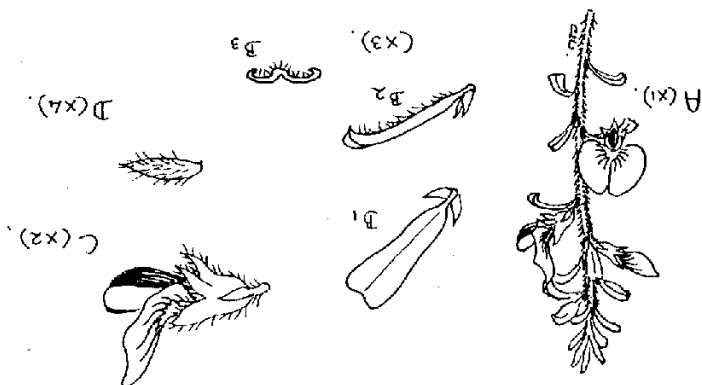
- Habit:** Erect shrub to 1.5 m high. Branchlets hairy. (A).
- Leaves:** Cuneate, flat, glabrous above, appressed hairs or almost glabrous on undersurface, small recurved mucro, 6–12 mm long × 2–4 mm wide. Petiole 1–1.5 mm long, stipules c. 2 mm long. (B₁ B₂ B₃).
- Flowers:** Mainly terminal on short branchlets or axillary near ends of branches, sessile. Calyx villous, partly enclosed in brown bracts, lobes as long as tube. (C).
- Bracteoles:** Broad linear, hairy on midrib, about as long as or slightly longer than the tube, attached on tube towards base. (D).
- Flowering:** October – November.
- Distribution:** Uncommon – endemic in Grampians, Victoria.



***Pultenaea microphylla* var. *microphylla* Sm.**

Spreading Bush-pea

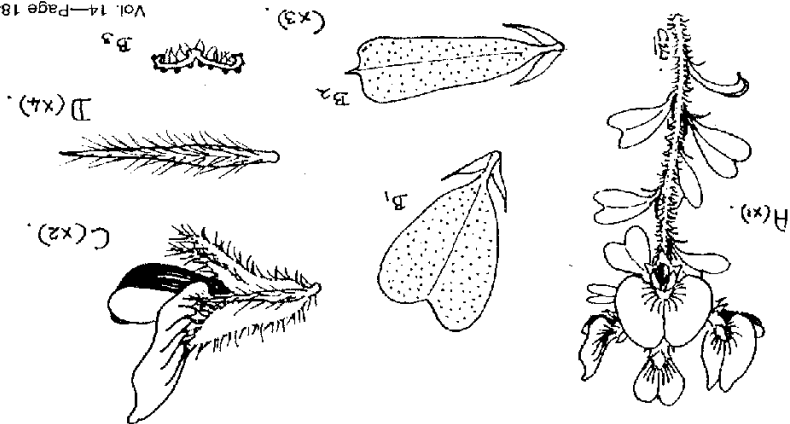
- Habit:** Diffuse, much-branched shrub (to 1 m high), sometimes prostrate.
Branchlets with short appressed hairs. (A).
Leaves: Cuneate, with recurved margins, usually hairy on undersurface, 4–8 mm long $\times$ 1–2 mm wide. Petioles c. 1 mm long; stipules 1–1.5 mm long. (B₁, B₂, B₃).
Flowers: Subsessile, mostly axillary, sometimes several at end of branches. Calyx with short hairs, lobes acute and usually shorter than tube.
Bracteoles: Linear, at base of calyx, usually shorter than tube and with sparse hairs. (D).
Flowering: Spring – September/November.
Distribution: Tablelands and Western Slopes of Northern NSW and Queensland.



***Pultenaea scabra* R.Br.**

Rough Bush-pea

- Habit:** Bushy shrub to 2 m high, pubescent. (A).
Leaves: Cuneate, notched, with definite recurved mucro, scabrous above, tomentose below, 5–12 mm long $\times$ 4–6 mm wide but variable in size and shape (B₁, B₂, B₃). Petiole c. 1 mm long; stipules subulate, 2–4 mm long. Loose terminal clusters, sub-sessile. Calyx villous, lobes longer than tube. Keel dark red. (C).
Bracteoles: Linear, hairy, as long as calyx and attached at its base. (D).
Flowering: Spring – August/November.
Distribution: S. Aust., Vic., N.S.W. – cool forests.





***Pultenaea retusa* Sm. (above)**

Blunt Bush-pea

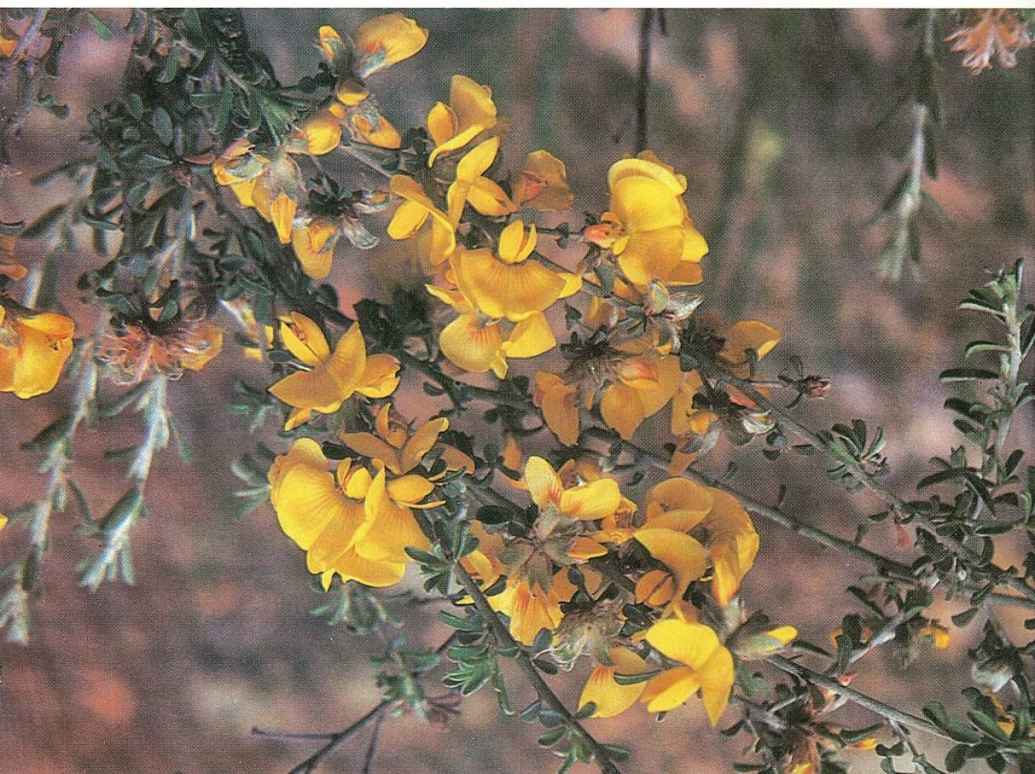
- Habit:** Erect, angular, glabrous shrub to 1 – 1.5 m high.
- Leaves:** Truncated/emarginate, flat, 5 – 15 mm long (B_1) and variable in size and degree of truncation (B_2), glabrous on both surfaces and with small petioles and stipules.
- Flowers:** Terminal heads, subsessile. Calyx silky hairy, lobes shorter than tube. Floral bracts prominent on buds but deciduous as flowers open. (C).
- Bracteoles:** Lanceolate, small, attached halfway up tube and then exceeding the tube. Slightly hairy on midrib. (D).
- Flowering:** Late Winter – Spring. August to October.
- Distribution:** Coast and adjacent areas in Eastern Vic., NSW and SE Qld.





Pultenaea largiflorens ▽

▽ *Pultenaea daphnoides*



Wildflower Publications

Our new marketing service to supply a wide range of books on the Australian Flora is now at your service. Enquiries for all books, including those offered here, are to be sent to Wildflower Publications, 11a Bray Street, North Sydney 2060.

We are often able to offer books at special prices especially if due allowance is made for the high cost of postage. For Christmas present shoppers the offers are extended to the end of 1987.

<i>Creating An Australian Garden</i> by John Hunt	\$24.00 post free
<i>Cradle of Incense</i> by George Althofer	\$ 8.00 post free
<i>Acacia of NSW</i> by Inez Armitage	\$ 6.00 post free
<i>Native Gardens — How To Create An Australian Landscape</i> by Bill Molyneux	\$17.00 post free
<i>Encyclopaedia of Australian Plants</i> Vol. 1, \$40.00 — Vol. 2, \$55.00 — Vol. 3, \$55.00 — Vol. 4, \$65.00 post free	
<i>Encyclopaedia of Australian Ferns</i> by D. L. Jones	\$80.00 post free
<i>Colour Your Garden</i> by Gwen Elliott	\$12.00 post free
<i>West Australian Plants For Horticulture</i> by Ken Newbey Part 1 and Part 2 each	\$ 6.00 post free

Wildflower Nurseries in Queensland

Fairhill Plants and Botanic Gardens — Fairhill Rd., Yandina, 4561. Tel. (071) 46-7193. Large range of trees, shrubs, ground covers, climbers, ferns, palms and orchids for the sub-tropical and tropical east coast. Extensive display gardens open 8.30 a.m. to 5 p.m. any day. New comprehensive catalogue \$3.50 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. 2750. Tel. (047) 77-4256. Five km north of Penrith, between Tadmore and Taylor Roads. Open 10.00 a.m.-8 p.m. Closed Sundays.

Denovans Nursery — 188 Marco Ave., Panania, 2113. Tel. 77-8891.

Sydney Wildflower Nursery — Branches at Duffys Forest 450-1785, Heathcote 520-3335, Marsden Park 637-4585.

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

Kentlyn Native Plants — 206 George's River Rd., Campbelltown, 2560. Tel. (046) 25-1583. Open 7 days.

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

Wildflower Nurseries in South Australia

Les and Kay Nesbitt — 18 Cambridge St., Vale Park, S.A. 5081. Tel. (08) 261-1550. Specialists in the propagation of Australian terrestrial orchids. S.A.E. for list and culture notes.

Nellie Nursery — 46 Randell St., Mannum, S.A. 5238. Tel. (085) 691-762. 129 Adelaide Rd, Murray Bridge, S.A. 5253. Tel. (085) 325-188. Rare plants — over 1000 species grown including 120 eremophiles. Stock changes weekly, so enquiries should be by phone. Hours of business — Tuesday to Friday 9-5, Saturday 9-12.30, Sunday 10-2. Other times by appointment.

Wildflower Nurseries in Tasmania

Banksia Nurseries Pty. Ltd. — 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 lines a speciality. Send S.A.E. for list.

Wildflower Nurseries in Victoria

Austriflora — 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.

Neil Marriott's White Gums Nursery — Specialising in *Grevilleas*, small shrubs and rarer species. Situated 3 km along Warracknabeal Road from Western Highway, Deep Lead intersection (13 km from Stawell). Hours — Fridays, Saturdays 9.00 to 5.00 or by appointment. Phone: (053) 58-2885 (orders to Box 107, Stawell, Victoria 3380).

Pomonal Wildflower Nursery — Gramplains. Sign opposite Gramplains Store Pomonal. Garden and Nursery open most of the time but phone (053) 56-6250 to check. Browse round our gardens.

Australian Wildflower Seed Suppliers

Nindethana Seed Service — Largest selection of native seed in Australia. RMB 939 Woogenilup, W.A. 6324. Available in 50¢ pks, gram lots or kgs. Please forward a stamp-addressed envelope for free catalogue. Tel. (098) 54-1066 in business hours. Telex: AA 91938.

R. Horner — 1 Grundy St., Alice Springs, N.T. 5750. Seed of trees and shrubs of Central Australia. Send 36¢ stamp for a list.

Western Australian Wildflower Society — P.O. Box 64, Nedlands 6009. A wide selection of Western Australian seeds is available at 70¢ per packet, plus postage of 87¢ for a number of packets. Send for a catalogue for 50¢ plus 37¢ postage. A huge range of seeds at a price you can afford expertly collected, labelled and packed. A book "Hints on Growing..." 40 pages, \$3.60 posted.

"Australian Plants", The Australian Flora Periodical

Past issues are available bound and cased, beautifully presented with green vinyl covering and gold lettering for \$21.00 plus \$2.00 postage. Vols. 3-10 are bound with another Society book as follows:

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 1",

VOLUME No. 5, issues 37-44, bound with "The Language of Botany",

VOLUME No. 6, issues 45-52, bound 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 69-76, bound with "Australian Plant General",

VOLUME No. 10, issues 77-84, bound with "The Cradle of Incense",

VOLUME No. 11, issues 85-92, are bound as one volume.

VOLUME No. 12, issues 93-100, individual issues only available at \$2.00 plus \$0.60 postage each.

VOLUME No. 13, issues 101 to present, individual issues only available at \$2.00 plus \$0.60 postage each.

Other Books Published by the Society:

"AUSTRALIAN DAISIES FOR GARDEN AND FLORAL ART", by the Australian Daisy Study Group, \$18.00 postage free.

THE BAKSIA BOOK — by Alex George, \$30.00 plus \$2.00 postage. The only complete reference to all species of

"CREATING AN AUSTRALIAN GARDEN", by John Hunt, \$24.95 plus \$2.00 postage. A practical guide to the creation

of a pleasing wildflower landscape to complement the home.

"NORTH AUSTRALIAN PLANTS", Part 1 by Jenny Harmer, \$12.00 plus \$1.00 postage. The best reference to top-end

Northern Territory flora.

"WEST AUSTRALIAN PLANTS FOR HORTICULTURE", Parts 1 & 2, by K. Newby, each \$12.00 plus \$1.00 postage.

A valuable guide to the plants with horticultural potential.

"CRADLE OF INCENSE", The Genus *Prostanthera*, by G. W. Atholter, \$15.00 plus \$1.40 postage. The only reference

to our Mint Bushes, the genus *Prostanthera*. A delightful book on the mint bushes.

"THE LANGUAGE OF BOTANY", by C. N. Debenham, \$9.50 plus \$1.00 postage. An outstanding reference to botanical

terms with examples from Australian flora. A recommended reference to botanical text.

"AUSTRALIAN PLANT GENERAL", by J. A. Barrie, \$9.50 plus \$1.40 postage. The only reference to the whole of the

flowering plant flora of Australia. Correct pronunciation is given for all generic names.

"A HORTICULTURAL GUIDE TO AUSTRALIAN PLANTS" — Single sheets with a large colour plate on the front,

described on rear, Sets 1, 2, 3, (4 out of print), 5, 6, 7, 8, a total of 271 plates for \$30.00 (binders \$5.50).

"ACACIAS OF NEW SOUTH WALES", by I. Armbrage, All N.S.W. watties described and illustrated by sketches and

colour, \$12.00 plus \$1.00 postage.

"FRIENDS AND FOES IN YOUR GARDEN" — D. Hocking, \$24.95, plus \$2.00 postage. The best guide on pest and

disease control of plants in your garden. A beautifully illustrated guide for pest control.

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. Enquiries for membership to:

THE SOCIETY FOR GROWING AUSTRALIAN PLANTS—N.S.W. LTD.

President: Mr R. Page, 34 Old Glenhaven Road, Glenhaven 2154.

Secretary: Mrs Glen Harvey, 5 Ellismere Road, Gymea Bay 2227.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—CANTERBURY REGION INC.

President: Mr J. Carter, 10 O'Hara Street, Warrimarr, S.A. 5073.

Secretary: Mrs G. Clarke, P.O. Box 207, Civic Square, A.C.T. 2608.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—QUEENSLAND REGION INC.

President: Mr Merv Hodge, P.O. Box 586, Fortitude Valley, Q. 4006.

Secretary: Mrs Eunice Clark, P.O. Box 586, Fortitude Valley, Q. 4006.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—SOUTH AUSTRALIAN REGION.

President: Mr Ivan Halliday, 29 Tennyson Avenue, Tasmere, S.A. 5073.

Secretary: Mr John Porter, 3 Barcroft Street, Pasadena, S.A. 5042.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—TASMANIAN REGION.

President: Professor George Wade, 5 Nightingale Avenue, Taroona, Tasmania 7006.

Secretary: Mrs Jan Harris, 88 Wellesley Street, South Hobart, Tasmania 7000.

SOCIETY FOR GROWING AUSTRALIAN PLANTS—VICTORIA—INCORPORATED.

President: Mr Bruce E. Grose, 9 Watlie Grove, Eltham, Vic. 3095.

Secretary: Miss Enid R. Bowman, P.O. Box 383, Hawthorn, Vic. 3122.

WEST AUSTRALIAN WILDFLOWER SOCIETY (INC.)

President: Mrs Marion I. Blackwell, P.O. Box 64, Nedlands, W.A. 6009.

Secretary: Mr Bob Backhouse, P.O. Box 64, Nedlands, W.A. 6009.

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

Managing Editor: W. H. Payne, assisted by Ray Page, P. D. Leak, B. Kennedy, J. Aston.

Do not telephone or call at private home. Enquiries by mail only. Please be patient for a reply.

For all book purchases, Wildflower Publications, 11a Bray Street, North Sydney 2060.

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, NSW 2213. For 1986 it will be \$7.00 for despatch

within Australia and \$9.00 U.S. for overseas. Your renewal date is on the envelope sticker. Send cheque with sticker.

COPYRIGHT—All material copyright as directed by authors.



Australian Natives In Flower Arrangements

Photography by Bruce Devine

The 'L' shape arrangement is reproduced from the book "Flower Arranging Australian Natives" by Barbara Coates. See page 149 for details. Fortunately the book does not rely on such difficult plants to grow as the *Banksia hookeriana* and the *Verticordia nitens* used above.

Page 188—Vol. 14

Surrey Beatty & Sons—Printers

