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## **BANKSIA ORNATA**

This issue is devoted to the wildflowers of South Australia. As our No. 38 issue featured the "Sturt's Desert Pea" on the cover (this issue being for the growing of wildflowers in the dryer inland areas), the S.A. executive requested this Banksia for the cover. It is a familiar sight in the temperate areas of bushland there.

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**WILDFLOWERS OF SOUTH AUSTRALIA OF HORTICULTURAL VALUE FOR  
THE HOME GARDEN**

Native Orchids, Spider Flowers, Boronia—Details of Cultivation—See Contents  
Inside Front Cover.

## GROWING WILDFLOWERS

The Australian flora is unique in the world. Much of it has considerable horticultural value. It has survived our climate for generations so that it follows that if we select the best flowering forms for planting in our gardens we should save considerable work as well as slow down the trend to extinction of our beautiful flora. This publication is devoted to the publication of advice for the home gardener.

Many readers still wonder "will that plant grow in my area though?" For this reason certain issues have articles from experienced horticulturalists from the one state and in this issue we introduce the South Australian flora and its cultivation. Those of experience in other States, especially Sydney and Melbourne, will immediately perceive however, that those plants recommended for the Adelaide Plains are equally at home on the Sydney or Melbourne clays and those for the Adelaide hills do quite well in good to lighter soils. It is evident that either conditions can be more severe in Adelaide as the plants recommended are the "hardy faithfuls", or the author's have been more concerned with describing plants that should give beginners every chance for success.

## CONTENTS OF THIS ISSUE

While this issue is complete in itself growers, particularly those in the dryer country areas, are especially referred to our No. 38 where the article by T. R. N. Lothian, Director, Botanic Gardens, Adelaide, "Gardening in the Low Rainfall Regions" is supplemented by a description of the "lily and iris" type plants of S.A.

### GROWING WILDFLOWERS IN THE GARDEN

This is the whole theme of the issue and all articles mention this. In particular refer to: *Think Before You Plant* by Jean Turner—page 302.

*Growing Native Plants in Metropolitan Adelaide* by I. G. Holliday—page 291.

*A Landscaping Plan for a Difficult Adelaide Allotment* by I. G. Holliday—page 308.

*Growing Banksia in the Mount Lofty Ranges* by S. G. Chinner—page 321.

*Growing Trees in Dry Areas* by D. G. & E. G. Foulis—page 322.

### SOUTH AUSTRALIAN WILDFLOWERS

*Plants of the Mount Lofty and Southern Flinders Ranges* by Darrell Kraehenbuehl—page 295.

*Plants of the South East of South Australia* by Marian Beek—page 299.

"Common Fringe Myrtle", *Calythrix tetragona* by P. Conrick—page 325.

*Eucalypts of S.A.* by C. D. Boomsma. All S.A. species mentioned with their application—page 310.

### ORCHIDS

*Cryptostylis of South Australia and Their Culture*—page 305.

*Spiranthes of South Australia and Their Culture*—page 305.

*Caadenia of South Australia and Their Culture*, 'The Spider Orchids'—page 306.

*Chuochista*—An epiphytic orchid from Queensland—page 304.

*Other S.A. Terrestrial Orchids*—Previous issues have described these and given details of their culture: *Acianthus*, Vol. 3, page 376; *Calochilus*, 4, 279; *Corybas*, 3, 249; *Cryptostylis*, 4, 91; *Microtis*, 4, 170; *Pterostylis*, 3, 79; 5, 60. The cultivation of terrestrial orchids 4, 250 & 383.

### MORE WILDFLOWERS IN SOUTH AUSTRALIA

Previous issues have carried articles on the growing of wildflowers in S.A. some of which are: *Dianella*, 4, 357; *Grevillea* in Adelaide, 3, 17; *Malvaceous Shrubs*, 4, 19; *Myrtaceae*, *Baeckea* and *Hypocalymma* for S.A., 4, 56; *Pimelea* in S.A., 4, 373; *Teatree* in S.A., 4, 60; *Thryptomene* for S.A., 4, 373; *Succulent Native Plants*, 3, 111 and *Wildflowers in Clay*, 3, 298.

## CORRECTIONS

There have been a number of errors in the issues of Vol. 5 for which the editor apologises. Will readers please forward all the corrections they can find for inclusion in the index to Vol. 5. The next issue completes Vol. 5.

## BORONIA STUDY GROUP

If you are interested in growing *Boronia* you should join this group. Much of the work in correspondence, advice, seed and cuttings will be done by mail so the country people from all temperate areas of Australia are especially invited. The group has the services of very competent propagators and modern facilities to grow hundreds of plants from seed or cutting if we can find people interested enough to send them. It does not matter if you do not know the names of the plants in your area we will soon identify them for you. As well as collectors of seed or cuttings we want gardeners to grow the plants from the simple advice given and report results.

Write to Mr. A. Ward, 66 Cecil St., Gordon N.S.W. for further details.

## "West Australian Plants"—A Descriptive Catalogue (2nd Edition)

This fine book was one of the first produced by the Society and has been so widely acclaimed and received that a reprint has been necessary. The number of colour plates has been doubled but the real value of the book even for those who have a copy of the first edition is that fully revised, it is the only reference ever produced to the entire flora of Western Australia. New additions include the grass and fern families but the many hundreds of species added and names revised make this book a must for anybody interested in growing the western wildflowers. Every species is listed with details of plant type, height, flower colour and flowering period and the conditions of its natural habitat. This is concluded by articles such as "Planning, Making and Growing a Native Garden" and "Propagation".

Available from the Editor, 860 Henry Lawson Drive, Picnic Point, 2213 for \$3.00 plus 20c postage.

# GROWING WILDFLOWERS

GROWING NATIVE PLANTS IN METROPOLITAN ADELAIDE by I. G. Holliday

## 1. Climate, Soils, Water Supply

Among the capital cities of Australia, Adelaide's closest climatic comparison would be with Melbourne and Perth. Although its average annual rainfall is less than these two cities (21 inches compared with 26 inches in Melbourne and 36 inches in Perth), and it is usually a little warmer than Melbourne, all 3 cities share a common weather pattern—hot, dry summers with most of the rain falling in winter. Hobart too, has this weather pattern but it is much cooler than Adelaide. Adelaide differs greatly from these cities however, in its soils which are predominantly alkaline clays (c.f. Perth's deep acid sands and Melbourne's acid soils) and to my knowledge is unique in this respect among Australia's capital cities.

The Metropolitan area of Adelaide is now defined as extending from Gawler in the north to Willunga in the south, bounded to the west by the sea and to the east by the western regions of the Mount Lofty Ranges. This represents an area of approximately 768 square miles which is mainly near level plains consisting of cleared rural land or land which has been built on. The plain's soils are quite variable but mainly alkaline (pH 7.5-pH 9).

The hills and foothills areas are represented by dry sclerophyll forest and savannah woodland with a rainfall varying from 25-45 inches. A good deal of this however, runs away due to the steep slopes. Soils here are more likely to be of acid reaction and vary from light sands of quartzite or sandstone origin to clay soils resulting mainly from weathered shales and schists.

The majority of the population live on the plains which are characterized by long summer periods without rain (Dec.-April), strong winds, cold south westerlies from the sea, and hot, dry north to north-east winds with dust from the land. Fogs and frosts are fairly common in the Hills districts but are not often encountered on the plains.

Water is another problem, especially in summer months when it is most needed. At this time the normal water supply is supplemented by Murray River and bore water, both containing a high salt content as well as being alkaline in reaction. My advice to native plant growers is to establish small plants by planting out in autumn to receive the winter and spring rains and then forget about summer water. I believe more plants in Adelaide are lost by summer watering than by the lack of it. I know that some will argue with this and realise that there are some very notable exceptions (e.g. tropical species, *Boronia*, etc.).

## 2. Plant Species

In discussing plant species I am well aware that some of the plants I have listed as being difficult to grow under Adelaide's conditions will have succeeded in some reader's garden, and point out that it is only possible to generalize in a very broad way.

In this very broad sense also, there are 2 distinct divisions as far as plants are concerned. Those which are best suited to the Mount Lofty Ranges and those best suited to the plains. For example, most of the mallee type eucalypts thrive on the plains but do not adapt easily in the colder, wetter hills districts. The opposite could be said of a number of the large forest eucalypts.

## PLANTS SUITABLE FOR BOTH THE PLAINS AND THE HILLS BEHIND

There is a range of hardy species which usually succeed in both divisions in most conditions encountered. These include:

Many *Eucalyptus* and *Acacia* species, *Angophora*, most *Callistemon*, *Melaleuca* (with some notable exceptions), *Callitris*, *Casuarina* (*C. torulosa* is best suited to the hills), *Pittosporum*, many of the *Hakea* family, some of the *Grevilleas*, *Kunzea*, *Calothamnus*, *Beaufortia* and *Leptospermum* species, *Hardenbergia*, *Sollya*, *Kennedia*, *Agonis flexuosa*, some *Correa*, and *Chamelaucium uncinatum* (resents dense limestone), to name a selection.



### THRYPTOMENE TUBERCULATA

As mentioned below the less hardy but beautiful little shrubs can only be grown easily in the lighter soils of the hills but proper preparation of raised garden beds can simulate these conditions. In our No 36 issue, Ivan Holliday describes a number of beautiful *Thryptomene* and their cultivation in Adelaide.

Species which are better suited to the hills and foothills areas include: *Prostanthera*, *Bauera*, *Calythrix*, *Hovea*, *Pultenaea*, *Thryptomene*, *Eriostemon* and *Crowea*, *Correa*, *Boronia*, *Phebalium*, *Pimelea* and a large percentage of the *Proteaceae* family—*Telopea*, *Banksia* (I have seen *B. grandis* at Crafers grow to 15' 0" high in 4 years—the same species in my own garden grew 6" in about the same period of time), *Grevillea*, *Dryandra*, *Petrophile* and *Isopogon*.

## PLANTS FOR GARDENS OF THE CLAY PLAINS

Those best suited to the plains only include: *Eremophila* (especially in the north and west suburbs), low rainfall *Eucalyptus* and *Acacia* species (but some of these do well in the hills), *Cassia* (these are not grown enough as there are some excellent long flowering species with attractive foliage—e.g. *nemophila*, *sturtii*, *artemisioides*), *Myoporum*, *Clianthus*. In addition some of the tropical rain forest species from Queensland and New South Wales are successful on the plains where plenty of summer water can be provided—e.g. *Hymenosporum*, *Castanospermum*, *Brachychiton*, *Schefflera*, *Tristania*, *Ficus*, *Eugenia*, *Syzygium*, to name a few. Some of these will grow in the hills but generally the cold winters are a problem.



Blocks by courtesy of Botanic Gardens, Canberra.

### MELALEUCA INCANA

*Melaleuca* species have proved very adequate as have the related "bottlebrush" type flowering plants, *Callistemon* and *Calothamnus*. It is usual to show a red bottlebrush flower but the colours range from yellow to red. This plant has a beautiful weeping habit of grey green feathery foliage and flowers very heavily in season.

### 3. Brief Discussion on some of the more difficult species

#### (1) *Dryandra*

Generally unreliable unless grown in well-drained hills areas. *D. floribunda* (syn. *sessilis*) is an easily grown species but is not one of the more spectacular.

## (2) *Banksia*

A better bet than the *Dryandra*. Quite a number of species appear to adapt to a variety of soils. Some which have succeeded on the plains include *B. burdettii*, *cayleyi*, *collina*, *lemanniana*, *media*, *prionotes*, *occidentalis*, *repens* (in sand), and *ericifolia* (this, however, is not a reliable species).

## (3) *Isopogon* and *Petrophile*

There are some fine species but they prefer the hills areas.

## (4) *Grevillea*

A number of the *Grevillea* family has proved fairly reliable in both divisions, although they do resent dense limestone.

Attractive species which can be especially recommended for Adelaide include: *G. pinaster* (medium shrub, red flowers), *G. tridentifera* (syn. *bitermata*) (a hardy, vigorous ground cover, creamy flowers), *G. leucopteris* (where drainage is good), *G. lavandulacea* (good dwarf forms available, red flowers), *G. banksii forsteri* (away from cold, hills areas), *G. oleoides*, and *G. heugeli* which does well on limestone. There is another *Grevillea* which thrives on Adelaide's limestone areas but it has not been positively identified. It is a vigorous shrub to 10 feet with smooth, silvery leaves and pink flowers.

## (5) *Leschenaultia*

These are often easily grown for a year or two (in made up soils) but then gradually die back and finally collapse.

## (6) *Verticordia*

This species has suffered in the past from a lack of trials. Cutting materials and seed has rarely been available here and the Ashby and Burdett families were virtually the only growers of these choice dwarf shrubs.

Recent increased interest in *Verticordia*, however, has meant that more plants are being tried in a variety of local gardens. Although it is still a little early to pass judgement there are promising indications that a number of *Verticordia* may be easier to grow than expected. Some species known to have persisted and flowered quite well over a period of 3-4 years (mainly in made up soils) are *V. acerosa*, *monodelpha*, *insignis*, *grandis* (foothills), *densiflora*, *picta*.

*Verticordia* require good crown drainage but appreciate a moisture holding subsoil. Light sand overlying a non-limy clay base such as some areas of Tea Tree Gully and Highbury appear to favour this species.

## (7) *Xanthorrhoea*

Because of their slow growth from seed few good specimens are seen in native gardens. Nevertheless, the "Grass Trees" are fine garden subjects and seedlings (particularly of *X. australis* and *X. semiplana*) are being planted by enthusiasts with patience. Young seedlings appear to adapt quite readily.

## (8) *Dampiera*

There are some beautiful species of this genus which are unknown in cultivation because seeds and cutting material are very difficult to obtain. Judging on the ease with which species which are available can be grown (provided they are given about 12" of sandy topsoil) it would seem that every effort should be made to bring more of this genus into cultivation. They spread by underground root suckers and are ideal for scrambling among rocks, making a gay splash of blue or intense purple in late winter and spring. Cultivated species which are easily grown under these conditions, include *D. cuneata* (blue), *rosmarinifolia* (deep purple, mauve, pink, blue and white forms), *diversifolia* (a creeping mat of deep purple).

## S.A. WILDFLOWERS

### PLANTS OF THE MOUNT LOFTY AND SOUTHERN FLINDERS RANGES

by Darrell Kraehenbuehl

The Mount Lofty and Southern Flinders Ranges stretch in an almost unbroken chain for 250 miles from the most southerly point at Cape Jervis, Fleurieu Peninsula to Quorn in the north.

The southerly portion of the Mount Lofty Range system includes the Hindmarsh Tiers, Bugle Ranges, Higher Loftys near Stirling and Uraidla and the Forest Range. Rainfall is generally over 30 inches per annum with the greatest precipitation at Stirling 47", Parawa (Fleurieu Peninsula) 40" Mount Compass, Myponga and Inman Valley 35".

The Northern Mount Lofty Ranges comprise a number of interesting spur ranges, Barossa Range, Clare Hills, Tothill Range, Burra Hills, and Bundaleer Hills which all differ slightly in physiography and character. Rainfall is much lower and averages 22"-27" per annum. The eastern slopes of the Mount Lofty Range between Truro and Strathalbyn are intersected by a number of short picturesque gorges and rainfall averages 17" per annum.

Wirrabara Forest 27" and Mount Remarkable 25" are the wettest places in the Southern Flinders Ranges although most parts receive 21" a year. Rainfall decreases to 12" at Quorn.

With such a variety of terrain it is not surprising that many curious and colourful native plants are found throughout this region. Many Eastern State plants have their furthest occurrence to the west of the Continent in the Mount Lofty and Flinders Ranges and some of the more notable of these are as follows: *Callitris rhomboidea*, *Todea barbara*, *Persoonia juniperinum*, *Acacia vomeriformis*, *Acacia melanoxylon*, *Hovea longifolia* var. *lanceolata* (Mount Remarkable), *Pultenaea daphnoides*, *Eriostemon verrucosus* (Tothill Range), *Phebalium hillebrandii*, *Leptospermum pubescens*, *Melaleuca squarrosa* and *Melaleuca squamea* (Mount Compass District), *Eucalyptus macorrhyncha* (Clare Hills), *E. microcarpa* (Mount Remarkable), *E. rubida*, *Epacris impressa*, *Sprengelia incarnata*, *Veronica derwentia* and *Stylidium majus*.

The expansion of Adelaide suburbia into the western foothills and Higher Loftys and the taking up of land for agricultural and farming pursuits (orchards, market gardens, grazing properties and pine plantations) has seriously decimated much of the original scrub and forest. There are no National Parks and Reserves greater than 3,000 acres and because it seems likely that other large tracts of virgin bushland will be difficult to obtain in the future, several native plant species are in possible danger of extinction. But the South Australian National Parks Commission, to its credit, continues to acquire areas of 100 to 1,000 acres whenever they are available.

The position in the Southern Flinders Ranges is far more heartening for large National Parks have been recently proclaimed at Alligator Gorge, Mambray Creek and Mount Remarkable and possibly Telowie Gorge.

The flora of the Southern Mt. Lofty Ranges is most closely allied to that of Western Victoria and Tasmania. Endemicism reaches its greatest variety in the wetter areas for e.g., Encounter Bay region, Higher Loftys, Fleurieu Peninsula, and the Mount Remarkable-Alligator Gorge region. Latest information available indicates that 40 species and varieties are confined to the area under review.

As most of my remarks will deal with shrub species, the following endemic grasses and orchids are not treated here.

GRAMINAE: *Stipa brachystephana*, *Stipa congesta*, *Danthonia clelandii* and *Amphipogon strictus* var. *setifer*.

ORCHIDACEAE: *Thelymitra urnalis*, *Prasophyllum validum*, *Prasophyllum rotundiflorum*, *Prasophyllum fitzgeraldii*, *Caladenia gladiolata*, and *C. rigida*.



Blocks by courtesy of Canberra Botanic Gardens

BORONIA HETEROPHYLLA. *Boronia*—after an Italian, F. BORONE who accompanied expeditions in the 18th century. *Heterophylla*—variable leaves.

### RED OR KALGAN BORONIA

On seeing the 'Red' or 'Kalgan Boronia' in vivid flower everyone may wish to have one, and may wonder if it is easy to obtain and grow. It may be bought from some nurseries dealing in native plants, and its popularity is established in gardens as an easily grown medium shrub which will live a good number of years with simple care.

Like the Brown Boronia (*B. megastigma*) it is native to W.A.; is more robust and has a sweet scent in both leaves and flowers, though less powerful than the better known species. When lingering over the scent a slightly bitter aroma is sometimes noticed recalling Rue, and other plants of this family (Rutaceae) to which Boronias belong.

Growth is dense, flexible and soft in all parts and quite hardy to a wide range of conditions. Drought and hot winds, however, are not tolerated, and adequate water must be given, specially in summer. It is essential to keep the roots cool, and as watering on bare soil will not do this in extreme heat, a mulch must be used unless nearby plants provide shade. Making sure the ground is soaked first several inches of leaf mould or compost should be put around the plant. Another method is to use sizeable flat rocks. These look attractive, and in fact a large rockery makes a fine setting for this subject, and with its roots protected it flourishes in full sun.

In habit it is evenly round or oval, quickly making a mature specimen which may be 3 ft. high when two years old from planting, and eventually reaching over 4 ft. high. Healthy foliage has a fresh appearance all the year, and individual leaves may vary on one plant from narrow and simple to finely divided.

No serious pests or diseases have been noted.—J. Wrigley.

*Editor's Note:* This colour plate no doubt looks odd in this position. It was planned to carry a colour plate of *Grevillea lavandulaceae* here but at the last moment the blocks were missing. This is one reason your journal is so late.

**MIMOSACEAE:** It is fitting that the wattles be mentioned first as they are such a feature of the Australian landscape.



Blocks by courtesy of South Australian Museum

Artist: Alison Ashby

***Acacia dodonaefolia*.** A very handsome viscid shrub reaching 15 to 20 feet. The one nerved lanceolate phyllodes vary in length from 2 to 4 inches and are about  $\frac{1}{4}$  inch wide. The large deep yellow flower heads are a feature of this shrub. It is a winter flowering species and in the wild state grows mainly on brown loams. Occurs in the Encounter Bay region, Southern Mount Lofty Range, Southern Eyre Peninsula and eastern end of Kangaroo Island. Flowering period: July-October. Excellent specimen shrub.

**Acacia iteaphylla.** A shapely glabrous shrub to about 12 ft. The broad linear phyllodes are 2 to 4 inches long, acute, and 1 nerved. Flowerheads are at first enclosed by brown bracts. Light yellow flowerheads form masses of blossom in the bush. A winter flowering species, it is already popular in home gardens. From my experience, this shrub does very well on brown loams, and in the wild occurs in the Flinders Range (Telowie Gorge) and Gawler Range (Eyre Peninsula). Flowering period: July-September.

**Acacia wattiana.** A tall glabrous shrub to 8 ft. The phyllodes are oblanceolate, 1 nerved and obtuse, 2 inches long and approx. ½ inch wide. This wattle closely resembles *Acacia brachybotrya* in appearance. Flowerheads are light yellow and rather scattered over the bush. Prefers skeletal loams of sclerophyll scrub. Recorded from Gladstone to Mt. Remarkable; Tathill Range; Koorunga; and Boobarowie. I consider this *Acacia* might be suitable as a shelter belt shrub in areas of 16 to 22 inch rainfall. Fl. Sept.-Oct.

**Acacia parvifolia.** A small rigid pubescent shrub with tiny flat rigid, broadly triangular phyllodes. The linear pod which is twisted into about 3 close coils like a clover is very characteristic. This *Acacia* has been only recorded from the Flinders Ranges (Hills north of Oodlawirra and Beetaloo Valley). I have not seen this plant in the field. Fls. August-October.

**Acacia gracilifolia.** A very graceful resinous shrub up to 10 ft., with long filiform phyllodes 3 inches in length. The narrow seed pods are about 4 inches long. One of the very best wattles in South Australia, with masses of large round golden yellow heads. I have grown this shrub successfully on the Adelaide Plains at West Croydon (sandy loam of the old River Torrens fan delta) and brown clay loam at Millwood. It grows very rapidly under cultivated conditions, but does not seem to live very many years. This *Acacia* is locally abundant at Telowie Gorge, Alligator Gorge and Mambray Creek in the Southern Flinders Ranges.

**Acacia quornensis.** Glabrous shrub 6 to 8 ft. high with slender 1 nerved phyllodes 1 to 2 inches long and ¼ inch broad. Seed pod 2 to 4 inches long. A wattle which closely resembles the Swamp Wattle *Acacia retinodes*. Recorded for hillsides near Quorn in the Southern Flinders Range. Although I have seen this wattle in the field, I have never seen it flowering. Flowering period: Summer. Suitable as a shelter belt for more arid gardens.

## FABACEAE:

No less than 13 *Pultenaea* species are found in the Mount Lofty Range and the following 6 which are peculiar to South Australia should be worthwhile acquisitions to the shrub garden. Propagation by seed.

**Pultenaea teretifolia.** Terete leafed shrub covered with short rough hairs. Some shrubs grow to a height of 2 ft. The yellow and red flowers are borne in leafy heads at the end of the branchlets. Recorded for the Encounter Bay District and Eyre Peninsula. In the Spring of 1969 I collected this plant at Lyndoch (Mount Lofty Range) growing in a white sandy loam with *Callitris preissii* and *Calytrix tetragona*. A fine shrub for lighter soils. Masses of flowers all over the bush. Flowering period: September-October.

**Pultenaea graveolens var. glabrescens.** An aromatic shrub with an odour resembling curry powder. The tiny linear leaves ¼ inch long are 1 furrowed above. A handsome shapely low shrub to 4 ft., covered with numerous yellow pea flowers. This shrub has only been found at Mt. Remarkable and at Alligator Gorge where it is particularly abundant at elevations over 2,000 ft. It occurs on skeletal loams. Flowering period: September-November.

(Continued on page 318)

## WILDFLOWERS OF SOUTH AUSTRALIA

### SOME PLANTS IN THE S.E. OF SOUTH AUSTRALIA by Marian Beek

Between Desert Camp and Keith, in the dry mallee vegetation with an annual rainfall of about 18 in., grow many desirable native plants suitable for garden cultivation. They occur in a wide variety of soils, which can be deep grey sand with granite outcrops in some places or red brown soil over limestone, but sandy loams are most common. They are mostly neutral soils, but the pH value can vary to less than 5.

*Correa pulchella* is very common on Kangaroo Island and on Yorke and Eyre Peninsula. But a few years ago it was discovered in the South-east at Desert Camp. It grows only in a confined place in very stony soil and never in the deep sands. The colour of the bells can vary from a deep orangy-red to a delicate pastel pink. Can be propagated from cuttings and is lovely in a rockery.

*Pomaderris obcordata* grows in the same locality as the correa and makes another very worthwhile garden plant. They grow in great masses underneath the whipstick mallees and are a breathtaking sight in early spring. The low bushes are about 3 ft. high with very small heart-shaped leaves. Flowers are formed in clusters. Deep pink woolly buds open into white or yellow stars. This combination of pink and white is a most delightful one and is just as nice as the common exotic garden shrub, *Viburnum tinus*.

*Dampiera lavendulacea* is a dainty plant, small and often straggly, which likes to grow in close association with other plants, so that they can push their branches through some undergrowth. Delicate sprays of deep blue flowers adorn the plants in springtime. Not easy to grow from cuttings, but like all dampieras the plant suckers freely and can be grown from these.

*Olearia ciliata* is a very charming member of the daisy family. Their deep blue golden-hearted daisies form eye catching patches. They always grow with their flower stems thrust through some undergrowth and that is the only way in which they like to grow; their roots in the shade and their cheerful faces in the sun. It is very easy to strike from cuttings.

*Grevillea lavandulacea* The form which grows here is a small bush with stiff prickly foliage, very inconspicuous during the year, but in springtime they come to life when their scarlet flowers glow like fire. Propagate from cuttings.

*Phelialium brachyphyllum* is a delightful small plant, only a foot high, with small round warty foliage. Small flowers have prominent orange stamens showing off beautifully against the white petals. Can be struck from cuttings. It likes to grow in dappled shade with a yearly mulch of leaf mould and regular watering.

*Baeckea behrii* can stand dry conditions and is easy to grow. The slender shrubs have soft feathery foliage and a sprinkling of small white flowers during Christmas time.

*Baeckea crassifolia* is a gem. Twiggy shrubs, small and upright, bear many miniature leptospermum like flowers, clustered thickly along the branches in white, pink or mauve. They should be grown in deep sandy loam and like an acid soil. Most effective in a clump. Both Baeckea's can be grown from seeds.

*Boronia coerulescens* is very common. The small plants are bluish green with aromatic, thick linear leaves, covered with glands. Waxy stars

appear in winter and spring and are seldom blue, more often lilac-pink, reddish or white. Unlike other boronias they can stand dry conditions and full sun. They are not easy to strike from cuttings, but well worth the effort. Seedlings are easy to transplant.



Blocks by courtesy of South Australian Museum

Artist: Alison Ashby

***Boronia filifolia*** (above) is a lovely plant. It grows only into a small straggly bush with flowers of glowing pink.

*Editor's Note:* This plant has become quite well known in eastern Australian gardens. The flowers above are  $\frac{3}{5}$ ths natural size, so that while the flowers are only  $\frac{1}{2}$ " across, they are numerous. The big feature of this plant however is that it flowers for most of the year. It is only small to 1 foot but is so easily grown from cuttings that you can raise dozens of plants from one good stock plant in a year. It is also quite hardy.

**Hibbertia virgata.** Several hibbertias grow in this area but this one is my favourite and makes a lovely addition to any rock garden. It has soft spiny foliage and very large chalices of shining gold. Deep pink buds are an added attraction.



Blocks by courtesy of South Australian Museum

Artist: Alison Ashby

**Prostanthera aspalathoides** (above) is a pleasing shrub with very refreshing bright green foliage and a profusion of scarlet pixy caps. Very easy to strike from cuttings but not so easy to grow. It likes a sandy loam, absolute perfect drainage and some shade.

*Editor's Note:* *Prostanthera aspalathoides* is another gem much prized in eastern Australian gardens. There is also a yellow form. Growing to only one foot high, this tiny plant is ideal for growing among other shrubs. It needs shade and protection and water with drainage. It grows readily from cuttings.

***Prostanthera behriana*** is a slender upright shrub with soft grey green foliage and pale mauve purple-throated trumpets. Can be struck from cuttings.

***Scaevola aemula*** is another gem. It has been described in an earlier issue, but is well worthwhile mentioning again. Some forms have larger and better blooms than others. The form at Desert Camp has large purple fans, about an inch across. It makes an ideal pot plant, is also lovely in a rockery especially when it sprawls over a stone.

Every garden should have at least one mallee and there are several in this area suitable for garden culture. *Eucalyptus diversifolia* and *E. incrassata* are described on page 317.

## THINK BEFORE YOU PLANT

by Jean Turner

Think before you plant. A simple garden motto but one that will save a very great deal of wasted time and disappointment. At first glance the climate of S.A. appears to be one that is far from favourable to the growth of many plants, however, most of the settled area has the advantage of being sufficiently intermediate to enable conditions to be provided to suit a very wide range of plants.

People who live on the coast know only too well that as long as their gardens remain exposed to the sea winds their choice of plant material will be limited, but once they have established some form of breakwind or shelter belt, they find that the range is increased far beyond their most hopeful expectations. The same principle can be applied to any garden, with a little thought it is quite possible to create your own micro-climate that will enable you to grow plants with which you have never previously succeeded.

As long as trees and shrubs are put in wherever there is a space or where that particular species will look nice, planting must remain a hit or miss affair, you may succeed or you may not, but a few minutes spent checking to find out the conditions under which the plant does well and then choosing the site that is nearest to those conditions will pay dividends.

It is quite unnecessary to take the attitude that "I am stuck with this situation and there is nothing I can do about it." There is plenty you can do, and with very little effort. For example, let us say you have a heavy clay soil and you wish to grow something native to sandy areas. Well, at least you can give it the best drained site you have and the chances are you may get away with it, many of our plants have proved themselves amazingly adaptable. To raise a bed even a little as 2 or 3 inches will ensure that water does not lie there and that factor alone could mean the difference between success and failure.

To illustrate what I mean, in cold climates such as England gardeners sometimes leave the gate open to let the frost out! No, don't laugh, it is not as crazy as it sounds. What happens is this; air currents and frost flow down hill just as water does, therefore if the garden is on a slope which extends beyond it and is surrounded by a hedge or solid fence, the downward flow of the frost will be stopped and a frost pocket will be formed which will extend back up the garden for a distance relative to the height of the obstruction. If, however there is a break in that obstruction, such as an open gate, the frost laden air will be channelled through the opening and move on further down the valley.

The worst killer in Adelaide gardens is our hot, dry winds. Well none of us can stop the wind but all of us can divert it if we wish. Information

on how to do this most effectively is readily available. It is possible to side-step the problem by growing plants known to withstand wind but those who wish to grow more tender ones can do so by providing shelter for them.

A point to watch when seeking information is to be sure you understand what is meant by the terms employed. One which commonly causes confusion is "sand-plain species". Many people take this to mean plants which grow on sandy soil probably many feet in depth. Such a soil is correctly called a deep sand. What is known as the sand plain is a layer of sand sometimes less than a foot deep over a clay sub-soil—a vastly different thing, and one which anyone can have by simply buying a load of sandy soil and building their own sand plain. But again there is a right and a wrong way to go about it, find out how before you start or your sand plain may finish up more correctly called a sand cemetery.

Finally, group your plants according to their requirements and you will save yourself a great deal of trouble as well as having a garden which gives much greater visual satisfaction. It is obvious that if you put a plant from Central Australia next to one from tropical Queensland either one will die from too much or too little water or you will try to compromise between their needs and have two sickly plants neither of which grow as they should. Keep dry area plants by themselves and forget about watering them, and use the ones from high rainfall areas as lawn specimens and in positions where they can receive adequate water. It is as simple as that, but what a difference it will make. So remember leave the spade where it is for a few minutes, the reference book comes first.

## REVIEWS ON NEW BOOKS ON WILDFLOWERS

All wildflower books on the market available from The Editor, "Australian Plants", 860 Henry Lawson Drive, Picnic Point, 2213.

**Flowering Vines of the World** by E. A. Menninger — Price \$26.00 incl. postage

A large 410 page book with 580 photographs, 200 in full colour, it is good value even at this price. For the first time the climbing plants of the entire world, that is those species of horticultural value, are all described in one book in such an interesting manner with simple clear descriptions for the home gardener to follow. Before the descriptions of what appears to be over 1000 plant species are chapters entitled "How Vines are Constructed", "The Theory of Vines", "The Mechanics of How Vines Climb", "The Usefulness of Vines", "How Vines are Supported", "Climbers in the Glasshouse", "Espaliers", "The Most Beautiful Vines in the World" etc. A well written practical book for the home gardener.

**Flowering Trees of the World** by E. A. Menninger — Price \$20.00 incl. postage

Although this book has been reviewed before in this journal one cannot mention the above book without some reference to this book on trees. With 425 colour plates it is the result of the author's life's work, world travels and love—trees. A remarkable and beautiful reference to the world's best trees.

**Australian Native Gardens and Birds** by Barbara Salter — Price \$1.95 + 15c postage

A small 106 page book in the "Jacaranda Pocket Guides" series. The author should be well known to our readers as the lady who is so enthusiastically urging Australians to protect and encourage our native birds by growing suitable wildflowers. This book tells you just how to do this. Chapters in the book are entitled "The Author's Garden", "Establishing a Native Garden that will Attract Birds", "Notes on the Propagation of Native Plants", "Additional Ways to Attract Birds", "Other Native Fauna", "Native Trees and Shrubs for the Birds", "Pesticides", "Some Birds of the Garden", etc. Illustrated with colour plates and sketches of feeding bottles and trays that can be easily made. This book is well written and of particular value to the home gardener who loves the sound of birds in the garden.

## BOOKS ON AUSTRALIAN ORCHIDS

**Australian Orchids In Colour** by L. Cady & E. Rotherham — Price \$3.95 + 40c postage

It is expected this book will be available in July, 1970. I have not seen it but with a team of Leo Cady, a regular writer for us, E. Rotherham, one of the most highly regarded wildflower photographers in Australia and Reed Publishers, who have done such a fine job on other colourful books, this should be good value. Send orders and it will be sent to you by post as soon as it is available.

**Australian Indigenous Orchids** by A. W. Dockrill — Price \$18.00 + \$1.00 postage

There are many books available on orchids and no doubt there will be more. The only complete reference to all Australian epiphytic orchids and those terrestrials in the northern half of Australia, is this book. Every species is shown in detail with enlargements of the parts, on a separate full page beautifully drawn sketch. Each species has a full botanical description with references but of necessity to the non botanist, the description is repeated in simple terms with details of interest such as distribution etc. No other book provides these features as well as many fine full colour plates and it is intended to maintain it up to date through "Australian Plants" issues. If you are keen on native orchids and have not got a copy yet you will eventually. It is expensive but good value for the many hundreds of large pages so well presented, it is easy to follow.

## An Australian Orchid

*Chilochista phyllorhiza* is the only Australian species of a small genus in the subtribe Sarcanthinae of the tribe Vandeae. It is a leafless and practically stemless plant with broad rough roots. The inflorescences are from 2 to 6 inches long and the very short lived flowers (up to 20) are borne in 2 or 3 spasms over a period of a week or two. The flowers are about  $\frac{1}{2}$  an inch in diameter, widely opening and white with some yellow and wine red on the lip. The sepals and petals are  $\pm$  oval. The lip has an almost conical spur about  $\frac{1}{10}$  of an inch long and three lobes; the side lobes are broadly oblong but the front lobe is triangular; there is a large calbus within the spur and it is cylindric and hairy on top; the front wall of the spur is thick and hairy on the inner surface. There are two, one on either side, curious hair-like, gland tipped and wine-coloured appendages on the anther.



### Deane's Orchid Nursery

The main interest in this plant for the layman is that it consists of roots only. I grow it on tree fern blocks in the heated glasshouse with about 60% shade. It is mist sprayed with water every morning and fertilized with 'Aqualol' about 3 times a year.—R. Deane.

Distributed sporadically from the Tully River and at least as far north as the Pascoe River in eastern Cape York Peninsula, this species is mainly a coastal epiphyte, even sometimes being found on mangroves, but it does

occasionally extend to the ranges. The main flowering season is Nov.-Dec.

*Editor's Note:* The above description is taken from the book "Australian Indigenous Orchids" by A. W. Dockrill. Every epiphytic orchid native to Australian, and there are hundreds described in the simple terms used above. This simple description follows a full botanical description using technical terms and metric units of measure with a full reference to previous descriptions and varieties. Opposite these descriptions is a large full page line drawing of the plant with enlarged views of its components so that even the most inexperienced beginner can join with the most qualified botanist in the study, identification and appreciation of our native orchids. As two large pages are devoted to each species of Australian orchid and the plants are presented in an easy to follow manner, this is a very large book and excellent value for the money.

The colour plate is one of the many original colour plates prepared to adequately illustrate the book. This one was rejected by the author as not being good enough to match the high standard of the book. I badly need good colour slides of any species not illustrated in the book or in previous issues of "Australian Plants". The book is available by post from the Editor for \$18.00 plus \$1.00 postage.

### PHOTOGRAPHIC COMPETITION

I am seriously handicapped in the illustration of our native orchids by the shortage of good colour slides. Let us have a little competition over the next flowering season with entries to close on 1st June, 1971. There will be two classes, the best slide of native *Dendrobium* and the best slide of an epiphytic orchid other than a *Dendrobium*. They are to be of an Australian species that has not been illustrated in previous issues of "Australian Plants" or "Australian Indigenous Orchids". Composition of the slide to be within the range of styles clearly set in the colour plates already published.

## Growing the *Cryptostylis* of South Australia

by R. C. Nash—All articles copyright

There is only one member of the genus *Cryptostylis* found in South Australia and this is the species *C. subulata*. This plant blooms in late December through to early February and has been recorded from the swamps found in the southern Mt. Lofty Ranges, and the South East of South Australia where it has been found thriving in some of the pine plantations, but here it rarely flowers.

As this plant is a swamp dweller in S.A., a very damp compost is required. The compost is made up of a mixture of coarse sand, peat and a little moss. The sand and peat to be of about equal proportions. Even though the compost is to be kept damp, good drainage is again essential, so mix into the compost some fine chips of broken pot.

The pot should be stood in water so that the water level is about 3 to 5 inches below the crown of the tuberous roots. This species grows best in open sunlight with some very light strip shade. The water should be changed regularly.

## The Growing of *Spiranthes* in South Australia

*Spiranthes sinensis* is the only member of this genus found in South Australia and has been recorded from the swamps in the Mt. Compass and Myponga districts and parts of the South East of South Australia. It flowers late in December and January, sometimes it is to be found in flower early in February. This is another swamp orchid and grows in very damp conditions. Under cultivation in multiples vegetatively. Easily grown from seed.

For compost and cultural conditions use those that I have recommended for *Cryptostylis subulata*.

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## SPIDER ORCHIDS

by R. C. Nash—All articles copyright

The Spider Orchids or as they are known scientifically the genus *Caladenia*, have 20 recorded species in South Australia. Most are very difficult to grow but with care many respond if given the correct attention. As the tubers are easily lost when collecting these plants, great care must be taken when removing the plants from the soil. Unless the intended grower is very experienced no attempt should be made to collect these plants.

***Caladenia tessellata* Fitz. formerly *C. cardiochila* Tate.**

Habitat: Sandy areas to the north of Adelaide, York Peninsula, Mallee lands, Kangaroo Island and the South East of South Australia. This plant favours sandy country. Blooms Sept. and Oct. Plate 237, 238\*.

Compost and culture. The compost is made up of 95% clean coarse sand with as little as 5% humus material mixed in. This compost fills the top one third of the pots depth and the other two thirds of the pots depth is filled with clean coarse sand. Chips of broken pot and/or limestone are placed in the base of the pot. Place an half inch or a little deeper layer of rotted sawdust or leaf mould on top of the compost. Tubers may be placed in a cluster of up to 6 in a four inch pot. Place the pot in a position sheltered from the wind with a moderate amount of sun. Watering; keep the compost just damp to a little dryer. Do not over water. Under this culture this species responded very well and it multiplied vegetatively.

***Caladenia gladiolata* Rogers**

Habitat: A very rare plant recorded from Cherry Gardens and the Hornsdale, Appila-Yarrowie districts. Sth. Flinders Ranges. Blooms September.

***Caladenia clavegera* A. Gunn.**

Habitat: South East of South Australia. Blooms September and October.

A plant I have not seen yet. I would suggest the culture that is used for *C. tessellata* be tried as this species come from a similar habitat. Pl. 239\*.

***Caladenia leptochila* Fitz.**

Habitat: Very common in parts of the Mt. Lofty Ranges, the southern Flinders Ranges, South East of South Australia. Blooms October. Pl. 240\*.

Compost, 85% coarse clean sand, 15% sawdust. This mixture is placed in the top one third of the pot's depth. The remaining two thirds of the pots depth is filled with washed coarse sand with broken pieces of pot placed in the bottom of the pot. A layer of sawdust or leaf mould is placed over the top of the compost to a depth of about half an inch. Place the pot in a very moderate shady spot sheltered from the wind. Do not change the shade content once the plants have become established. Watering; keep the compost just damp. Do not over water.

***Caladenia ovata* Rogers.**

Habitat: Coastal parts of Kangaroo Island. Blooms Sept. and Oct.

As this is another sand dweller, try the culture for *C. tessellata*.

\* Colour plates in the magnificent "Orchids of Australia" by W. H. Nicholls. Available from The Editor for \$31.00 incl. postage. The 476 colour plates illustrate most of the Australian terrestrial orchids and future issues will refer to these. Our colour plate will be of groups of orchids either of the one species or of similar species. Colour slides are needed so why not have a competition among those interested. Entries to reach editor by June 1971.

### EDITOR'S NOTE TO ORCHID GROWERS

With this article we will commence a series of articles on the Genus *Caladenia*. Will readers please report on their experiences.

***Caladenia reticulata* Fitzg.**

Habitat: The Adelaide Plains, Mt. Lofty Ranges, Kangaroo Island and the South East of South Australia. Found in both sandy and gravelly clay areas. Blooms well after a bush fire. Blooms October. Plates 250, 251.

A plant that I have not had very much success with, I would suggest that the culture I have used for *C. leptochila* be tried.

***Caladenia fitzgeraldii* Rupp.**

Habitat: Coastal hills of the southern Mt. Lofty Ranges e.g. near Cape Jervis, not common. Blooms October. Possibly synonymous with *C. reticulata*.

A plant like the preceding. Same culture used for *C. leptochila*.

***Caladenia rigida* Rogers.**

Distribution: Parts of the Mt. Lofty Ranges such as Cherry Gardens through to Macclesfield, Golden Grove through to Williamstown, endemic to S.A. Flowers in September.

This species has been tried in cultivation many times without success.

***Caladenia patersonii* R.Br.**

Habitat: Throughout the Mt. Lofty Ranges and the better watered parts of the Mallee areas, Kangaroo Island, York Peninsula and the South East of South Australia. Although this plant has a very wide range and grows in many soil types it is never common or numerous. This is our largest spider. Blooms September and October. Plates 259, 260, 261, 262, 263.

Compost and culture the same as for *C. leptochila*.

***Caladenia dilatata* R.Br.**

Habitat: Throughout the Mt. Lofty Ranges and the better watered areas of the state very common and numerous in many areas. Our best known spider. Very variable in shape and colour. Blooms Sept. to Nov. Pl. 265.

Compost and culture as that used for *C. leptochila*. *Caladenia dilatata* and *C. leptochila* may be grown together in the same spot.

***Caladenia dilatata* var. *concinna* Rupp. (*C. toxochila* Tate).**

Blooms September to November. Plate 265.

Compost and culture the same as that I have recommended for *C. tessellata*. Do not plant in a cluster and keep the compost dry.

***Caladenia filamentosa* R.Br. and the variety *tentaculata* Rogers.**

Habitat: York and Eyre Peninsula, Flinders Ranges, Mallee lands and Kangaroo Island. May occur in the South East of South Australia too. Very numerous in some places. Blooms September. Plate 258.

Compost and culture the same as that I have recommended for *C. tessellata*. Multiplies vegetatively.

***Caladenia bicalliata* Rogers.**

Habitat: Sand hills in limestone country. York Peninsula, Mallee lands east of the lower Murray River, Kangaroo Island and possibly the South East of South Australia. Blooms September (early). Plate 242.

I would suggest a compost and culture as the type used for *C. tessellata*.

To be continued in our next issue where the remaining species to be found in S.A. will be mentioned with details of their culture.

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## A WILDFLOWER GARDEN

### A LANDSCAPING PLAN FOR A DIFFICULT ADELAIDE ALLOTMENT

by I. C. Holliday

The particular allotment shown on the sketch on page 309 is situated in the south western suburb of Adelaide at Seacombe Gardens. Advantages of this site included its elevation with good views overlooking St. Vincent's Gulf and very good drainage—a slope of about 1 in 6 and a porous rocky soil. Disadvantages which very much limited the choice of plant species were:

- (1) A very poor rocky soil of limestone origin.
- (2) Severe winds from the south and south-west.

Average annual rainfall in this part of Adelaide is about 20 inches, most of which falls between May and October.

The harsh winds and limestone soil eliminated many of the more popular and colourful Australian plants and yet as can be seen from those chosen quite an extensive and interesting range can still be used in plantings of this type. The choice is by no means limited to those named but they do represent a good selection of mainly tried and proven species under these conditions.

Three plants which particularly interested the owner and which would most likely succeed on this site were *Myoporum floribundum*, *Alyogyne hakeifolia* and *Grevillea leucopteris*. However, plants were not procurable at the time of planting but these may be included at a later stage.

In designing the form of the garden certain elements were already fixed. For example the house was already located on land which had been levelled. The owner was not prepared to extend the levelled section any further thus fixing the area of the rear paved terracing and the approximate 5 ft. rise to rear garden area. He also requested a fairly large rear lawn protected from the prevailing winds, thus more or less fixing the form of this section of the garden. Views looking westward to the sea were preserved by planting the front with ground cover (*Myoporum parvifolium*) or lawn and suitable tree placement.

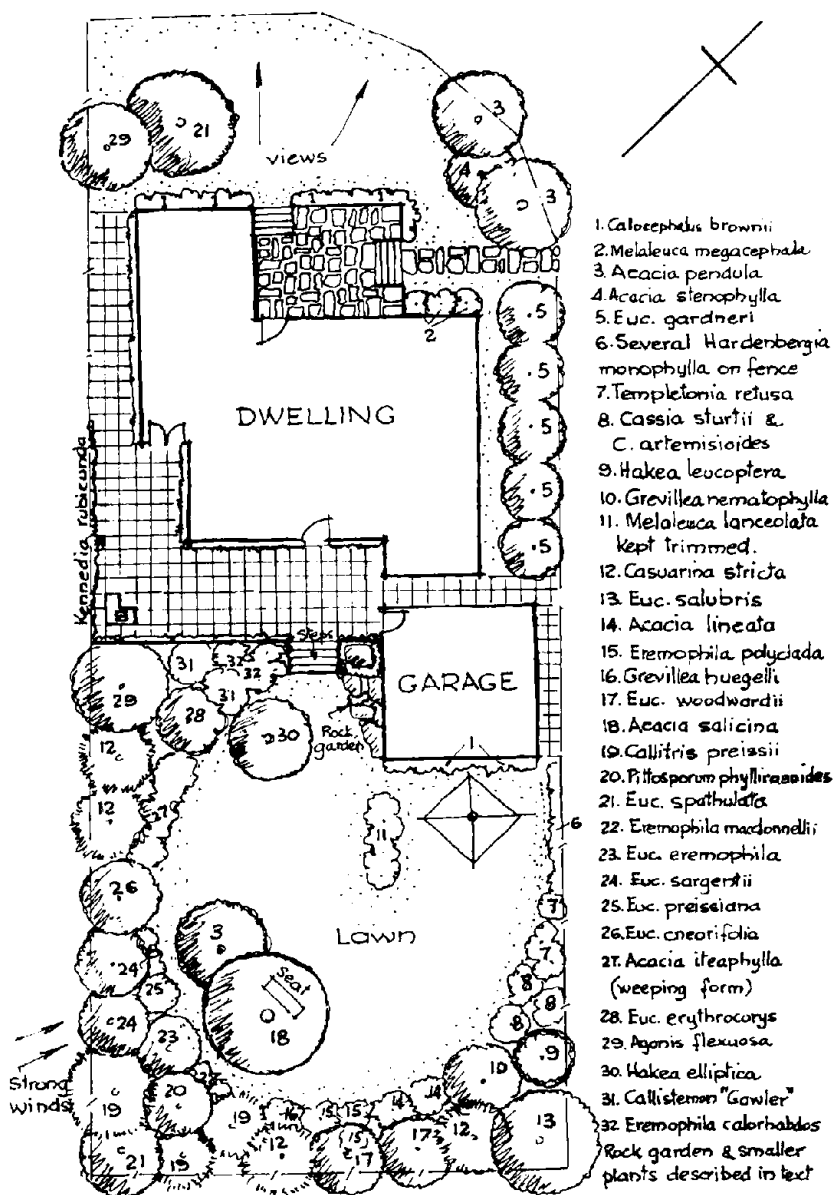
The plan lists mainly the larger plants but the areas between these plants also included ground cover and smaller shrubs to be planted at the same time so that they establish before the trees take over. Plants used for this purpose were *Correa pulchella*, *Hardenbergia monophylla*, *Rhagodia spinescens* var. *deltophylla*, *Eremophila glabra* (prostrate yellow flowering form), *Acacia bynoeana* var. *latifolia*, *Kochi oppositifolia*, *Dodonaea humilis*, *Helichrysum cinereum*.

Plants used in the rock garden (some sand added) and for trailing over the stone retaining wall and around the steps were:-

*Clianthus formosus*, forms of *Correa pulchella*, *Veranica distans*, *Dampiera rosmarinifolia*, *Frankenia* species, *Helichrysum cinereum* and *H. apiculatum*, *Ajuga australis*, *Eremophila subfloccosa*, *Dianella revoluta* and *D. tasmanica*.

It should also be pointed out that this particular soil is very lacking in plant nutrients and many of the species would rarely grow as large as they might do in more favourable conditions. For this reason, where the plan shows one plant of a particular species, in some cases several were planted close together to achieve a clump or mallee-like effect. This feature was particularly applied to some of the eucalypts.

## LANDSCAPING WITH WILDFLOWERS — 2



**Editor's Note:** This periodical has been published now for 10 years and contains hundreds of pages of information on the identification, characteristics and cultivation of our wildflowers. Our unique flora is so vast that we have covered only a portion of those species of horticultural value. However with the first five volumes as a reference we are now in a position to give more precise information to home gardeners who know only a little about our flora or gardening.

Future issues will contain plans and advice of how particular sites may be landscaped and readers are invited to submit plans they would recommend for trial.

**LANDSCAPING WITH WILDFLOWERS**—1 was contained in our No. 38 issue, page 59 and is for a homestead in the country.

# S. A. EUCALYPTS

## THE CULTURE IN SOUTH AUSTRALIA OF INDIGENOUS EUCALYPTUS SPECIES

by C. D. Boomsma

Of the 600 approx. species recorded for the whole of Australia, less than 60 species occur in South Australia, of which eight are either endemic or largely confined to South Australia. They are *Eucalyptus cladocalyx* (Sugar Gum), *E. cneorifolia* (K.I. Narrow Leaf Mallee), *E. cosmophylla* (Cup Gum), *E. fasciculosa* (Pink Gum), *E. gongylocarpa* (Desert Gum), *E. lansdowneana* (Port Lincoln Gum), *E. pimpiniana* (Pimpin Mallee) and *E. remota* (Mount Taylor Mallee).

It is of interest that five of these endemics or near endemic species occur on Kangaroo Island, two of which are regarded as endemic to the Island—*E. cneorifolia* and *E. remota*.

Species may be grouped using botanical or growth response features—the latter has been chosen as having some application to cultivation whereas botanical features have more application to botanical identification.

Perhaps mature height growth as a single growth feature is the most appropriate feature as it is an indication of the volume production of a stand of trees, and therefore the site potential. It is not surprising then, that with a sufficiently wide range of sites, a given species can exhibit a mature height from less than 12' to more than 30', in fact, *E. obliqua* reaches heights of 200' in Eastern Australia, but in S.A. the height range is

- 100' on deep grey brown silt loams, or alluvials in sheltered gullies in the Mount Lofty Ranges;
- 50' on sands and sandy loams over mainly siliceous rocks in the Mount Lofty Ranges and Kangaroo Island;
- 25' on eroded lateritic podsols on ridges and plateaux in the Mount Lofty Ranges and Kangaroo Island;
- 12' on deep acid grey sands receiving about 20" of rainfall in Zones 10 and 11.

Occasionally a horticultural selection exhibits a vigour exceeding that shown in the natural provenance, e.g. *E. cladocalyx* var. *nana* (Plate 61) sometimes surprises by growing well on deep brown sands receiving an average rainfall as low as 12". *E. 'Torwood'* (Plate 82) grows bigger and better than *E. torquata* (Plate 80)\* or *E. woodwardii* (Plate 38)\* at Radium Hill which has an average rainfall of 7".

In selecting a species for planting in South Australia, a glance at the isohyet map shows the arid nature of South Australia as only 4% receives 20" of average rainfall or more, and 83% receives less than 10" average annual rainfall. In practice, rainfall zones are a useful guide in species selection, even though they do not indicate the effectiveness of the rainfall in relation to the evaporation of moisture from the soil or percolation into the soil versus run-off, or even the capacity of the site to store water.

However, it would be prudent to select species with a similar seasonal rainfall of the planting site, either winter or summer. To some extent, this point is taken care of by the fact that the bulk of the cultivated areas in South Australia receive a winter rainfall, as does the bulk of the *Eucalyptus* spp. which are propagated.

\* Colour plates in "Eucalypts" by Stan Kelly. A beautiful book illustrating most Eucalypts in colour. Available from Editor for \$12.40 incl. postage.

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## GROUP A. TALL TREES OVER THIRTY FEET MATURE HEIGHT

Included in this group are nineteen species, which comprise about one third of the total. Eleven species are native to areas receiving more than 24" average annual rainfall and comprise seven smooth barked gums, three fibrous rough barked stringybarks, and one chunky rough barked box.

Of the eight species from areas receiving less than 24", six are boxes, one is a smooth barked gum, *E. gongylocarpa* and one is a half rough barked gum, *E. huberiana*.

### 1. SMOOTH BARKS - GUMS, receiving more than 24" average rainfall.

The most widespread Eucalypt in Australia, *E. camaldulensis* has been actively planted for nearly one hundred years in Australia, and is one of the most favoured species for forest plantings overseas.

Its gross rather stubby trunk supports a few massive branches which develop picturesque shapes at maturity and decorate the landscape in a most satisfying manner, even though its pattern of occurrences may stretch ribbon-like marking out the waterways.

This species has a bad name for branches dropping.

*E. cladocalyx* (Sugar Gum), an endemic to South Australia, has been widely and successfully planted in many southern areas of Australia. The bad tendency of the past to plant this species in farming areas receiving about 17" of rainfall or less has led to wholesale premature death of branches and trees. Of interest is the horticultural variety, *E. cladocalyx* var. *nana* (Bushy Sugar Gum), which can grow successfully on most areas of heavy textured soils receiving as little as 17" rainfall, and occasionally in areas of lower rainfall on deep brown sands. (Plate 61).

The innate differences in field habit of the three disjunct occurrences of *E. cladocalyx* are obvious and could justify an ecotype status, as they appear to be inherited.

| Location              | Approx.<br>Rainfall | Mature<br>Height | Trunk<br>Form |
|-----------------------|---------------------|------------------|---------------|
| Flinders Ranges ..... | 26"                 | 80'              | Straight      |
| Kangaroo Island ..... | 23"                 | 60'              | Bent          |
| Eyre Peninsula .....  | 21"                 | 40'              | Twisted       |

*E. fasciculosa* (Pink Gum) is common in South Australia on shallow rocky soils receiving about 21" rainfall when it may not reach 30' high, and just continues into Victoria at about latitude 37°45'S. With an increase of rainfall on deeper soils, heights exceeding 30 feet are not uncommon, but, of course, there it meets other competing species such as *E. leucoxylen* and *E. camaldulensis*. Unless tree-planting is proposed on harsh rocky sites, there is not much future in the cultivation of this species. Plate 220\*.

*E. leucoxylen* (S.A. Blue Gum) with a varied field habit from a tall tree to mallee according to the growth factors of each site is a versatile species in South Australia. It is regularly planted in South Australia for windbreaks, shade and honey production. Plates 212, 213 & 214\*.

*E. ovata* (Swamp Gum) is restricted to acidic and sometimes saline areas that are waterlogged for upwards of eight months per annum. It is a species with little commercial or ornamental value, capable of growing in wet areas of impeded drainage. Plate 106\*.

*E. pauciflora* (Snow Gum) occurs as a few relict trees in the Lower South East, the bulk of the limited original occurrence has been cleared. This is an interesting occurrence because the altitude ranges from near sea level to only a few hundred feet. Although it would grow on a number of elevated areas of the Mount Lofty Ranges. Plate 168\*.

| Eucalyptus species native to S.A.             | Natural Occurrence | Habit | Plant Here |
|-----------------------------------------------|--------------------|-------|------------|
| <i>E. anceps</i> (R.Br.) Bl.                  | 3-11               | BCD   | 1, 2, 3    |
| <i>E. baxteri</i> (Benth.) Maid. & Bl.        | 8, 10-12           | ABC   | 4          |
| <i>E. behriana</i> F. Muell.                  | 3-5, 8, 10         | BCD   | 2, 3       |
| <i>E. brachycalyx</i> Bl.                     | 3, 6, 8            | BCD   | 1, 2, 3    |
| <i>E. calycogona</i> Turcz.                   | 3-10               | BCD   | 1, 2, 3    |
| <i>E. camaldulensis</i> Dehn.                 | 1-12               | A     | W, 4       |
| <i>E. cladocalyx</i> F. Muell.                | 3, 4, 11           | AB    | 4          |
| <i>E. cneorifolia</i> DC                      | 8, 11              | BCD   | 2, 3       |
| <i>E. concinna</i> Maid. & Bl., Maid.         | 1, 3               | D     | 2, 3       |
| <i>E. conglobata</i> (R.Br.) ex Benth., Maid. | 3, 7, 11           | CD    | 2, 3       |
| <i>E. cooperana</i> F. Muell.                 | 3, 7               | BCD   | 1, 2, 3    |
| <i>E. cosmophylla</i> F. Muell.               | 8, 11              | BCD   | 4          |
| <i>E. dichromophloia</i> F. Muell.            | 1                  | AB    | 1, 2, 3    |
| <i>E. diversifolia</i> Bonpl.                 | 3-11               | BCD   | 2, 3       |
| <i>E. dumosa</i> A. Cunn.                     | 3-11               | BCD   | 1, 2, 3    |
| <i>E. ewartiana</i> F. Muell.                 | 1                  | D     | 1, 2, 3    |
| <i>E. fasciculosa</i> F. Muell.               | 6, 8, 10-12        | ABC   | 3, 4       |
| <i>E. foecunda</i> Schauer                    | 3-11               | BCD   | 1, 2, 3    |
| <i>E. gamophylla</i> F. Muell.                | 1                  | D     | 1, 2, 3    |
| <i>E. gillii</i> Maid.                        | 2, 4               | BCD   | 1, 2, 3    |
| <i>E. gongylocarpa</i> Bl.                    | 1                  | ABC   | 1, 2       |
| <i>E. goniocalyx</i> F. Muell.                | 4, 5, 8            | AB    | 4          |
| <i>E. gracilis</i> F. Muell.                  | 2-7, 9, 10         | BCD   | 1, 2, 3    |
| <i>E. huberiana</i> Naud.                     | 3, 8, 11, 12       | AB    | 4          |
| <i>E. incrassata</i> Labill.                  | 3, 6-11            | BCD   | 1, 2, 3    |
| <i>E. intertexta</i> R. T. Baker              | 1-4                | ABC   | 1, 2       |
| <i>E. lansdowneana</i> F. Muell. J. E. Brown  | 3, 11              | CD    | 3          |
| <i>E. largiflorens</i> F. Muell.              | 4, 5, 6, 9         | ABC   | W, 3       |
| <i>E. leucoxydon</i> F. Muell.                | 3-6, 8, 10-12      | ABC   | 3, 4       |
| <i>E. macrorhyncha</i> F. Muell.              | 5                  | AB    | 4          |
| <i>E. mannensis</i> C. Boom.                  | 1                  | D     | 1          |
| <i>E. microcarpa</i> Maid.                    | 4                  | AB    | 3          |
| <i>E. microtheca</i> F. Muell.                | 2                  | ABC   | W          |
| <i>E. morrisii</i> R. T. Baker                | 1, 2, 4            | D     | 1, 2       |
| <i>E. obliqua</i> L'Herit                     | 8, 11, 12          | ABC   | 4          |
| <i>E. odorata</i> Behr. ex Schldl.            | 3-11               | ABCD  | 3          |
| <i>E. oleosa</i> F. Muell.                    | 1-11               | BCD   | 1, 2       |
| <i>E. ovata</i> Labill.                       | 8, 11, 12          | AB    | 4          |
| <i>E. oxymitra</i> Bl.                        | 1                  | D     | 1, 2       |
| <i>E. pachyphylla</i> F. Muell.               | 1                  | D     | 1, 2       |
| <i>E. pauciflora</i> Sieb.                    | 12                 | AB    | 4          |
| <i>E. pimpiniana</i> Maid.                    | 1, 3               | CD    | 1, 2       |
| <i>E. porosa</i> F. Muell in Miq.             | 3-8                | ABCD  | 1, 2, 3    |
| <i>E. pyriformis</i> Turcz.                   | 1, 3               | BCD   | 1, 2       |
| <i>E. remota</i> Bl.                          | 11                 | D     | 4          |
| <i>E. rubida</i> Deane & Maid.                | 8                  | A     | 4          |
| <i>E. rugosa</i> (R.Br.) Bl.                  | 3-11               | CD    | 1, 2, 3    |
| <i>E. socialis</i> F. Muell.                  | 3-7, 9, 10         | BCD   | 1, 2, 3    |
| <i>E. striatocalyx</i> W. V. Fitz.            | 1, 3               | BCD   | 1, 2, 3    |
| <i>E. terminalis</i> F. Muell.                | 1                  | AB    | 3, 4       |
| <i>E. trivalvis</i> F. Muell.                 | 1                  | D     | 1, 2       |
| <i>E. viminalis</i> Labill.                   | 8                  | AB    | 4          |
| <i>E. viridis</i> R. T. Bak.                  | 4                  | BCD   | 1, 2       |
| <i>E. vitrea</i> R. T. Bak.                   | 12                 | AB    | 4          |
| <i>E. websteriana</i> Maid.                   | 1                  | D     | 1, 2       |

Natural Occurrence—The species may be found in areas on map opposite.

#### Habit—

A = Tall tree usually over 30' high at maturity

B = Medium tree usually between 12-30' high at maturity

C = Small tree usually less than 12' high at maturity

D = Mallee with several stems rising from a common rootstock

W = Species which occur along waterways.

Plant Here—Recommended rainfall zones for field planting—Upper map opposite.



**E. rubida** (Candle Bark Gum) is restricted to fertile acid soils in cold elevated valleys, and with an increase to 1800' altitude it is able to persist on ridges with soils of moderate fertility when the average rainfall exceeds 36". Because its tall white shaft like trunks harmonise attractively with the varied landscape of hills and valleys, it is popular. Plate 118.

**E. viminalis** (Manna Gum) in South Australia is variously hybridised so that few pure stands exist which agree technically with the species description. They occupy warmer friable soils in areas generally receiving less rainfall than *E. rubida*. Little planting of this species other than in Koala Bear Parks is carried out in South Australia. Plate 138.

2. SMOOTH BARKS, GUMS, receiving less than 24" average rainfall.

**E. gongylocarpa** (Desert Gum) an unknown species in cultivation, is native to areas receiving much less than 10" of rainfall, e.g. Great Victoria Desert, where it exceeds a height of 30 feet, and 24" trunk diameter.

Its sparse leaves, even when adult, are unique in being mainly opposite, and the erect straight trunk is spotted with spaced small persistent flakes through incomplete shedding of the old bark.

3. ROUGH BARKS, BOXES AND STRINGYBARKS, receiving more than 24" average rainfall.

There are three stringybarks, none of which are regularly planted in South Australia. Of interest is the unique single disjunct occurrence of *E. macroryncha* (Red Stringybark) at Clare, and the interesting adaptations in the form of *E. obliqua* (Messmate Stringybark) and *E. baxteri* (Brown Stringybark) from tall trees 80' high to trees less than 12' high with changes in the site. *E. baxteri* is a tall tree on deep coloured sands of the Lower South East, receiving 30" average rainfall, to less than 12' high on pale grey sands receiving 21" average rainfall of the Upper South East.

**E. obliqua** exhibits similar changes, a tall tree in the Mount Lofty Ranges when on fertile grey-brown silt loams to a small tree on eroded lateritic podsols. Plate 158.

**E. gonicalyx** (Long Leaved Box) is a poor site indicator throughout Australia as it grows on shallow to rocky sandy soils of low nutrient status, generally with little soil moisture storage capacity, even though the rainfall may exceed 28" average annually. The seedling and sucker leaves are opposite, rounded, with a waxy surface which still command some attention for indoor decoration. Plate 115.

**E. huberiana** (Rough Barked Manna Gum) often occurs on less protected sites of more friable soils than those sites typical of *E. viminalis* which explains its wider distribution unaccompanied by *E. viminalis*. Although the regional variability of this species has long been recognized, its nomenclatural status is far from being simply of hybrid origin between a rough barked parent, *E. aromaphloia* and *E. viminalis* as *E. huberiana* occurs as an outlier on Kangaroo Island and Eyre Peninsula unaccompanied by either *E. aromaphloia* or *E. viminalis*. Field planting is carried out at a low rate spasmodically but it is a vigorous species capable of producing abundant shade in areas receiving about 28" average rainfall. Plate 139.

**E. vitrea** occurs on infertile swampy sites of the Lower South East and so is an indicator of inferior sites. No planting has been undertaken.

4. ROUGH BARKS, BOXES AND BLOODWOODS, receiving less than 24" average rainfall.

**E. dichromophloia** (Variable Barked Bloodwood) of the Far North is not uncommon in the ranges where it can be erect and stately.

**E. intertexta** (Gum Barked Coolibah) can grow to an impressive size along waterways of the arid northern areas. In the limited amount of amenity planting, it produces a bushy crown of branches and foliage of fresh green colour which gives a generous shade. Plate 142.

**E. largiflorens** (Murray Box) occurs on sites liable to infrequent flooding, mainly along the Murray and its tributaries. In cultivation it grows satisfactorily in areas of deep heavy textured soils along water-ways and flood plains, or on sites having an average rainfall of about 19". Plate 193.

**E. microcarpa** (Grey Box) occurs in South Australia in a single district, the Southern Flinders Ranges, where it prefers brown and red brown loams, often containing lime which receive an average rainfall of about 19". Although no plantings have been made of this species, its strong vigour in developing a short thick trunk which supports a spreading shady crown could lead to more interest being shown. Plate 197.

**E. microtheca** (Coolibah). A widespread species along waterways (even if ephemeral) of the harsh interior of Australia. A number of successful experimental plantings have been made on sites having an average rainfall of 10-14 inches. Most people have met different spellings of the common name which was first printed as 'Kulaba' in 1875 by William Ridley in his study of the Kamilaroi language. The popular 'Coolibah' has been chosen because it agrees with the spelling used in Australian ballads and literature as pointed out by the Chief Librarian of South Australia. This, it is hoped, will narrow the range of spellings in current use, even though 'Coolabah' is a reasonable alternative. Plate 201.

**E. odorata** (Peppermint Box) occurs on rather similar textured soils as *E. microcarpa* but on slightly less favourable sites, either lower rainfall, or poorer soils. It has the ability to adopt a mallee habit when the growth conditions become too severe. In so doing it may be accompanied by a number of the widespread mallee species. As wood of this species was once much sought after for domestic purposes and because the areas occupied have cropping potential, clearing was active so that the major part of its occurrence on favourable land has been largely removed. Little planting of this species has been carried out, but its vigour is equal to that of *E. microcarpa*, even if it rarely grows higher than 50', and 40" diameter at ground level. Plates 187 & 188.

**E. porosa** (Mallee Box) is found on a range of soils and most contain lime from minor to major amounts as in soils with a kunkar or calcrete layer.

Its fresh (lettuce) green foliage is in contrast to that of two species with which it occurs; olive green of *E. odorata*, and dull grey-green of *E. largiflorens*. The limited plantings made have been successful in the predominantly limestone areas of the 10"-19" rainfall zones of South Australia. There are field clues suggesting that it could have a reasonable salt tolerance, as its occurrence is frequently coastal, or ringing saline lakes, or on solonised brown soils. Plate 186.

**E. terminalis** (Long Fruited Bloodwood). This species has much the same distribution as *E. dichromophloia*, and comprises the southern limits of both species. Perhaps it is not surprising then that hybrid specimens intermediate between the two Bloodwoods are not uncommon in South Australia. No cultivation has been practised as the germination trials of the seed have given poor results. Plate 20.

## GROUP B. MEDIUM TREES BETWEEN TWELVE AND THIRTY FEET HEIGHT

**E. leucoxylon** var. **macrocarpa** J.E.B. Consideration of the listed species will be given in either Group A or C as no species is solely restricted to this

group other than this variety. In South Australia it occurs naturally in areas receiving upwards of 22" of average rainfall, often in sub-coastal areas. Its single trunk is variously crooked, even if erect and it often retains patches of old bark plates. In cultivation, its vigorous compact growth explains its popularity as a street tree, and the large dark red flowers in groups of three are most attractive. Unfortunately, the inheritance of the red coloured flowers appears to be about 50%, the balance being pale to pink. Plate 213.

## GROUP C. SMALL TREES TO TWELVE FEET HIGH OR MALLEES

About one third of the listed species exhibit a mallee form, some of which have already been considered, and it is proposed to include here only those listed as B, C, D.

### 1. MALLEES OR SMALL TREES receiving more than 24" annual rainfall.

*E. cosmophylla* (Cup Gum) is more often a mallee than a tree, and is the only mallee species typically found in cold, wet districts of poor soils in South Australia. It is tolerant of poorly drained acid soils receiving as much as 36" of rainfall. Its large flowers, which are in groups of three, appear during winter and offer a generous quantity of nectar to bees when supplies are otherwise scarce. Plate 36.

A limited amount of ornamental planting has been carried out.

### 2. MALLEES OR SMALL TREES receiving less than 24" average rainfall.

*E. anceps* is found in the vast southern mallee areas of Victoria-South Australia and even if it is rather difficult to uphold its botanical identity as being distinct from *E. dumosa*, in cultivation it has a similar potential as that species for wind-breaks in mallee districts threatened with wind causing soil erosion. Plate 70.

*E. behriana* (Broad Leaved Box) occurs sparingly in South Australia on light grey brown-brown medium textured soils with lime present in light to medium quantity. The limited field plantings made have shown that it grows vigorously and resists well the damaging effects of moderate exposure. It is, therefore, suitable as a small shade tree, or windbreak on suitable soils receiving about 19" average rainfall. Plate 195.

*E. brachycalyx*, *E. dumosa*, *E. rugosa*. These mallees occur together in varying proportions depending on the district. Several plantings of *E. dumosa* have shown promise but no trials with *E. brachycalyx* or *E. rugosa* have been made. Plates 72, 73, 71 and 75.

*E. calycogona* (Square Fruited Mallee) produces abundant blossom which is quite attractive when tinged with pink. This is one of the hardy species occurring on shallow limestone rubble soils receiving as little as 12" average rainfall. The limited plantings have grown well. Plates 221 & 222.

*E. cneorifolia* (Kangaroo Island Narrow Leaf Mallee) is restricted to Kangaroo Island but for a single patch of a few acres on the adjacent mainland at Waitpinga. It was soon discovered that the foliage of this species produced a high yield of commercial grade of oil and for many years oil distillation was a local industry. This species is one of the most amenable to shaping, either into a hedge, windbreak, or shade tree and most plantings on medium-heavy textured soils receiving an average rainfall of about 20" have proved successful. Plate 224.

*E. cooperana* (syn. *E. flocktoniae*, Merritt). This species can develop into a shapely small tree and has proved satisfactory in a number of plantings on medium to heavy textured soils receiving upwards of 12" average rainfall.

***E. diversifolia*** (S.A. Coastal Mallee). This is rather a plain species with dull foliage and pale flowers which appear in winter, so it is not surprising that no apt common name is in general use. Its ability to grow well in sub-coastal areas, even on deep calcareous sands, gives a clue to its versatility of adaption to soils of different textures, acid or alkaline, deep or shallow, well or poorly drained. Small plantings have been made consistently for a number of years for windbreaks with satisfactory results.

***E. foecunda*** (Slender Leaved Mallee). Its uniformly decorative slender foliage is attached to branchlets which seasonally may colour yellow to scarlet. Sometimes this species is reduced to a shrubby habit on harsh sites, but is capable of reaching 20 feet when on deep soils receiving about 18" average rainfall. Plate 181.

***E. gillii*** (Curly Mallee). The common name refers to the twisted and bent stems exhibited by mature specimens in their native habitat. It has grown well in gardens in Adelaide where its glaucous opposite heart shaped leaves have decorative appeal. Plate 230.

***E. gracilis*** (Yorrell). The common name is well documented but scarcely ever used. As this species is usually in mixtures with several others, and being without a distinctive easily recognized feature, it is usually lumped with the others as a mallee. However, it can reach a height of 25 feet and have a single strong trunk. Its thin crown scarcely is satisfactory for shade production, but is very hardy, occurring naturally in areas receiving less than 10" average rainfall. Plate 223.

***E. incrassata*** (Ridge Fruited Mallee). This species is incorrectly listed as smooth fruited in many texts in contrast to the first specimen collected from the Esperance district of Western Australia which has ridges present. In South Australia it is a widespread species typical of the mallee-heath areas but not restricted to it. Its versatility is not unlike that of *E. diversifolia* being capable of growing with that species in most of its natural range, and as well as growing independently inland on much shallower soils with less rainfall. Only limited cultivation of this thick leaved species has been attempted in South Australia. Plate 67.

***E. lansdowneana*** (Port Lincoln Mallee). The terminal panicle inflorescence is typical of many of the Boxes, and its field occurrence on Kangaroo Island and Eyre Peninsula partly overlaps that of *E. odorata*. As the flowers are borne at the ends of branchlets, at least in part, the colourful lavender-purple forms are particularly attractive. However, these occur naturally only sparingly and the inheritance of good colour is not high, nevertheless, as a street tree, this species has shown a little success as a small tree of varied form. Plates 184 & 185.

***E. oleosa* F. Muell., *E. socialis* F. Muell.** (Red Mallee). Both species have been planted to a limited extent for many years as specimen trees. Being native to the relatively dry and arid mallee areas they are capable of growing successfully in some of our harshest conditions in the wheat growing areas. Plates 227, 228 & 229.

***E. pyriformis*** (Ooldea Mallee). The squat fruited form native to South Australia is really a subspecies, *youngiana* F. Muell. of the long tapered fruited *E. pyriformis* which is restricted to Western Australia. It has been grown to a limited extent as specimen trees in gardens in Adelaide for quite a few years with success where its large flowers, up to 4" across, make a striking picture. Being native of the arid areas of the far west it would be expected to grow in some of our harshest planting sites. Although quite impressive trees occur naturally, in cultivation it is a mallee. Plate 245.

***E. striatocalyx*.** This species has only recently been recorded for the western arid areas of South Australia and although it is hardy, a small tree to mallee, it has not been adequately tested in cultivation as yet.

***E. viridis*** (Green Mallee). The typical form has striking narrow lanceolate-linear emerald green foliage which is inclined to be held erect on the branchlets. The recent collections from altitudes of 2000 feet in the north eastern Flinders Ranges and Gammon Ranges have been accepted as this species despite the dull to sub-glaucous colour of some specimens (especially when dried). However, the decorative nature of the foliage of this species has appeal for floral art and it could do a similar job as *E. spathulata* if a reliable seed provenance was located. *E. viridis* has not been sufficiently cultivated in South Australia, to judge. Plate 190.

#### GROUP D. MALLEES

The species placed in this group are either small, shrubby or scrambly mallees and rarely, if ever, develop on erect single tree-like trunk in S.A.

***E. conglobata*** (W.A. Coastal Mallee). This species occurs on Kangaroo Island, Eyre and Yorke Peninsulas and a number of small islands including Boston Island where it develops a tree habit. Limited plantings have been made of a West Australian provenance with most satisfactory results in that an erect tree to 20' high has resulted. Plate 69.

The other species in this group are: *E. ewartiana* (Plate 237), *E. gamophylla* (Plate 141), *E. mannensis*, *E. morrisii* (Plate 94), *E. oxymitra* (Plate 238), *E. pachyphylla* (Plate 247), *E. pimpiniana* (Plate 85), *E. trivalvis*, *E. websterana* (Plate 235). These occur in the Far North to Central Australia and the few plants in cultivation are mallees in form. A number have ornamental features, attractive large sharp pointed buds, *E. pachyphylla*, opposite leaves joined at the base, *E. gamophylla*, and spaced cordate leaves *E. websteriana*.

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#### PLANTS OF THE MOUNT LOFTY AND FLINDERS RANGES—cont. from page 298

***Pultenaea quadricolor*.** A small slender shrub under 1 ft. high and branching from near the base. The small linear-lanceolate leaves  $\frac{1}{2}$  inch in length, are concave and glabrous above and pubescent underneath. The solitary red and yellow flowers are borne on short peduncles  $\frac{1}{4}$  inch long. A rare plant of wetter places in the Mount Lofty Range and Encounter Bay. (Mylor, Upper Sturt, Barossa Reservoir). Flowering period: October-December.

***Pultenaea involucrata*.** Small soft hairy shrub to 2 ft., with crowded lanceolate leaves  $\frac{1}{2}$  inch long. The sessile yellow and red flowers are solitary at the end of short branchlets. This *Pultenaea* is well distributed in sclerophyll scrub and forest of the Higher Lofts (Mylor, Mt. Compass, Stirling), on podsol and laterite soils. Flowering period: October-December.

***Pultenaea trinervis*.** Low shrub up to 2 ft. high, with small ovate-lanceolate leaves about  $\frac{1}{2}$  inch long, which are glabrous above and villous below. Similar to the above species, but the leaves are 3 nerved on the lower face. I have seen this shrub growing profusely in laterite soils near the Range road, Fleurieu Peninsula but it is apparently an uncommon plant in South Australia. Also recorded from near Port Lincoln and Edillilie, Eyre Peninsula. Flowering period: October-December.

***Pultenaea acerosa* var. *acicularis*.** A rigid shrub often with long stems to 4 ft. high. The prickly needle like leaves are a little over  $\frac{1}{2}$  inch long with a pungent mucro. The yellow flowers are mostly solitary on very short peduncles. This species favours white sandy loams along the foothills of the Mt. Lofty Range (Black Hill, Highbury) Echungo, and Port Elliot. Also occurs on Kangaroo Island. Flowering period: September-December.

**RUTACEAE:**

The Genus *Correa* is very well represented in South Australia with 8 of the 11 known Australian species occurring in this State. All the *Correa* spp. lend themselves well to cultivation. Propagation by cuttings.

***Correa calycina*.** Medium size shrub up to 4 ft. high, with thick ovate-oblong and obtuse leaves between 1 to 2 inches long. The pale green leaves are stellate hairy underneath. In this species the stamens are exerted from the inch long green corolla. A rare *Correa* only recorded from Hindmarsh Valley Waterfalls and from the vicinity of the Onkaparinga River in the Mount Lofty Range. Flowering period: Late spring and summer.

***Correa pulchella*.** Small erect shrub 6 to 20 inches high. The green broadly ovate to oblong leaves are rather variable ranging from ½ to 1 inch long and ¼" to ¾" wide. The red or orange-red corollas are a feature of this outstanding Australian floral gem. The stamens are scarcely exerted in this species. An ideal rockery plant or ground cover species which likes summer watering in hot areas. In its native habitat on Southern Eyre Peninsula; Yorke Peninsula; Kangaroo Island; Encounter Bay and along Waitpinga Creek, this plant favours sandy loams and limestone near the coast. Flowering period: September-December.

***Correa decumbens*.** Low shrub with spreading branches along the ground. The narrow oblong leaves about 1 inch long and ¼ inch broad are glabrous above and tomentose below. *Correa decumbens* differs from the other "Native Fuchsias" in having the long and narrow red and green corollas standing erect rather than drooping. I have tried this shrub as a ground cover plant with excellent success on brown loam at my Millswood home, but it requires summer watering. One of my favourite *Correas*. Recorded from the Higher Lofty (Bridgewater, Longwood, Mylor) and Kangaroo Island where it occurs on skeletal and podsol loams. Flowering period: Occasional flowers for most of the year.

***Boronia edwardsii*.** A small shrub to 1 ft. in height with pubescent branches. The 3 leaflets about ¼ inch long resembling whorled leaves. A handsome *Boronia* with large pink flowers about ½ inch across. Generally found on white sand or laterite soils. Recorded from Kangaroo Island (where it is very common); Mount Lofty Range (Mount Barker and Uraidla); Encounter Bay; Waitpinga. A lovely *Boronia* deserving of cultivation on lighter soils. Flowering period: October-December.

**PROTEACEAE:**

***Hakea vittata* var. *glabriflora*.** A tall shrub over 2 ft. high with slender pungent terete leaves approximately 2 inches long. The flowers are deep pink and the fruit ovoid. This variety has only been recorded from Stirling East (Higher Loftys), where it is extremely localised and in grave danger of extinction. Occurs on skeletal loam. It is important that this plant be cultivated as soon as is feasible. Flowering period: September-October. Propagation by seed.

***Grevillea lavandulacea*.** Fleurieu Peninsula form. One of the finest forms of the well known Spider Flower *G. lavandulacea* is confined to the laterite loams of southern Fleurieu Peninsula. This shrub is much taller (3 to 4 ft.) than the usual forms of *G. lavandulacea* in South Australia with dark green narrow lanceolate leaves. The crimson or dark red flowers are massed along the branches. This form has been propagated with success from cuttings by S.A. nurserymen. Flowering period: August-December. Colour plate p. 296.

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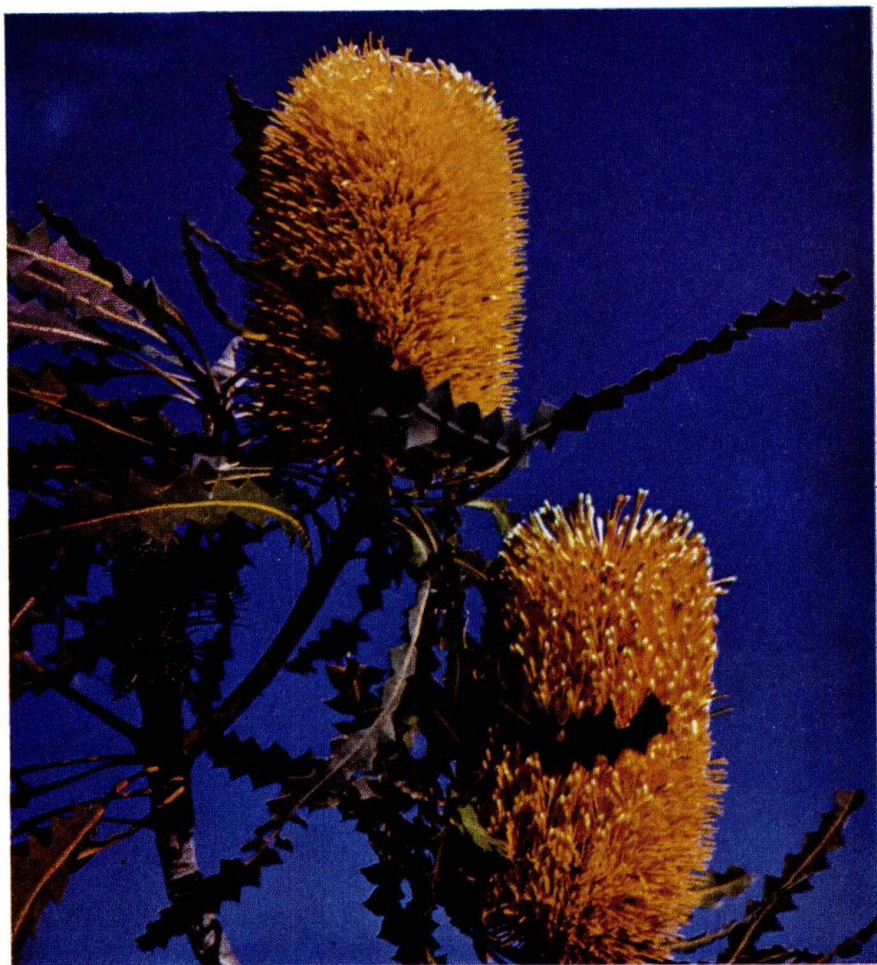
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## Growing Banksias in the Mount Lofty Ranges

by S. G. Chinner

Following the purchase of 2 acres of partially cleared bushland at Crafrers in 1957, 4 banksias, *B. grandis*, *B. prionotes*, *B. ericifolia* and *B. menziesi* were planted each in cleared areas of approximately 3' in diameter. In 1960, *B. serrata*, *B. collina* and *B. browni* were added.



Photography by F. W. Humphreys

### **BANKSIA ASHBYII—See page 336**

Watering consisted of about 1 gallon weekly during the first summer. *B. ornata*, *B. nutans*, *Br. dryandroides* and *B. lehmanniana* were added the following year. Colour plate of *B. ornata* on front cover.

*B. prionotes* died 12 months after planting, *B. ornata*, after flowering well died in 1968 following a wet winter. All the others are doing well; *B. grandis* is 15' high and has had a dozen or more flowers in each of the last 3 years; *B. ericifolia* is 8' high with a 10' spread and has flowered profusely each winter. *B. collina*, 8' flowers well.

## GROWING TREES IN DRY AREAS

by D. G. & E. G. Foulis

It was in 1953 that we started growing trees, mainly Eucalypts and Acacias, with mixed results.

Firstly, our farm is situated 45 miles east of Pt. Augusta, 18 miles from the beautiful Flinders Ranges, on the eastern side of the Willowie Plain. The soil in the area is a red mallee soil, with patches of limestone and rubblely clay with deep (usually dry) creeks through it. Rainfall is very variable—from 18" in a year, to 6½": averages 12". Ranges from no rain for four months to 370 pts. in 40 hours. The farm is situated outside Goyder's Rainfall (and vegetation) Line.

In June 1943 we bought 53 trees from a nursery at Pt. Augusta. These were *Eucalyptus steedmani*, *E. dumosa*, *E. lansdowneana*; *Acacia salicina*, *A. oswaldi*; *Pittosporum phylliraeoides*; Arizona pine; *Melaleuca lomerata*. The Arizona pines lived or struggled for a few years, then died out in dry years. *E. lansdowneana* is subject to insect attack, and never looks healthy.

Over the following years, encouraged by results, we planted many types of trees; after the first few years growing most of our own seedlings, which is another story.

The methods we have found most suitable for planting our woodlots is to have the area under fallow for 1 or 2 years; this should be well fenced to keep out stock, and with a good type of gate for easy entry to cultivate around trees. To suppress the weed growth I find it is necessary to cultivate between the rows of trees with a 3-point linkage cultivator. In good years here, the woodlot is cultivated up to 3 times, preferably after rains. This controls weeds. Management is very important for first 4 to 6 years, after which trees control the weed growth themselves. During this early stage we also clean base of young trees with a shovel, to check any weeds that are missed. This is hard and tedious work, but to get good results, I have found this is very important.

The seedlings are planted out after a good opening rain, in the autumn; that is any time from April to July. When planting young trees I usually take 2 or 3 shovelful of soil, making a saucer-shaped depression, then digging a hole 7" to 8" deep, using a grubber; having the top of soil of young tree about 1" below the surrounding soil; then tramp the soil well. I do not water in, because rainwater is scarce, and with planting 500 to 600 trees a year would be very time-consuming.

The trees we have found most suitable to our uses for shade, shelter and beautification in this area are Eucalyptus, Acacias, Casuarinas and Eremophyllas, and some other varieties which have survived in the area through the droughts. The Western Australian dry areas trees seem to adapt to this country well, and are not hard to raise from seed though one needs time and patience. When seeds are planted in early August the young plants are usually ready to plant out in the following Autumn. Also seedlings grown locally become acclimatised, and are seldom lost with frost.

The farm (and vicinity) before planting began, was lacking in trees. Apart from a few pepper-trees planted by the early settlers, and a few sugar gums and golden wattles around the house, there were very few trees just here.

Now the setting for the homestead is much different, being protected from north winds, which are well-known for their strength and dust-bearing qualities, here. Also from cold southerlies in the winter.

Bird-life has increased amazingly (since we began growing trees). This we have found after the first years, have kept trees and garden free from insect pests. Galahs have caused a nuisance with chipping at trees for fun, also there have been losses with frosts and rabbits and droughts, in early stages. Some varieties have proved unsuccessful including *E. caesia*, *E. macrocarpa*, *E. lehmanni*, *E. tuart*. We have tried to grow other shrubs with same methods, but feel these need more care and attention than the Eucalypts.

To sum up, we feel that, though we are accredited with green fingers, it is more a matter of preserverance and patience, together with the blessing of Mother Nature.

The following is a list of types we have found satisfactory:

P = Poor      F = Fair  
G = Good      V.G. = Very Good

| Type                                             | No. of<br>trees | Progress | Remarks                                                         |
|--------------------------------------------------|-----------------|----------|-----------------------------------------------------------------|
| <i>Euc. angulosa</i> .....                       | 20              | V.G.     | Two forms. Good shelter tree.                                   |
| <i>Euc. astringens</i> .....                     | 15              | G.       | Tall shade tree.                                                |
| <i>Euc. brockwayi</i> .....                      | 20              | V.G.     | Shade tree.                                                     |
| <i>Euc. calycagona</i> .....                     | 20              | V.G.     | Free-flowering mallee.                                          |
| <i>Euc. camaldulensis</i> .....                  | 100             | V.G.     | Planted along creeks—some 25' in 14 yrs.                        |
| <i>Euc. campaspe</i> .....                       | 40              | V.G.     | Medium height, good shade tree, with<br>glaucous foliage.       |
| <i>Euc. diversifolia</i> .....                   | 10              | F.       | Requires higher rainfall. Bushy.                                |
| <i>Euc. dumosa</i> .....                         | 70+             | V.G.     | Shade tree. Good farm tree.                                     |
| <i>Euc. dundasii</i> .....                       | 70              | V.G.     | Tall shade tree. Attractive shiny leaves<br>are much admired.   |
| <i>Euc. eremophila</i> .....                     | 60              | V.G.     | Very good all-round tree for farm<br>planting.                  |
| <i>Euc. flocktoniae</i> .....                    | 30              | V.G.     | Taller, free-flowering tree.                                    |
| <i>Euc. erythronema</i> .....                    | 30              | V.G.     | Striking red flowers, white bark. Orna-<br>mental.              |
| <i>Euc. forrestiana</i> .....                    | 20              | V.G.     | Bushy tree. Ornamental buds. Tree<br>suffers in dry years.      |
| <i>Euc. gairdneri</i> .....                      | 30              | V.G.     | Bushy medium height, shows promise.                             |
| <i>Euc. gracilis</i> .....                       | 15              | V.G.     | Mallee.                                                         |
| <i>Euc. grossa</i> .....                         | 3               | F.       | Scraggly.                                                       |
| <i>Euc. intertexta</i> .....                     | 4               | G.       | Mallee.                                                         |
| <i>Euc. kruseana</i> .....                       | 30              | V.G.     | Ornamental flowers and leaves. More<br>suitable for garden use. |
| <i>Euc. nutans</i> .....                         | 10              | F.       | Bushy.                                                          |
| <i>Euc. lansdowneana</i> ....                    | 10              | P.       | Consider unsuitable here.                                       |
| <i>Euc. le soueffii</i> .....                    | 15              | V.G.     | Shady tree.                                                     |
| <i>Euc. occidentalis</i> .....                   | 5               | G.       |                                                                 |
| <i>Euc. platypus</i> .....                       | 50+             | V.G.     | Very impressed with bushy form. Good<br>shade tree.             |
| <i>Euc. salmonophloia</i> ....                   | 10              | V.G.     | Shade tree with ornamental shiny bark.                          |
| <i>Euc. salubris</i> .....                       | 20              | V.G.     | Shade tree. Twisted branches. Buds held<br>for years.           |
| <i>Euc. salubris</i><br>var. <i>glauca</i> ..... | 15              | V.G.     | Shade tree.                                                     |
| <i>Euc. steedmanii</i> .....                     | 60              | V.G.     | Bushy. Good shelter tree.                                       |
| <i>Euc. stoatei</i> .....                        | 5               | V.G.     | Bushy.                                                          |
| <i>Euc. stricklandii</i> .....                   | 20              | G.       | Attractive flowers—open shade tree.                             |
| <i>Euc. torquata</i> .....                       | 20              | V.G.     | Good flowers. Well shaped tree.                                 |
| <i>Euc. viridis</i> .....                        | 4               | V.G.     | Medium tree. Small white flowers.                               |
| <i>Euc. woodwardii</i> .....                     | 10              | G.       | Attractive flowers. Straggly habit.                             |
| <i>Euc. spathulata</i> .....                     | 50              | V.G.     | Fine-leaved shelter tree. Quick-growing.                        |
| <i>Euc. "torwood"</i> .....                      | 5               | V.G.     | Attractive flowers—fair shade tree.                             |
| <i>Euc. transcontinentalis</i>                   | 5               | V.G.     | Mallee.                                                         |

|                                |    |      |                                                 |
|--------------------------------|----|------|-------------------------------------------------|
| <i>Euc. tetragona</i> .....    | 5  | V.G. | Unusual type tree, with furry, glaucous leaves. |
| <i>Euc. redunca</i> .....      | 10 | V.G. | Bushy shelter tree.                             |
| <i>Euc. melanophloia</i> ..... | 10 | V.G. | Mallee—bushy form.                              |
| <i>Euc. oleosa</i> .....       | 40 | V.G. | Bushy. Good stock shelter. For farm             |
| <i>Euc. leptaphylla</i> .....  | 30 | V.G. | planting.                                       |
| <i>Euc. pteracarpa</i> .....   | 30 | V.G. | Medium tree—quick growing.                      |
| <i>Euc. corrugata</i> .....    | 20 | V.G. | Medium height; quick growing tree.              |



Blocks by courtesy of The Sydney County Council

### **EUCALYPTUS CAMALDULENSIS Dehnh.**

The trees are growing on flooded land of gentle topography. They will withstand winter and spring flooding for lengthy periods but rarely flooding in the summer. *E. camaldulensis* can become a tall tree to 40 metres, often with a short massive bole and spreading crown. It is the most widespread of all *Eucalyptus* species, along the banks of inland rivers and adjacent flats.

## COMMON FRINGE-MYRTLE

*CALYTHRIX TETRAGONA* by P. Conrick

Among the most delightful members of the Myrtaceae family are the Calythrix. This name is derived from the Greek words KALYX—a cup and THRIX—a hair and refers to the fact that the sepals end in a long hair or bristle. The group, consisting of about 40 species, is wholly Australian in distribution.

The two South Australian species are *Calythrix involucrata*, which is confined to Eyre Peninsula, and *Calythrix tetragona*, which occurs throughout temperate Australia. The specific name TETRAGONA—four angled refers to the shape of the leaves.



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I find *C. tetragona* a most interesting species because of the variation of the flowering period from August to January and because of the great variety of rainfall and of soil types in which it naturally occurs.

As far as a garden subject is concerned it does best in a reasonably well drained sandy soil and under these conditions responds to fertilisers. I have used both sheep manure and a complete mixture of P.N.K. *C. tetragona* is extremely frost hardy and well adapted to summer droughts. This plant should always be pruned after flowering otherwise it will soon become a straggling shrub instead of a neat, compact bush. This species grows readily from seed, which collects like down beneath the plants, some two months after flowering.

PLANTS OF THE MOUNT LOFTY AND S. FLINDERS RANGES—cont. from page 319

**LILIACEAE:**

***Lomandra densiflora*.** A dense clumpy perennial usually with smooth light green leaves 8 inches to 2 ft. long. The small greenish-yellow flowers are clustered in panicles near the base of the stems. Prefers brown loams and mallee loams. Recorded from foothills of the Mount Lofty Range; Hallet Cove; Murray Lands; and Mt. Remarkable. Flowering period: August-November.

***Lomandra fimbriata*.** Low perennial with long narrow filiform leaves 8 inches to 15 inches long. The basal leaf sheaths are brown and fibrous. Small green flowers are borne near the base of the plant. Quite common on podsol loams and in rocky scree areas of the Higher Loftys. October.

***Thysanotus exasperatus*.** An attractive Fringe Lily with large white tubers distant from the rootstock. The strap like leaves 8 to 12 inches long are about the same length as the stem. Mauve flowers are borne in pedunculate umbels among the upper branches. Recorded for the Bundaleer Hills and Flinders Range, but I have collected this plant from rocky scree slopes under *Casuarina stricta* at Mt. Kitchener (Barossa Range). Flowering period: October to early November. Ideal for alpine gardens or rockery.

***Xanthorrhoea quadrangulata*.** A tall Grass Tree with scape and spike occasionally exceeding 9 ft. Leaves are quadrangular. Occurs on rocky scree hillsides in the Mt. Lofty and Flinders Ranges. I have seen excellent transplanted specimens treated as rockery plants. Flowering period: February-April.

***Xanthorrhoea tateana*.** Without a doubt one of the most attractive Grass Trees in South Australia. Total length of scape and flowering spike up to 20 ft. In this species the long flat leaves form a "grass skirt" around the stout stem. On Kangaroo Island this shrub was once the principal source of Yacca Gum. Also occurs at Fleurieu Peninsula; and Marble Range (Eyre Peninsula). Flowering period: February-May.

**CASUARINACEAE:**

***Casuarina striata*.** A large shrub or small tree 5 to 15 ft. high. Called Small Bull Oak in South Australia and a characteristic shrub of sclerophyll scrub in the Mt. Lofty Range. The branchlets are whorled, striate, with rounded ribs. The oblong cones are 1 to 2 inches long. Prefers poor podsol and laterite loams of the Southern Mt. Lofty Range and Kangaroo Island. Flowering period: June-December. Might be useful as a specimen shrub for sandy areas and ironstone gravel soils. Propagation by seed.

**SCROPHULARIACEAE:**

***Veronica decorosa*.** An erect graceful shrub approximately 2 ft. in height with linear acute leaves 2 inches in length. The lovely white flowers which are streaked with purple are borne in short racemes in the upper axils of the plant. I have seen this shrub at Port Germain Gorge and at Mount Remarkable growing on rocky clay loams. A very desirable plant to introduce to the garden, and will propagate from cuttings. Only found in the Flinders Ranges, and Nth. Mount Lofty Range near Burra. Sept.-Oct.

**MYOPORACEAE:**

***Eremophila santalina*.** Medium size shrub about 6 ft. high with long alternate lanceolate-acuminate leaves 1 to 2 inches long and about ¼ inch broad. A very graceful species somewhat resembling *Santalum lanceolatum* or a young *Myoporum platycarpum*. The ¾ inch white flowers are solitary or twin on short pedicels ½ inch long. This shrub is one of my favourite Eremophilas. A rare species recorded for the Flinders Range from near Port Augusta to Leigh Creek, but I have only seen it in the field at Mambray Creek National Park. Fl.: August-October.

**SOLANACEAE:**

***Anthocercis angustifolia*.** An aromatic glandular-hairy shrub with a somewhat unpleasant odour. Some shrubs exceed 3 ft. in height under favourable conditions. The linear-cuneate leaves are about 1 inch long. In Spring high rocky places in the Torrens Gorge are conspicuous with flowering bushes of this unusual shrub. Flowers large white. Recorded for Mount Lofty Range (Morialta, Black Hill, Torrens Gorge) and at Wilpena Pound in the Northern Flinders Range. Flowering period: August-December.

**THYMELAEACEAE:**

***Pimelea petrophila*.** A small twiggy plant about 1 ft. high with lanceolate leaves about 1 inch long. The white flowers are mostly dioecious and silky pubescent. A very attractive shrub occurring naturally in rocky scree areas at Mount Remarkable, Alligator Gorge and other places further north in the Flinders Ranges. This species should be eminently suitable for rockeries. Flowering period: September-December. Propagation by seed.

**LOGANIACEAE:**

***Logania recurva*.** A glabrous shrub up to 3 ft. in height with lanceolate leaves 2 inches long and ¼ inch broad, which are recurved along the margins. The dense white cymes of sweetly scented flowers are mainly borne along the upper branches of the shrub. Occurs on podsol and laterite loams. Recorded for the Mount Lofty Range (Mt. Lofty, Black Hill, Forest Range, Southern Fleurieu Peninsula where it is very common) and at Ardrossan on Yorke Peninsula. Suitable for a shrub garden. Flowering period: August-October. Propagation by seed.

**LAMIACEAE:**

The Genus *Prostanthera* is well represented for South Australia. 13 species have so far been recorded for the State, with 6 of these being endemic. Many *Prostanthera* species will strike from cuttings.

***Prostanthera behriana*.** A tall many branched shrub to 6 ft., with hoary branches and lanceolate or linear glabrous leaves about ½ inch long. The ½ inch white, pink or violet flowers are brown dotted in the throat. A very attractive shrub which would undoubtedly do well on light sandy or rocky skeletal soils. Will propagate from cuttings. Recorded from Northern Mount Lofty Range (Tothill Range, Barossa Range), Black Hill and McLaren Vale in the Mount Lofty Range and from Monarto South near Murray Bridge. Flowering Period: July-January.

***Prostanthera eurybioides*.** An aromatic shrub up to 3 ft. in height, with very small thick ovate to linear sessile leaves. The ½ inch pink or bluish-violet flowers have red spots at the base of the lower lip. This species is probably the best of all the South Australian Mint Bushes, but its habitat is seriously threatened by clearing. A very rare plant which occurs at Monarto and Kinchina near Murray Bridge; near the mouth of the Murray; and one collection from Mount Barker (Mount Lofty Range) in 1938. Seems to prefer granitic soils near Monarto. Several members of the South Australian S.G.A.P. have grown this shrub from cuttings. Flowering period: September-November.

***Prostanthera chlorantha*.** Low aromatic shrub about 18 inches in height, the branches, foliage and calyx covered with short hairs. The recurved ovate or rhomboid leaves approximately 1/8 inch long. The green or yellow flowers are about 1 inch in length. A common shrub in sandy places of the Barossa Valley (Sandy Creek, Lyndoch). Has also been recorded from Mount Barker; Hope Valley; Kangaroo Island; and near Port Lincoln. Flowering period: August-January.

**GOODENIACEAE:**

***Goodenia albiflora*.** Erect glabrous perennial to 1 ft. in height. The ovate-lanceolate blue-greenish leaves 1 to 3 inches long and mainly 1 inch broad are sharply toothed. The large attractive 1 inch white flowers are softly scented. This *Goodenia* is very rarely ever found away from limestone or a clay loam overlying limestone. It is an excellent perennial for the rockery or alpine garden. Occurs in the foothills of the Mount Lofty Range (Morialta, McLaren Vale, Marino). Also at Koorunga; Flinders Ranges. Flowering period: September-January.



Blocks by courtesy of South Australian Museum

Artist: Alison Ashby

***Goodenia albiflora* Schldl.—3/5 natural size**

Goodeniaceae is a family of plants that are easily grown and make good small garden subjects. See No. 42 issue where many of the best are described and illustrated in colour.

**COMPOSITAE:**

***Olearia grandiflora*.** Large undershrub 1 to 4 ft. in height with a white tomentum on the branches, stems and underside of the large 3 inch ovate-lanceolate leaves. This species differs from *Olearia pannosa* in having denticulate leaves. The showy white flowers are about 3 inches across. A very fine *Olearia* which has one of the largest flowers of all the Australian



Blocks by courtesy of South Australian Museum

Artist: Alison Ashby

***Olearia ciliata*—3/5 natural size**

The *Olearia* or "Australian Daisies" are easily grown. This species is described on page 299.

species. Only found in wet areas of the Higher Lofty's which exceed 30 inches of rain per annum, on poor skeletal loams. A fairly rare plant. Flowering period: October-January.

***Senecio hypoleucus*.** A very handsome stout perennial 2 to 3 ft. high with entire or minutely toothed ovate-lanceolate leaves about 2 to 5 inches long and 1½ inches broad. The leaves are green above and white tomentose underneath. The golden yellow tubular flowers form dense heads at the ends of the branchlets. Occurs in shady places and along roadside embankments at Greenhill Road near Mount Lofty, Clarendon, Highbury and several other places along the western foothills of the Mount Lofty Range. Flowering period: October-January.

***Senecio megaglossus*.** A very stout glabrous and glaucous undershrub with large obovate-oblong leaves 2 to 3 inches long and about 1 inch broad. The large yellow flowerheads have ligules about 1 inch long. The whole plant is very similar to *Senecio magnificus*. *Senecio megaglossus* has been recorded from Warren Gorge near Quorn, and the hills between Hallett and Burra in the Northern Mount Lofty Range.

#### MYRTACEAE:

***Callistemon teretifolius*.** A terete leaved shrub 3 to 5 ft. high with rigid leaves averaging 2 to 4 inches long. The tips of the leaves are pungent pointed. The handsome red brushes are about 3 inches long and the fruits are globular. Commonly known as the Flinders Range Bottlebrush, although it has been recently discovered growing at Hale National Park, Williamstown in the Mount Lofty Range. One of the best of the Australian Bottlebrushes. I have a fine specimen growing in my garden at Millswood on a brown clay loam. Although the flowering period is stated as October to December, it will flower after Summer rains. Propagation by seed. See page 333.

***Eucalyptus cneorifolia*.** The Narrow Leaf Mallee. A tall mallee up to about 30-40 ft. The leaves are long linear lanceolate often exceeding 3 inches in length and 3/8 inch broad. Small white flowers in umbels. The fruits are sessile in dense globular clusters. A very common gum tree on the Eastern end of Kangaroo Island where it is still used for the distillation of eucalyptus oil. A beautiful mallee eminently suitable for a windbreak. Once occurred in the Waitpinga district but may be extinct there now. Found on white sandy loams. Flowering period: Summer.

***Eucalyptus cladocalyx*.** The well known Sugar Gum grows to a handsome tree 70 to 100 ft. in height in the Southern Flinders Range. The glossy green lanceolate leaves are about 5 to 6 inches long and 1 inch to 1½ inches broad. The urn shaped fruit of this species is very typical. Flowers deep yellow. A tree often grown for shelter belts or along roadsides. Also occurs near Vanilla (Southern Eyre Peninsula) and Kangaroo Island. Flowering period: February-April.

***Eucalyptus cosmophylla*.** Known locally in South Australia as Cup Gum or Scrub Gum. A large shrub or small tree (depending on the soil type) 6 to 35 ft. high. Although a somewhat straggling species, the large pink or white flowers up to 1½ inches across and the stout woody capsules are most attractive. This gum occurs on poor podsol and laterite soils of the Southern Mount Lofty Range and Kangaroo Island. A garden novelty for lighter loams. Flowering period: April-July.

***Lhotzkya glaberrima*.** A glabrous undershrub up to 3 ft. high with tiny lanceolate leaves 1/8 inch long. The white or light pink flowers are clustered in small leafy spikes below the ends of the branchlets. A very beautiful and graceful shrub suitable for gardens with sandy soils. Occurs

naturally on white sand loams at Mount Compass, Ashbourne Scrub and Currency Creek in the Mount Lofty Range and also Kangaroo Island. Flowering period: September-December. Might strike from cuttings.

#### EPACRIDACEAE:

***Styphelia exarrhena*.** Low shrub with glossy glabrous ovate or ovate lanceolate leaves  $\frac{1}{4}$  inch long. The tiny white flowers  $\frac{1}{8}$  inch in length are on short axillary pedicels. A plant of white sandplains. Recorded from Mount Lofty Range (Ashbourne Scrub), Ninety Mile Desert; Monarto South; Eyre Peninsula. Flowering period: Most of the year.

***Leucopogon concurrens*.** A straggling twiggy shrub with wiry branches. The concave ovate lanceolate leaves  $\frac{3}{8}$  inch to  $\frac{1}{2}$  inch long are striated with 5-12 longitudinal nerves. The small white flowers are in short dense terminal or axillary spikes. Like a number of the smaller bushy *Leucopogon* spp., it should be a useful addition to the rockery. Prefers lighter soils. Has been recorded from Longwood and Mylor in the Mount Lofty Range; Encounter Bay; Kangaroo Island and Bakers Range in the South East. Flowering period: Mainly Spring and Summer.

***Acrotriche fasciculiflora*.** Stiff shrub up to 3 ft. high with hairy branches and pungent pointed hairy lanceolate leaves up to  $\frac{1}{2}$  inch long. The dense spikes of pink flowers are massed together at the base of the shrub. The globular pink drupes are only about a third the size of the succulent drupes of the native currant *Acrotriche depressa*. This species is one of the "plant novelties" from the Mount Lofty Range. The handsome foliage and flowers or berries clustered at the base of the plant lend it an unusual character of its own. Occurs on better brown loams or richer podsol soils in shady places of the Higher Loftys (Mount Lofty, Basket Range, Mylor). The plant formerly known from Kangaroo Island as *Acrotriche fasciculiflora* has recently been described as a new species *Acrotriche halmaturina*. Flowering period: June-November.

#### EUPHORBACEAE:

***Micranthemum demissum*.** A small shrub to 18 inches high with tiny leaves approximately  $\frac{1}{4}$  inch long in half whorls at the nodes. The chief attraction of this shrub are the curious glabrous ovoid capsules,  $\frac{1}{2}$  inch long, which vary through colours of green, brown to red. The small flowers are insignificant. This species occurs on white sand and laterite loams in the Mount Lofty Range at Mount Compass and the Ashbourne Scrub. Flowering period: September-November. Could be tried as a novelty in a rockery.

#### RHAMNACEAE:

***Cryptandra hispidula*.** A small shrub under 1 ft. high with small terete leaves about  $\frac{1}{8}$  inch long. The 2-8 tubular whitish flowers also about  $\frac{1}{8}$  inch long are mainly in terminal heads surrounded by leafy bracts. A somewhat rare plant found in the swampy districts of Myponga, Yundi and Mount Compass in the Mount Lofty Range and also Kangaroo Island. I have seldom seen this plant in the field. Flowering period: Spring and Summer.

***Trymalium wayi*.** Attractive round shrub 3-4 ft. high, with hoary branches and obovate cuneate leaves varying from a little over  $\frac{1}{4}$  inch to 1 inch long. The leaves glabrous above with a golden or light brown tomentum below. In Spring bushes of this species are covered with numerous racemes of minute pale yellow or tan coloured flowers. Has been recorded from Mount Lofty Range (Torrens Gorge, Onkaparinga Gorge, Sounders Creek Gorge); Rocky River in the Flinders Range; Kangaroo Island and Mount Monster in the South East. Flowering period: August-October. Prefers rocky scree slopes near gorges.

***Spyridium phlebophyllum*.** Low shrub about 2 ft. high with obovate leaves  $\frac{1}{4}$  inch to  $\frac{1}{2}$  inch long, and glabrous above, white silky underneath. The flowerheads are sessile in the forks. A species confined to the Flinders Ranges where it occurs from Warren Gorge near Quorn to the extreme northern Flinders at Mount Livingston. Rocky areas in gorges. Flowering period: Spring.



Blocks by courtesy of South Australian Museum

Artist: Alison Ashby

***Spyridium coactilifolium* Reiss.— $\frac{3}{5}$  full size**

***Spyridium coactilifolium*.** A very nice small shrub with rusty-tomentose branches and ovate oblong leaves about  $\frac{1}{4}$  inch long which are often notched at the summit (a characteristic feature of this species). Flowers in compound heads. Encounter Bay region, Waitpinga and Kangaroo Island.

**Spyridium thymifolium.** Low spreading shrub about 1 to 2 ft. high with flat ovate leaves generally about  $\frac{1}{2}$  inch long and  $\frac{3}{8}$  inch wide. The dense compound flowerheads are rather woolly in appearance. One of the best of the Spyridiums—the tomentum on the underside of the leaves giving the plant a greyish appearance. Locally abundant on laterite loams near Mount Compass and Fleurieu Peninsula in the Mount Lofty Ranges. Also at Encounter Bay, Kangaroo Island and Fowlers Bay.



Blocks by courtesy of South Australian Museum

Artist: Alison Ashby

**Callistemon teretifolium F. Muell.—3/5 full size—see page 330**

Bottlebrush type flowers are most suitable for clay and poorly drained sites. There are dozens of species of *Melaleuca*, *Calothamnus*, *Beaufortia* and *Callistemon* of various sizes from tiny shrubs up with a wide colour range. These are described in past issues some of which have been entirely devoted to the problems of establishing a beautiful garden in clay soil areas.

## THE SOCIETY FOR GROWING AUSTRALIAN PLANTS

"AUSTRALIAN PLANTS" IS AUSTRALIA'S NATIONAL PRESERVATION JOURNAL  
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Many cover the same range of subjects, which have already been introduced in "Australian Plants" but most have either of the following disadvantages. They either have a large number of beautiful colour plates with inadequate descriptions and practically nothing on cultivation, or they attempt to deal with cultivation and skimp on colour plates leaving it to the readers experience or imagination as to what the plant and flower really looks like. If you bought most of the books available you would have less than half of the range of material available in past issues of "Australian Plants". There are exceptions.

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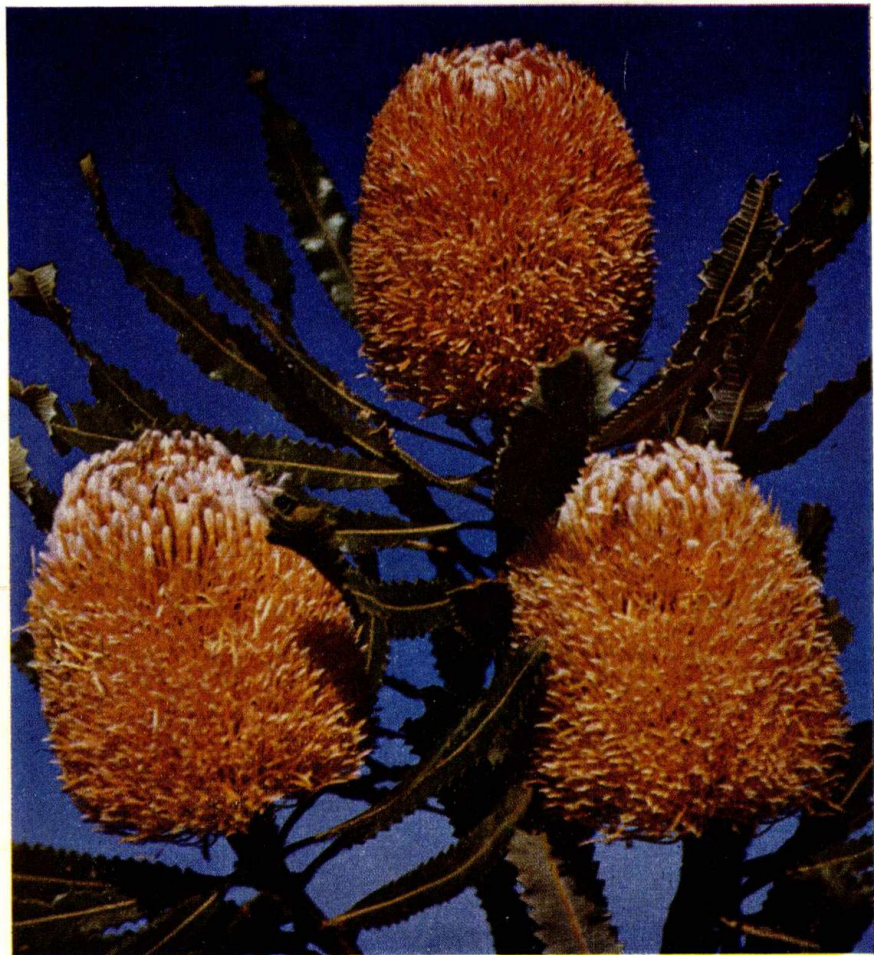
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Colour photography by C. A. Gardner

### **BANKSIA BURDETTII**

This spreading dome-shaped shrub to 10 ft. high is from the inland of Western Australia in the 18" to 24" rainfall area in deep sand country. The leaves are 3-6" long and the flower spikes 5"-7" long.

## **SOUTH AUSTRALIAN PIONEERS**

In an issue devoted to S.A. flora you may ask why include the above colour plate and that of *Banksia ashbyi* on page 321. These plants preserve to eternity the memory of two famous S.A. pioneers of the use of the Australian flora for horticulture. Edwin Ashby who is survived by Alison Ashby, artist of the colour plates in this issue, and Keith Ashby who is still patronising research in the flora. Burdett and his family will long be remembered in South Australia. Our No. 41 issue illustrated one of a number of horticultural forms of wildflowers *Melaleuca fulgens* 'Payne's hybrid' developed by another pioneer, F. C. Payne. (No. 41 issue describes many species of *Banksia*).