

# Australian Plants

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This issue recommends the cultivation of Australian plants in hot/dry areas.

**Government responsibility.** Being essentially a hot/dry continent, responsible government is becoming increasingly conscious, not only of the desperate need for preservation of the flora but of its commercial value and at last, its application to increase the quality of life of all Australians. While governments are guided by their experts, it is the informed advice of the citizens that is highly valued. It is time for us all to accept this opportunity to aid our country. Plant Australian, counsel your representative.

**South Australia** is particularly aware of its responsibilities for the hot/dry area flora and the standard of living of its people in circumstances of limited natural resources, especially water. The principal articles of this issue are from government institutions and it is sincerely hoped that they receive continued support in these vital developmental programmes in the face of reduced real incomes.

**Pioneers** in the awareness of the Australian flora are comparatively few and South Australia may be rightly proud of the families of Ashby, Burdett, etc. While these names have been immortalised in the botanical names of plants, they have left a legacy for ever. It is a great pity that Australian Plants was not in publication fifty years ago to record the vast knowledge that has been lost. We acknowledge the life work of a more recent pioneer, Noel Lothian, recently retired as Director of the Botanic Garden, Adelaide. See further in this issue for details.

**Modern research** is a concern of this society that has been instrumental in the creation of The Australian Flora Foundation. It is hoped that the government of South Australia will provide continuing and increased support for programmes so vitally concerned with our national heritage and in particular to the quality of life of its people, as recorded in this issue.

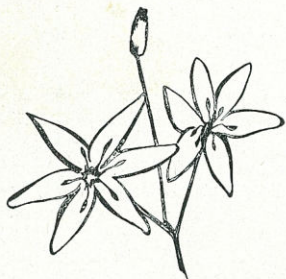
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## COVER PLATE: *Eucalyptus caesia*

A beautiful small tree to grace your garden, the red flowers being about 2 cm across and well displayed as shown. A feature of the form of this species that is illustrated is the weeping habit of its silvery grey foliage. It is such a distinctive plant that it has been given a cultivar name of 'Silver Princess'. Recent scientific research has given it a subspecies name as well so that this plant now labours under the name of *Eucalyptus caesia* sub sp. *magna* 'Silver Princess'.

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## **Wildflower Gardens In Dry Areas**

by Ian Bond

An Australia-wide trend towards a system of gardening, based on the use of selected native plants and mulching materials is also popular in the Riverland area of South Australia. A native garden needs very little maintenance and is popular with anyone wishing to reduce their gardening workload.

A feature of this system using native plants is the quick growth of trees and shrubs, which gives a "mature look" garden in as little as four years from planting.

Saving water is also a consideration in reducing the water bill, or where water is not readily available on many farms. Low humidity, combined with high evapotranspiration by plants growing in hot, dry areas, means very high water consumption when using traditional plants. By selecting suitable native plants, only minimal water is needed to maintain an attractive garden.

Like any other form of gardening, a certain amount of work is involved in establishing and developing a "native" or "easy care" garden. Once this is completed, the work load is minimal compared with a traditional garden. The drier areas to me are very rewarding, mainly because of the intense flower colour of many species. Some of our choicest Australian plants are often difficult to grow in the wetter areas due to poor drainage and root-rot.

The land form of the Riverland consists of moderately high, parallel sandhills super-imposed on a rolling terrain with occasional depressions. Soil is a reddish sand, grading to sandy clay loam over a calcareous layer in the flats and rises. The sandhills consist of a deep layer of coarse reddish sand with moderate lime at depth, and most soils come within the pH range 7.0 to 9.0. Average annual rainfall of the area is 250 millimetres.

The soil and climatic conditions that exist in the Riverland, and are the centre of my experience, are representative of large areas of S.A. including the Eyre, Yorke and Fleurieu Peninsulas, Upper North and Mallee districts.

### **Landscaping**

Because of the often limited depth of topsoil, it is important that the builder does not unduly disturb the site prior to construction of the dwelling. The so called "cut and fill" technique often leads to plant growth problems in later years, especially where the calcareous subsoil is mixed with topsoil. It should be the contractors' responsibility to replace topsoil to its original state.

Planting of the entire garden in the same year is recommended, as the generally infertile nature of topsoil leads to great competition between plants. After the third year it is often very difficult to establish new plants, with the exception of a few species from the genus *Cassia* and *Acacia*.

Generally not enough consideration is given to landscaping, especially in dry areas, where good effects can be achieved by careful blending of species for size, appearance, flower colour and form.





*Eremophila hillii* ▲

*Eremophila hillii* ▼







### A Dry Area Garden Setting

Photography by Ian Bond

The tree is a five year old *Eucalyptus erythronema* which has brilliant red flowers in summer. The smooth white trunk is pleasing and the light shade close to the house pleasant. The ground cover comprises three plants of *Eremophila biserrata* that are 4 years old. Monthly waterings have been given throughout summer and autumn only.

### *Eremophila hillii* (opposite)

Photography by Ian Bond

The plants in the top photograph are 1.3 metres across at five years of age. The flower shown below is on a plant propagated from the one yellow/orange flowered bush found amongst the normal red-flowered bushes at Ooldea in S.A.



## The Use Of Trees

Shade, and leafy canopies of greenery help to mitigate the effects of long, hot, dry days in summer. Some of the small mallees are very underrated as not only do they have attractive flowers and buds but produce shiny new green leaves in the very hottest of weather when many exotic trees have a leaf shed in heat waves despite copious watering. Three that have been used successfully are *Eucalyptus gracilis*, *E. erythronema* and *E. gillii*.

I do not recommend using large eucalypts such as *Eucalyptus leucoxylon*, *E. salubris* and *E. dundasii* in the average house garden as their root systems become very dominant and cause stunted growth of smaller species.

A large range of trees and shrubs have been successfully used here in native plantings. Most have been adequately described in previous issues of Australian Plants so the names only will be listed here.

*Callitris preissii*: Fresh green foliage for many years, especially with a little summer watering, but is slow growing.

*Eucalyptus*: At least fifty species have been successfully grown in low rainfall areas. I would select *E. erythronema* as the best all rounder, viz: Excellent small tree for home gardens, bright red flowers in summer, smooth white stem most of the year — tolerant of alkaline soils, hardy and fairly drought resistant. Other good eucalypts include:—

Large trees (only recommended for streets, parks or large gardens)

|                                       |                                 |                         |
|---------------------------------------|---------------------------------|-------------------------|
| <i>E. astringens</i>                  | <i>E. largiflorens</i>          | <i>E. salmonophloia</i> |
| <i>E. cladocalyx</i> var. <i>Nana</i> | <i>E. lesouefii</i>             | <i>E. salubris</i>      |
| <i>E. dundasii</i>                    | <i>E. leucoxylon</i>            | <i>E. sargentii</i>     |
| <i>E. formanii</i>                    | <i>E. leucoxylon</i> rosea      | <i>E. stricklandii</i>  |
| <i>E. gomphocephala</i>               | <i>E. leucoxylon</i> macrocarpa | <i>E. torquata</i>      |
| <i>E. intertexta</i>                  | <i>E. occidentalis</i>          | <i>E. woodwardii</i>    |

Small to medium trees:—

|                        |                       |                        |
|------------------------|-----------------------|------------------------|
| <i>E. dumosa</i>       | <i>E. foecunda</i>    | <i>E. "pterocarpa"</i> |
| <i>E. eremophila</i>   | <i>E. forrestiana</i> | <i>E. socialis</i>     |
| <i>E. erythrocorys</i> | <i>E. pimpiniana</i>  | <i>E. spathulata</i>   |
| <i>E. flocktoniae</i>  | <i>E. platypus</i>    | <i>E. youngiana</i>    |

## Shrubs

*Acacia iteaphylla*: Quick growing robust wattle, suited to many situations particularly in providing quick shelter or background planting.

*Alyogyne hakeifolia*: (Cream flowered) — Quick growth and fresh green foliage.

*Banksia ashbyii*: Surprisingly successful on the deep red sands. Vol. 5, 321.

*Callistemon viminalis* "Captain Cook": Very useful to provide height without too much spread; along driveways.

*Cassia sturtii*: Long flowering, attractive grey foliage and interesting seed pods. Vol. 8, 340.

*Chamelaucium uncinatum*: An old favourite of many people — some beautiful colour forms now available. Vol. 4, 141.

*Correa pulchella* 'Minor' — Spectacular with its winter flowers, and lovely foliage. Vol. 6, 300.

*Eremophila*: My favourite genus. Many good ones but two species are worthy of special mention. *E. ionantha* (blue flowers in early summer — graceful foliage — bush does not get "woody", — useful in shaded areas but also thrives in full sun). *E. oppositifolia*, graceful grey foliage, very useful as a



contrast shrub in landscaping. Flowers are attractive and even after they shed, the small cream sepals remain on the bush and provide interest for a long period. Refer to other articles in this issue.

*Grevillea thelemanniana* (Spriggs) — Several grevillea species thrive under our conditions where drainage is good but this one is outstanding both in form and for its long flowering habit. We are unable to trace its origin but have given it the name Spriggs as local identification of the cultivar. Vol. 4, 5.

*Hakea multilineata*: Excellent for attracting native birds.

*Melaleuca nesophylla*: Good form and foliage for landscaping. Attractive mauve flowers in summer.

*Westringia rosmariniformis*: Does not like too much limestone but is a good landscaping subject.

### Ground Cover Plants

Many ground cover plants have been tested over the years but the several forms of *Myoporum parvifolium* are hard to beat under our dry conditions. They can be used in large sweeps in place of lawn to provide flat areas of greenery which require no mowing and very little water. *Eremophila biserrata*, although slower growing, provides an even more attractive sweep of greenery and is equally as hardy. See the colour plate on page 5.

It is important with these prostrate ground covers to lay about 5 centimetres of mulch prior to planting. This prevents weeds coming through the ground cover which would occur if the plants were put directly into bare soil.

### Mulches

These have many advantages in dry area gardening:—

- Properly selected they fit into and complement a native garden setting.
- Provide soil cover until plants are large enough to shade out and prevent weed growth through root competition.
- Prevent severe heat radiation.
- Reduce water loss through evaporation.

Some materials available in the Riverland include apricot and almond shells, grape stalks and wood chips. Several other materials are available around Australia as industry by-products.

### Irrigation

The aim should be to establish a watering schedule which suits each situation and maintains plants in good condition.

Experience through trial and error has shown that the schedule given in Table 1 provides sufficient water in the early years to establish a healthy, vigorous root system, which in later years can support the plant under minimum water application conditions. Our best planting time is in April.

**TABLE 1. Drip Irrigation Schedule for Native Gardens in Dry Areas**

|                |                                                                |
|----------------|----------------------------------------------------------------|
| 0 - 6 months   | 8 litres per plant, applied weekly                             |
| 6 - 12 months  | 32 litres per plant applied fortnightly from October to March. |
| 12 - 24 months | 80 litres per plant applied monthly from October to March.     |

Drippers giving an output of 4 litres per hour are recommended and should be calibrated by placing containers under at least two drippers and running the line for one hour. At the end of this period, there should be four litres of water in each of the containers. Sometimes only a quarter turn of the tap is necessary to get this output. Where block levels vary, pressure-compensating drippers should be used. A cheap in-line filter is essential and it should be cleaned at least once in a season.





*Eremophila glabra* (WA form) ▲

*Eremophila glabra* ▼



*Eremophila glabra*

Photography by Ian Bond

The form shown at top is a prostrate plant with yellow flowers from W.A. The young plants are growing in a mulch of apricot shells from a local S.A. crushing plant. The typical flower of *E. glabra* is shown in the lower photograph (by C. Garrett) though of another colour form. This is a semi-prostrate plant.





***Eremophila glabra***

Photography by Ian Bond

The form shown above is found in the Murchison River area of Western Australia. This plant is 7 years old 1.2 metres high and 1.2 metres wide.



Depending on amount and frequency of rainfall in autumn, winter and spring of the first year it is assumed that at certain times no drip watering will be required. In the second and subsequent years, avoid watering in autumn, winter and spring to encourage plants to use natural rainfall to extend their root systems. Irrigation should be considered only as a supplement to maintain plants in healthy condition during long, dry summers. An experiment conducted by the S.A. Department of Agriculture at Monarto showed that over-watering could be a problem with some native trees and shrubs. Test beds were planted in 1976 with 41 Australian species and five exotics. Each year the different test areas received 300 mm, 850 mm and 1400 mm of water applied by sprinkler irrigation. This was over and above natural rainfall at Monarto (366 mm per year). One interesting result was that trees showed growth depression and symptoms of salinity/water logging where the more poorly drained soil types were overwatered on the higher schedule.

Figures given in Table 1 should be used as a base, and a slight upward or downward adjustment made according to annual rainfall for the district. In deep sands it may be desirable to split the applications to avoid wastage, although some leaching beyond the root zone is desirable to avoid an accumulation of salts.

During the first three seasons a soil probe can be used occasionally to define the "wetted" zone. This gives a guide to the depth and lateral spread of water in the root zone. A simple probe can be made by fitting a handle to a one metre length of 10 mm steel rod, blunt at the penetration end. A few hours after watering, the rod can be easily pushed through the "wetted" areas, but not the dry zones. It is important after year two to place two or three additional drippers around large trees for their greater water requirements.

### Fertilizer

Native plants do not, as a rule, need fertilizer, but in poor soils I find that a little extra nitrogen keeps plants healthy and seems to enhance their drought tolerance. The safest method is to apply a good double handful of blood and bone manure per year to established plants. It is best applied in autumn and lightly raked into the surface mulch.

### Pests and Diseases

Dry areas seem to be fairly free of fungus diseases, but avoid wetting the leaves of some species such as *Eremophila*. In a well balanced native garden, birds and other predators keep insects under control. The worst problem we have in the Riverland seems to be scale insects on certain genera, especially *Eremophila*. These can generally be controlled by spraying ant nests and tracks with chlordane.

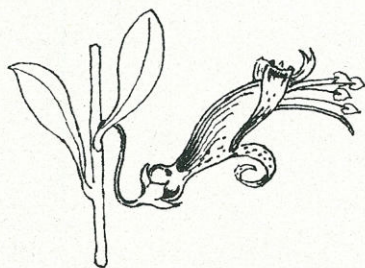
### Pruning

Many species respond well to light pruning after flowering. *Eremophila* and *Callistemon* in particular should be regularly pruned to prevent heavy seed setting on the periphery of bushes. I find a set of hedge clippers the most satisfactory way of pruning immediately following flowering.

### CONCLUSION

There is no doubt now that many people are very happy with this new style of garden, which is a suitable alternative for Australian conditions. It can considerably reduce the work load once the garden is established. Even in the dry areas of Australia, it is now possible to enjoy an exciting new style of gardening which is more in harmony with the climate of this ancient continent. ■





# **Eremophila**

## **Their cultivation and care**

Based on an address by Mr. Ian Bond (Manager of Loxton Horticultural Research Station, S.A. Agricultural Department) to the Society in Melbourne.

I am not an authority on *Eremophila*, and my interest in native plants is of a more general nature. Nevertheless the genus *Eremophila* is playing an increasingly important part in landscaping in South Australia because of its drought tolerance, its ability to thrive in conditions of low humidity and extreme summer heat. We had two days of 46°C in Loxton last year. With the high cost of domestic water, there is a big swing to low maintenance gardens based on the use of hardy native plants, mulches and ground cover plants to reduce the size of lawns. The Riverland rainfall is only 250 mm (10''), Adelaide is 520 mm (20'').

People are discovering the wonderful family of plants, *Eremophila*, with its incredible shapes, sizes, leaf forms and flower colours. Given a little summer watering, they give fresh growth in the hottest of summer weather, and if carefully selected, a good range of flowers for several months of the year. We possibly have an added advantage in the Riverland, in that we get very intense colour in all our plants, e.g. *Eucalyptus woodwardii*, *E. torquata*, and W.A. Eucalypts, generally have the best and most intense colour, and I believe it is because of the heat and low humidity. This seems to apply to the *Eremophila* too. Even under our apparently ideal conditions we do encounter some problems.

Our biggest problem is alkalinity; the red sands vary from a few centimetres in depth to several metres, and they nearly always overlay limestone. The pH of the soil ranges from 7-9, mostly 7.5-8. I believe *Eremophila* are not so specific in their soil requirements but have trouble with overwatering.

*Eremophila maculata*, and there is a big range of forms, if planted on the red sand overlaying this limestone, can show quite pronounced chlorosis of the tips, but is not a serious problem. Some other species such as *E. granitica*, *E. racemosa* (the old *E. bicolor*) and *E. drummondii*, suffer more from a general yellowing over the whole bush rather than specifically at the tips of the shoots. On the other hand the grey-leaved species of which I am rather fond, and with which you can do so much in landscaping by contrasting them with the shiny green-leaved species, don't suffer from iron chlorosis, e.g. *E. hillii* and *E. oppositifolia* and many others.

Grafting or budding of *Eremophilas* has considerable potential. We have grafted *E. granitica*, *E. racemosa*, and the broad-leaved form of *E. drummondii* on to *E. laanii* for two reasons: because *E. laanii* is a good straight stock, it has good straight wood easy to graft onto and easy to bud into, and secondly, it appears to be fairly tolerant to alkalinity.

We have also used *E. laanii* for the pink form of *E. bignoniæflora* which was found in our district, and for *E. purpurescens*, which is magnificent and my favourite. It has a beautiful oval shiny leaf and a flower like a miniature orchid, and might be worth trying in general garden situations.





***Eremophila maculata* var. *brevifolia***

Photography by Ian Bond

This very attractive form has recently been brought into garden cultivation in the Riverland of South Australia. The bush is 2 years old, one metre wide by 0.5 metres high. It is nourished by drip irrigation.

***Eremophila maculata***

Composite photography opposite by Ian Bond & P. Althofer

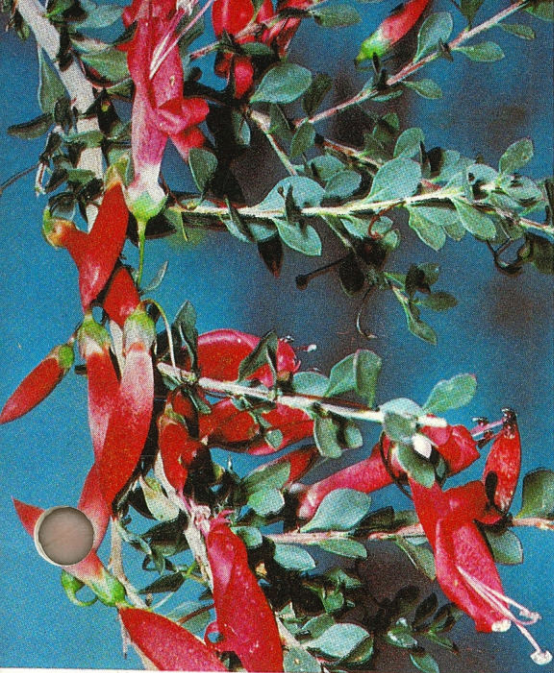
Top left: *Eremophila maculata* var. *brevifolia*.

Top right: *Eremophila maculata* var. 'aurea', a Queensland form.

Bottom left: *Eremophila glabra*, a form from Geraldton, W.A. (Slide was incorrectly labelled).

Bottom right: *Eremophila maculata*, a form from Queensland.







## Nematodes

We have a lot of problems with nematodes on the red sand. They thrive in sandy soil, especially if it is irrigated. They are very important where plants are grown in warm, moist, sandy soil such as the Riverland. We did some work at the Research Centre in 1981 and that is in Vol. 11, No. 8 of "Australian Plants". Briefly, we did pot experiments using steam sterilized soil plus some tomato roots which were heavily infested with nematodes. These were mixed up and incorporated in the mixture, and after growing a variety of native plants on for 10 weeks in it, the roots were assessed for nematode infestation, and, unfortunately, the *Eremophila* that we used had 50-100% infestation on their roots. There was nil infestation on all the Eucalypts, and some of the long-lived *Acacias* — *A. sowdenii* and *A. pendula*; *Callitris*, the native pine, and *Calothamnus* and some of the *Grevilleas*. So it appears that nematodes could be a problem to us in light sandy soil under irrigation. However, on some plants, nematode galls were present on the roots, but the females didn't occur, which means that these species probably have some resistance to the Root-Knot nematode. It doesn't mean that all is lost as quite a lot of *Eremophila* will thrive with some nematodes on them.

## Fungus Diseases

Not a problem in the Riverland. We did a little work at the Research Centre in very wet weather, winter 1973-74, which is written up in "Australian Plants", March 1976, Vol. 8, No. 66. The rainfall we had was exceptional — unheard of — we had far more rainfall than had ever been recorded. Unfortunately our *Eremophila* ran into a bit of trouble. Our plant pathologist isolated *Botrytis* and *Alternaria* sp. The affected parts shrivel and turn brown and some defoliation occurs, and also there is a definite margin between the green tissue and the damaged tissue. The *Botrytis* mainly causes twig death, and the *Alternaria* caused leaf spotting. It has not really occurred again since.

Examination of some of these species revealed that some were more susceptible than others. The most susceptible forms were the *Eremophila glabra* species and *E. hillii*; but the ones which showed a great deal of resistance were *E. alternifolia*, which is very lovely, *E. drummondii* and *E. ionantha*, which is one you should be able to grow more widely. We have it growing by lawns in the Riverland district and they are watered every second or third day. There is no sign of any trouble. The *E. maculata* were fairly resistant to these fungal diseases, as were *E. crassifolia* and *E. granitica*. There are over 140 species of *Eremophila* so there is much to be done on selection and plant trials.

We have a little trouble with scale, particularly on the *E. maculata* species. It is not a great problem, as if the infestation is light — and I don't believe in using chemicals unless something really gets out of hand — we simply clip the pieces off and put them in the incinerator, and nine times out of 10 it will clear up. If it gets more serious, try using a narrow range oil, which is a new formulation. Some of you may have used standard white oil and had a bit of burning. The citrus growers are now using the narrow range oils for red scale control (and having good results). The oil can be used at most times of the year. Golden Fleece are calling it "Lowvis" and "Unipar" is the other brand.

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## Grafting Of Wildflowers

Considerable success is being achieved with the cultivation of many desirable species grafted onto suitable robust stock roots. Future issues will deal with the various methods of grafting. Will readers please advise of their experiences and methods used? In particular will the scientifically trained people speculate on the conclusion that it is not the above ground conditions that are important, outside of extremes, but a suitable rootstock that is robust for a particular area?



## Grafting Experience

Our grafting techniques have been put to very good use again for some species which are difficult to strike. *Eremophila maitlandii* is grafted on to *Myoporum insulare* (the common Boobialla), but this is quite logical as both belong to the family *Myoporaceae*.

These root stocks have special advantages. *E. bignoniaeflora* grows naturally in our part of the world along the river flats and stands an occasional flooding, so wet feet are no real problem for it. Its seed germinates more freely than others. The *Myoporum insulare* comes from some of the wetter parts of Australia, such as Port Lincoln, Kangaroo Island and Tasmania. It should be a good root stock for heavy clays which remain waterlogged for some time. Also, we have used those stocks for grafting *E. santalina*. We have had some success using grafting for some of the short-lived species. *E. macdonnelli*, the Simpson Desert form, with grey leaves and big purple flowers, has lived only six months to two years, but the grafted plants are now three years old.

Grafting can be used for novelties for those who are so inclined. The Western Australian prostrate form of *E. glabra*, which is a lovely lettuce green, has been grafted onto *Myoporum* and been made into a weeping standard. *Myoporum parvifolia* has been grafted onto *E. santalina* which is fairly vigorous, and again has been made into a weeping standard.

Grafting seems to be fairly simple to do as long as it is in the growing season, and the root stock has a good sap flow. We use T-bud as in fruit tree propagation; the whip-and-tongue graft which is a very old method and probably gives the strongest union; but the easiest method is the cleft graft right in the tip. It is important to put a plastic bag over the last graft to keep the humidity up because the growth is so lush and sappy that it will easily dry out.

## Irrigation

This may or may not concern most readers. *Eremophila* thrive on some irrigation, but just be careful with prolonged watering using sprinklers which keep foliage wet. Drip irrigation would be more suitable. We have worked out a watering schedule for native plants in the Riverland area using four litre per hour drippers. In the first six months when we plant, we water for about two hours per week which gives each bush eight litres per week, bearing in mind that we plant in April. We cut off the water in winter and spring if there is plenty of rainfall. Through the first summer we start again about Sept.-Oct. and take them right through at 32 litres per fortnight. In the second year we space out to monthly waterings of 80 litres per plant. This is for all native plants suitable for our area (up to 500 ml. rainfall). You don't soften them too much but let them fight through autumn, winter and spring and make their own natural root systems. In the third and subsequent years we continue with 80 litres a month. I still suspect that this is too much. Native plants should only have a minimum of water.

## Mulch

I will say a bit on *mulches* because, not only with *Eremophila*, but with all our native plant landscaping in South Australia generally it protects against our low rainfall. We are very lucky in the Riverland having a lot of mulch material to call on. We have a lot of apricot shells as the processing industry is based here. The crushed apricot shells make a good mulch. We also have a good source of almond shells, and have tonnes of grape stalks from the wineries, of which there are about 20 in the Riverland area. Previously these





***Eremophila youngii***

Photography by Ian Bond

This bush is 6 years old, 1.5 m high by 1 m wide, and is growing in deep sandy soil. See page 30 for sketch of flower and leaves.

**Editor's Note:**

To adequately illustrate articles, it is undesirable to reproduce only close up technically assisted photography. We need good slides of well grown plants or garden settings. The printer can show his art on beautifully presented photography but can only do the best possible with some of these photographs of bushes and gardens. Can I see any photographs you have? Incidentally an important message in the above photograph is its successful cultivation in deep sandy soil. Who else has success in deep sandy soil?



were burnt. We also get wood chips from tree prunings. Mulching is essential when you are using ground covers, because if you plant these without a mulch the weeds will come up between the leaves.

### Fertilizer

We use blood and bone mainly which doesn't do any harm, applied around shrubs and lightly worked into the mulch.

### Pruning

*Eremophila* thrive on a bit of light pruning. The *Eremophila maculata* species tend to open out with the weight of the seeds, and it is their natural habit to look a bit straggly at times, but if you get in fairly early and prune straight after flowering then they tend to produce a new flush of growth and don't get into that top-heavy situation. You can kill *Eremophila* with heavy pruning, but *E. margarethae* is one that can stand heavy pruning. This has grey foliage and lovely purple flowers.

### Landscaping with *Eremophila*

There is a great challenge to use *Eremophila* for landscaping. There are so many colour forms, every colour in the spectrum, and there are so many shapes, sizes and leaf forms to contrast with, e.g. *E. purpurescens* planted in groups of five contrasting with *E. hillii* and *E. glabra*, the grey-leaved ones. You can also use similar forms but different flower colour. *E. oppositifolia* is what I call a broom-type shrub, planted in contrast to *E. dempsteri*, another "broom type" which has a fluffy seed pod all over the bush when not in flower. *E. maculata* var. *brevifolia* has masses of cerise flowers at the same time as a little *Eremophila* found above Renmark which has a yellow spotted throat flower. Some *E. maculata* flower in winter. You can use summer flowering and winter flowering plants to give a continuity. Some plants flower for long periods e.g. *E. calorhabdos* and *E. maculata* forms.

Others of interest are *E. sturtii*, the turpentine bush, which is the bush the station people have used to thatch their meat houses, as it is a deterrent to flies. *E. crassifolia* is tiny, quite attractive and grows in the Mallee. *E. divaricata* is not a particularly attractive bush as it gets woody, but when it is young it has a graceful habit and beautiful flower. *E. scoparia* is very attractive. *E. bignoniaeflora* is being used as a street tree in Berri, and is used as a root stock for grafting. *E. polyclada* should grow in the temperate eastern fringe.

Some of the prostrate ground covers make excellent substitutes for lawns. Two that I have used in landscaping are *E. glabra* (Roseworthy form) and *E. biserrata*. Both of these are very prostrate and remain a lush green throughout the year, on only four summer waterings.

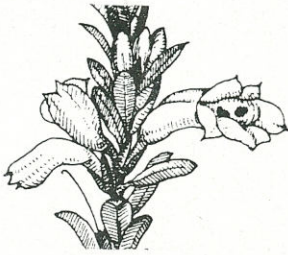
I think *Eremophila* are a wonderful genus. They attract birds, have a wide range of flower colours and thrive in hot, dry situations. Some of the proven species should now be mass planted in many of the low rainfall areas of Australia, and they certainly should be used in more private gardens. ■

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### Wildflower Gardening In Dry Conditions

A number of previous issues discuss the problems faced by people living in inland or dry or hot situations. Readers should purchase previous issues and read the many articles by experienced growers who have learnt to face these problems. In particular readers are referred to Issues 58, 59 and 78. A further issue is in preparation for the Alice Springs situation and another for the northern areas of Australia. Readers are invited to send reports or problems. These issues are not only of value to people living in the areas covered. Reports are needed from city dwellers on their success with dry area plants as we have done in this issue —Editor.





# Eremophilas

by G. Needham, *Eremophila* Study Group Leader

Eremophilas are now being successfully cultivated in the gardens of many native plant enthusiasts. Thriving naturally in often extremely harsh conditions of heat and dryness this genus adapts quite well to more moderate conditions. Under higher than normal rainfall the plants tend to be more lush and vigorous in growth which is not a disadvantage. Eremophilas are extremely variable in growth habit and appearance; in fact it is sometimes hard to believe they are in the one family. Plant habit varies from ground hugging mat plants 25 mm high through all shapes and forms—spreading, slender open, dense to tall shrubs or trees 6 m high. Foliage can be minute stem clasping, thin, round, tomentose, glabrous, viscid, dark green, grey, almost white; the flowers white, cream, yellow, pink, red, blue and all shades of purple—in fact providing an almost endless variety of form and possessing an individual character which is peculiar to the Australian outback.

As with many other Australian plants some thought is necessary to establish plants in the garden. Whilst eremophilas will grow in a wide range of climatic conditions and soils the majority seem to prefer a firm well drained soil, neutral to alkaline, a fact worth noting for people who cannot grow those plants favouring acidic soils. A sunny position suits most, although many are growing in gardens where they are somewhat shaded by other plants. Sun at least part of the day would be a minimum requirement for good growth. As in nature the smaller varieties will grow in more sheltered areas of the garden.

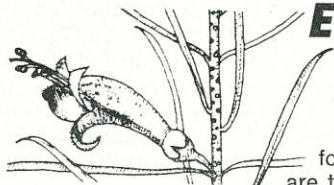
Plants grow in a natural rainfall from 200 mm to 400 mm but the majority of this precipitation may fall in heavy downpours in short periods of time. In the garden however, it is wise to give some water to small plants or those showing stress. If the plant dries out foliage is often lost and the plant develops a woody appearance which detracts from its presentation as a garden specimen. If the land has a slope, drainage will be no problem. If water logging of the soil occurs on a flat area a small hillock can be built before planting to prevent water accumulating at the base of the plant.

Eremophilas accumulate quite a layer of dead leaves and fruit around the base of the plant forming a natural mulch. Anything that helps retain moisture can be of use including stones and gravel.

As with many Australian plants a rich soil is not necessary. If the plant is healthy then fertilisers are not required but if a plant is suffering from a deficiency then a cautious application of a general mix to a damp soil may produce a result. Pruning has a beneficial effect. New growth is usually concentrated towards the tips and removal of these tips produces a denser and often better shaped bush with more flowers.

The most reliable method of propagation has been by cuttings. Of later years some work has been carried out grafting *Myoporum insulare* with species that have refused to be propagated by other methods. ■





# Eremophila in Sydney

by Ray Page, President, N.S.W. Region SGAP

Having grown eremophilas in Sydney for the past twelve years, I have found that there are two crucial factors which have great bearing on the success and health of the plants i.e. soil type and correct watering. Those two factors over all others such as humidity, summer rain, fungal diseases and insect attack appear to hold the key to success.

The Sydney area basically consists of various sandstones and shales and for eremophilas, it is the shales that are of most import. Unfortunately for a large proportion of growers in Sydney eremophilas do not seem to like the often dry sandstone conditions with low nutrient levels. In sandstone plants struggle. They grow spindly and suffer die back.

However, it is in the shales and more particularly, in the heavy chocolate coloured loams, that the plants do best. The moisture trapped on the underlying clay beds is sought by the roots and the nutrients in the soil help to grow lush, succulent plants that bush up and have an abundance of flowers. Feeding with well-composted horse manure, blood and bone and slow-release fertilisers assist the growth, but it is still these heavier soils that provide the most suitable growing conditions.

The depth of soil above the clay bed is also of some importance in regards to the growth and height of plants. Where soil is deep or can be mounded better plants seem to be produced. In a shallow depth, ten centimetres or so, plants can be stunted, but where the roots system can go downwards for forty centimetres or more, bushier plants are established.

The second important factor is watering, especially *winter* watering. In Sydney's often dry harsh winters many eremophilas suffer. Firstly there is leaf loss then secondly die back similar to self preservation mechanisms.

Remembering that the majority of eremophilas come from the west and north western areas of Australia where winter rain is a natural occurrence I experimented with winter watering and found that it was needed to stabilise the plants. Die-back stopped and leaves were retained. In summer, watering is needed only when the ground becomes dry. Use other plants in the garden such as *Prostanthera* to judge the amount of water required as often eremophilas die in their roots and stems but, because of the fleshy nature of the plants, leaves can be maintained healthy and green for quite some time and one would never know.

Species which I have found do well in Sydney are the green leaved, more succulent types of *Eremophila*, *E. maculata* (all forms and colours), *E. glabra*, *E. decipiens*, *E. denticulata* and *E. laanii*. While no bush reaches the size or proportions that they do in inland areas, all these plants can be a dense bush a metre or more high.

Prostrate or semi prostrate forms of *E. glabra*, *E. serpens* and *E. densiflora* also do well. These are the basic plants with which I began as plant material was very scarce. However, many new species and forms are now available and well worth trying. The silver leaved forms of *E. glabra* and *E. subflososa* are very attractive and contrast well with the blue flowers of species of *E. nivea*. *E. bicolor* with its flowers which bud yellow and open candy pink grows well and one of the hardiest is *E. santiliana*. *Eremophila gibbifolia*, *E. weldii*, *E. ionantha*, *E. bignoniiflora*, *E. dempsteri*, *E. crassifolia*, *E. longifolia*, *E. polyclada*, *E. brevifolia*, *E. alternifolia* and *E. oppositifolia*, all seem to establish themselves well in many gardens.



I have had less success with *E. macdonnellii* (both silver and green forms), *E. calorhados* and *E. christophori*, but have seen them growing to full size in other gardens. Pot culture sometimes helps, but there are problems.

The outstanding plant for hardiness, colour, contrast and beauty is *E. youngii*. I have seen it growing in a variety of shale soils and in dry conditions in a river pan. It has maintained itself well. It is an upright bush to one metre in Sydney and with its pink flowers in contrast with its silver foliage it is a must for any native plant enthusiast.

All *eremophilas* grow best in full sun in uncrowded situations. The first group, mentioned above, grow well in semi shade quite often, but other species tend to fade in prolonged periods without sun. Furthermore *eremophilas* do not seem to be overly fond of pot life. They tend to become very leggy and suffer great leaf loss. The leaves turn black and tip growth, typical of some plants in their natural habitats, is all that survives.

I have found it better to plant out young plants, as soon as they have been hardened off after striking. These plants seem to grow quickly and establish healthy plants. Plants left in pots for some time, seem to have to re-establish themselves after planting out.

Finally material for cuttings is quite important. Where I sometimes have not achieved success with young fresh material, I have found that the old wood is usually more than sufficient in some species to get a strike. This quite surprises me when I consider many other genera. Do not discard any material, try the lot. ■

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## Propagating *Eremophilas* From Cuttings

By Cheryl Moulder and others of the *Eremophila* Study Group

Vegetative propagation produces plants which have identical characteristics (colour form, growth habit) to the parents. This is particularly important when trying to propagate from a hybrid parent.

### Containers

The containers to be used for propagation must be clean and free of bacteria, and there must be sufficient room for good root development. I find that 300 ml cream containers with 3 or 4 holes cut into the base are ideal, but other containers which may be used are plastic and earthenware pots. Even jiffy pots or small "thumb tubes" are suitable for single cuttings. If earthenware pots are used they should be thoroughly scrubbed and washed in disinfectant and then washed again.

### Propagating Medium

Basically, any medium which is open enough to allow good drainage and aeration is suitable. A medium in common usage is 50% sand and 50% humus or peat moss. The sand must be carefully washed to remove any fine particles which are likely to reduce the permeability of the mix and result in the rotting of the cutting. If available a 50-50 mixture of coke breeze and peat moss is also suitable.

### Cutting Material

Ideally, the cutting material should be planted as soon as it is taken. The cuttings can be any size from small to large, heel or tip cuts, from young or mature wood. Root suckers are the best type of "cuttings". Simply pull or dig up a root sucker and plant into the propagating medium as it is.



### Preparation of Cuttings

If the cuttings have dehydrated in transit, immerse them in water for 10 minutes. The addition of a fungicide (Benlate or Capton) can be beneficial. If resin-coated cuttings have stuck together, soak the cuttings in a 50-50 methylated spirit and water solution, and then wash in fungicide or water. Make a fresh cut at the base of the cutting. Remove leaves and side shoots on the lower 1/3 of the cutting and also remove flowers and fruits which will invariably rot. Take care not to strip the bark. Dip the bottom of the cuttings into rooting hormone (e.g. Seredix No. 1).

Use a long pointed instrument (e.g. a skewer or a dibbler) to make a hole in the potting medium. Place the cutting in the hole and press the medium firmly around it. Do not overcrowd the cuttings in each pot — they need a good circulation of air to prevent rotting.

### Location of Potted Cuttings

A frame in common use is a wooden structure with a hinged lid. The wood should be treated to prevent rotting by painting with creosote. Strengthened plastic can be attached to the four sides and the lid with drawing pins. Recommended dimensions for the beginner are a height of 300 mm with a length and width of 700 x 900 mm.

This frame can be placed anywhere in the garden. Level the area first, place a sheet of strong plastic on the ground to prevent weed growth and sit the frame down. Place a layer of coke, scoria or gravel inside the frame and sit the pots on this.

To maintain suitable propagating conditions, it is advisable to keep the frame fairly full. Suitable locations can be anywhere from complete shade to full sun. As the temperature can get quite high in summer frequent watering will be necessary and a semi-shaded position is more suitable.

Spray the cuttings at least once a week with a fungicide and remove any rotted cuttings to prevent contamination of healthy plants. Check frequently for any pests (slugs, etc.).

### From Richard Davidson

In a recent experiment to ascertain the optimum time for settings I put cuttings into propagating sand only, in a 120 x 75 mm cold frame under a tree. The frame gets morning and afternoon sun. Watered morning, noon and night unless temp. records 35°C, then water 5-6 times daily. Top left slightly open in hot weather.

Those set in November: *E. macdonnelli* (7) (7) (set 7 rooted 7), *E. densifolia* (7) (5), *E. margarethae* (7) (3), *E. markingleyi* (5) (2), *E. glabra* (6) (4). Most came in January with the rest in February.

Those set in December: *E. ericalyx* (6) (0), *E. maculata* (4) (1), *E. glabra* (4) (4), *E. drummondii* (6) (0), *E. ionantha* (6) (0).

### From Warwick Pybus, Use of Hormone in Propagation of Eremophilas

Following success by others in the use of hormone solutions for the striking of cutting material, it was decided to give it a go ourselves. The hormone used was Indo-3-Y1-Butyric acid (I.B.A.) mixed at the rate of 1 gram with 20 ml of 50% Methanol. This mixture is stable and can be kept in the refrigerator for some time. Materials, Selbys or Anax in Adelaide.

In most cases the number of cuttings was divided into two lots, one for use with the hormone, the other to act as control without hormone. The cutting medium used did vary somewhat between batches, but was approximately 2 parts of perlite and 1 part of peat. Growing conditions were in a glasshouse and the cuttings were placed in a hot bed at approximately 25°C with mist for 2 seconds every twenty minutes.



I must emphasize that this trial was conducted under commercial conditions with no special consideration to the particular requirements of *Eremophilas*. Each treated cutting was dipped 10 mm into the hormone solution for 5 seconds before insertion into the cutting medium.

A detailed table of results is given in an *Eremophila* Study Group newsletter. The subjective opinion I have formed was that those cuttings treated by hormone had earlier and stronger formation of roots. The roots produced by the two rooting methods did vary. Those treated had a massive bunch of shorter roots clustered in the treated area and were very strong and well attached. If by accident some roots are damaged there are still plenty left. Roots on the untreated cutting material seemed longer and more delicate but with few attaching points making them more vulnerable to damage.

If it is possible to substantially decrease the time taken to produce roots, then many species which drop leaves or rot in the cutting frame, may strike before this can happen. It may also be an advantage to induce rooting in the cooler months of the year in those "hairy" species which object to the frequent watering, necessary in spring and summer.

#### From Brian Staker

I.B.A. is the hormone in SERADIX as printed on the label. SERADIX powder is available in three strengths 1, 2 & 3. I have found that hormone treatment improves strike rates, but usually only No. 1 as the other two are too strong for soft tip cuttings. I have also had some good results using "STRIKE" the hormone being in this case ALPHA NAPHTHYLACETIC ACID (A.N.A.). "STRIKE" also contains the fungicide "CAPTAN" and this may account for the good results rather than A.N.A.

#### From Rosemary Pedler

At the annual sale of plants by the Northern Areas Group of SGAP at Booleroo in April the cut flowers used for decoration included two nice slips of *Eremophila macdonnellii*, a grey-leaved and a nice green-leaved form. I took them home and placed them in a tumbler of water over-night. They ended up next day, in my potting box. The result has been a 100% strike with six grey-leaved and seven green-leaved rooted cuttings.

My potting mix consists of about ½ sharp sand, ¼ peat moss and ½ vermiculite. I do not use any hormone powders. My potting box is made of loose cement bricks built into a box shape about 6' x 3' with 2" of loose gravel inside for drainage, and topped with a sheet of corrugated green plastic. It is situated half-way under a lemon tree and faces East, so gets morning sun only.

While on the subject of *E. macdonnellii*, my original plant of the narrow green-leaved variety is now about 8 years old and measures 17 feet, 3 inches x 13 feet x 4 feet, 6 inches tall (5.25 x 4 m x 1 m 40 high). It is growing in an area of deep river sand, pH 8.5-9 in natural rainfall of approx. 15 inches. It has successfully survived a drought, a couple of floods and an active rabbit warren under its canopy. So it seems that "Treat em rough" succeeds better than 'The good life' as I have invariably lost plants of this type which have received garden care.

Also growing in this general area of river bank (Broughton River) is an original specimen of *Eremophila longifolia*, which must be among the granddaddies of them all. Measured girth at approx. 10" (25 cm) above the ground is 60" (or 120 cm). The very gnarled trunk leans skyward for about 3½ metres and then bows down in a tangled manner to within ½ metre of the ground. A little thin on foliage but still flowering gamely. There are taller specimens of *E. longifolia* nearby but without the aged character which this one exudes.



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Managing Editor: W. H. Payne

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# Eremophila from seed

A summary of Reports in the *Eremophila* Study Group Newsletters, prepared by Ken Warnes.

While we still have no answer to seed germination, a number of plants have been established from seed and perhaps it is an opportune time to put down a few thoughts — all conflicting. In Newsletter 2, page 3, I concluded that solutions of iron chelate triggered germination. Dave Gordon plants copious quantities of seed in iron stone soil and waits up to 4 years for germination. Bert Curtis sows in March and keeps damp with rain water to simulate a natural "break" to the season.

Murray Catford planted half a batch of *E. scoparia* with nil result. Four years later he planted the rest and had good germination in 10 days. Did the storage period help? Bruce Spiers and others have extracted seed from the drupe and germinated them on blotting paper.

No. 5, p. 3. Doris Phelps scraped up a heap of fruit and trash of *E. maculata* and in from 9 days to 15 months germinated 140 with odd later stragglers. She observed that a white mycellum-looking growth was present and wondered if this had any effect. Older, shabby-looking fruit germinated first.

No. 5, p. 3. Graham Harrington, CSIRO, Deniliquin, gives the results of experiments with seed of several species at varying controlled temperatures and summarizes it, as follows:

- (a) The germination requirements are mysterious when a seed under constant conditions will germinate for no apparent reason after 9 months.
- (b) Permanently wet conditions do not seem to be inhibitory and may eventually be required.
- (c) Fresh seed will germinate and these results suggest a loss of viability after the 1st year.
- (d) Unlike many arid zone spp. high storage temperatures do not seem to encourage germination although I have not tried a period of high temp. (Summer), then cold (Winter) and then germination at moderate temperatures (Spring).

No. 10, p.3. Ray Isaacson reported germination from seemingly immature fruit in one season when sown immediately, but nil the next year after a short storage period. Personally, I have always been a bit sceptical about the emu theory being a necessary part of germination. Then one day I suddenly realized how strange it was that emus would eat old mature fruit, which is really only a chunk of wood. Surely they would pluck the fleshy fresh young drupes if *Eremophila* fruit were useful feed. Ray's experience would show that young fruit contains viable seed and I think this is a field to be developed.

On the other hand we have members who are convinced that old fruit are required and to support this I recently had germination of 11 *E. gilesii* sown at least 6 years ago (seed from Dave Gordon), plus 1 *E. delisseri* and 1 *E. hillii*. This seed lay in a large pan in the open and had been subject to the iron chelate treatment which triggered germination of *E. oldfieldii*, *E. hastiana* and *E. latrobei* in 1-12 weeks. No *E. gilesii* had been seen in all that time, yet after the prolonged heavy rain in April, 1978, 11 came up from the totally decomposed fruit. 6 were from a single fruit. 3 months



later only 4 survive and only 2 have just started a pair of leaves. Unfortunately, none of last year's seedlings survived, neither those listed nor a couple that came later. The prolonged cold, wet weather of 1978 was too much for them.

The seed-pan remained in the open throughout the summer of 1978/79 and was watered occasionally with nil result, but within a week of rain in early April the *gilesii* started germinating again and at least 60 have come, mainly singles with a few twins and triplets, but nothing to match last year's sextuplets. A dry spell caused germination to cease, but further rain brought more plants. As last year's attempt to let them grow on in the pan was a failure I decided to pot on at the cotyledon stage. After a lot of "heat" 38 were potted on, some to jiffy tubes, others to 2" x 5" bags. "Damp off" and mice claimed the remainder and "damp off" continues to be a problem despite regular use of Benlate. I discovered that the radicle emerges first from the drupe and penetrates deep into the soil before pulling the cotyledons free, so that I was trying to handle tiny cotyledons with a 2" long, thread-like, BRITTLE, radicle. Only a few were transplanted intact. A number of plants have survived.

I support the theory that an inhibitor is involved. It is natural that conditions for germination and survival must be optimum for a desert plant. I suggest that a young fruit if detached could germinate immediately if suitable conditions prevail, but if maturing on the bush and not detaching until suitable conditions no longer exist, the inhibitor would have developed and would be effective until broken down by time or leached out by water. This would be consistent with the evidence of numbers as summarized earlier.

I understand that experiments on a similar "difficult" plant were:

Watered with distilled water and produced 0% germination.

Watered with double distilled water through a silicon still 100% germination.

A copper salt solution produced 25% germination.

A lead salt solution produced 90% germination.

The hypothesis was that the metal ions in the salts bend the inhibitor into non-inhibitory form, double distilled water washed out the inhibition.

Could it have been that my iron chelate treatment had a similar effect with *Eremophilas*? It certainly seems a field worth pursuing.

#### From Ron Schalinger

Germination of *Eremophila* seed is considered to be difficult, so difficult that quite often one is advised somewhat despairingly — first catch your emu — the suggestion being that the only way is to take advantage of the bird's digestive system, as this seems to trigger germination in these seeds.

In Alice Springs recently I was fortunate enough to meet John Blakeman and he told me that he had decided to try and match as closely as possible the process to which a seed was subjected during its passage through an emu, and added that whereas he had had no luck at all with untreated seed, he was now having continuous success.

His method — Place the seed in a tumbler (of the kind used in polishing stones), add sand, gravel and bird droppings. Tumble the lot for a couple of weeks and the seed will then germinate — some immediately — some later and some much later; but here is a method that works, and for that I would like here to thank John Blakeman. ■



# Trees

## For Hot Dry Conditions

Reprinted by permission from "Shrubs and Trees For Australian Gardens"  
by E. E. Lord and J. H. Willis

The native flora of the semi-desert country is frequently characterised by hard leathery leaves, often rich in oils, and curiously turned edgewise to the face of the sun to reduce evaporation of moisture. This applies particularly to eucalypts, which have adapted to Australia's desert areas. Other trees, such as the majority of our wattles (*Acacia*), have completely lost their original leaf system, which has given place to an odd thickening or widening of the stalks known as "phyllodes", which have the appearance of leaves, but with a greatly reduced moisture-evaporation surface. The leaves of other trees are extremely small, as for instance cypress-pines (*Callitris*), tamarisks and she-oaks (*Casuarina*) on which the leaves are reduced to minute scales, only visible under magnification. Many species of *Hakea*, *Melaleuca*, *Cassia*, *Banksia*, *Ceratonia* and *Callistemon* have foliage highly resistant to evaporation of moisture. On the other hand Saltbush (*Atriplex*), Boobialla (*Myoporum*), Bluebush (*Maireana*), Jade-plant (*Portulacaria*), and Agave, etc., have fleshy, succulent leaves in which they retain great quantities of water.

Another important factor is the root system. We have reason to believe that many of our drought-resistant trees have two distinct sets of roots. The primary system spreads out over a large surface area and constitutes the main feeding apparatus as far as soil nutrients are concerned. Bacterial action rendering down all kinds of organic substances only occurs freely in the upper soil layer (to a depth of 15 to 20 cm), and it is there, during the wet season (or under artificial watering) that most of the soluble plant food is absorbed by the root-hairs. The presence of this humus (decayed vegetable and animal matter) seems to be essential to the maximum absorption of plant food, and in the case of many trees the process is also accompanied by a strange fungus companion on the roots, known as the *mycorrhizal association* and referred to in previous chapters. The period of rainfall is, of course, marked by the annual new growth of stems and leaves, and the production and storage of material for flowers and fruit (which may, however, mature at a later stage). When the soil dries out in summer, the ground water-level descends to a considerable depth, perhaps 3-6 m, and to maintain moisture supply a secondary deep root-system comes into operation. These roots often penetrate to great depths and distances. Meanwhile the activity of the surface roots has probably ceased completely. Dry sand may be swept away by eroding winds or banked high while heavier soils may shrink and open in deep cracks.

An interesting comparison may be drawn between this double root action and the corresponding behaviour of a tropical flora. Sir Albert Howard in his *Agricultural Testament* describes an extensive investigation which revealed intense root action at depths of 5 m and more during prolonged dry seasons when the soil-moisture level was very low. Torrential summer rains, however, would afterwards so saturate the soil that all deep root activity had to cease through lack of oxygen, and careful examination then revealed corresponding activity in a shallow root system where air was still able to circulate in surface



soil between the heavy downpours. Soil aeration seems to be a most important factor in such high rainfall areas, especially when the natural surface mulch of humus has been disturbed by cultivation or clearing.

Having thus a better understanding of what is taking place below ground, we can more intelligently assist the trees we have planted in their life and death struggle. The subsoil should not be too deeply disturbed, nor should much foreign soil or other material be introduced. The tree roots must be encouraged to penetrate quickly and deeply into the existing subsoil, and barely sufficient water should be applied through the first summer to keep the tree growing. Frequent or light watering will induce surface rooting and defeat the very object in view, which is that the tree should become self-supporting as soon as possible. Normal winter rains create an ample reserve in the subsoil, and this may be conserved for many months by applying a heavy mulch of dried weeds or other material to stop evaporation of surface moisture. Mulching with organic matter in this manner has been found to be more effective than just surface working, and less damaging to roots — at least, as far as young trees are concerned. Edward H. Faulkner in *Ploughman's Folly* describes some remarkable experiments in retaining subsoil moisture throughout the summer by lightly disking into the surface a heavy mulch of green crop, which, he explains, effectively breaks the upward capillary soakage.

An interesting experiment has also been carried out at Bayswater, Victoria, where a large and healthy collection of trees and shrubs is maintained with no summer watering whatever. Trees are planted in autumn as small as possible, with no soil disturbance, a heavy surface mulch of organic material, and the very minimum of watering for a short time until established. Growth is notably slow in dry seasons and would appear to be only as much as the plant can carry under natural rainfall, and it does not die back at all even under prolonged dry spells. Beneath the mulch there is always a moist soakage from the subsoil, whilst nearby ground, bare and hard, has lost its moisture.

### Small Evergreen Trees For Hot Dry Conditions

|                                   |                     |                            |
|-----------------------------------|---------------------|----------------------------|
| <i>Acacia acuminata</i>           | Jam Wattle          | Yellow flowers             |
| <i>Acacia adunca (accola)</i>     | Golden Glory        | Yellow flowers             |
| <i>Acacia aneura</i>              | Mulga               | Grey foliage, shelter      |
| <i>Acacia baileyana</i>           | Cootamundra         | Silver fol., yellow fls.   |
| <i>Acacia farnesiana</i>          | Cassie-flower       | Deep yellow flowers        |
| <i>Acacia holosericea</i>         | Silky Wattle        | Silver fol., yellow fls.   |
| <i>Acacia loderi</i>              | Nealie              | Small shade tree           |
| <i>Albizia lophantha</i>          | Cape Wattle         | Handsome foliage           |
| <i>Callistemon brachyandrus</i>   | Bottlebrush         | Red flowers                |
| <i>Capparis mitchellii</i>        | Wild Drange         | Large white flowers        |
| <i>Cassia brewsteri</i>           | Cigar Cassia        | Yellow flowers             |
| <i>Casuarina stricta</i>          | Drooping Sheoke     | Weeping habit              |
| <i>Dodonaea viscosa</i>           | Giant Hop-bush      | Small shade tree           |
| <i>Eremophila longifolia</i>      | Berrigan            | Red flowers                |
| <i>Eremophila oppositifolia</i>   | Twin-leaf Emu-bush  | Hoary fol., cream fls.     |
| <i>Eucalyptus caesia</i>          | Gungurru            | Red blooms, silver caps.   |
| <i>Eucalyptus calycogona</i>      | Red Mallee          | Foliage and spring fls.    |
| <i>Eucalyptus concinna</i>        | Vict. Desert Mallee | Glossy fol., cream fls.    |
| <i>Eucalyptus crucis</i>          | Silver Mallee       | Silvery foliage            |
| <i>Eucalyptus eremophila</i>      | Tall Sand Mallee    | Foliage and winter fls.    |
| <i>Eucalyptus erythronema</i>     | Red-fl. Mallee      | Red flowers                |
| <i>Eucalyptus lehmannii</i>       | Bushy Yate          | Large yellow-green fls.    |
| <i>Eucalyptus oleosa</i>          | Giant Mallee        | Shade, shiny foliage       |
| <i>Eucalyptus stricklandii</i>    | Strickland Gum      | Yellow flowers.            |
| <i>Eucalyptus viridis</i>         | Green Mallee        | Foliage                    |
| <i>Eucalyptus youngiana</i>       | Large-fruit Mallee  | Red flowers, big caps.     |
| <i>Ficus platypoda</i>            | Rock Fig            | Yellow-brown fruits        |
| <i>Geijera parviflora</i>         | Wilga               | White flowers, stock feed  |
| <i>Godonocarpus cotinifolius</i>  | Bell-fruit Tree     | Small "desert" tree        |
| <i>Hakea eyreana (divaricata)</i> | Corkwood            | Forked fol., cream fls.    |
| <i>Hakea suberea</i>              | Corkwood            | Pencil leaves, yellow fls. |
| <i>Heterodendron oleifolium</i>   | Cattle-bush         | Shade tree, grey fol.      |
| <i>Myoporum insulare</i>          | Boobialla           | Fast-growing shade tree    |
| <i>Pittosporum phillyreoides</i>  | Weep. Pittosporum   | Weeping, orange capsules   |
| <i>Santalum lanceolatum</i>       | Nth. Sandalwood     | Grey leaf, bluish fruit    |



## Larger Evergreen Trees

|                                      |                      |                               |
|--------------------------------------|----------------------|-------------------------------|
| <i>Acacia estrophiolata</i>          | Cent. Ironwood       | Graceful drooping fol.        |
| <i>Acacia pendula</i>                | Weeping Myall        | Weeping tree                  |
| <i>Acacia salicina</i>               | Willow Wattle        | Yellow flowers                |
| <i>Acacia sowdenii</i>               | Western Myall        | Umbrella tree (for shade)     |
| <i>Atalaya hemiglauc</i>             | White-wood           | Grey leaves, winged caps.     |
| <i>Brachychiton gregorii</i>         | Desert Kurrajong     | Pinkish yellow fls., pods     |
| <i>Brachychiton populneus</i>        | Kurrajong            | Creamy brown-dotted fls.      |
| <i>Brachychiton rupestris</i>        | Old. Bottle Tree     | Swollen trunk                 |
| <i>Callitris columellaris</i>        | White Cypress-pine   | Upright conifer               |
| <i>Callitris preissii</i>            | Slender Cypress-pine | Upright conifer               |
| <i>Casuarina decalaneana</i>         | Desert Oak           | Desert shade tree             |
| <i>Casuarina luehmanni</i>           | Bull-oak (Buloke)    | Shade tree                    |
| <i>Casuarina cristata</i>            | Belah (Belar)        | Shade tree                    |
| <i>Erythrina vespertilio</i>         | Bat's-wing Coral     | Red flowers, red seeds        |
| <i>Eucalyptus camaldulensis</i>      | River Red Gum        | Shade tree (watercourses)     |
| <i>Eucalyptus cladocalyx</i>         | Sugar Gum            | Shade and wind-break          |
| <i>Eucalyptus gongylocarpa</i>       | Barra Gum            | White trunk, papery caps.     |
| <i>Eucalyptus microtheca</i>         | Coolabah             | Shade tree (watercourses)     |
| <i>Eucalyptus papuana</i>            | Ghost Gum            | Picturesque white trunks      |
| <i>Eucalyptus papulnea</i>           | Bimble Box           | Shade from shining crown      |
| <i>Eucalyptus spathulata</i>         | Swamp Mallet         | Shade, fine grey foliage      |
| <i>Eucalyptus terminalis</i>         | Bloodwood            | Shade, large capsules         |
| <i>Eucalyptus transcontinentalis</i> | Redwood              | Yellow flowers                |
| <i>Eucalyptus woodwardii</i>         | Lemon-fl. Gum        | Yellow flowers, silver fruits |
| <i>Grevillea striata</i>             | Beefwood             | Shade, white blossom          |

Australia's classic example of desert gardening and tree culture is without doubt the amazing achievement of the Zinc Corporation Ltd. at Broken Hill, under an average annual rainfall of 190 mm. Broken Hill is now protected by a belt of green holding the existing soil, protecting from much of the dust menace and effectively checking the advance of the desert. Over 60 kinds of eucalypts and a similar number of *Acacia* species are being grown at Broken Hill, together with numerous other types of trees, both Australian and exotic.

## Shrubs And Trees For Australian Gardens

by E. E. Lord and J. H. Willis

This well known book originally by E. E. Lord is now in its fifth revision, thanks to the practical competence of that much revered professional botanist, Jim Willis. The book recommends not only Australian natives but has chosen from the world's best trees and shrubs, those most suited for Australian conditions. The book is a splendid example of practical reality. Recognising the fact that Australian trees and shrubs have evolved over the centuries to grace our landscape at least 50% of the plants described and recommended are Australian natives. The result is a pleasing blend of native and exotic plants that complement each other. Good simple descriptions are provided for the species used but the sections of special interest are where the authors have divided the Australian scene up into Zones depending on climatic conditions and have, by sketches, suggested what native and exotic trees and shrubs to select and how to arrange them for a pleasing effect. A feature of the book is the all new colour plates of excellent quality relying on the competence of H. A. Morrison, a long time contributor to Australian Plants.

## FLORA OF AUSTRALIA — VOLUME 8

Volume 8 which includes 19 families of the Australian flora is now available from The Editor, Australian Plants, for \$34.00 post free for the hard covered edition. This volume includes the families Brassicaceae, Droseraceae and Frankeniaceae. Those include many plants of particular interest.

*Flora of Australia* is a series of books issued by the government which will contain botanical descriptions of all species of plant in the Australian flora. As the official accredited publication it will be a valuable reference to all. Do not expect anything but a scientific work though as such it is still a valuable and easily understood reference. Previously issued volumes are Volume 1 — Introduction (\$15.00) and Volume 29 Solanaceae (\$25.00) both available from The Editor, Australian Plants.

As with all other scientific publications of interest, it is proposed to present in future issues of Australian Plants a summary of the principal items of general interest written in our terms. An issue is under preparation on the plant family Solanaceae. To assist in the preparation of an issue presenting Volume 8 will readers forward notes on their experiences with cultivation, or any good colour slides. As the families include *Drosera* there should be much to report to put together an excellent issue.

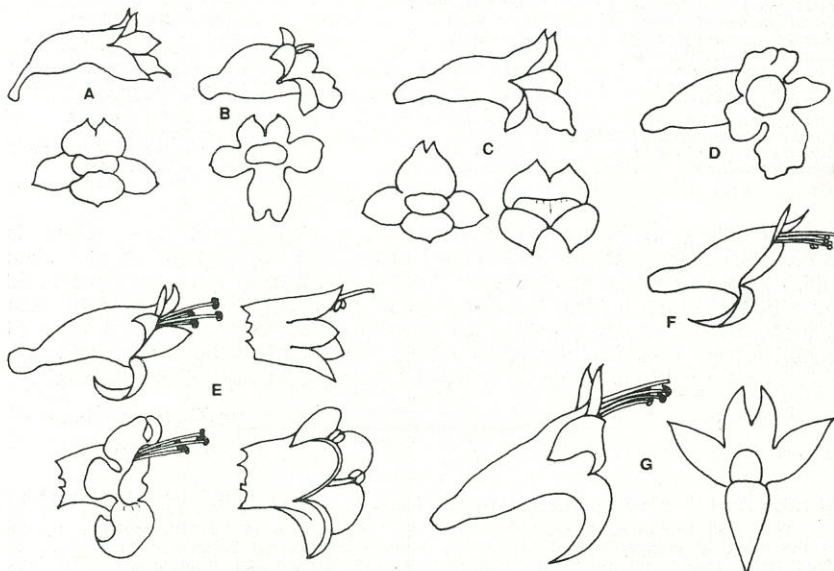


# EREMOPHILA

The genus as presented by R. J. Chinnock in "Flora Of Central Australia", this interpretation being by W. H. Payne as a guide to readers. The extensive research by Bob Chinnock has led to many name changes and new descriptions that will be presented to readers in series form.

## *Eremophila* flower (corolla) shapes

While at first glance the flowers of most emu bushes are very similar, a closer examination will reveal that they can be grouped as shown in the sketches below:



Corolla shape A is confined to four of the six species with opposite leaves as described below and to *E. christophori*. The floral tube appears flattened a little and the petals do not spread at the ends as much as other species.

Corolla shape B has a shorter fatter tube than most other types and is found on *E. falcata*, *E. paisleyi* and *E. sturtii*.

Corolla shape C is found on twenty three (23) species which include *E. macdonnellii*, *E. margarethae*, *E. bowmanii*, *E. rotundifolia*, etc.

Corolla shape D is found on *E. bignoniiflora*, *E. polyclada* and *E. platycalyx*.

Corolla shape E is found on *E. macgillivrayi*, *E. oppositifolia*, *E. tetraptera*, *E. latrobei*, *E. longifolia*, *E. alatisepala*, *E. neglecta* and *E. youngii*.

Corolla shape F is found on *E. duttonii*, *E. maculata*, *E. alternifolia*, *E. oldfieldii*, *E. linearis*, *E. undulata*, *E. serrulata* and *E. glabra*.

Corolla shape G is found on *E. leucophylla*, *E. abietina*, *E. miniata* and *E. fraseri*.

## *Eremophila cuneifolia* (opposite, top)

Photography by R. Chinnock

*Eremophila cuneifolia* is a sticky shrub 0.3-1.5 m, with densely hairy rough branches. The leaves are alternate, densely clustered wedge-shaped to round, minutely hairy and resinous, 0.5-2 cm x 5-15 mm. The flowers are of type C, solitary, sub sessile, deep rich purple, light purple and sometimes whitish, 1-2 cm long.

## *Eremophila inflata* (opposite, bottom)

Photography by R. Chinnock

The peculiar pitcher-shaped flowers of *E. inflata* are not found in any other species of *Eremophila*. The flowers, violet or pink in colour, 7.5 mm in length, are borne in profusion during spring and early summer and unlike other species the corolla does not fall off the reflexed calyx. *Eremophila inflata* is a small shrub to 1 m tall and wide. It is known only from an area of woodland east of Hyden and is listed as a rare and endangered species.





*Eremophila cuneifolia* ▲

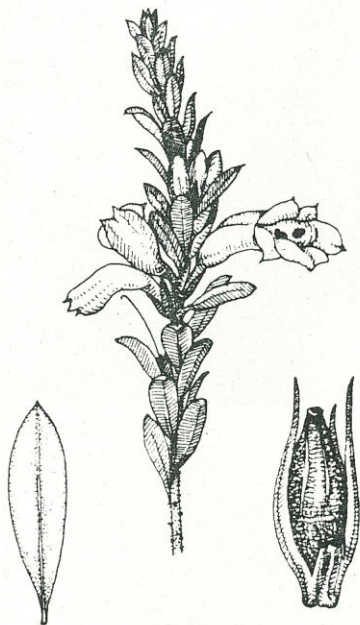
*Eremophila inflata* ▼



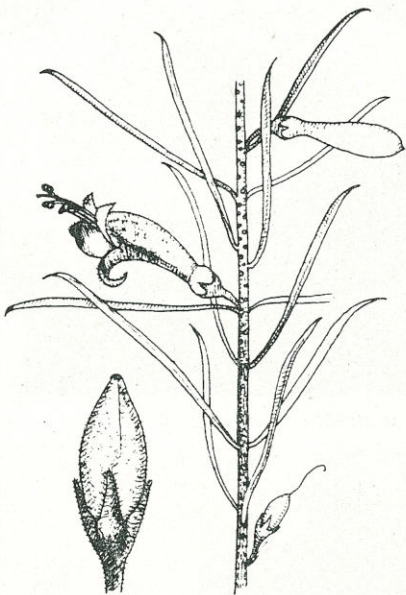


### Species Of *Eremophila* With Opposite Leaves

1. *Eremophila arachnoides* is a broom-like shrub to 2 m, the branches having numerous fine lines along them. The leaves are opposite, erect or spreading, covered in dense white scales that drop off with age, usually sharp pointed and 1.5-3 x 1 mm. The flowers are solitary or paired, white to mauve of shape A.
2. *Eremophila dalyana* is a shrub to small tree 1-7 m with branches covered with scaly hairs. The leaves are opposite, narrow and to a curved point, 2-6 cm x 1 mm. The flowers are solitary or paired, lilac to white of shape A.



*Eremophila christophori*



*Eremophila youngii*

3. *Eremophila scoparia* is a silvery broom-like shrub 1-3 m with 4-ribbed branches covered in grey to yellowish scales. The leaves are opposite narrow with a curved point 1-1.5 cm long. The flowers are 1 or 2 in the leaf axils, lilac to white of shape A.
4. *Eremophila verrucosa* is a shrub 1-2 m with grey leaves and branches. The leaves are opposite, decussate (opposite in pairs, each pair at right angles to the succeeding pair), narrow tending to lanceolate, flattened or channelled above, 1-1.6 cm x 1.5-2 mm. The flowers are blue to white, mauve and shape A.
43. *Eremophila oppositifolia* is a shrub or tree 1-10 m with opposite or alternate, terete long narrow leaves 2-10 cm x 1-7 mm. The flowers are 1 or 2 in leaf axils, cream tinged pinkish above and of shape E.
45. *Eremophila youngii* is a grey to yellowish shrub 1-2 m with grey leaves and branches the leaves being opposite, linear-lanceolate, apex recurved and hooked, 1.6-4 cm x 2-4.5 mm. The flowers are solitary, red, of shape E. See page 16 for colour photograph.



## Species Of *Eremophila* With Shape A Flower

The only species that has a flower shape designated A in the sketches, and that does not have opposite leaves and hence is not described above is: *Eremophila christophori* is a shrub to 2 m with crowded alternate leaves, elliptic to narrow-oblongate, apex acute, 1.5-3 cm x 4-8 mm. The flowers are solitary, blue and of shape A.

## A Key To Species of *Eremophila*

This is the first portion of the key to the species found in Central Australia as presented in Flora Of Central Australia and is that of species with leaves opposite in pairs along the stem. All other species have their leaves alternately attached along the stem, i.e. not opposite each other, except for some few species where the leaves tend to be whorled, i.e. in a ring around the stem.

By some unusual circumstances four of the six species also have a characteristic corolla (flower) shape as defined in *Eremophila* flower (corolla) shapes on page 28.

- |   |                                                                                                                          |                          |
|---|--------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1 | Leaves opposite                                                                                                          | 2                        |
|   | Leaves alternate or rarely subwhorled                                                                                    | 7                        |
| 2 | Indumentum of branches and leaves of oblong flattened appressed segmented hairs; corolla glabrous outside                |                          |
|   | Indumentum of branches and leaves lepidote (flattened appressed circular scales); corolla lepidote or stellate-pubescent | 3                        |
| 3 | Indumentum of corolla lepidote                                                                                           | 4                        |
|   | Indumentum of corolla stellate pubescent                                                                                 | 5                        |
| 4 | Branches and leaves completely covered in a persistent silvery lepidote indumentum; fruit obconical, lepidote            | 3. <i>E. scoparia</i>    |
|   | Branches and leaves completely covered with a white lepidote indumentum only when young; fruit subfusiform, villous      | 2. <i>E. dalyana</i>     |
| 5 | Leaves 1-1.6 cm long, subterete, channelled above; internodes 2-4 mm; tubercles larger, evenly dispersed; ovary villous  | 4. <i>E. verrucosa</i>   |
|   | Leaves 1.5-4 cm long, terete or linear; internodes > 1 cm; stem tubercles small, in rows; ovary stellate pubescent       | 6                        |
| 6 | Flowers red; anthers exserted; fruit dry                                                                                 | 45. <i>E. youngii</i>    |
|   | Flowers lilac; anthers included; fruit succulent                                                                         | 1. <i>E. arachnoides</i> |
| 7 | The rest of the key distinguishes the remaining 58 species found in Central Australia.                                   |                          |

Readers are invited to submit reports on *Eremophila* for future issues in this series. ■

## Flora Of Central Australia — Ed. J. Jessop

\$35.00 post free from Editor

This book is the result of a co-operative effort by The Systematic Botany Society, a group of dedicated scientists used to producing their work to conform with strict international standards, and it is usually highly technical and wordy. Hence my cautious review in a previous issue. But! This is a book for all. An essential reference for every botanist and student of the flora. An essential reference also to anyone interested in Australia's wildflowers. The text is shortened to describe in clear terms, the critical features of each plant. Many line drawings illustrate the text. For instance, for 56 species of *Eucalyptus* of Central Australia, each has a description that includes the trunk, the bark, etc., and a sketch of buds and fruits; the species of *Hakea* have sketches of leaves and fruit, etc. Order now, post free from the Editor, Australian Plants.

## Wildflowers Of Tasmania

Readers in Tasmania have prepared a number of articles on wildflowers of their isle. One problem is the availability of good quality colour slides. If you have a slide that appears to be good, please forward it for inspection. Slides are returned promptly and in the same condition as forwarded. More articles on Tasmanian wildflowers would also be welcome.

## PHOTOGRAPHY AND AUSTRALIAN PLANTS

The best colour printing needs and deserves the best quality in 35 mm colour slides. You will note that in previous issues we have relied heavily on the photographic skills of H. A. (Alan) Morrison, Brian Crafter, C. L. Wheeler, C. Garrett, Murray Fagg and B. A. Fuhrer. We shall be depending heavily on the continued support of these donors. Who else has a really good slide of an Australian wildflower? —Editor.





*Eremophila chamaephila* ▲

*Eremophila platycalyx* ▼







***Eremophila denticulata*** (above)

Photography by R. Chinnock

*E. denticulata* forms a robust shrub up to 2 m high and wide. Apart from the red to carmine flowers the deep green shiny leaves make this a very attractive shrub. Although very common in cultivation in South Australia the species is extremely rare in the wild and it is known only from a few locations in south-west Western Australia.

***Eremophila chamaeophila*** (opposite, top)

Photography by R. Chinnock

This small compact species from Western Australia forms a low growing shrub up to 30 cm tall. The terete leaves are densely clustered on the branches and have prominent tubercles on the lower side. The lilac to light purple flowers are similar to those found in *E. crassifolia*.

***Eremophila platycalyx*** (opposite, bottom)

Photography by R. Chinnock

This is a shrub 1-2 m high and broad with grey, hairy, rough branches sometimes sticky when young. The leaves are alternate, narrow to broad lanceolate and grey as shown, being densely covered with fine hairs. The flowers are 1, rarely 2 in the leaf axils with pink sepals 1 cm long as shown where the top flower has dropped off, the corolla being type D. cream, often spotted purple.



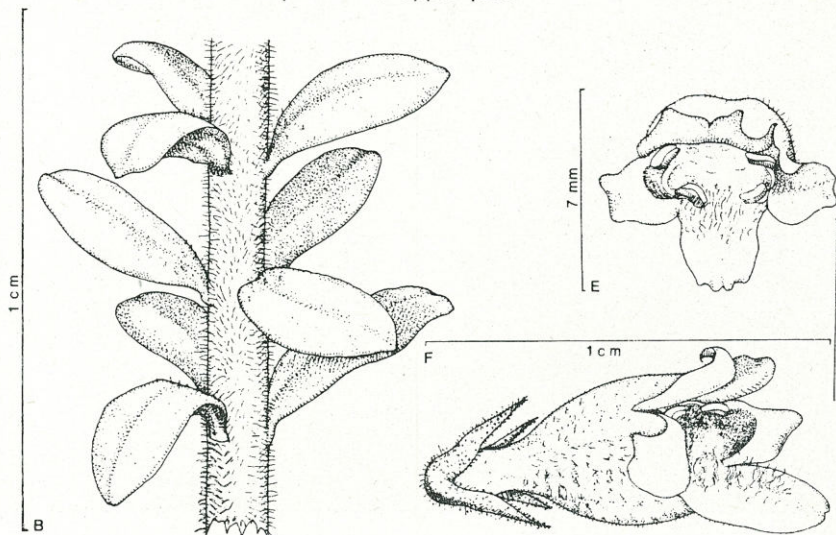
# Eremophila ternifolia

A newly named species by R. J. Chingock in Nuytsia, Vol. 4-1-1982.

This low spreading shrub (0.3 x 0.5 x 0.5-0.7 m) has characteristic ternate leaves in whorls of 3, the whorls alternating as shown in the sketch below. The smaller branches are usually opposite, or nearly so in pairs in one plane like a fan. The leaves are green above, often reddish-brown below, entire 6-11 x 2.7-4 mm and glabrous. The flowers are shaped as shown below, solitary, sessile, 10 mm long, lilac, the tube white below, spotted purple inside and prominently bearded on the lowermost lobe as shown.

*Eremophila ternifolia* is a rare and endangered species found only at Wongan Hills, Western Australia where another very rare species, *E. sargentii* is also found. It grows in *Eucalyptus longicornis/salubris* woodland with scattered mallees (*E. gracilis*) under a shrub layer of *Santalum acuminatum*, *Melaleuca adnata*, *Acacia orbifolia* on red clays between breakaways.

*E. ternifolia* is allied to *E. veronica* that differs in having small, densely spiral, linear sub terete leaves which are flattened on the upper-side, and an ovoid fruit which is not split in the upper part.



*Eremophila ternifolia*. Portion of branch showing the ternate leaf arrangement with front and side view of flower.

## North Queensland Rainforest Conference

From June 29th to July 3rd, the Tableland Branch S.G.A.P., is sponsoring a North Queensland Rainforest Conference.

Over the next four days, we will be spending most of the day actually out in the rainforests of North Queensland. We will spend each day visiting several excursion areas, viewing different types of rainforest each day. We will have excursion leaders at each site to point out particular features and plants of that area and to answer your questions.

After each day, the evenings will be used to talk about the day, compare notes and specimens, hear various talks, view slides and movies, look at displays and other related things.

Each person will be responsible for his own accommodation, transportation, breakfast and evening meals. We will provide advice on these matters, excursion notes, lunch and a "cuppa" in the morning, afternoon and evening. The anticipated cost is \$25 per person. For a detailed brochure that will include suggested accommodation, a more detailed programme, and registration forms send a self addressed, stamped envelope to North Queensland Rainforest Conference, Tableland Branch, SGAP. P.O. Box 604, Atherton, Qld. 4883.



# PLANTING IN ARID REGIONS

by Noel Lothian from his book published 25 years ago, see page 38.

Whilst the likelihood of encountering salt trouble must not be overlooked, the problem of obtaining suitable trees and shrubs for growing in these regions resolves itself into finding plants which:—

- are capable of growing in low rainfall areas;
- are capable of withstanding low humidities;
- are capable of withstanding high sun, and therefore high soil temperatures (overcome by deep mulch of creek gravel);
- are capable of withstanding frost;
- are capable of withstanding drifting sand.

The following lists are of species which will grow when little other than natural rainfall is received. Some watering will be helpful for a year or so, and growth will be more rapid if the plants are placed where seepage water is available. The number of gallons of water required can be estimated if it is remembered that such waterings will need to be made regularly ever 2-3 weeks and take from 5-6 gallons for each watering. If water is available (e.g. Murray River towns, Whyalla, etc.), a greater variety of plants can be grown.

## Some Plants for heavy and clayey soils in dryish districts

(In areas receiving less than 500mm rainfall annually some summer watering may be necessary until established. Heavily mulch with creek gravel.)

|                           |                |                             |                 |
|---------------------------|----------------|-----------------------------|-----------------|
| <i>Acacia cambagei</i>    | Gidgee         | <i>flocktoniae</i>          | Merritt         |
| <i>farnesiana</i>         | Popinac        | <i>forrestiana</i>          | Marlock         |
| <i>kempeana</i>           | Witchetty      | <i>gardeni</i>              | Marlock         |
| <i>ligulata</i>           | Umbrella       | <i>gillii</i>               | Curly Mallee    |
| <i>notabilis</i>          | Flinders       | <i>grossa</i>               | Coarse fl.      |
| <i>oswaldii</i>           | Miljee         | <i>hemiphloia</i>           | Grey Box        |
| <i>pendula</i>            | Weep. Myall    | <i>leucoxylon</i>           | White Ironbark  |
| <i>pycnantha</i>          | Golden Wattle  | <i>nutans</i>               | Red fl. Moori   |
| <i>ringens</i>            | Needle Acacia  | <i>occidentalis</i>         | Swamp Yate      |
| <i>salicina</i>           | Pt. Broughton  | <i>populifolia</i>          | Bible Box       |
| <i>sawdenii</i>           | Myall          | <i>preissiana</i>           | Bell-fruit      |
| <i>stenophylla</i>        | River Cooba    | <i>pyriformis</i>           | Ooldea Mallee   |
| <i>tetragonophylla</i>    | Dead-finish    | <i>racemosa</i>             | Ironbark        |
| <i>victoriae</i>          | Elegant Wattle | <i>saligna</i>              | Syd. Blue Gum   |
| <i>Cassia Aust. spp.</i>  | Cassias        | <i>sideroxylon</i>          | Mugga           |
| <i>Casuarina cristata</i> | Belah, Bl. Oak | <i>steedmanii</i>           | Steedman        |
| <i>cunninghamiana</i>     | River Sheoak   | <i>stricklandii</i>         | Strickland      |
| <i>fraseriana</i>         | Fraser         | <i>torquata</i>             | Coolgardie      |
| <i>glauca</i>             | Swamp Oak      | <i>Ficus macrophylla</i>    | Moreton Bay Fig |
| <i>suberosa</i>           |                | <i>rubiginosa</i>           | Rusty-leaf Fig  |
| <i>Eremophila species</i> | Emu Bush       | <i>Hakea leucopetra</i>     | Needle Hakea    |
| <i>Eucalyptus albens</i>  | White Box      | <i>suaveolens</i>           | Sweet Hakea     |
| <i>campaspe</i>           | Silver Gimlet  | <i>Melaleuca pauciflora</i> |                 |
| <i>clelandii</i>          | Blackbutt      | <i>pubescens</i>            | Black Tea-tree  |
| <i>encorifolia</i>        | Kangaroo Is.   | <i>Myoporum insulare</i>    | Boobyalla       |
| <i>eremophila</i>         | Rock Gum       | <i>montanum</i>             | Water bush      |
| <i>erythrocorys</i>       | Illyarie       | <i>platycarpum</i>          | Sugar Wood      |

## Plants which can be grown in areas receiving less than 240 mm of rain

|                              |                |                            |                  |
|------------------------------|----------------|----------------------------|------------------|
| <i>Acacia aneura</i>         | Mulga          | <i>Dodonaea attenuata</i>  | Hop-bush         |
| <i>farnesiana</i>            | Popinac        | <i>Euc. camaldulensis</i>  | Red Gum          |
| <i>iteaphylla</i>            | Nealie         | <i>diversifolia</i>        | Soap Mallee      |
| <i>loderi</i>                | Flinders       | <i>flocktoniae</i>         | Merritt          |
| <i>notabilis</i>             | Needle         | <i>incrassata</i>          | Lerp Mallee      |
| <i>ringens</i>               | P. Broughton   | <i>intertexta</i>          | Coolabah         |
| <i>salicina</i>              | Myall          | <i>oleosa</i>              | Giant Mallee     |
| <i>sawdenii</i>              | Dead-finish    | <i>papuana</i>             | Ghost Gum        |
| <i>tetragonophylla</i>       | Elegant Wattle | <i>woodwardii</i>          | Blackbutt        |
| <i>victoriae</i>             |                | <i>woollsiana</i>          | Mallee Box       |
| <i>Brachychiton gregorii</i> | Desert Kurra.  | <i>Ficus macrophylla</i>   | Moreton Bay Fig  |
| <i>papulneus</i>             | Kurrajong      | <i>rubiginosa</i>          | Rusty-leaved Fig |
| <i>Callitris glauca</i>      | White Cypress  | <i>Melaleuca glomerata</i> | Paper-bark       |
| <i>propinqua</i>             | Murray Pine    | <i>pauperiflora</i>        | Desert Tea-tree  |
| <i>Cassia eremophila</i>     | Desert Cassia  | <i>pubescens</i>           | Black Tea-tree   |
| <i>Casuarina decaisneana</i> | Desert Oak     | <i>Myoporum insulare</i>   | Boobyalla        |
| <i>cristata</i>              | Belah          | <i>platycarpum</i>         | Sugar-wood       |
| <i>luheimannii</i>           | Buloak         |                            |                  |





***Eremophila sargentii*** (above)

Photography by R. Chinnock

A small shrub to 1 m tall, with densely clustered sticky leaves. It produces masses of lilac to purple flowers during spring. A rare species only known from the Wongan Hills in Western Australia and a recent introduction. The leaves of this species emit an odour which some may find offensive.

***Eremophila compacta*** (opposite, top)

Photography by R. Chinnock

This Western Australian species forms a shrub 0.3-1 m tall and wide and is very similar to *E. bowmanii* found in eastern Australia. Difficult to grow except in very dry climates.





*Eremophila compacta*

Photography by R. Chinnock

## PIONEERS IN WILDFLOWERS —South Australia

**Edwin Ashby** established a homestead that he called "Wittunga", in a natural bush area in the Adelaide Hills in 1901. He became fascinated with the Australian native flora and fauna around him, becoming an enthusiastic and widely respected naturalist and conservationist. He made many trips to various areas of Australia but South Australia was his home and he brought the Australian flora home with him. His collections and subsequent plantings of thousands of Australian plants established him as a true pioneer in the cultivation of the flora. Adelaide newspapers of the time record his reports in an era when the Australian bush scene was an obstacle to be conquered, not cultivated and admired. Honoured by *Banksia ashbyi* he is an Australian Pioneer.

**Alison Ashby** accompanied her father on many expeditions and recorded her early love for Australian wildflowers in a very large collection of wildflower paintings. Reproductions of these paintings are available on postcard size from the Adelaide Botanic Gardens and S.A. Museum. This love of nature extended to all living creatures and she has taken an active part in much of the cultural activity in South Australia. She is a foundation member



of the National Trust of South Australia. 'Watiparinga' is one of a number of reserves established at the initiative of Alison, and was previously portion of her own property. While she received the active assistance of many volunteers, it was her inspiration and herculean efforts that has led to the establishment of 'Watiparinga' by Alison M. Ashby, an Australian lady.

**Keith Ashby** continued his father's work in the extension of the considerable plantings at Wittunga. His enthusiasm and love for both the Australian and South African plants, growing in their hundreds on the now-landscaped acres of the beautiful property, culminated in its donation to the South Australian people as an annex to the Botanic Garden of Adelaide. These magnificent gardens are a tribute, not only to Edwin, the father, and Keith, the son, but to his wife and four children all of whom whole-heartedly supported this magnificent gesture; an Australian family.

**William Burdett**, friend and collaborator of Edwin Ashby. The private "garden" of the Burdett family reached its peak in the 1930s. When visited by Federal Councillors of SGAP in the late 1960s it was a magnificent site, an extensive ironstone ridge of a large spur on the lower part of the Mt Lofty Ranges, covered in an astounding array of wildflowers, all of which had naturally regenerated from the original planting years earlier. The Waratah looked to be thriving among its cousins the *Banksia* and *Dryandra* of W.A., *Nuytsia* and hundreds of other plants from many parts of Australia. A floral tribute to a noble Australian immortalised by *Banksia burdettii*.

**Noel Lothian**, O.B.E., is a pioneer in every sense of the word, a noble Australian deserving acclaim while he is still alive and contributing to our National culture. His early life was carried out with such distinction that he was appointed Director of the Botanic Garden, Adelaide, in 1948, a post he has recently relinquished. He established himself very early, as a leader and pioneer in gardening in Australian conditions always with particular affection for South Australia. His writings thirty years ago were well ahead of their time and laid particular emphasis on the use of the Australian flora in horticulture, a study which became his life's work and a significant contribution to Australian culture. South Australian people may remember him for his media presentations in press, radio and television; he is certainly more widely known for his writings in books and scientific journals, but it is hoped that he is more generally honoured for his wider contribution to the Australian way of life not least of which is the magnificent team he has built up to continue his work at the Adelaide Botanic Garden under the direction of Dr. Brian Morley and the scientists led by Dr. John Jessop.

**F. C. Payne**, a private citizen who created a nursery and wildflower garden in Athelstone on the slopes of Black Hill. A man with a dream and a love for wildflowers. For 15 years his "Sanctuary" was visited by many who could see that it should not be allowed to fade away. History will never adequately record those who influenced the decision by the far sighted Campbelltown City Council to purchase the property at a gift price or the subsequent acquisition by the Dunstan State Government. The Black Hill Native Flora Park is now a facility for the people of Adelaide that other states must envy, thanks to the foresight of a number of real Australians.

**T. M. Black**, O.B.E., a Hansard reporter, who, very late in life took on the task of describing the flora of South Australia. The fact that fifty years later his books on the flora, suitably updated, are still in use testifies to the scholarly application of this 'amateur' botanist and the high regard with which he is held. ■



## A NEW 'AUSTRALIAN PLANTS'?

Have there been any changes? The same printer, the same printing machine with the same machine operator that have served us for years. What is different is the quality of colour printing. The whole credit must go to Ivor Beatty and his competent staff who have developed new facilities and procedures using a great deal of courage, initiative and skill coupled with modern technology to break away from established plate makers and produce the product themselves. You are reaping the rewards of the best in Australian technology and trade skill. —Editor.

### Wildflower Nurseries in Queensland

**Fairhill Nurseries** — Fairhill Rd., Yandina, 4561. Tel. (071) 46-7193, P.O. Box 100. Large range of trees, shrubs, ground covers, climbers, ferns, palms and orchids for the sub-tropical and tropical east coast. Extensive display gardens 8.30 a.m. to 5 p.m. anyday. New comprehensive catalogue now available \$2.00 posted.

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

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

### Wildflower Nurseries in New South Wales

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

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

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

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

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

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

**Teloopa Valley Nursery** — George Downes Drive, Kulnura, 2250, 1.5 km past Kyola Road. Rare and unusual natives. Phone: (043) 76-1318 (best at 9.00 a.m.). Send S.A.E. (230 x 100 mm) for list. Regret no mail orders. Closed Tuesdays.

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

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

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

### Wildflower Nurseries in Tasmania

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

### Wildflower Nurseries in Victoria

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

### Australian Wildflower Seed Suppliers

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

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



## BOOKS ON WILDFLOWERS

This is a mail order service of books, the price including a discount of 10% plus postage. You may be able to buy the following books a little cheaper and some groups in the society are offering certain books at a bigger discount so if you want to shop around after reading my reviews, then do so. However the service we offer will be convenient and any small profit made is reinvested in the production of Australian Plants. You may pay a little more through this service but the donation will be well used.

### Garden Weeds — Identification And Control

A well researched and produced small book by the Adelaide Botanic Gardens and available from them for \$7.00 incl. postage. Part 1 describes the factors affecting the growth and control of weeds in the garden. Part 2 describes and illustrates by line sketches, over 100 species of weeds most commonly met together with methods of control. The use of chemicals is recommended only where necessary.

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

|                                                                            |         |              |         |           |         |
|----------------------------------------------------------------------------|---------|--------------|---------|-----------|---------|
| Flora Of Australia — Vol. 1, Introduction....                              | \$15.00 | — Vol. 8.... | \$35.00 | — Vol. 29 | \$25.00 |
| Australian Plant Genera — The only botanical reference to all genera ..... |         |              |         |           | \$11.30 |
| For N.S.W.                                                                 |         |              |         |           |         |
| “Flora of the Sydney Region” — The well known Beadle Student's Flora       |         |              |         |           | \$45.00 |
| “Plants of Western N.S.W.” — 752 pages, colour illustrated .....           |         |              |         |           | \$60.00 |
| “Plants of N.S.W.” — A census of Cycads, Conifers and Angiosperms ....     |         |              |         |           | \$20.00 |
| “Kosciusko Alpine Flora” — Costin, Gray, Totterdell and Wimbush .....      |         |              |         |           | \$29.00 |
| “Native Trees & Shrubs of S.E. Australia” — Leon Costermans .....          |         |              |         |           | \$34.00 |
| For Queensland                                                             |         |              |         |           |         |
| “Native Plants Of Queensland” by Keith Williams .....                      |         |              |         |           | \$32.00 |
| “Wildflowers Of Tropical Queensland” — A Wilderness in Bloom by Hinton     |         |              |         |           | \$9.00  |
| “National Parks of Southern Queensland” by Mackness .....                  |         |              |         |           | \$15.00 |
| For Victoria                                                               |         |              |         |           |         |
| “Native Trees and Shrubs of S.E. Australia” — Leon Costermans .....        |         |              |         |           | \$34.00 |
| “Flowers and Plants of Victoria and Tasmania” .....                        |         |              |         |           | \$26.00 |
| For South Australia                                                        |         |              |         |           |         |
| “Flora of South Australia”, Black — Part 1, \$20.00. Parts 2-3 and 4 each  |         |              |         |           | \$9.00  |
| For Northern Territory                                                     |         |              |         |           |         |
| “North Australian Plants,” Harmer .....                                    |         |              |         |           | \$8.00  |
| “Flora Of Central Australia” Aust. Systematic Bot. Soc. ....               |         |              |         |           | \$37.00 |
| For Western Australia                                                      |         |              |         |           |         |
| “Flowers and Plants of Western Australia” .....                            |         |              |         |           | \$26.00 |
| “West Australian Plants For Horticulture” — Part 1 and Part 2 .....        |         |              |         |           | \$10.00 |
| For Tasmania                                                               |         |              |         |           |         |
| “A Guide To Flowers and Plants Of Tasmania”, Ed. M. Cameron .....          |         |              |         |           | \$25.00 |

### On The Cultivation Of Australian Plants For All States

|                                                                                      |         |
|--------------------------------------------------------------------------------------|---------|
| Australian Plants—The best reference. Bound volumes 2-9, @ \$15.00 plus \$1.00 post. |         |
| For details of previous issues see inside the rear cover.                            |         |
| “A Horticultural Guide To Australian Plants” — Sets 1-6 @ \$3.00 each; Set 7         | \$6.00  |
| “Encyclopaedia Of Australian Plants” — Elliott & Jones Vol. 1, \$36.00, Vol. 2       | \$45.00 |
| “Australian Native Plants” — Wrigley & Fagg .....                                    | \$37.00 |

### About Specific Groups of Plants

|                                                                                |         |
|--------------------------------------------------------------------------------|---------|
| Ferns — “Australian Ferns & Fern Allies”, Revised & Enlarged. Jones & Clemesha | \$22.00 |
| Eucalypts — “Eucalypts” Vol. 1 and Vol. 2, by Stan Kelly .....                 | \$24.00 |
| “A Gardener's Guide to Eucalyptus”, by Ivan Holliday .....                     | \$18.50 |
| Mint Bush — “Prostanthera” — “The Cradle of Incense” — Althofer .....          | \$16.40 |
| Wattles — “Acacias of N.S.W.” Armitage .....                                   | \$10.00 |
| “Acacias Of South Australia” — Whibley .....                                   | \$12.00 |
| “Acacias of Australia” — Marion Simmons .....                                  | \$34.00 |
| “Aquatic Plants Of Australia” — H. Aston .....                                 | \$25.00 |
| “Useful Wild Plants In Australia” — A. B. & J. W. Cribb .....                  | \$16.00 |
| Darwinia and Homoranthus — A Guide to — T. L. Blake .....                      | \$8.00  |
| “Seaweeds of Australia”, Ed. 1; Christianson .....                             | \$20.00 |
| Carnivorous Plants — Slack .....                                               | \$20.00 |
| Plants Of Prey — Erickson — Insectivorous plants of W.A. ....                  | \$15.00 |

### On The Australian Fauna

|                                                           |         |             |         |
|-----------------------------------------------------------|---------|-------------|---------|
| “Birds Of Australia” .....                                | \$23.95 | plus \$1.65 | postage |
| “Birds For Beginners” .....                               | \$12.95 | plus \$1.25 | postage |
| “Field Guide To Australian Shells” .....                  | \$16.95 | plus \$1.25 | postage |
| “Australian Shells” .....                                 | \$19.95 | plus \$1.60 | postage |
| “Gemstones In Australia” .....                            | \$15.95 | plus \$1.25 | postage |
| “Australian Mammals in the Wild” .....                    |         |             | \$11.95 |
| “Birdscaping Your Garden”, by C. M. Adams .....           |         |             | \$12.95 |
| “Complete Birds Of The World” .....                       |         |             | \$34.95 |
| “Spiders of Australia — A Field Guide”, by Mascord .....  |         |             | \$16.95 |
| “Handbook Of Insect Collecting”, by Dr. C. Smithers ..... |         |             | \$15.00 |



## **THE SOCIETY FOR GROWING AUSTRALIAN PLANTS**

Applications to join the society should be directed to the secretary for your state as listed on the inside of the rear cover of this issue. The annual subscription varies with each state from \$11.00 to \$14.00 per annum and should be ascertained by enquiry as above. The annual subscription includes a subscription to *Australian Plants*. The society offers a variety of activities to its members including a state or regional publication containing news of society activities, meetings, outings, seed, etc.

A real strength of the society is the large number of local groups who organise their own activities and finances and usually involves an additional small fee. Those local groups varying from a few active people to hundreds of members is where the real action is if you would like to become involved. All enquiries to the state secretary.

## **THE PERIODICAL AUSTRALIAN PLANTS**

Produced on a non-profit-making basis with honorary officers by the N.S.W. Region of the society, this periodical is for members of all the autonomous state or regional societies. Internal society affairs are not included and it has become established throughout the world as a commercial periodical for all people interested in the Australian flora.

Readers are indebted to the scientists and concerned amateurs who submit articles or colour slides for publication at no charge. The policy is to maintain the style of presentation so that it may be easily read by any one, no special background being necessary in botany or horticulture. Its continued success will depend on the support of interested people at all levels but especially the home gardener. If you have grown a plant, let us know so that others may gain from your experience, even if very limited.

An important function of *Australian Plants* is the reporting of the results of scientific research in a form that can be easily read by all. There is a limit to how clearly scientific research can be presented without the use of some basic scientific jargon, presentation of data or plant descriptions with their correct names. A great deal of effort goes into presenting published and current research in as simple a form as possible. Much may still appear too scientific for many but you will be surprised how quickly you can learn to understand topics of interest to you and value the information presented. If you find some article a bit "heavy", remember that someone else is enjoying it. All articles of a simple nature on cultivation are published so the fault for any shortfall in this area is the reader who should be contributing. Where is your contribution?

## **THE AUSTRALIAN FLORA**

Why is the inexperienced grower so important? The exotics used in horticulture throughout the world were once wildflowers of some natural area. They have been selected for some desirable feature, usually reliability in the garden situation and for display. The Australian native flora includes thousands of plants of value and most will become extinct unless the secrets of their survival are discovered. We need to find out under what conditions they may be reliably cultivated and select those forms that are of special value for hardiness, spectacle, landscaping, medicine, etc. We make no secret of the fact that whereas some are quite easy to grow, and we encourage beginners to start with these, most have not been tamed and present a challenge to us all.

### **What can be done by the inexperienced, untrained amateur?**

Either as a member or subscriber, plant and grow Australian wildflowers and send the Editor short notes on progress. Issues contain suggestions on what you can do. This not only supports and encourages those more qualified but lends strength and purpose to all responsible members of our community.



## The Society As A Group Of Individuals

Comprising principally interested, unqualified, individuals the society is:

1. Providing a service to its members and a sounding board to the nation.
  2. Producing Australian Plants and books on the Australian flora.
  3. Undertaking study at the home gardener level as Study Groups.
  4. Instrumental in the establishment of The Australian Flora Foundation.
  5. Responsible for establishment of The Australian Cultivar Registration Auth.
  6. Providing an interface between the scientific world and the general public by publishing results of research in a form that may be more widely appreciated.
  7. Maintaining liaison with Botanic Gardens and public institutions to the mutual advantage of the public and government established to serve it.
- Support this national activity either as a member or a subscriber.

## STUDY GROUPS

A study group consists of SGAP members with an interest in a particular genus or group of native plants. Each group has a leader who corresponds with members, sending seeds, cuttings, or advice. He or she also summarizes information received from members and prints it in the newsletters sent to members every few months.

Most groups have both active and passive members. Passive members receive newsletters, information, etc., but do not actively participate in study. Active members study some aspect of the plants which interest them and report their observations.

Although some groups have members who possess specialist skills, this is not a prerequisite for joining a study group. All that is needed is an enthusiasm for a particular group of plants and a willingness to record and report observations.

Subscriptions, payable on joining, are \$2.00. (The Stylidium Group has been re-organized in such a way that no subscriptions are payable.)

Study Groups that may interest you are:

|                          |                                                                     |
|--------------------------|---------------------------------------------------------------------|
| Plants useful as food.   | Mrs. C. Newton Smith, 21 Banksia Av., Beaumaris, Vic. 3193.         |
| ACACIA                   | Mrs. Marion Simmons, P.O. Box 1148, Legana, Tas. 7251.              |
| BANKSIA                  | Mr. Trevor Blake, 22 Vista Avenue, Ringwood East, Vic. 3135.        |
| BEAUFORTIA               | Mr. Brian Walters, Lot 32, Wilchard Road, Castlereagh, N.S.W. 2750. |
| BRACHYSCOME & HELIPTERUM | Mrs. Maureen Schaumann, 88 Albany Drive, Mulgrave, Vic. 3170.       |
| CALLISTEMON              | Mr. Harry Infield, Demesne Farm, Coomaba Road, Coomaba Park 2428.   |
| CYCAD & ZAMIAD           | Mr. Len Butt, 25 Ortive Street, Yeronga, Qld 4104.                  |
| DRYANDRA                 | Mr. Tony Cavanagh, 16 Woodlands Drive, Ocean Grove, Vic. 3226.      |
| EREMOPHILA               | Mr. Geoff Needham, 2 Stuckey Avenue, Underdale, S.A. 5032.          |
| EUCALYPTUS               | Mr. Tony Bean, P.O. Box 397, Nambour, Qld 4560.                     |
| FERN                     | Mrs. Molly Murray, 25 Nowill Street, Rydalmere, N.S.W. 2116.        |
| GREVILLEA                | Mr. Peter Olde, 138 Fowler Road, Illawong, N.S.W. 2234.             |
| HAKAIA                   | Mrs. Hazel Blackney, 23 Devon Street, Eaglemont, Vic. 3084.         |
| HIBBERTIA                | Mr. Bernard Dixon, 82 Gilbertson Road, Kardinya, W.A. 6163.         |
| HIBISCUS                 | Mr. Doug Phillips, 25 Lima Street, Toowong, Qld 4066.               |
| MELALEUCA                | Mrs. Gladys Holmes, Briggs Road, Brighton, Tas. 7403.               |
| PROSTANTHERA             | Mr. Les Taylor, 4 Prospect Street, Blacktown, N.S.W. 2148.          |
| RAINFORREST              | Mr. Graham Quint, 16 Evans Street, Peakhurst, N.S.W. 2210.          |
| STYLIDIUM                | Mr. Richard Davidson, P.O. Box 51, Melton South, Vic. 3338.         |

Anyone interested in starting a new study group or in taking over the Calytrix Group, which is at present in need of a leader, should contact: Miss Jo Walker, Study Group Co-ordinator 16 Blundell Street, Queanbeyan, N.S.W. 2620

## The Banksia Study Group

The Banksia Study Group wishes to inform all S.G.A.P. members that *Report No. 6* is now available. It has reached 50 pages and has been commercially printed. Topics covered are — The revision in detail; pot culture, grafting, historical cultivation in Europe, phosphorous toxicity, cultivation notes, germination and cautionary thoughts on growing exotic natives.

The Banksia Study Group is not like other study groups. We do not have a membership fee but finance the group's activities through the sale of Reports, so please no annual subscriptions.

Report 6 is \$4.00 plus \$1.00 postage (Vic.)

Report 3 is \$3.00 plus \$1.00 postage (Vic.)

Available from Trevor Blake, 22 Vista Ave., East Ringwood, Vic. 3135.



## Past Issues of "Australian Plants"

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

- VOLUME Nos. 1 and 2, out of print.
- VOLUME No. 3. Issues 21-28, bound with "Catalogue of Cultivated Australian Plants".
- VOLUME No. 4. Issues 29-36, bound with "W.A. Plants For Horticulture—Part I".
- VOLUME No. 5. Issues 37-44, bound with "The Language of Botany".
- VOLUME No. 6. Issues 45-52, with "West. Aust. Plants For Horticulture—Part II".
- VOLUME No. 7. Issues 53-60, bound with "North Australian Plants".
- VOLUME No. 8. Issues 61-68, bound with "The Cradle of Incense".
- VOLUME No. 9. Issues 68-76, bound with Australian Plant Genera.
- VOLUME No. 10. Issues 77-84. Individual issues only available at \$2.00 post free.
- VOLUME No. 11. Issues 85-92. Each issue to date available at \$1.50 post free.

**Binders** for separate issues of Australian Plants are now available either the old style with screws or the new with D-rings, at \$4.00 each plus \$0.60 postage.

## Other Books Published by the Society:

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

## The Society for Growing Australian Plants

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

- SOCIETY FOR GROWING AUSTRALIAN PLANTS—CANBERRA REGION:**  
President: Dr. Carmel Statham, 128 Kalgourlie Street, Fisher, A.C.T. 2611.  
Secretary: Mrs. S. Smith, P.O. Box 207, Civic Square, A.C.T. 2608.
- SOCIETY FOR GROWING AUSTRALIAN PLANTS—N.S.W. REGION:**  
President: Mr. Ray Page, 2 Edgar Street, Baulkham Hills, 2153.  
Secretary: Mrs. Glen Harvey, 5 Ellesmere Road, Gympie Bay, 2227.
- SOCIETY FOR GROWING AUSTRALIAN PLANTS—QUEENSLAND REGION:**  
President: Mr. Glen Thomas, 922 South Pine Road, Everton Park, 4053.  
Secretary: Mrs. Eunice Clark, P.O. Box 809, Fortitude Valley, 4006.
- SOCIETY FOR GROWING AUSTRALIAN PLANTS—SOUTH AUSTRALIAN REGION:**  
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Secretary: Mr. John Porter, 3 Barcroft Street, Pasadena, S.A. 5042.
- SOCIETY FOR GROWING AUSTRALIAN PLANTS—TASMANIAN REGION:**  
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Secretary: Mrs. J. C. Wilcox, G.P.O. Box 1353P, Hobart, 7001.
- SOCIETY FOR GROWING AUSTRALIAN PLANTS—VICTORIAN REGION:**  
President: Mr. David Davie, 29 Pope Avenue, Boronia, 3155.  
Secretary: Miss E. R. Bowman, P.O. Box 393, Hawthorn, 3122.
- WEST AUSTRALIAN WILDFLOWER SOCIETY (Inc.)**  
President: Mr. John Colwill, P.O. Box 64, Nedlands, W.A. 6009.  
Secretary: Mr. Wayne Clarke, P.O. Box 64, Nedlands, W.A. 6009.

### PUBLISHING SECTION FOR SOCIETY

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

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***Eremophila calorhabdos***

Photography by R. Chinnock

This is a medium-sized shrub of outstanding merit as a structural plant in the native garden. The bush produces many vertical branches sometimes 2.5 to 3 metres high which are clothed in red to pink tubular flowers over a long period. As the branches grow, the flowers are continually produced at each node along the new growth. The leaves are small and serrated, shiny green with a white reverse.

This plant can be found on red, alkaline, loamy soils east and south of Norseman, W.A., in association with mallee eucalypts of this area. It appears to be fairly adaptable under garden conditions but results are best achieved in a fairly friable alkaline loam or clay soil in full sun such as South Australia's wheat country, and where annual rainfall is about 25-40 cm. Quite large cuttings strike fairly easily.