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Australian Plants in Colour

The article opposite is from "Colour Your Garden" a book by Gwen Elliott. As you can see, she has done a thorough job. Her previous book "Australian Plants For Small Gardens and Containers" was very well received and deservedly so. You can still purchase a copy from me for \$30.00. They are excellent guides, ideal for beginners.

In the coming issues of Australian Plants we hope to continue this theme and give readers a guide as to how they may bring colour to their gardens throughout the year. This will be for gardeners in all areas of Australia. They will be colourful issues so we expect that readers will forgive, even appreciate, a few educational (semi-technical) articles.

We need your help. After all this is your journal — it is produced on a non-profit making basis with honorary officers and contributors. We need reports of plants that have given especial pleasure to you — shape, colour, bird attractors, etc.

Photographers

Most especially we need good photography — colour slides or prints. Most photographers fluke a good one so let us see it. There are many good photographers who may welcome an opportunity to see their work in print. Photographers please help us. We can meet film and processing costs for those good enough.

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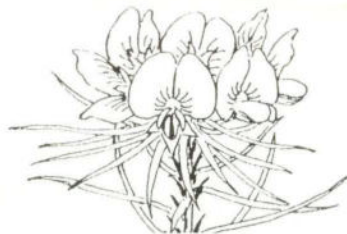
COVER PLATE

Correa reflexa

Photography by Colin Woolcock

The coastal heathlands and forests of south-west Victoria are bright with the red, pink, green and white bells of *Correa reflexa* and *Correa alba* var. *pannosa*. *Correa reflexa* is as variable in the size of plant and foliage as in the colour of its flowers, spreading prostrate under taller coastal shrubs, growing tall in the open forest, or as a small shrub sharing its colour with the Flame Heath (*Astroloma conostephioides*) and Common Heath (*Epacris impressa*) in a heathland display. Leaves are simple, spreading or reflexed, ovate or oblong, dark green, mostly smooth on the upper surface and densely white-hairy below. The colours of the flowers range through red with green tips on the petals, pink with cream tips, cream with green and wholly greenish-white. It is also variable in its choice of habitat, growing well on sand and sand over limestone on the coast to loam and clay soils in the forests — all localities in SW Victoria being well-watered by a good average rainfall. For many months the pavement flower-boxes in Portland, Victoria, are bright with the colours of *Correa reflexa*. A selected form had cultivar status in English gardens as early as 1840. — Dorothy Woolcock.

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Colour Your Garden

Some extracts from "Colour Your Garden
with Australian Plants", by Gwen Elliot*

Almost every colour and shade can be seen in flowering plants. The brilliant displays of colour provided by flowers have led many people to become keenly interested in their cultivation. Sometimes we see eye-catching areas of individual colours, or our attention can be captured by a kaleidoscope of colour combinations. Not all the beauty consists of strong, striking colours. Some of the most beautiful garden landscapes feature the soft, paler colours of pinks, mauves, pale yellows or white.

To obtain the best results from our garden plants, we must endeavour to provide the conditions under which they will grow to their maximum potential. The majority of plants will provide their best flowering display if they receive either morning sun, or in some cases full open sunshine throughout the day.

If we are looking for a colourful display in areas which are densely shaded, we must give very careful consideration to the plant species we choose. Pale colours such as white and yellow will add light to the area, particularly on dull days. The use of container-grown plants can also be valuable in difficult positions, such as areas of almost total shade. Plants can be grown in pots in a situation which receives warmth and sunshine, then as they come into flower they can be transferred to the shaded site.

Flower colour is of course by no means the only attractive aspect of Australian plants. It is possibly not even the most significant. Major features of any Australian native garden are the beauty of the form and foliage of the plants, the fragrances both of foliage and flowers, and the textures of trunks, bark, leaves and fruits.

We are fortunate in Australia to have a rich heritage of attractive and fascinating native birds. These can be encouraged to our gardens by the plants which play a vital role in their natural food chain. Many flowers are rich in nectar supply. These are eagerly visited by birds in the honey-eater group. In some cases small insects are also attracted to the nectar, and they in turn bring the small insect-eating birds to the garden. As a bonus to the gardener, these birds will take care of many of the small garden creatures commonly regarded as pests. Further information on bird-attracting plants will be found in Chapter 29 of the book.

Vigorous, healthy plants will usually produce a better display than those which are weak or diseased. Thus general horticultural practices such as, weeding, fertilizing, pruning, mulching and watering become significant in achieving the best results.

Red-flowered Plants

Many native species provide showy displays of red flowers. There are of course different shades of red, from deep reds, through clear bright red, to colours with a tint of purple or orange. Other chapters describe species of different flower colour such as Chapter 7 — Light Reds or Pinks, Chapter 5 — Oranges and Golds or Chapter 6 — Purples and Mauves.

There are hundreds, if not thousands of species with red flowers but only some of these which come into the category of being showy have been listed opposite. There are obvious limitations in presenting a chart such as this. The flowering periods are shown, followed by mature plant width and height, and by a guide to its use as follows:

*Colour Your Garden with Australian Plants by Gwen Elliot

This well prepared book is an excellent guide as to how you can colour your garden. There is a chapter for yellows, reds, blues, oranges and golds, purples and mauves, pinks, white and cream, combinations of white and pink, greens and flowers with a combination of colours. These chapters each include a chart giving the flowering periods of recommended species. The chart for red-flowering plants is reproduced on page 52.





A Wildflower Garden (above)

Home of John Hunt, Sydney

A colourful wildflower garden surrounding the home of John Hunt, Sydney. John is a very successful grower of wildflowers, the photograph showing only a small portion of a very large garden. Hopefully John will prepare a small book on the subject for us all. It is a good photograph to illustrate this issue on colourful wildflower gardens. The red of the *Grevillea* 'Robyn Gordon' near the doorway will flaunt its red flowers for many months while others are not in flower. Note the use of ground covers and border plants, and the contrast provided by the cream flowered *Melaleuca*. — Photography and comments by W. H. Payne.

Colour With Green (top left)

Photography by C. L. Wheller

A garden in Victoria that relies on colour. When the shrubs are not in flower, this section relies on the red gravel path flanked by the permanent deep green of the *Scleranthus biflorus*. This plant forms soft cushiony mounds. Readers are referred to our No. 100 issue where the cushion plants of Tasmania are described, ideal for the "green effect". Colour photography in some previous issues were incorrectly credited to C. L. Wheeler, my apologies — Editor.

Tetradlea ciliata (bottom left)

Photography and caption by Neil Marriott

Two colour forms red and white, complement each other, side by side. In fact, to get the best effect in a garden of colour, an occasional white flowered plant is specially valued. The plants are three years old, planted in a raised up bed of local soil plus gypsum plus gravel, mulched with washed river sand. They are quite hardy and will last many years given good drainage but not too dry in summer. These plants are now suckering and self seeding through the garden. They come in various colour shades to a pure white. The plants behind are *Lasiopetalum macrophyllum*, a beautiful prostrate form, *Eriostemon verrucosus* and *Helichrysum apiculatum* (not in flower).

Part of the Neil Marriott garden is shown on page 57.

Colourful Wildflower Gardens

Reds

Plant name	Flowering period												Size and requirements
	J	F	M	A	M	J	J	A	S	O	N	D	
<i>Anigozanthos rufus</i> Red Kangaroo Paw													0.3-0.75 cm x 1 m/H O SS D L SA G C1 F1
<i>Astroloma conostephioides</i> Flame Heath													0.3-1.5 m x 0.5-2 m/H O SS D L SA G C1 F2 B
<i>Banksia coccinea</i> Scarlet Banksia													3-5 m x 2-4 m/H O D L SA G C1 F1 B
<i>Beaufortia decussata</i>													2-3 m x 1-2 m/ H O SS D (also W) L SA G C1 F1 B
<i>Boronia heterophylla</i> Red Boronia													2-3 m x 1.5-2 m/O SS D M L SA G C1 F1
<i>Boronia mollayae</i> Tall Boronia													1-4 m x 1-2 m/O SS D M L SA G C1 F1
<i>Brachysoma lanceolatum</i> Swan River Pea													0.5-2 m x 1-3 m/H O SS W L SA G C1 F1 B
<i>Callistemon citrinus</i> Crimson Bottlebrush													2-8 m x 2-6 m/H O SS W L SA G C1 F1 B
<i>Callistemon 'Harkness'</i>													3-6 m x 2-6 m/H O SS W L SA G C1 F1 B
<i>Callistemon phoeniceus</i>													2-4 m x 3-5 m/H O SS W L SA G C1 F1 B
Lesser Bottlebrush													
<i>Callistemon viminalis</i> Weeping Bottlebrush													1-12 m x 1.5-6 m/H O SS W L SA G C1 B
<i>Calothamnus quadrifidus</i>													2-4 m x 2-5 m/H O SS W L SA G C1 F1 B
Common Net-bush													
<i>Calothamnus sanguineus</i>													0.5-2.5 m x 1-3 m/H O SS D L SA G C1 F1 B
Blood-red Net-bush													
<i>Correa 'Manni'</i>													1-2.5 m x 1-2 m/O SS D L SA G C1 F2 B
<i>Correa pulchella</i>													0.3-1 m x 1-3 m/H O SS D L SA G C1 F2 B
<i>Darwinia leystylia</i>													1 m x 1 m/O SS D M L SA G C1 F1 B
<i>Epacris impressa</i> 'Bega' Common Heath													0.5-1 m x 0.5 m/O S SS D M L SA G C1 F2 B
<i>Eucalyptus ficifolia</i> Red-flowering Gum													6-10 m x 5-8 m/H O D L SA G C1 F1 B
<i>Eucalyptus nutans</i> Nodding Gum													3-5 m x 2-4 m/H O D L SA G C1 F1 B
<i>Grevillea banksii</i> Banks' Grevillea													2-5 m x 2-3 m/H O D L SA G C1 B
<i>Grevillea 'Boongala Spinebill'</i>													1.5-2 m x 2-2.5 m/H O SS D L SA G C1 F1 B
<i>Grevillea brownii</i>													0.5 m x 1-3 m/O SS D L SA G C1 F1 B
<i>Grevillea dimorpha</i> Flame Grevillea													1-2 m x 1-3 m/O S SS D L SA G C1 F2 B
<i>Grevillea hookerana</i> Toothbrush Grevillea													2-4 m x 3-4 m/H O SS D L SA G C1 F1 B
<i>Grevillea lavandulacea</i> Lavender Grevillea													0.5-2.5 m x 0.5-3 m/H O SS D L SA G C1 F2 B
<i>Grevillea oleoides</i>													2 m x 1.5 m/H O S D L SA G C1 F2 B
<i>Grevillea 'Poorinda Constance'</i>													1.5-3 m x 1.5-3 m/H O SS D L SA G C1 F2 B
<i>Grevillea 'Poorinda Firebird'</i>													1.5-3 m x 1.5-3 m/H O SS D L SA G C1 F2 B
<i>Grevillea 'Robyn Gordon'</i>													1-2 m x 2-3 m/H O SS D W L SA G C1 F1 B
<i>Grevillea speciosa</i> Red Spider-flower													1.5-3 m x 1.5-3 m/H O SS D L SA G C1 F2 B
<i>Grevillea thelemanniana</i> , grey leaf form													0.3 m x 2-3 m/H O SS D L SA G C1 F1 B
Spider-net Grevillea													
<i>Grevillea wilsonii</i>													1-1.5 m x 1-1.5 m/H O SS D L SA G C1 F1 B
<i>Hakea bucculenta</i> Red Pokers													2-4 m x 1.5-3 m/H O D L SA G C1 F1 B
<i>Kennerleya eximia</i>													Prostrate x 1-3 m/O SS D L SA G C1 F1
<i>Kunzea baxteri</i>													2-4 m x 2-4 m/H O SS D L SA G C2 F1 B
<i>Lechenaultia formosa</i> Red Lechenaultia													Prostrate to 0.6 m x 0.5-1 m/ H O SS D M L SA G C1 F1
<i>Melaleuca coccinea</i> Goldfields Bottlebrush													1.5-2.5 m x 1-2 m/H O SS D L SA G C1 F1 B
<i>Melaleuca lateralis</i> Red Robin Bush													2-4 m x 1.5-3 m/H O SS W L SA G C1 F2 B
<i>Melaleuca steedmanii</i>													1.5-2.5 m x 1-2 m/H O D L SA G C1 F1 B
<i>Prostanthera aspalathoides</i>													0.5 m x 0.3-1 m/O SS D L SA G C1 F2 B
Scarlet Mint-bush													
<i>Regelia velutina</i> Barrens Regelia													2.5-4 m x 1-2 m/H O SS D L SA G C2 F1 B
<i>Rhododendron lachae</i>													1-1.5 m x 1-2 m/S SS D M L SA F1
<i>Telopea speciosissima</i> NSW Waratah													3-5 m x 2-3 m/O SS D M L SA C1 F2 B
<i>Templetonia retusa</i> Cockies' Tongues													1.5-2.5 m x 1-2 m/ H O SS D W L SA G C2 F1 B
<i>Verticordia mitchelliana</i>													0.5-1 m x 1 m/H O D L SA G C1 F1
Rapier Feather-flower													

H-Hot. Tolerates sun for most of the day.

O-Open. An open position, but not necessarily to hot sun.

S-Shade. Will grow in full shade.

SS-Semi-shade. Dappled sunlight or part shade, daily.

D-Drainage. Needs or prefers well-drained soil.

M-Moist. Will grow well in soil moist for most of year.

W-Wet. Will withstand extended wet periods.

L-Loam. Suitable for loams, clay-loam or clay.

SA-Sand. Suitable for sandy soils or sandy loam.

G-Gravels. Suitable for coarse, open gravels.

CA-Calcareous. Suitable for alkaline soils.

C1-Coastal. Suited to protected coastal situations.

C2-Coastal. Suited to exposed coastal situations.

F1-Frost. Moderately frost resistant.

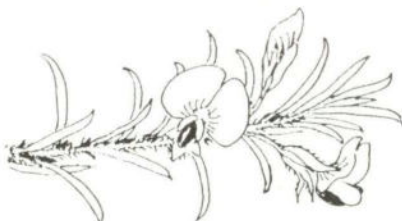
F2-Frost. Frost resistant at all growth stages.

B-Birds. Attractive to birds.

The species listed are described in the chapter for Red Flowered Plants in the book "Colour Your Garden with Australian Plants".

Colourful Groundcovers

by Gwen Elliot
from "Colour Your Garden"



Sometimes in garden planning, our first priority in regard to selection of a plant for a particular position may be its growth habit. Such is the case with groundcover plants. Aspects such as foliage and flower colour will affect our final choice of which particular groundcover we wish to grow.

Groundcovers are extremely useful plants. In garden beds they provide a living mulch. This assists by reducing soil temperature during hot weather, and also by reducing moisture evaporation from the soil.

These species can be grown in areas where only a prostrate cover is desired, or they can be planted in association with taller trees or shrubs.

Groundcovers can also provide assistance in regard to weed control, although some gardeners make the mistake of expecting too much here. If weeds are a problem before a groundcover is planted and no effort is made to eliminate them, the problem is likely to continue. Any groundcover plant which could outgrow or smother existing weeds is likely to be an even greater problem itself. We must tackle the weed problem first, then use groundcover plants in an effort to reduce subsequent weed growth.

Groundcover plants are of value if we wish to cover sloping embankments. This can eliminate the need to mow lawn planted on a slope, and the root system of the plants will reduce soil erosion. Groundcover foliage will also prevent soil being washed away by rain falling directly onto the surface.

Reproduced on page 54 is the chart from the book, of recommended plants. Some of the plants are described as follows:

Darwinia taxifolia* ssp. *macrolaena

NSW, Qld.

This is a low, spreading shrub, (0.1-1 × 1-2 m) with small, narrow, grey-green leaves. The flowers are produced in clusters, and are a showy bright pink to red. Flowering is over a long period, mainly between September and June. An excellent container plant, and suitable for garden cultivation.

H O SS D L SA G C1 F1 B (Key to letters is given opposite).

***Grevillea juniperina*, prostrate form Juniper Grevillea**

NSW

A variable species, with prostrate and shrubby forms available (0.3 m × 2-3 m). The prostrate forms have proved both hardy and popular in cultivation, and include plants with buff, yellow or apricot flowers. Plants are propagated from cuttings to retain desired habit and flower colour. Main flowering period is between July and November.

H O SS D L SA G C1 F2 B

Grevillea juniperina* var. *trinerva

NSW

This is a particularly showy variety of *G. juniperina* to 0.2-0.5 m × 1.5-3 m. The flowers are bright red, and can provide a profuse display during the flowering period of July to November. There are at least two slightly different forms in cultivation. One is generally more compact, and not as vigorous as the other.

H O SS D L SA G C1 F2 B



Helichrysum apiculatum ▲

▼ *Pultenaea pedunculata*





***Pratia pedunculata* (above)**

Caption and Photography by C. L. Wheller

The *Pratia* is 3-4 years old. Longevity has not yet been determined. It suffers badly in dry conditions. There has been no upkeep so far, apart from frequent watering and controlling spread by cutting back. It seems happier in some shade. The plant in the centre is *Thomasia*, yet to flower. Behind is a mint bush, *Prostanthera denticulata* and the red bells of *Correa reflexa*.

***Helichrysum apiculatum* (opposite top)**

Photography and caption by Neil Marriott

This prostrate suckering form of unknown origin, was planted in a raised up bed with small amounts of gypsum and gravel added for improved drainage. It was mulched with washed river sand. This *Helichrysum* likes moderate summer watering: it encourages a second flush of flowers. The peak flowering is late spring to summer. The grey ground cover on one side at the rear is *Eremophila glabra*, a lime flowered form and the background is *Eremophila verticillata*, *Grevillea lavandulacea* x *alpina*, *Dampiera diversifolia*, etc. The plants are 3 years old.

***Pultenaea pedunculata* (opposite bottom)**

Caption and Photography by C. L. Wheller

This slow growing ground cover stands full sun and drought well, but improves with partial shade and some watering in the summer. It produces yellow or yellow-orange (or brown) flowers for 2-3 weeks in late Oct-Nov here. Two colour forms are shown above. It is my favourite ground cover because of its attractive dense green mat at all seasons and its ability to exclude most weeds. It requires very little maintenance and is not frost tender or too rampant and is a very good lawn substitute. It is easily propagated from cuttings or rooted layers. A so-called pink form 'Pyalong Pink' is available but is not a particularly good colour. It is native to this district, Romsey, and to many other parts of Victoria.

Colourful Groundcovers

Plant name	Flowering period												Size, colour, requirements
	J	F	M	A	M	J	J	A	S	O	N	D	
<i>Dampiera diversifolia</i>													Prostrate x 1-2 m/Flowers blue. O SS D L SA G C1 F1
<i>Dampiera linearis</i> Common Dampiera													0.3-0.5 m x 1-2 m/Flowers blue. H O SS D L SA G C1 F1
<i>Dampiera rosmarinifolia</i>													0.4 m x 1-3 m/Flowers blue (sometimes pink). H O SS D L SA G CA C1 F2
Rosemary Dampiera													0.1-1 m x 1-2 m/Flowers pink to red. H O SS D L SA G C1 F1 B
<i>Darwinia taxifolia</i> ssp. <i>macrotaena</i>													0.5 m x 1-3 m/Flowers red. O SS D L SA G C1 F1 B
<i>Grevillea brownii</i>													0.3 m x 2-5 m/Flowers dark red to burgundy. H O SS D M L SA G C1 F2 B
<i>Grevillea x gaudichaudii</i>													0.3 m x 2-3 m/Flowers buff, yellow or apricot. H O SS D L SA G C1 F2 B
<i>Grevillea juniperina</i> , prostrate form													0.2-0.5 m x 1.5-3 m/Flowers red. H O SS D L SA G C1 F2 B
<i>Grevillea juniperina</i> , var. <i>trinerva</i>													0.3 m x 2-3 m/Flowers red. H O SS D L SA G C1 F1 B
<i>Grevillea thelemanniana</i> grey-leaf form													0.5 m x 2-4 m/Flowers white. H O SS D L SA G C1 F2
<i>Grevillea tridentifera</i> , prostrate form													Prostrate x 1-2 m/Flowers mauve (some forms white). H O D L SA G C1 F1
<i>Hemidandra pungens</i> Snake Bush													Prostrate to 1 m x 1-1.5 m/Flowers yellow O SS D M L SA G C1 F2
<i>Hibbertia obtusifolia</i>													Prostrate x 0.5-1 m/Flowers bright yellow. H O SS D L SA G C1 F2
<i>Hibbertia pedunculata</i> Guinea-flower													0.1 m x 1-3 m/Flowers red with yellow. H O SS D L SA G C1 F2
<i>Kennedia prostrata</i> Running Postman													0.1-0.3 m x 1-3 m/Flowers white or pale pink. H O SS W L SA G CA C2 F2
<i>Myoporum parvifolium</i>													Prostrate x 0.5-1.5 m/Flowers orange and yellow with brown. O SS D M L SA C1 F1
Creeping Myoporum													Prostrate x 0.5-2 m/Flowers blue or white. H O SS M W L SA C1 F2
<i>Oxylobium tricuspidatum</i>													Prostrate x 1-2 m/Flowers orange, yellow or pink. H O SS D L SA G C1 F2
<i>Pratia pedunculata</i> Pratia													0.2-0.5 m x 1-2 m/Flowers mauve to purple. O SS D M L SA C1 F1
<i>Pultenaea pedunculata</i> Matted Bush-pear													Prostrate x 0.5-1 m/Flowers deep blue to purple. H O SS D M L SA C1 F2
<i>Scaevola striata</i> Royal Robe													
<i>Wahlenbergia gloriosa</i> Royal Bluebell													

For a key to the letters used above and below, see page 50. Some plants are:

Hibbertia pedunculata, Guinea-flower

Vic., Tas.

A mat-forming species to 0.5-1 m, with a profuse display of bright yellow flowers between October and April. The flowers are open-petalled, and about 2 cm in diameter. The leaves are dark-green, and plants can spread by layering from the prostrate stems. Plants of this species have been grown and sold under the incorrect name of *H. procumbens*.

H O SS D L SA G C1 F2

Kennedia prostrata, Running Postman

all states

This a prostrate, spreading plant (0.1 m x 1-3 m), with clover-like leaves. The pea-shaped flowers are bright red with yellow. Main flowering period is between August and November. Plants can be quick growing, and will usually flower best if in a sunny situation.

H O SS D L SA G C1 F2

Myoporum parvifolium, Creeping Myoporum

Vic., Tas., SA, WA

This is a variable species (0.1-0.3 m x 1-3 m). A hardy, prostrate form will spread by layering in a favourable situation. Another form develops as a low undershrub. The small, open-petalled flowers are white or sometimes pale pink. They can be profuse along the branches between November and March. The leaves are narrow, and 2-4 cm long. They are commonly bright green, but a form with purplish foliage is also in cultivation.

H O SS W L SA G CA C2 F2

Colourful Gardens with Minimum Watering

by Gwen Elliot
from "Colour Your Garden"

Many species of Australian plants originate from climatic regions where there is a very low annual rainfall. Some of these plants are also adaptable to garden situations where much more moisture is available. Others are not.

In most Australian capital cities home and community gardens have been developed on the basis that water will always be available for the provision of moisture as required for garden purposes. This is either from adequate rainfall, or from reservoir supplies via our taps and hoses, or sprinkler systems. It is not until we experience one or two years of excessive dryness or drought that we realise how much we take for granted this natural resource of water. It is often only when we see plants dying in our gardens that we appreciate the inadequacy of our initial planning.

There are nearly always some plants which we wish to grow, and which we know will require watering in the dry months of the year. These should be grouped together in our garden. In this way we need only water one section, rather than the total garden area.

For the major portion of our gardens, it is possible to select plant species which will survive on a minimum amount of summer moisture.

Flowering may not be as prolific in dry seasons as it is in times when more moisture is available, but the plants will nevertheless survive and be ready to return to their normal showy display in better seasons.

There are some plants which thrive on extremely dry conditions, and flowering may be better in these years than when summer moisture is available. Species which are described in earlier chapters, and which fall into this category include *Banksia menziesii*, *B. prionotes*, *Brachychiton acerifolius*, *Clianthus formosus*, *Chamelaucium uncinatum*, *Dryandra formosa*, *Hakea bucculenta*, *Isopogon latifolius*, *Kunzea baxteri*, *Regelia velutina*, *Stenocarpus sinuatus*, *Verticordia chrysantha* and *V. mitchelliana*.

In watering our gardens we set up a growth pattern which once established, must be maintained. If we are generous with water and fertilizers, plants will usually respond by putting on new growth. This growth must then be maintained by a continued supply of moisture, or wilting will result and the plant may even die. By adopting a more moderate approach and using only limited fertilizer to maintain a steady rate of growth, plants are less likely to be adversely affected by drought years.

The pruning of part of the foliage from a plant can help to reduce its need for moisture during a dry season. Mulching around the base of plants will also help by keeping the root area cooler, and also by reducing the amount of evaporation caused by the sun shining directly onto the soil. Organic mulches should not be placed right against the trunk or stem of a plant, as this can lead to collar rot.

Groundcover plants serve a very useful purpose as living mulches. A list of colourful, prostrate species which can be grown for this purpose is given opposite.

Many of the methods we use for watering our gardens are in themselves very wasteful. Frequently we see the use of sprinklers which spray not only the garden beds, but also the driveway, footpath, barbecue area or other places where the water is not needed.

A trickle watering system is an excellent means of using minimum water with maximum benefit to plants. Lengths of extremely narrow tubing are used to convey water directly from a plastic pipe to the plants selected. Timing clocks can also be incorporated in the system, so that the water can be turned on or off automatically. Trickle irrigation systems are not necessarily expensive to instal, and small units designed for the home gardener are readily available. They are highly recommended, both for good plant growth, and efficient use of water.

The plants in the chart on page 58 have all proved to be hardy for extended periods of dryness. Some will also tolerate times of waterlogging. This is extremely useful, as many areas can have both very dry and very wet seasons in the same year. ■



Callistemon 'Little John' ▲

▼ *Grevillea lanigera*, prostrate form





A Wildflower Garden (above)

Photography and caption by Neil Marriott

A built-up bed of local soil, a sandy loam, with added gypsum and gravel. The plants are three years old and were heavily mulched with washed river sand. In the foreground left is *Conostylis robustum*, behind *Eremophila pantonii*, the red *Lechenaultia formosa* behind a catspaw, *Anigozanthus humilis*, and in front of *Conostylis candicans* (yellow) and *Helipterum roseum*, the everlastings. Refer to the article on page 59.

Callistemon 'Little John' (opposite upper)

Caption and photography by W. H. Payne

A dwarf shrub less than one metre high growing in John Hunt's garden. There are many forms of *Callistemon* (bottle brush) developed for horticulture. Many are described in previous issues of *Australian Plants*. They are hardy rewarding plants. As with most other plants, the better the growing conditions and the more care, the better the display. This plant will be growing in good well-drained soil, receive adequate moisture, and probably have been properly pruned by cutting off all flower heads after flowering.

Grevillea lanigera (opposite lower)

Photography by C. L. Wheller

Shown is one of the many forms of *Grevillea lanigera*. Normally a small shrub to above a metre, this form is low-growing or prostrate. Prostrate or ground cover plants are difficult to photograph, this one being taken from above. As can be seen it flowers freely. It is two years old 0.75 m wide with a few branches above 0.25 m high. The green to the left is *Scleranthus biflorus* and at top right is *Pratia pedunculata* not in flower.

Colourful Gardens with Minimum Watering

Plant name	Flowering period												Size, colour, requirements
	J	F	M	A	M	J	J	A	S	O	N	D	
<i>Acacia boormanii</i> Snowy River Wattle													3-5 m x 2-5 m/Flowers yellow. H O SS D L SA G C1 F2
<i>Acacia retinodes</i> Wirilda													3-5 m x 2-5 m/Flowers yellow. H O SS W L SA G C1 F2
<i>Astroloma conostephioides</i> Flame Heath													0.3-1.5 m x 0.5-2 m/Flowers red. H O SS D L SA G C1 F2 B
<i>Banksia burdettii</i> Burdett's Banksia													3-6 m x 3-6 m/Flowers orange. H O D L SA G C1 F1 B
<i>Banksia prionotes</i> Acorn Banksia													5-12 m x 4-6 m/Flowers orange. H O D L SA G C1 F1 B
<i>Brachysema lanceolatum</i> Swan River Pea													0.5-2 m x 1-3 m/Flowers red. H O SS W L SA G C1 F1 B
<i>Brachychiton acerifolius</i> Flame Tree													10-40 m x 10-15 m/Flowers red. H O SS D L SA C1 F1
<i>Brachychiton discolor</i> White Kurrajong													10-30 m x 5-15 m/Flowers pink to red. H O SS D L SA C1 F1
<i>Calocephalus brownii</i> Cushion Bush													0.2-2 m x 0.5-3 m/Foliage silvery. Flowers pale yellow-white. H O D L SA G C2 F1
<i>Cassia artemesioides</i> Silver Cassia													1-2 m x 1 m/Flowers yellow. H O D L SA G CA C1 F2
<i>Ceanothus formosus</i> Sturt's Desert Pea													Prostrate x 1-4 m/Flowers red with black. H O D L SA G C1 F2
<i>Callistemon 'Harkness'</i>													3-6 m x 2-6 m/Flowers red. H O SS W L SA G CA C1 F1 B
<i>Calothamnus quadrifidus</i> Common Net-bush													2-4 m x 2-5 m/Flowers red. H O SS W L SA G C1 F1 B
<i>Calothamnus sanguineus</i> Blood-red Net-bush													0.5-2.5 m x 1-3 m/Flowers red. H O SS D L SA G C1 F1 B
<i>Chamaelium uncinatum</i> Geraldton Wax													2-5 m x 2-6 m/Flowers white, pink, mauve or reddish purple. H O SS D L SA G C1 F2
<i>Dryandra formosa</i> Showy Dryandra													3-8 m x 2-5 m/Flowers orange-yellow. H O SS D L SA G C1 F1 B
<i>Enchylaena tomentosa</i> Barrier Salt-bush													0.3-1 m x 0.5-1.5 m/Fruits yellow to dark red. H O D L SA G CA C1 F2
<i>Eucalyptus erythrocorys</i> lillyarrie													5-8 m x 3-6 m/Bud-caps red, flowers yellow. H O SS D L SA G C1 B
<i>Eucalyptus leucocylon</i> , dwarf forms Yellow Gum													5-8 m x 5-8 m/Flowers white to light or deep pink. H O SS W L SA G C1 F2 B
<i>Eremophila</i> species, Kalgoorlie													0.5-2.5 m x 0.5-1.5 m/Flowers mauve. H O SS D L SA G CA C1 F1
<i>Grevillea hookerana</i> Toothbrush Grevillea													2-4 m x 3-4 m/Flowers red. H O SS D L SA G C1 F1 B
<i>Grevillea lavandulacea</i> Lavender Grevillea													0.5-2.5 m x 0.5-3 m/Flowers red. H O SS D L SA G C1 F2 B
<i>Grevillea 'Poorinda Queen'</i>													2-3 m x 2-4 m/Flowers orange. H O SS D L SA G C1 F2 B
<i>Grevillea speciosa</i> Red Spider-flower													1.5-3 m x 1.5-3 m/Flowers orange. H O SS D L SA G C1 F2 B
<i>Grevillea wilsonii</i>													1-1.5 m x 1-1.5 m/Flowers red. H O SS D L SA G C1 F1 B
<i>Hakea bucculenta</i> Red Pokers													2-4 m x 1.5-3 m/Flowers red. H O D L SA G C1 F1 B
<i>Isopogon latifolius</i>													1.5-2.5 m x 2-2.5 m/Flowers mauve. H O SS D L SA G C1 F1
<i>Kunzea baxteri</i>													2-4 m x 2-4 m/Flowers red. H O SS D L SA G C2 F1 B
<i>Lagunaria patersonii</i> Nortolk Island Hibiscus													8-13 x 3-6 m/Flowers pink. H O SS D L SA G CA C2 F1 B
<i>Lambertia ericifolia</i>													2.5-3.5 m x 2-3 m/Flowers orange. H O SS D L SA G C1 F1 B
<i>Melaleuca coccinea</i> Goldfields Bottlebrush													1.5-2.5 m x 1-2 m/Flowers green. H O SS D L SA G C1 F1 B
<i>Melaleuca diosmitolia</i>													2-4 m x 2-4 m/Flowers green. H O SS M W L SA G C1 B
<i>Melaleuca incana</i> Grey Honey-myrtle													2-3 m x 2-3 m/Flowers pale yellow. H O SS M W L SA G C1 F1
<i>Pittosporum phylliraeoides</i> Butterbush													4-10 m x 2-5 m/Flowers and fruits yellow. H O SS D L SA G C1 F2
<i>Pittosporum rhombifolium</i> Old Pittosporum													4-10 m x 2-5 m/Flowers cream. Fruits orange. O S SS D L SA C1 F1
<i>Regelia velutina</i> Barrens Regelia													2.5-4 m x 1-2 m/Flowers red. H O SS D L SA G C2 F1 B
<i>Sallya heterophylla</i> Bluebell Creeper													Climber. Flowers blue. H O SS M W L SA C1 F1
<i>Stenocarpus sinuatus</i> Firewheel Tree													6-15 m x 3-5 m/Flowers red with yellow. H O SS D M W L SA G C1 B

A Wildflower Garden

Further Notes by Neil R. Marriott

In the March, 1984 issue of *Australian Plants* my garden was described and beautifully illustrated by many colour plates. As the editor pointed out, I did not adequately describe the soil and its treatment.

It is my opinion that soil type is not vital and is certainly not the major factor in the successful cultivation of Australian plants. However it does have some bearing on the species being grown. What is of vital importance, (as I pointed out in my article) is *excellent drainage*; without this, very few of the more desirable species can be grown at all regardless of your soil type. To prove this point I have developed garden beds of sands, gravelly loams, sticky clays etc. and *all* are only really successful if well drained.

Clay soils, in my opinion, give better results than sandy soils when very well built up, although care must be taken to ensure that only those species with root systems that can withstand the higher soil-moisture levels found in clays are grown in this type of soil. For example, during the 1982 drought, I planted out a bed of very well built up sticky red clay with many *Grevillea* species including several *Grevillea leucopteris*. These thrived throughout the drought and were 1.5m high when the first heavy rains broke the drought; within a week they were all dead — their root systems could not cope with the very moist soil. All the other *Grevillea* continued to thrive and are now magnificent, large, specimens.

As I pointed out in my March, 1984 article, soil structure can be readily improved with the addition of gravels, humus and gypsum if necessary. By building *your* soil up and thus modifying its structure, a huge range of the more spectacular plant species can be grown regardless of your soil type. Even those on alkaline soils can increase the range of species grown by following this advice and by incorporating sufficient humus material or imported acid soil into the top 15cm of your beds; it is quite amazing how many small species will grow quite happily on alkaline soils so long as the top 15cm of soil is slightly acidic.

Don't despair of your soil type; build it up and modify its structure to suit the plants you wish to grow and you will be amazed at your success. See photograph on page 57. ■

Kennedia nigricans

An Insular Form reported by Greg Keighery, Kings Park, WA.

Kennedia nigricans is a vigorous, and commonly grown vine or groundcover. Perhaps indication of its popularity can be judged from the number of appearances in *Australian Plants* (at least 11 times, including a colour plate in Vol. 6, page 240). In these stakes it is only surpassed by Sturt's Desert Pea (*Clianthus formosus*) which can boast some 7 colour plates, and is probably the most quoted vine.

The species is native to near coastal southern Western Australia, between Warriup Inlet (34° 41'S and 118° 30' E) and Middle Island (34° 06'S and 123° 11'E). Normally the flowers have a bright yellow eye on the standard petal. However, plants from Middle Island have an orange eye on the standard.

Dr. Arthur Weston obtained seed of the Middle Island form in 1980, and it has subsequently been grown to flowering in Perth and on the Moore River by Bob Dixon. The form is true breeding from seed, and unlike *Clianthus* colour forms is as vigorous as the normal form.

Fortunately Middle Island is a nature reserve and this form is well protected in the wild.

Perhaps further colour forms await discovery in the genus *Kennedia*. ■



Banksia audax flowers, E. of Southern Cross, W.A.

Photography by F. W. Humphreys

Banksia audax* C. Gardner (1928)

Specific name from the Latin *audax* (bold), apparently in reference to the species' adaptation to a relatively dry, inland habitat.

A shrub to 1 m tall with lignotuber. Bark fissured, grey. Branchlets tomentose. Leaves scattered, narrowly cuneate, truncate, 2-7 cm long, 8-20 mm wide, concave to flat, serrate, tomentose-hirsute becoming glabrous except fine pits on lower side. Inflorescences on short lateral branchlets, ovoid-cylindrical, 3-5 cm long, 5-5.5 cm wide at flowering; bracts at base tomentose, persistent. Flowers golden-orange including styles, those at apex rusty-brown. Perianth 20-23 mm long including limb of 3.5-4 mm, pubescent-hirsute outside, glabrous inside. Pistil 19-23 mm long, gently curved, glabrous except hairs on ovary; pollen-presenter narrow, 1 mm long. Old flowers persistent. Follicles up to 40, elliptic, 8-13 mm long, 4-5 mm high, 4-6 mm wide, smooth, hirsute; usually opening with fire, split from stylar point. Seed obovate, 18-22 mm long; seed body cuneate-obovate, 10-12 mm long, 6-8 mm wide, smooth or slightly rugose; wing curved, 9-12 mm wide, notched.

DISTRIBUTION Western Australia, in the inland region between Southern Cross, Pingaring, the Johnston Lakes and Bullabulling.

HABITAT In yellow sandy loam sometimes with gravel, in open heath. Annual rainfall 250-300 mm.

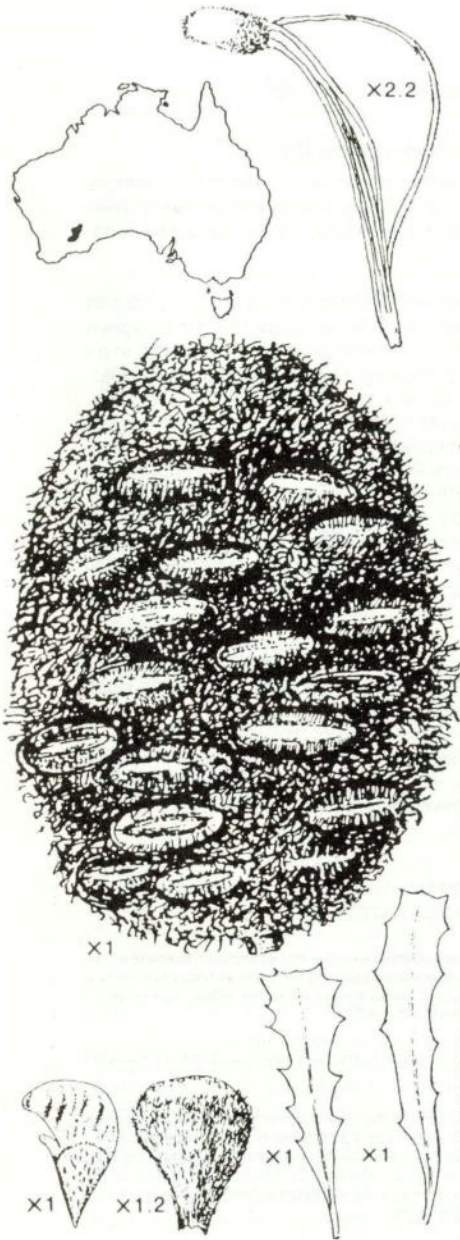
FLOWERING PERIOD — November to January.

Fire-tolerant, sprouting from the lignotuber.

NEW GROWTH Rusty-brown.

RELATED SPECIES No species closely resembles *B. audax*. The nearest relative is *Banksia benthamiana*, which is a larger shrub without lignotuber and with larger leaves, flowers and follicles. Also related is *B. laevigata* which is a tall, non-lignotuberous shrub and has spherical inflorescences with yellow or creamy-grey flowers.

CULTIVATION A small shrub with several openly-branched stems; probably takes up to 10 years to flower from seed. Leaves medium green, dull, rigid; new leaves attractive. Flowers moderately conspicuous; old flowers persistent, brown. If straggly it may be cut back to lignotuber. Full sun in well-drained or somewhat gravelly soil. Should do well in areas of low rainfall.



Above: *Banksia audax*. Fruit with unopened follicles; a dissected follicle (lower centre); a bud just before limb opens; leaves; drawn by Charles Gardner. Seed (lower left), drawn by Alex George.

*Reproduced from "The Banksia Book" by Alex George, see page 87.

The Native Eco-Garden — 4

by Coralie Whitby

No-Dig Gardening? What does the Forest Do?

In a forest, annuals commonly occupy and stabilize disturbed soil where there is more light for growth. This happens, for example, along wide forest verges and in recent clearings. Given no further soil disturbance, the annuals will eventually be shaded out by seedlings of permanent forest species.

Eco-gardens (conservation gardens) are modelled on the forest: in particular, the part of the garden where annuals are grown is modelled on the forest verge which is ploughed every few years as a fire-break, letting light in to the soil and recycling soil elements. In an eco-garden, beds for annuals are prepared by first allowing a ley to grow there for a year. (Ley is temporary grassland — annual ryegrass, clovers, dun peas, oats, vetch, chicory, sheep's parsley and others can be sown.) After a year's growth, the ley is removed, the soil is double-dug, and the ley is then turned under to establish conditions like those in the forest verge after ploughing. The loosening of compacted sub-soil gives deep-rooting annuals the best possible chance of developing well; and also there is evidence that pests such as ear-wigs and millipedes build up in "no-dig" vegetable gardens, so a four-year dig in annual beds is useful for pest control. Crops of three different annuals are sown in succession, the soil being improved by green manures and lightly forked between crops; and then the soil is again allowed to rest and recover its structure under a year's ley, when the cycle begins again.

Native annuals in forests also occur with other plants along well-lit pathways and clearings — in keeping with this, annuals in a native eco-garden could occupy the same kinds of niches in the border, until displaced by long-lived species.

From the forest model, double-digging and top-soil cultivation in the case of shrubs and trees are appropriate before planting only — in the forest, the soil around trees and shrubs is held firmly in place by roots and ground-covering plants, and by the layer of litter.

The Native Eco-garden — Practice and Theory (4)

The following are questions by the Editor, in correspondence, and answers by Coralie Whitby.

"The plants you nominate for a ley in the annual garden are all introduced — not acceptable to many SGAP members as they do not reflect the native flora. Substitute native species should be easily obtainable or germinated — there is an ample range of wildflowers to choose from to make the ley attractive. What ones could be used? Again, people do not want a portion of their garden to look a mess."

To answer your last comment first, I have a small ley section growing now, and I do protest that it looks anything but a mess.

The function of a temporary ley is to restore soil structure every fourth year in an area maintained unnaturally under annuals. The ley species are selected for their ability to give a dense top growth for organic matter, and a stratified root arrangement particularly for recovery of nutrients from all soil levels. The introduced ley is a standard method of restoring soil structure after annuals. If an area is allowed to progress naturally through annuals and the successive stages to forest, a ley is not needed to restore soil structure. If annuals are put in year after year, the soil deteriorates: it is necessary to conserve soil, and it is in the interest of all gardeners to know ways of doing this.

At present it is not possible to incorporate into native garden routine a temporary ley in which all the species are Australian annual or biennial plants. From a perusal of Wrigley and Fagg, very few Australian annuals have been studied and developed even for normal gardening purposes — certainly not for their potential in ley or as cover crops. Some perennial indigenes with abundant leaf occur in my own clearing (but not in the forest itself where they appear to be suppressed). I have selected two of these for trial as cover crops but I will not have data available on them for two years at least. One problem in getting a suitable native ley together is the almost complete absence in the Australian native range of tall-growing, annual, soft-leaved legumes: most are woody or at least sclerophyll — not suitable for quick rotting-down in the soil.

"Is it necessary to dig up a quarter of the eco-garden each year?"

No. In an eco-garden a quarter of the garden-planted-with-annuals is dug each year. The soil around long-lived subjects is never disturbed after the initial soil preparation.

"If annuals are planted among trees, does this imply digging around trees as though they were not there? Will double-digging be good for keeping the roots of the large plants back, to give annual plants a better chance?"

In a species list for Sherbrooke Forest, Victoria, annual indigenous plants are anything but conspicuous, perhaps altogether absent: all the annuals listed appear to be introduced aggressives, such as *Myosotis* — and even these are suppressed except just along the edges of paths and along the forest verge. If you intend your eco-garden to contain some taller subjects, you are creating a synthetic forest or woodland. While such a garden is young there will be enough light and sufficiently loose soil between the shrubs and trees for you to grow some native annuals. Later there may still be room for them along edges of beds; but once your eco-garden is properly established, permanent subjects will not make room for annuals — that is not part of nature's plan. At that stage the soil under your synthetic forest or woodland will be conserved, and native annuals will be best placed in a separate bed where they can have all the loose soil, nutrients, water and light they need. Make sure you rest soil used for annuals one year in four, under a temporary ley of effective species. ■

Diplarrena

by Kay Geeves, Tasmania

Tufted plants are very useful in the garden and the *Diplarrena* species particularly so. They are attractive in a rock garden setting or as a pleasing contrast in the foreground of a shrubbery. They also look well in plantings near a pool. Depending on choice and space they can be used as single specimens or group plantings. *Diplarrena* belong to the *Iridaceae* family.

Diplarrena occur widely in Tasmania and we have two species. In their natural habitat they often treat us to incredibly magnificent displays. I've seen acres of *Diplarrena latifolia* making an unforgettable sight on the south and west coast areas of Tasmania. I've also seen *D. latifolia* growing in association with *Blandfordia punicea* amongst the contorted rocks of ranges near Zeehan and looking absolutely splendid.

Diplarrena latifolia occurs from mountains in the south and west of Tasmania to sea level and is endemic to Tasmania. *D. moraea* is widespread and prolific at lower altitudes particularly in the north and east of the state often in open, rocky areas. The plants recover well from fires and flowering is stimulated.

Diplarrena moraea is a tussock-forming perennial with a short rhizome. Leaves are sword-shaped, sheathing at the base, flat and up to a metre long. The stems are longer than the leaves so flowers are well displayed. The flowers emerge from between two sheathing bracts of a spathe and are produced in succession. Flowers are white and have 6 segments that are obovate-cuneate. The three outer segments are up to 3 cm long and 1.5-2 cm wide. The three inner segments are much shorter, narrower and more erect, often with yellow or purplish tints towards the apex. Fruit is a three locular capsule containing rows of flattened seeds. It occurs in Vic. and N.S.W. as well as Tas.

Diplarrena latifolia is very similar to *D. moraea* but the two species differ in the shape of the outer segments and in the colour of the inner segments. In *D. latifolia* the outer segments are broadly elliptical. The inner segments are beautifully patterned with dark purple lines passing towards, but not reaching, the centre, usually on a white background. The flattened apex area may be white, yellow or deep purple. Flowers are usually larger than *D. moraea*. Plants vary from robust lowland forms to dwarf alpine variants.

I have grown both species under garden conditions at Port Huon, south of Hobart, for many years and find them very rewarding. I regard *D. latifolia* as one of my choicest plants. It flowers in spring and again in autumn. It can be grown from seed or root division and requires plenty of moisture. One of my plants is in fairly heavy loam and the other in a raised alpine rockery and both are doing well. Both are well drained. *D. moraea* occurs naturally in this locality and I have two long established plants in the heavy loam and two in a rockery with light bush sand and copious vegetable matter. I regard *D. moraea* as a very hardy, easy-to-grow plant. Propagation is as for *D. latifolia*. *D. moraea* flowers in summer. ■

House Plants

Proven Natives And Their Care

by Ailene Kollosche

All plant life depends on a number of inter-related and interdependent factors which can be grouped under five headings: light, temperature, water, air, and nutrients. The balance between these factors varies with the species and some are more adaptable than others to variations from the optimum levels.

Light

The wavelengths of visible light used by plants in photosynthesis do not coincide with those to which the human eye is sensitive, and what appears to be adequate light can be very inadequate. Apart from use of a photometer, the only practical method of determining suitable positions for plants is to gauge the greatest exposure to light, taking into account reflected light, and then proceed by trial and error. Plants vary in the amount of light required, and the depth of colour and pigmentation of the leaves can be used as a rough guide.

Some plants brought indoors during flowering, e.g., *Chorizema* spp., require very good lighting and some direct sunlight.

Foliage plants with white or yellow variegated leaves, e.g., *Pisonia umbellifera*, *Ficus rubiginosa* 'Variegata', need strong light and a little less direct sunlight. The white or yellow areas of the leaves indicate reduction or absence of the cells containing chloroplasts, responsible for photosynthesis; and to maintain a healthy state the chloroplasts that are present have to work at an optimum level of efficiency only possible with good light. Poor lighting results in either loss of the variegated character of the foliage or weakness of the plant.

In plants with red or purple foliage the pigment masking the green chlorophyll develops only in strong light, e.g. *Cordyline terminalis*. In poor light the foliage becomes greenish and the plant weakens.

Plants with green foliage require light strengths varying from strong light to deep shade, the darker the green, the more shade the plant will tolerate. Many of the latter category have very thick leaves, e.g. *Ficus macrophylla*, *Hoya* spp., in contrast to the very thin leaves of the paler green foliaged plants, e.g., *Cissus antarctica*, *Omalanthus populifolius*.

Daylight can be augmented with fluorescent lighting, but the complications this involves are hardly practical in the average home.

Exposure to full direct sunlight through glass must be avoided, particularly in summer, the effect being scorching of leaves and burning of roots, and usually the death of the plant.

Temperature

Although most of the Australian plants tried as house plants show a surprising tolerance to a wide range of temperatures, sudden wide fluctuations or sharp changes in the ambient temperature as a result of blasts from air conditioners, open doors and windows, or from close proximity to a fire, can be very detrimental, particularly to plants from sheltered habitats.

It must be remembered that a windowsill, particularly if enclosed by curtains, can, near the glass, offer very little protection against the cold of a winter night, and an unshaded north facing windowsill in summer can be a disaster to any plant.

Reprinted from South Australian S.G.A.P. Journal, one of the newsletters circulated to Society members in each state as part of membership.

Water

Plants, like all living organisms, consist largely of water — about 80% of body weight — and the percentage must remain at an optimum to maintain the health of the plant.

Nutrients in the soil, necessary to metabolism, are absorbed in solution through the roots by osmosis and in the form of sap circulated through the plant tissues.

Water also serves to keep the cells and tissues of the plant turgid, which maintains the shape of the whole plant. Lack of water causes a plant to wilt, and in the case of a soft plant, to collapse.

Turgidity of the cells is also necessary to maintain the condition of the stomata, or pores, on the undersurfaces of the leaves. The gaseous exchanges involved in photosynthesis (assimilation of carbon dioxide) and in respiration (assimilation of oxygen and release of carbon dioxide) take place through the stomata. Transpiration, the release of water vapour, maintains the flow of water into the roots and through the plant. Transpiration also creates a satisfactory microclimate around the foliage, and is also dependent on the condition of the stomata.

This microclimate can, in the case of rainforest plants, be 50% or more atmospheric humidity, which, in the natural habitat, is related to surrounding conditions and remains constant. Transpiration from the leaf surface is not restricted to the stomata but can take place over the entire leaf surface. In the case of plants from very dry habitats such as deserts, where conservation of available water is essential, the outer cuticularised layer of leaf surface is developed to the point where transpiration is restricted to the stomata. In the case of rainforest plants this cuticle is very much reduced, and in aquatic plants is absent altogether, allowing complete permeability of surrounding water. As most of the house plants come from rainforest habitats it is necessary to maintain a humid microclimate around the foliage. Many plants are adaptable to a drier microclimate and need no special care, e.g., *Ficus macrophylla*, *Schefflera actinophylla*, *Grevillea robusta*, some manage to survive without special care, but others show a definite adverse reaction (e.g. leaves shrivel and drop). A few, such as *Drosera* spp., die very quickly if kept out of a very humid microclimate — these are safer kept in a terrarium.

There is only one set rule for watering a terrestrial plant: the soil must never be allowed to become waterlogged and soggy because this cuts off the supply of oxygen in the air required by roots, which promptly rot, and the plant dies. This situation is the greatest single cause of plant loss and arises when a plant is watered too frequently or the pot allowed to sit in a layer of water in the saucer. There are a few very specialised exceptions to this, such as the *Drosera* spp.

Frequency and amount of watering is largely a matter of trial and error, and of personal judgement and depends on such factors as ambient temperature, atmospheric humidity, size of container, soil, species and natural habitat, and season (most plants require much less water in the winter when growth rate slows down). Although some plants need a constantly damp soil, e.g. *Boea hygrosopica*, and others, such as many of the palms, prefer to dry out almost completely between watering, the majority prefer to become slightly dry on the surface. Eucalypts, when grown indoors, require an exceptional amount of water. As they do not tolerate waterlogging, watering becomes a daily, or even more frequent, chore, against perhaps weekly in the case of a similarly sized plant of another species. Watering should be regarded as a job to be done "as necessary" but never at set intervals.

Tap water is usable for most plants, but some of the more delicate or specialised plants do it better with rain water — if the latter is in plentiful supply it should be used for all watering.

In winter it is preferable to water in the morning. If this is not possible, allow water to reach room temperature before using. With delicate plants, water used should always be at room temperature.

Two techniques can be followed for watering. If watering from above use a container with a narrow spout and pour water in slowly at the rim, tipping off any excess that drains into the saucer. Alternatively, the pot can be immersed in water up to the level of the soil and left till water soaks up to the soil surface; then drain completely before returning the pot to the saucer.

The humid microclimate required by many plants can be achieved in several ways, the simplest being to keep the plant in the bathroom or similar position, and spray frequently with water. Another method is to stand the pot on top of a layer of pebbles, gravel or perlite in a dish of water, so that the water does not reach the bottom of the pot. Better still, group several pots together in a larger dish set up in this way. Another method is to group pots together in a large container or planter box filled with damp sphagnum moss — this has the added advantage of insulating the root systems against sudden temperature fluctuations.

For transpiration to continue effectively, the leaf surfaces must be kept clean and the stomata unclogged; in the natural habitat this is taken care of by rain. House plants benefit from a shower outdoors either from rain or hose while in a shaded position, and when the temperature is suitable. At other times the leaves can be sprayed in the bath, or wiped over with clean water and cotton wool. Leaf glosses should be used very sparingly, if at all.

Air

Though air is necessary to plant life, experience shows that plants, particularly from rainforest habitats, do better in a relatively undisturbed environment. This is rarely practical in the home, but efforts should be made to avoid draughts from doors, windows, fans and airconditioners, which disperse the individual microclimates and which frequently are accompanied by sudden temperature changes.

Soil

Formulae for soil mixes for indoor plants are legion. The most popular, quoted by Wrigley and Fagg, is —

Loam	— 2 parts
Well rotted cow manure	— 1 part
Peat moss	— 1 part
Leaf mould	— 1 part
Coarse river sand	— 1 part

However, loam is not as easily obtained, or as good, as it used to be (in horticultural terms loam is rotted down grass turves), the acquiring of well rotted cow manure can present problems, and leaf mould can carry its own collection of problems often mobile and undesirable. Home sterilisation presents more problems still. For those living in units or flats, or with limited time, the alternative is to buy potting soil by the bag, from the nearest nursery. Strictly speaking, this "potting soil" is, nowadays, a soilless, or artificial, compost, composed of pounded pine-bark and peat moss, mixed in with sand. Sometimes nutrients are added as well. The great disadvantage of this medium is that it dries out very rapidly and is difficult to re-wet, so the bag or bin must be kept very tightly closed. If re-wetting is necessary, use hot water. The advantages are that the material is lighter and cleaner to handle, and the basic medium can be modified to produce a drier or damper medium. This is done by the addition of more sand (sand prevents "caking") to the mix when a drier medium is required and by the addition of extra peat or sphagnum moss to produce a damper medium. Perlite, which is capable of absorbing and holding large quantities of water, will help to prevent "caking" and at the same time give a more open, damper, and better drained mix. Isolite (granulated polystyrene) being impervious to water serves to keep the soil open and allow access of oxygen-bearing air to the roots. A mix that has proved successful is:

Soilless compost	2 — 3 parts
Coarse sand	1 — 2 parts
Peat moss	1 — 2 parts
Isolite or Perlite	1 part

This is for general use; the exact proportions are a matter of experience and judgement and further modifications can be made for more demanding plants. It should be remembered that peat and sphagnum moss are, in themselves, excellent mediums for tropical and rainforest plants, and the latter, which will hold four times its weight of water, has the additional property of discouraging the growth of micro-organisms. The S.G.A.P. Queensland Journal has suggested a mixture of sand, peat moss and peanut husks as the most successful medium for growing *Boea hygroskopica*, and Italian and American literature recommend a mixture of sand, peat and sphagnum moss for *Drosera* spp.

When a natural mix is used for potting, regular application of nutrients will be required after about three months; with the artificial mix, nutrients will have to be incorporated in the mix and continued. It must be remembered that, apart from trace elements, the main constituents of plant fertilisers are Nitrogen, Phosphorus and Potassium in various proportions, referred to as the N.P.K. ratio. It is generally accepted that the N.P.K. ratio 10:9:8 is safe for native plants if used with caution. Fertilisers can take the form of slow release granules, applied about every six months or a liquid such as Aquasol, used at half strength about fortnightly in the growing season.

Pots

In the South Australian climate plastic or glazed ceramic containers are, on the whole safer than terracotta pots, which can dry out at an alarming speed in hot weather. Good drainage is essential, either old-fashioned "crocking" or fly-wire and gravel.

Over-potting should be avoided as the soil can remain too wet; and it should be remembered that many of these plants are somewhat restricted in their root-run in their natural habitat.

When potting-on does become necessary, roots may be lightly trimmed and some of the old soil knocked out before planting in the next size pot, and watering-in well.

Pruning

Many of the plants used indoors benefit from tip pruning commencing at an early age as it improves their shape and appearance. Single stem trees are better left alone as pruning can destroy their natural character.

Climbers

These can be trained across walls, on supports such as drift wood or on mini-trellises incorporated in the container (e.g. plastic trellis wired on to the pot rim). They can be used to form a room divider or screen. An outsize totem pole suitable for light and profuse climbers can be made by forming the plastic trellis into a tube and wiring to the rim of the pot.

Pests

These can be as much of a nuisance indoors as in the garden, and very few of us have birds wandering loose indoors to help in their control.

The first line of defence, if pests do appear, is to stand the plant in the bath and thoroughly spray the foliage, turning the pot on its side to get at the undersurfaces of leaves. This takes care of red spider mite (usually an indication of insufficient humidity), aphids, and black and white fly in their early stages. If more drastic treatment becomes necessary use a pyrethrum-based spray, but preferably not in an aerosol form. Lie the plant on its side in the bath with the foliage enclosed in a large plastic bag and spray into bag. The bag should be left in a position for a short time to allow the insecticide to affect the pest. The foliage can be washed next day to remove any dead bodies and remaining toxic material.

Mealy bugs, active in hot, dry, airless conditions, can be dealt with by dabbing with a small paintbrush or cotton bud soaked in 70% alcohol. Scale can also be treated by this method.

Looper caterpillars can also find their way indoors and cause enormous damage before their presence is detected. Their habit of adjusting their appearance to whatever they select to live on, and the very unlikely plants that are selected, such as *Araucaria* spp., make detection difficult. The least traumatic method of dealing with them, as far as the plant is concerned, is a session with a pair of forceps and a magnifying glass.

Use of native plants in public buildings

This is another untried field in Australia, apart from the ubiquitous *Schefflera actinophylla*. A motor parts showroom in Adelaide has a very fine specimen, about 4 metres tall in an open, well-lit, south-facing stairwell, growing in a shallow concrete bowl about one metre across and 0.75 metres deep.

Schefflera actinophylla, *Araucaria heterophylla*, *Hoya carnosa*, *Ficus macrophylla*, *Acmena smithii*, *Cissus antarctica* and *Lepidozamia peroffskyana* have been tried in a large, open plan, sealed and airconditioned laboratory with nearly 24 hours per day fluorescent lighting. This experiment showed that the species used were at least as adaptable as the exotic indoor plants grown with them, but that such conditions demand modification of the artificial soil mix to retain much more water. The experiment also showed the value of a system to create a very humid microclimate. Pests including black fly, mealy bugs, and scale proved a very bad and persistent problem. Strangely enough, in spite of the double doors and lack of windows, a few ladybirds appeared hot on the heels of the pests.

Other Applications Around the Home

Use of native plants can be extended into many areas such as terrariums (ideal for some carnivorous plants and for ferns and mosses), hanging baskets, and as bonsai subjects. The scope is only limited by your imagination and willingness to experiment.

Australian Plants Used as House Plants

The following list of native plants recommended for use as house plants has been culled from Australian literature on native plants and from European, English and American literature on house plants. Some have been tried under Adelaide conditions, and all of these have proved successful. Descriptions of most of these plants will be found in previous issues of Australian Plants.

Abarema grandiflora; *A. sapindoides* — "Stinkwood", "Snow Wood", "Tulip Siris".

Abrophyllum ornans — A beautiful leafed small tree.

Acacia spp. (e.g. *Acacia drummondii*).

Acmena hemilampra — "Lilly Pilly", many are now *Syzygium* species.

Agapetes meiniana. A well-flowered climber, sometimes epiphytic.

Agathis robusta — "Kauri Pine"; *A. microstachya* and *A. atropurpurea*, "Blue Kauri".

Alectryon tomentosus; *A. subcinereus*, "Native Quince".

Aleurites moluccana — "Candle Nut".

Alocasia macrorrhiza — "Cunjevoi".

Alpinia coerulea — "Red Leaf Ginger"; *A. arctiflora* — "Native Ginger"; *A. arundelliana*.

Anopterus glandulosus — "Native Laurel", beautiful white flowers, and *A. macleayanus*.

Araucaria bidwillii — "Bunya Pine"; *A. cunninghamii* — "Hoop Pine", "Moreton Bay Pine";

A. heterophylla (syn. *A. excelsa*) — "Norfolk Island Pine".

Ardisia brevipedata.
Argophyllum lejourdanii for the pleasing leaves.
Argyrodendron actinophyllum — "Black Jack", "Blush Tulip Oak".
Aristolochia deltantha (climber).
Athrotaxis cupressoides — "Pencil Pine", *A. laxifolia*, *A. selaginoides* — "King Billy Pine".
Backhousia citriodora — "Lemon Ironwood"; *B. anisata* — "Aniseed Tree".
Blepharocarya involucrigera — "Rose Butternut"; *A. depauperata*.
Boea hygroskopica (an Australian "African Violet").
Brachychiton acerifolium — "Illawarra Flame Tree"; *B. discolor* — "Queensland Lacebark"; *B. populneum* — "Kurrajong"; *B. rupestre* — "Bottle Tree".
Cardwellia sublimis — "Northern Silky Oak", "Golden Spangle-wood".
Carnarvonia araliifolia — "Red Oak", leaves like those of *Aralia*.
Castanospermum australe — "Black Bean", "Moreton Bay Chestnut".
Cayratia clematidea (climber with globular, black, edible berries).
Ceropegia cumingiana (climber).
Chorizema cordatum; *C. diversifolium* (climber); *C. ilicifolium*.
Cissus antarctica — "Kangaroo Vine", "Native Grape"; *C. hypoglauca* — "Water Vine"; *C. nitens*; *C. oblongata*; *C. repens*.
Citriobatus multiflorus — "Orange Thorn".
Clerodendrum cunninghamii; *C. floribundum*.
Clianthus formosus — "Sturt Desert Pea".
Colocasia esculenta — "Taro".
Cordyline fruticosa; *C. murchisoniae*; *C. petiolaris*; *C. stricta* ("Erect Palm Lily").
Costus potierae, a herb with an erect leafy stem to 3 m.
Croton insularis — "Queensland Cascarilla".
Curcuma australasica, a herb with a perennial rhizome.
Cuttsia viburnea, a small tree with panicles of white flowers.
Darlingia darlingiana — "Darling Tree".
Davidsonia pruriens — "Davidson's Plum" — Fruit can be used for jam making.
Dianella tasmanica — "Tasmanian Flax Lily" or other *Dianella* spp.
Dillenia alata — "Red Beech", reddish brown, papery bark.
Dioscorea transversa — "Yam"; *D. reticulata* or *D. bulbifera*.
Diploglottis australis — "Native Tamarind"; *D. cunninghamii*.
Dischidia ovata; *D. nummularia*; *D. rafflesiana* (button-like epiphytes).
Drosera spp. — "Sundews"; *D. adelsae*; *D. auriculata*; *D. binata* — "Forked Sundew"; *D. glanduligera*; *D. peltata*; *D. petiolaris*; *D. schizandra*; *D. spathulata*; *D. whittakeri*.
Euodia elleryana — "Corkwood", clusters of pink flowers.
Eupomatia bennettii — "Native Guava"; *E. laurina* — "Bolwarra".
Eurycles amboinensis — "Cardwell Lily"; *E. cunninghamii* — "Brisbane Lily".
Ficus benjamina — "Weeping Fig"; *F. coronata* — "Sandpaper Fig"; *F. macrophylla* — "Moreton Bay Fig"; *F. mollis*; *F. opposita* — "Sandpaper Fig"; *F. platypoda* — "Rock Fig"; *F. pleurocarpa*; *F. rubiginosa* — "Port Jackson Fig"; *F. rubiginosa* 'Variegata'.
Feldia australis. A creeper and climber on trunks of treeferns or trees.
Flindersia australis — "Teak"; *F. brayleana* — "Queensland Maple"; *F. collina*; *F. ifflaiana*; *F. pimenteliana*; *F. pubescens*; *F. schottiana* — "Cudgerie"; *F. xanthoxyla*.
Freycinetia australiensis; *F. excelsa*, climbers of the rainforest.
Grevillea robusta — "Silky Oak".
Helmholtzia acorifolia; *H. glaberrima*. Tall lily-like glabrous perennial.
Hicksbeachia pinnatifolia — "Monkey Nut".
Hollandaea sayerana.
Hoya australis — "Wax Flower"; *H. keysii*; *H. macgillivrayi*; *H. nicholsoniae*.
Kreysigia multiflora — "Bush Lily". Pale lilac or pink flowers.
Leea rubra.
Macadamia tetraphylla — "Queensland Nut", "Bopple Nut"; *M. ternifolia*; *M. integrifolia* — "Queensland Nut", "Bauple Nut".
Macaranga tanarius, a small tree with small yellow flowers.

Mackinlaya macrosciadea; *M. confusa*.
Molineria recurvata (syn. *Curculigo recurvata*) with sword-shaped leaves.
Neolitsea dealbata — "Grey Bollywood". A tree.
Nothofagus cunninghamii — "Myrtle Beech"; *N. gunnii* — "Deciduous Beech".
Omalanthus populifolius — "Queensland Bleeding Heart".
Opisthiolepis heterophylla — "Blush Silky Oak".
Orites excelsa, a handsome tree.
Peperomia enervis; *P. leptostachya*; *P. tetraphylla* (syn. *P. reflexa*). Herbs.
Phyllocladus aspleniifolius — "Celery-top Pine".
Piper caninum (climber); *P. mestonii* (climber) — "Long Pepper"; *P. rothianum* (climber).
Piptocalyx moorei (climber).
Pisonia umbellifera (syn. *Heimerliodendron brunonianum*) — "Birdlime Tree".
Plectranthus species — "Cockspur Flowers". Small shrubs.
Podocarpus alpina — "Mountain Plum Tree".
Pothos longipes — "Long-footed Climbing Aroid".
Randia benthamiana; *R. fitzalanii* — "Native Gardenia".
Rhaphidophora australasica (climber); *R. pachyphylla*; *R. pinnata*.
Rhodamnia argentea — "White Myrtle".
Rhodosphaera rhodanthema — "Yellow Cedar", "Tulip Satinwood".
Sarcopteryx stipitata — "Corduroy Tree", the surface is corrugated.
Scaevola enantophylla — "Climbing Fan Flower".
Scindapsus altissimus (climber).
Schefflera actinophylla (syn. *Brassaia actinophylla*) — "Umbrella Tree".
Stemona australiana — A slender climber with large heart-shaped leaves.
Stenocarpus sinuatus — "Wheel of Fire Tree".
Stephania japonica var. *discolor* — "Tape Vine"; *S. japonica* var. *timorensis*.
Syzygium coolminianum — "Blue Lilly-Pilly"; *S. floribundum*; *S. luehmianii*; *S. moorei* — "Coolamin", "Rose Apple"; *S. paniculatum*.
Tetragium nitens (climber) — "Shining Grape".
Timonius rumphii.
Triunia youngiana — "Spice Bush", "Native Honeysuckle".
Typhonium brownii — "Black Lily", "Black Arum Lily".
Tylophora barbata (climber).
Vesselowskyia rubrifolia.

FERNS

Most ferns may be grown indoors with variable success. Special mention is made of species of *Adiantum*, "Maiden Hair Fern"; *Asparagus*; *Athyrium*; *Asplenium*, *Azolla*, *Blechnum*, "Water Fern"; *Cyathea*, "Tree Ferns"; *Doodia*; *Drynaria*; *Lastreopsis*; *Lygodium*; *Nephrolepis*; *Pellaea*; *Platycterium*; *Polystichum*; *Pteris*; *Pyrrhosia*; *Todea*.

PALMS AND PALM-LIKE PLANTS

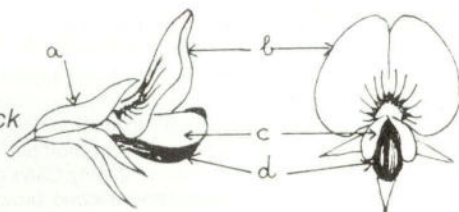
Archontophoenix alexandrae — "King Palm"; *A. cunninghamiana* — "Bangalow Palm".
Calamus australis — "Lawyer Vine", "Wait-a-while"; *C. motii*; *C. muelleri*; *C. radicalis*.
Caryota rumphiana — "Fish-tail Palm".
Colocasia esculenta.
Freycinetia sp. — "Climbing Pandanus".
Howea belmoreana — "Lord Howe Island Palm"; *H. forsteriana* — "Kentia Palm".
Hydriastele wendlandiana.
Laccospadix australasica.
Lepidozamia hopei (a Cycad); *L. peroffskyana* (a Cycad).
Licuala muelleri — "Fan Palm"; *L. ramsayi* — "Fan Palm".
Linospadix monostachyus (syn. *Bacalaria monostachya*) — "Walking-stick Palm".
Livistona alfredii; *L. australis* — "Fountain Palm", "Cabbage Tree Palm"; other *Livistona* spp.
Macrozamia moorei; *M. pauli-guilielmi*; *M. spiralis* — "Burrawang".
Normanbya normanbyi — "Black Palm".
Orania appendiculata.
 etc., etc.

Bush Peas

The Genus *Pultenaea* —

Part 3 by C. E. & D. T. Woolcock

a — the calyx cupping the flower
b — large petal — the standard
c — two petals — covering keel
d — two petals — boat shaped keel



This group covers species with alternate leaves which are linear but not needle-shaped or terete (see also "Australian Plants" No. 95 p117). Through the group, leaves may vary from 2-3 mm to several cms in length and are generally only 1-3 mm in width. Those included in this section are:—

Group III

(a) Leaves incurved

P. hispidula, *P. campbellii*, *P. aristata*, *P. boormanii*, *P. glabra*, *P. weindorferi*, *P. viscosa*, *P. viscidula*, *P. aspalathoides*, *P. neurocalyx*, *P. setulosa*, *P. graveolens*.

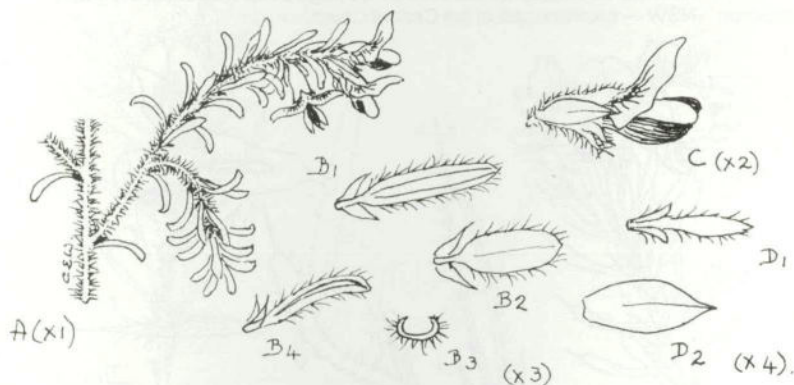
(b) Leaves recurved or flat

P. microphylla var *cinerascens*, *P. petiolaris*, *P. stipularis*, *P. conferta*, *P. drummondii*, *P. whiteana*, *P. pinifolia*, *P. barbata*, *P. pauciflora*.

Pultenaea hispidula R.Br. ex Benth.

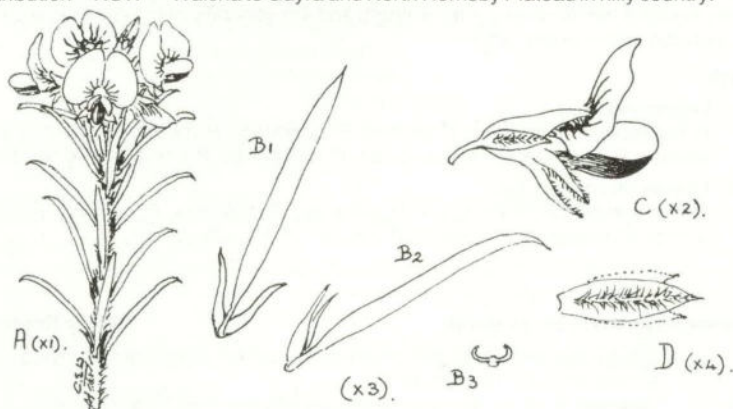
Rusty Bush-pea

Habit	Shrub 1 m or more high, with much-branched hairy stems and drooping, sometimes rusty, branchlets. (A).
Leaves	Crowded, linear to oblong, incurved, usually less than 10 mm in length, somewhat variable. (B_1 B_2); upper surface usually glabrous, lower scabrous or hirsute (B_3) leaf often recurved towards apex (B_4). Stipules 2-3 mm long.
Flowers	Axillary near ends of branchlets, subsessile or shortly pedicellate to c. 2 mm. Calyx often hairy; lobes acute, shorter than tube, lower ones smaller than upper two. (C).
Bracteoles	Highly variable, sometimes leaf-like and stipulate, hairy — other times oval, brown, viscid; attached at base of calyx tube and as long as or longer than the tube. (D_1 D_2).
Flowering	September-December.
Distribution	S. Aust. — S.E., Vic. — widespread in damp coastal and hilly areas, NSW — Central and S. Coast, southern Central Tablelands.



Pultenaea campbellii* Maiden and Betche*Walcha Bush-pea**

- Habit** Small, erect or spreading shrub usually less than 1 m high, glabrous except for young branches. (A). See page 84 for a colour photograph.
- Leaves** Linear, glabrous or a very few sparse hairs on undersurface, incurved, 5-15 mm long, mucronate tip recurved. (B, B₁, B₂, B₃) Petiole c. 1 mm; stipules 2-3 mm.
- Flowers** Terminal heads, flowers on short pedicels c. 2 mm long; floral bracts brown, shorter than pedicel (1-2 mm). Calyx glabrous but with ciliate margins. (C).
- Bracteoles** Lanceolate, sometimes trilobed, brown, hairy on midrib, no longer than the tube, attached at base of tube. (D).
- Flowering** October-November.
- Distribution** NSW — Walcha to Guyra and North Hornsby Plateau in hilly country.

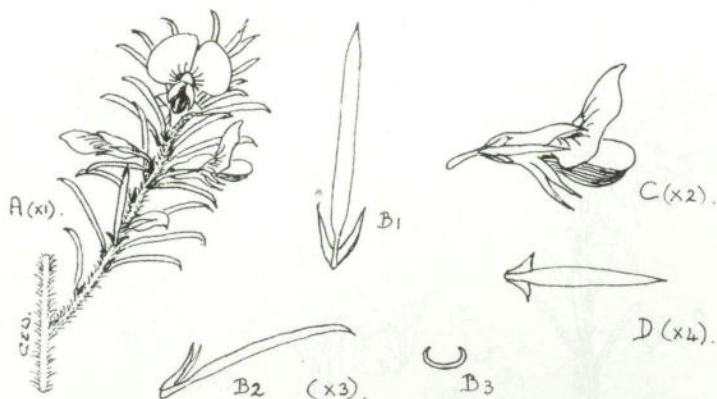
***Pultenaea aristata* Sieber ex DC****Bearded Bush-pea**

- Habit** Small, bristly shrub to about 50 cm high. Stems glabrous. (A).
- Leaves** Linear, erect, incurved, 8-12 mm long, glabrous on upper surface, lower tuberculate and often hairy, particularly near margins, apex with long bristle. Stipules prominent, 5-6 mm long. (B₁, B₂, B₃).
- Flowers** Shortly pedicellate in terminal heads. Calyx tube glabrescent but lobes are acuminate, bristle-tipped (aristate), the lower three longer than the tube, with long hairs giving a bearded appearance to the head (C). Bracts ovate to linear, 2-lobed, almost glabrous, persistent. September-October.
- Bracteoles** Linear with long bristly point, hairy, attached near the middle of the calyx-tube and as long as the lobes. (D). See page 84 for a colour photograph.
- Distribution** NSW — southern part of the Central Coast.

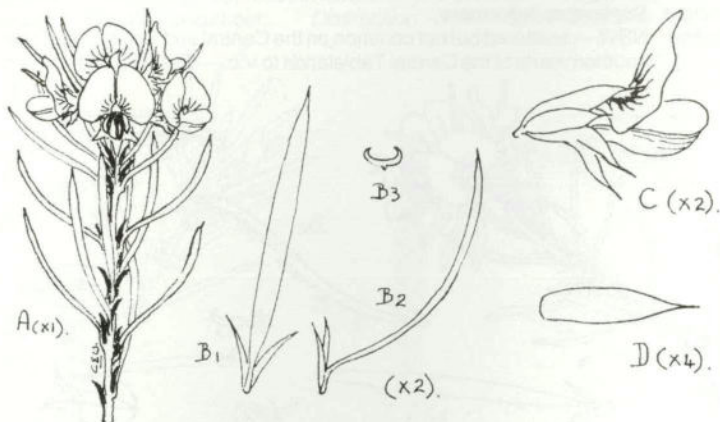


Pultenaea boormanii* Williamson*Boorman's Bush-pea**

- Habit** Small shrub on sandy soils (A). See page 77 for colour photograph.
- Leaves** Linear, incurved, mainly glabrous, 5-12 mm long, with recurved tip. Stipules 2-3 mm long (B_1, B_2, B_3).
- Flowers** Axillary near ends of branchlets on pedicels 2-4 mm long. Calyx sparsely hairy with subulate lobes longer than the tube. (C).
- Bracteoles** Tri-lobed, the central lobe linear-subulate, the side lobes stipulate, longer than the tube. (D).
- Flowering** Spring-early Summer.
- Distribution** Uncommon species — Western Plains of north NSW

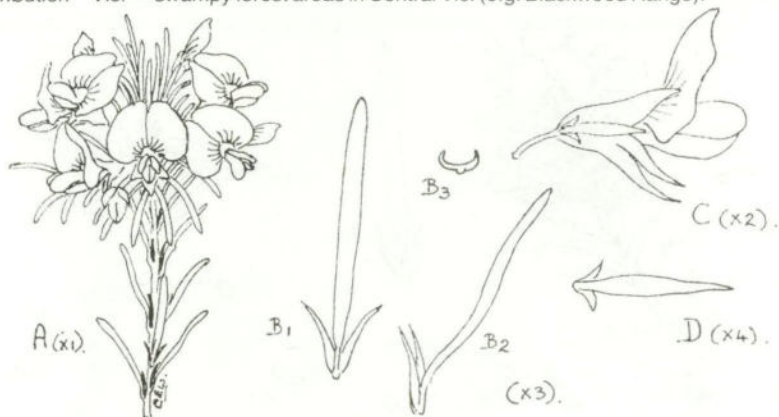
***Pultenaea glabra* Benth.****Smooth Bush-pea**

- Habit** Erect, entirely glabrous shrub, 1-2 m tall. (A).
- Leaves** Linear, incurved, glabrous, 10-20 mm long, on short petioles c. 1 mm long, acuminate sometimes slightly recurved tip, mid-vein on undersurface pronounced. Stipules prominent, 4-5 mm long. (B_1, B_2, B_3).
- Flowers** Leafy terminal clusters, sessile. Calyx glabrous, lobes with mucro. (C).
- Bracteoles** Lanceolate, longer than the tube, glabrous, mucronate (D).
- Flowering** Spring, September-October.
- Distribution** NSW — prominent in Blue Mountains.

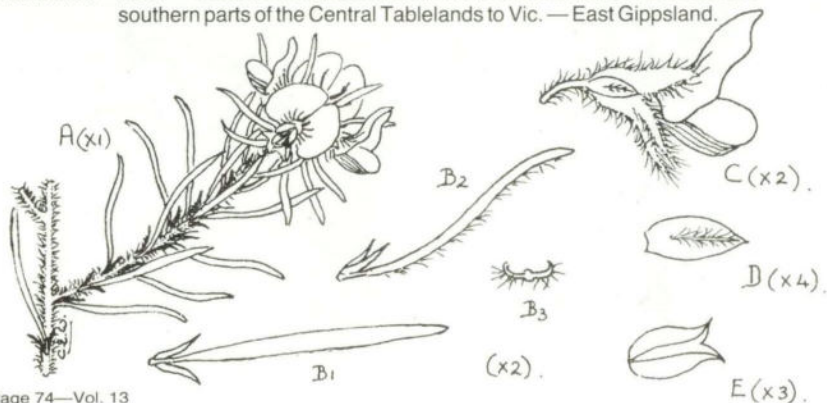


Pultenaea weindorferi* Reader*Swamp Bush-pea**

- Habit** Erect slender shrub to 2 m high, branched mainly at the top. Wholly glabrous.
- Leaves** Linear, incurved, crowded, glabrous, 10-15 mm long, on petioles c. 1 mm long, apex obtuse. (B_1 B_2 B_3). Stipules prominent 3-4 mm long, enlarged further in floral leaves.
- Flowers** In congested leafy heads at or near ends of branches, yellow. Calyx glabrous on a pedicel c. 3 mm long; lobes longer than tube, somewhat acuminate. (C).
- Bracteoles** Green, leaf-like, stipulate, attached at base and longer than calyx tube. (D).
- Flowering** October-November.
- Distribution** Vic. — swampy forest areas in Central Vic. (e.g. Blackwood Range).

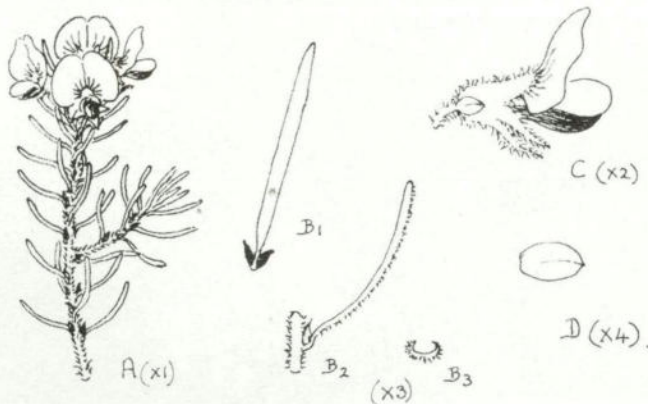
***Pultenaea viscosa* Benth.****Sticky Bush-pea**

- Habit** Erect shrub to 2 m high. (A). See page 77 for colour photograph.
- Leaves** Narrow lanceolate to linear, but not terete, upper surface concave and glabrous, lower surface usually with sparse pubescence, the apex blunt and often slightly recurved, 10-20 mm long $\times$ 1-2 mm wide. Stipules 3-4 mm long. (B_1 B_2 B_3).
- Flowers** Terminal few flowered clusters on pubescent pedicels c. 4 mm long. Floral bracts c. 5 mm long, brown, viscid. Calyx brown, viscid, villous, lobes acute. (C). Floral bracts reddish-brown, usually viscid. (E).
- Bracteoles** Ovate/elliptic, brown, viscid, with some hairs on midrib, no longer than calyx tube and attached at its base. (D).
- Flowering** September-November.
- Distribution** NSW — scattered but not common on the Central and South Coast and southern parts of the Central Tablelands to Vic. — East Gippsland.

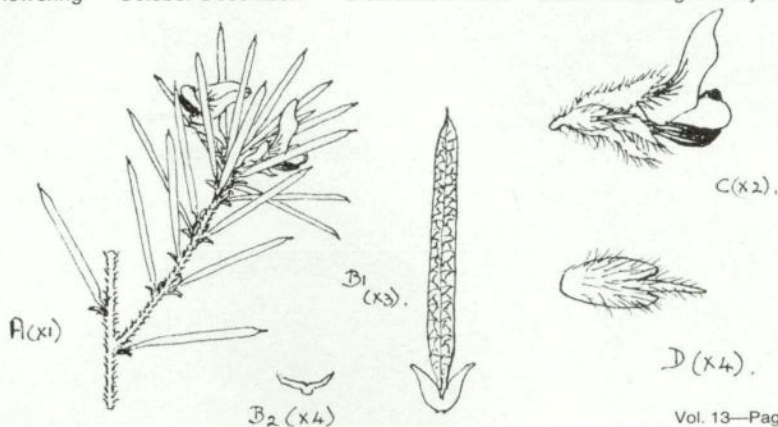


Pultenaea viscidula* Tate*Dark Bush-pea**

- Habit** Erect shrub to c. 1 m high with pubescent branchlets, viscid when young. (A).
Leaves Narrow-linear, channelled above, with blunt apex and minute spreading hairs on undersurface, 8-12 mm long shortly petiolate with minute brown stipules about as long as the petioles. (B_1 , B_2 , B_3).
Flowers 2-5 in terminal leafy clusters — pubescent peduncles 2-3 mm long. Calyx pubescent, with the 3 lower lobes lanceolate. Keel dark red. (C).
Bracteoles Brown, ovate, about half as long as the calyx-tube and inserted at its base, bluntly keeled and mainly glabrous. (D).
Flowering October-November. *Distribution* S. Aust. — Kangaroo Island.

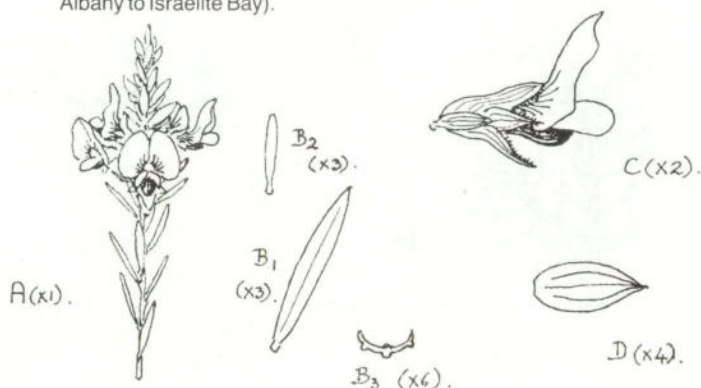
***Pultenaea aspalathoides* Meisn.**

- Habit** Shrub 60-100 cm tall, branches silky-pubescent when young. (A).
Leaves Alternate, narrow-linear, 12-20 mm long, distant along branches, crowded at end of branchlets, rigid tapering to a fine point scarcely pungent, concave, glabrous or with soft fine hairs, strongly reticulate, with midrib prominent beneath. Stipules c. 2.5 mm long, joined above base on top of leaf. (B_1 , B_2).
Flowers Solitary or 2-3 together, terminal, almost sessile within a dense tuft of floral leaves. Calyx silky villous, lobes acute, nearly equal and about as long as the tube. Keel much incurved. (C).
Bracteoles Trilobed, with appressed hairs, inserted just under the calyx. (D).
Flowering October-December. *Distribution* W.A. — South Coast e.g. Albany area.



***Pultenaea neurocalyx* Turcz.**

- Habit** Slender but rigid, heathlike, diffuse or divaricate shrub to 1 m or more high.
- Leaves** Linear or lanceolate, small (2-7 mm long), obtuse, concave or channelled above, 1-3 nerved below, usually glabrous. Stipules none (or very small). (B_1, B_2, B_3).
- Flowers** Sessile at first in small terminal heads, which soon grow out into leafy branches. Calyx glabrous or slightly pubescent, lobes all broadly lanceolate and about equal, scarcely acute, rigid, 3- or 5-nerved. Keel short. (C).
- Bracteoles** Inserted under the calyx, ovate or oblong, glabrous, 3-nerved. (D).
- Flowering** September-November.
- Distribution** W.A. — South-west (Wheat-belt, also coastal and near-coastal areas from Albany to Israelite Bay).



***Pultenaea setulosa* Benth.**

Ragged Bush-pea

- Habit** Shrublet (A).
- Leaves** Alternate, linear, not crowded, 6-10 mm long, closed along the central vein, pubescent on underside, slightly recurved mucro. Stipules 5-6 mm long, acuminate. (B_1, B_2, B_3).
- Flowers** Axillary, crowded near the ends of branchlets, large. Calyx mainly glabrous on tube, slightly hairy on lobes, which are acuminate and as long as the tube. Linear, attached near the centre of the tube and longer than the tube. (D).
- Bracteoles** Linear, attached near the centre of the tube and longer than the tube. (D).
- Flowering** Probably July-August.
- Distribution** Queensland and northern NSW. Very rare species — limited material available for examination.





Pultenaea viscosa ▲

▼ *Pultenaea boormanii*

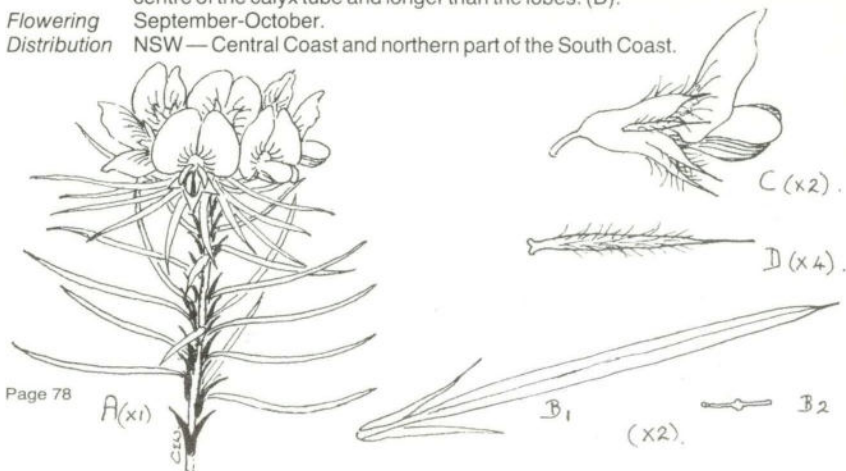


Pultenaea graveolens* Tate.*Scented Bush-pea**

- Habit** Bushy aromatic shrub, 1.5-2 m high. Branches pubescent. (A).
- Leaves** Spreading, linear or linear-lanceolate, crowded, incurved to furrowed above, pubescent, 4-6 mm long. Shortly petiolate with very small stipules c. 1 mm long (B_1, B_2, B_3).
- Flowers** Solitary, axillary, few at ends of branchlets, on peduncles 2-3 mm long. Calyx with some hairs acuminate lobes usually longer than the tube. (C).
- Bracteoles** Lanceolate, brown, glabrous, slightly viscid, usually shorter than, but no longer than, the tube and attached at its base. (D).
- Flowering** October-December.
- Distribution** Higher rainfall areas of S.A. and scattered in Western Victoria.
- Note:** var. *glabrescens* with shorter glabrous leaves 3-5 mm long — near Mt. Remarkable, Flinders Range, S.A.

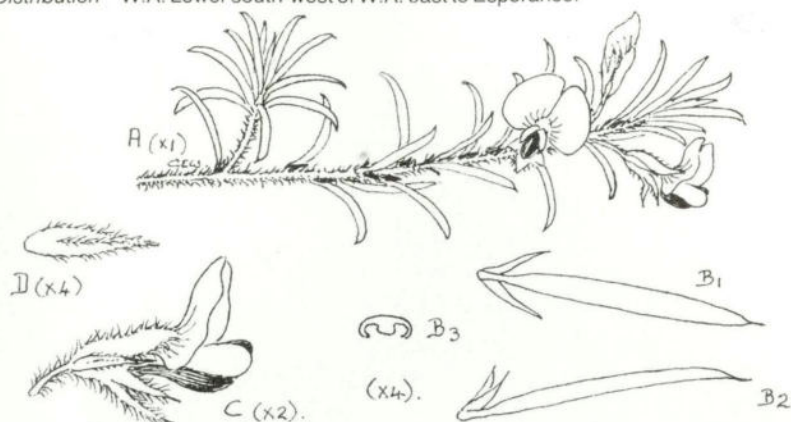
***Pultenaea stipularis* Sm.****Handsome Bush-pea**

- Habit** Erect, much-branched, handsome shrub usually 1-2 m tall with glabrous stems. (A).
- Leaves** Linear, crowded, rigid, usually flat with pungent mucro, 15-30 mm long, mainly glabrous, sometimes a few coarse hairs on newer growth. (B_1, B_2, B_3). Prominent stipules up to 10 mm long.
- Flowers** Dense heads at ends of branches, on pedicels c. 2 mm long. Calyx with long spreading hairs on the lobes, which are acuminate and pungent-pointed, the lower three much longer than the tube, which is less hairy. Floral bracts c. 10 mm long, lanceolate, acuminate, often 2-lobed. (C).
- Bracteoles** Narrow-lanceolate with pungent point, hairy in lower part, attached at the centre of the calyx tube and longer than the lobes. (D).
- Flowering** September-October.
- Distribution** NSW — Central Coast and northern part of the South Coast.



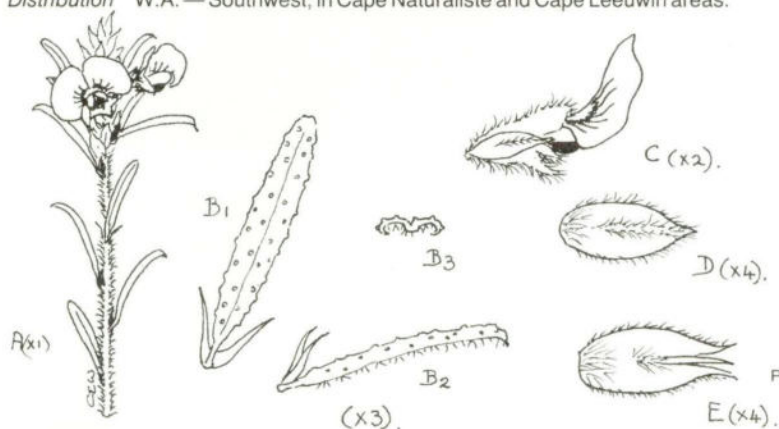
***Pultenaea conferta* Benth.**

- Habit** Diffuse, much-branched, often prostrate shrub up to 1 m diam. Branchlets glabrous or pubescent. (A).
- Leaves** Linear, crowded, alternate, 8-10 mm long $\times$ 1 mm wide, glabrous above, sometimes slightly hairy beneath, recurved with mucronate tip and margins closely revolute. Petiole c. 1 mm long, stipules lanceolate, subulate, 3-4 mm.
- Flowers** Small, axillary on short pedicels (to about 4 mm long) Calyx pubescent, tube short, upper 2 lobes large, oblong, free, lower 3 narrow and lanceolate, longer than the tube, mucronate. Keel dark red and as long as the wings. (C).
- Bracteoles** Linear-lanceolate attached just below calyx, longer than the tube, ciliate. (D).
- Flowering** Spring-late September-October.
- Distribution** W.A. Lower south-west of W.A. east to Esperance.



***Pultenaea drummondii* Meisn.**

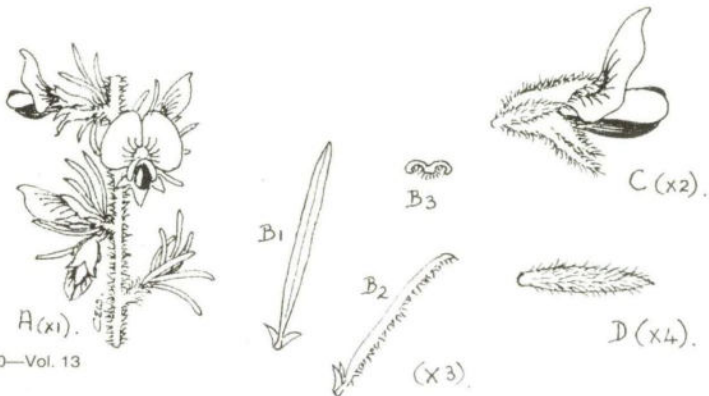
- Habit** Upright open shrub 60-100 cm tall. Stems and branchlets hairy. (A).
- Leaves** Linear with recurved margins, 10-15 mm long $\times$ 1-1.5 mm wide, scabrous above, lightly hairy below, not crowded. Short petiole 1-1.5 mm long. (B₁, B₂, B₃). Stipules light brown, 3-4 mm long.
- Flowers** Crowded at end of branchlets, giving the appearance of a terminal head. Light brown floral bracts, prominent and enclosing the calyx (E), which has 2 upper lobes larger than the other 3, tube and lobes all villous. Keel shorter than wings. (C). Flowering September-October.
- Bracteoles** Lanceolate/ovate, attached just below calyx tube and as long as the tube, hairy midrib, ciliate margins. (D).
- Distribution** W.A. — Southwest, in Cape Naturaliste and Cape Leeuwin areas.





***Pultenaea microphylla* var. *cinerascens* Williamson (above) Spreading Bush-pea**

- Habit** Diffuse, much-branched shrub to 1 m high. (A).
- Leaves** Linear, flat with revolute edges, recurved tip, sometimes scabrous, pubescent on under surface with prominent midrib, 6-10 mm long × 1 mm wide, crowded on very reduced lateral branches. (B, B₂, B₃). Stipules small.
- Flowers** Usually one or two on reduced branchlets, sessile. Calyx with short hairs; lobes acute to acuminate, varying in length; usually shorter than tube but may be as long as or longer. (C).
- Bracteoles** Lanceolate, about length of tube and with short hairs; attached at calyx base.
- Flowering** Aug-Oct **Distribution** NSW, Pilliga Scrub and ranges on West. Plains.

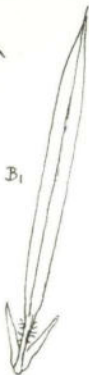




***Pultenaea petiolaris* A.Cunn. ex Benth. (above)**

Rayed Bush-pea

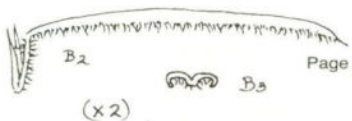
- Habit** Procumbent shrub often to 60 cm diam, pubescent stems (A).
- Leaves** Linear, flat with recurved margins, soft mucro, glabrous on upper surface, pubescent undersurface with prominent midrib, 10-25 mm long with hairy petiole 3-5 mm long. (B_1 , B_2 , B_3). Stipules 3-4 mm long.
- Flowers** Small, sessile, in dense terminal heads surrounded by a halo of leaves. Calyx pubescent, lobes acuminate. (C).
- Bracteoles** Linear-acuminate, pubescent, longer than the calyx and attached high up on calyx tube. (D).
- Flowering** Aug-Oct **Distribution** Nthn. NSW and S.E. Qld., coastal and adjacent hills.



C (x2).



D (x4).

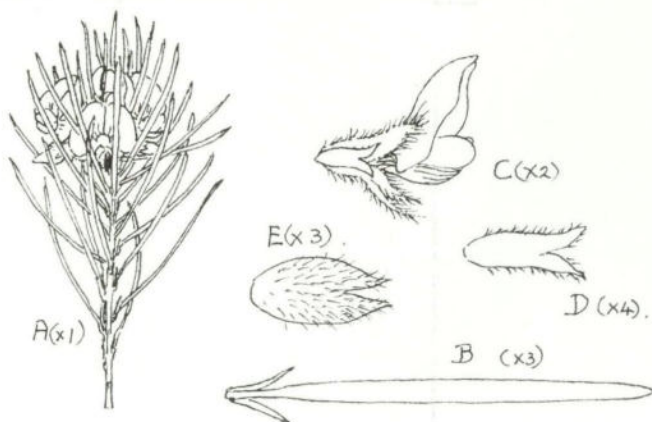


(x2)



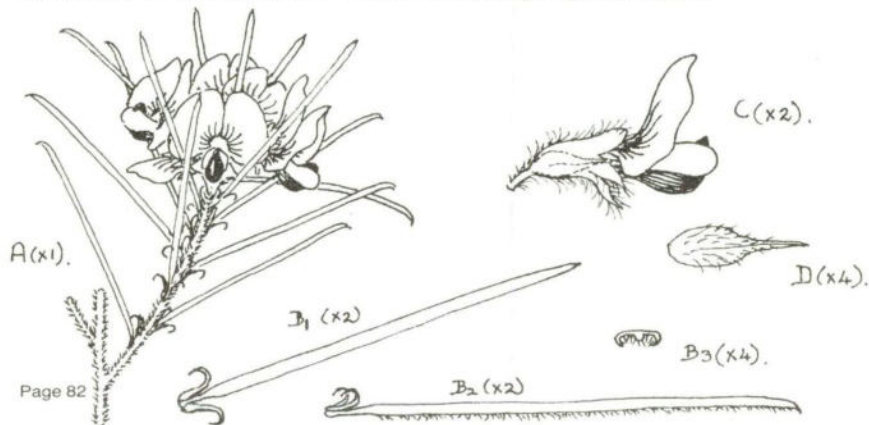
***Pultenaea whiteana* Blake**

- Habit** Shrub to 1 m high.
Leaves Linear with an acute tip, alternate, dense, flat, to 20 mm long. Stipules acuminate.
Flowers Dense terminal heads partly hidden by the leaves. Flowers sessile, calyx hairy, lobes longer than the tube. Floral bracts as long or longer than the calyx, bi-lobed and silky hairy.
Bracteoles Bi-lobed, attached at base of calyx and about as long as or slightly longer than the tube, ciliate.
Flowering Spring to early Summer.
Distribution Near summits of some mountains in S.E. Queensland.



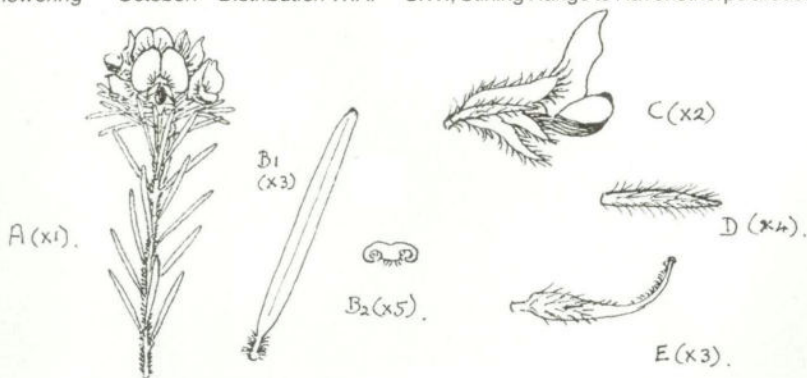
***Pultenaea pinifolia* Meisn.**

- Habit** Erect shrub 2-3 m high, virgate, villous branches. (A).
Leaves Alternate, narrow-linear, 25-40 mm long, with revolute margins and short recurved point, mainly glabrous above, hairy beneath. Stipules 2.5-3 mm long, recurved, longer than petiole, fragile, readily broken, leaving a 1 mm piece persisting. (B, B₂ B₃).
Flowers Large and numerous in terminal umbels or heads, pedicellate. Bracts deciduous. Calyx silky-pubescent, lobes broad, acute and about as long as the tube. Keel much incurved, obtuse.
Bracteoles Broadly spatulate, c. 5 mm long, inserted under the calyx, deciduous. (D).
Flowering October
Distribution South-west of W.A. — Warren District. e.g. Augusta, Walpole.



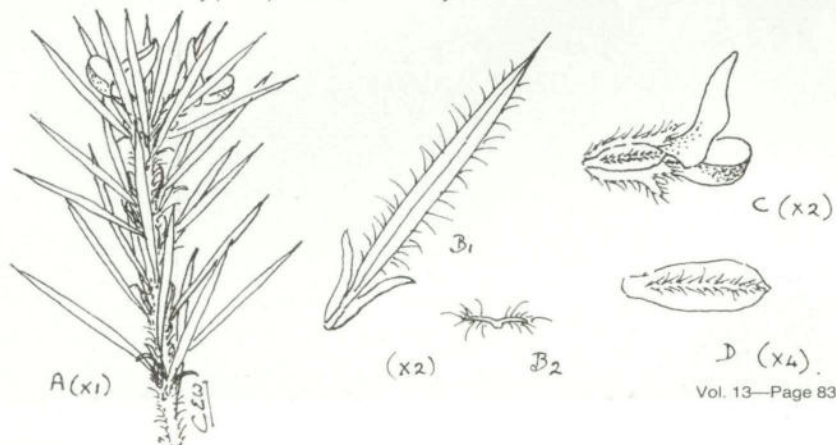
***Pultenaea barbata* C. Andrews**

- Habit** Shrub to 1 m high. Stems with very dense short appressed hairs. (A).
- Leaves** Moderately dense, irregularly arranged, to 17 mm long, linear, glabrous or with appressed hairs, or minutely tuberculate, and with densely hairy petiole, margins recurved with prominent midrib beneath. Stipules absent. (B_1 , B_2).
- Flowers** Dense terminal head-like umbel (with a few normal leaves grouped just beneath it, above them smaller similarly shaped, grey, hairy rather reflexed bracts); shortly pedicellate. Calyx hairy — upper two lobes joined high up, all lobes acute. Keel about as long as standard and wings. (C). Style bearded along inner side. (E).
- Bracteoles** Linear, attached at base of tube, longer than the tube, not green, very hairy.
- Flowering** October. *Distribution* W.A. — S.W., Stirling Range to Ravensthorpe areas.



***Pultenaea pauciflora* Scott**

- Habit** Shrub much branched, young branches hairy. (A).
- Leaves** Alternate, linear-lanceolate, 15-20 mm long, 1-2 mm wide, crowded towards end of branchlets, mucronate (mucro 1.5-2 mm long), flat or margins slightly thickened, conspicuous midrib; young leaves with sparse long hairs, becoming glabrescent. Stipules linear, 3-5 mm long. (B_1 , B_2).
- Flowers** 1 or 2 large yellow, sessile flowers, terminal, partly enclosed by the crowded leaves. Calyx (c. 6 mm long), villous, with lobes equal in size, no longer than the tube. (C). *Flowering* November.
- Bracteoles** Brown, oblong-ovate with a ciliate midrib, attached at base of the calyx and about as long as the tube. (D).
- Distribution** Apparently confined to the Narrogin area, W.A.; rare and restricted. Only recently (1984) relocated after 70 years.





Pultenaea campbellii ▲

▼ *Pultenaea aristata*



A Horticultural Guide To Australian Plants

Reproduced below is a colour plate from the Horticultural Guide. It is reproduced about half the size it appears in the guide. In fact that is what the guide is, a collection of loose leaf, large, top quality colour plates for filing in a D-ring binder (the special binder is \$5.50). If you consider that this colour plate is good, see the original in the guide. The authors have done a magnificent job.

Sets 1 and 2 comprise 48 sheets; Set 3 has 32 sheets; Set 4 — out of print; Sets 5 and 6 comprise 64 sheets; Set 7 has 63 sheets; Set 8 has 64 sheets. You can order the lot from The Editor, Australian Plants for \$30.00 plus binders @ \$5.50 — you will need 3.



Lepidozamia peroffskyana

Photography by Merv Hodge

Our last issue, No. 101, featured the Australian cycads with this species on the front cover. If you have not got a copy order it soon (\$2.00 plus 60¢ postage) before the issue sells out.

Native Plants of the Upper Blue Mountains

This is a small field guide for bushwalkers in the Blue Mountains, west of Sydney. The 68 pages contain 118 colour plates of the wildflowers in their native habitat with a concise clear description of the plant as you see it. The authors, Margaret Baker, Robin Corringham and Jill Dark have done a very good job, enticing others to tramp the mountain trails and enjoy the numerous floral treasures they have found. The husbands, Mark, Ron and Mick have got into the act also with most of the photography. Available through the Editor for \$10.00 including postage.

Growing Australian Plants North and West of Melbourne

A 24-page book produced by the Keilor Plains Group, there is no pretence at fancy colour presentation often with words of little practical meaning. They call it "Hints For Growing" and this is precisely what it is, for residents of the northern and western suburbs of Melbourne. Lists of plants suitable for growing in these areas are preceded by practical advice on planning and preparing the garden, planting, staking, mulching, watering, pruning, fertilizing, etc. Send to S.G.A.P. — Keilor Plains Group, 5 Bunarong Close, Kealba 3021, enclosing \$2.50 for a copy.

There is wide divergence of opinion over the use of the Australian flora in horticultural cultivars. The realities are that it is being carried out at an accelerating rate with the occasional outstanding success. The Australian Cultivar Registration Authority was formed to introduce order and recording into this important horticultural activity. Provided certain minimum requirements are met, all cultivars intended for marketing are registered on application.

The Australian Cultivar Registration Authority is concerned with two aspects. Some cultivars are not worthy of continuation. Such a value judgement is not possible in the circumstances of registration, nor permissible and is probably undesirable. The market place will eventually eliminate those of doubtful merit. Meanwhile the purchasers are left in confusion and often misled at early stages of introduction.

Some commercial outlets developing cultivars for the trade are ignoring the Authority and marketing unregistered cultivars. Fortunately many of these cultivars are worthy of release. This practice is permissible and the Authority does not seek, or desire, compulsory registration. The hope is that registration will become a desired objective and that co-operation in this area can be increased.

Australian Cultivars — a new book

To offer an incentive for orderly registration and an informed guide to the consumer, the authority proposes to publish a low priced but colourfully illustrated reference to the cultivars registered featuring those that show the most promise. Over successive issues of the series it is hoped that it will become a reliable guide to the consumer and a venue for promotion of new introductions as they are released.

What is needed is assistance from the horticultural industry and the consumer.

Cultivars in Horticulture — The Purchaser

The potential purchasers for reliable cultivars include every reader of Australian Plants. The Australian Cultivar Registration Authority seeks your support for this ambitious venture, to produce "Australian Cultivars" to the standard desired.

1. Good colour slides of all cultivars based on the Australian flora are needed. Over the next flowering season please photograph every well-flowered or well-presented cultivar that you can. Please do not leave it to someone else. Have a try yourself or encourage an acquaintance interested in photography to take some pictures. Slides are preferred (35mm) but prints are acceptable.
2. Please advise what cultivars you regard as suitable for horticulture and worthy of a prominent place in the proposed publication.

The Horticultural Industry

It is hoped that the professionals in the industry will take this opportunity to promote their products in a manner the consumer will appreciate by:

- (a) Registering any cultivars not already registered, especially the new introductions not already marketed.
- (b) Assisting with the photography of cultivars being marketed. Please arrange for good photographs for use in the publication of plants being marketed. The photographs used will be clearly acknowledged as to their origin and hence show purchasers a source of availability of the plants on the market place.
- (c) Marketing "Australian Cultivars" as a means of promotion. We do not expect any problem here, as the well-produced colourfully presented booklet will be marketed at a low price.

Australian Plant industry and consumers — support this venture.

The *Banksia* Book

by Alex George

This marvellous book has been over twenty years in preparation. The concept of a book on *Banksia*, with all species illustrated in full colour, started with Fred Humphreys. Tragically, Fred is no longer with us, his field work being continued by his charming wife Evelyn. We should have found the resources twenty years ago and printed the book then! Fred was joined by Charles Gardner, the Government Botanist of W.A. and leader in his field. One of his gifts was the ability to produce finely detailed line drawings and he prepared sketches of most the species known at the time. Before he died Charles gave these magnificent sketches to S.G.A.P. to use as we could. These sketches were made available to Alex George for use in his book and they form a major part of the art work in the book.

Let us pay tribute to these fine, generous pioneers of W.A. wildflowers.

Readers of Australian Plants will have noted the credits for numerous colour plates, to F. W. Humphreys. One of the many slides of *Banksia*, by Fred Humphreys is shown on page 60. The colour plate of *Dryandra calophylla* on page 89 is a product of the skill of Fred Humphreys. Look on page 52 of our No. 46 issue to see a colour plate of *Dryandra quercifolia* by Fred's wife Evelyn.

The *Banksia* Book is a credit to Alex George and this Society has been honoured by being able to make the resources available to assure that the memory of Fred Humphreys and Charles Gardner is perpetuated in appropriate art and colour printing work.

Available from the Editor, Australian Plants for \$29.95 plus \$2.05 postage.

Banksia Atlas

Volunteers throughout Australia are taking to the field to observe and record all the *Banksia* plants they find. Want to be in it? Each volunteer selected receives a pad of sight record sheets, a field notebook, an instructional booklet and a supplementary field guide. The co-ordinator is Anne Taylor of the Western Australian Wildlife Research Centre, Wanneroo 6065, W.A. There are co-ordinators in each state. What an interesting project, a scientific field study everyone can join in. Get your copy of The *Banksia* Book by Alex George (above) and see how you can help.

Books On Wildflowers

The Society publishes books that would not be produced by commercial publishers because of cost or limited demand. We also prefer to use Australian publishers. This means an additional cost of 20-30%. We are satisfied that the Australian craftsmen can do an excellent job. Working on a non-profit-making basis with honorary workers we do the best we can to keep prices down.

However, there are some who consider our books are overpriced, and with some reason. The position has been aggravated by the large increases of postal and freight costs as we run a mail order business for books. We can only do the best we can.

Bound Volumes of Australian Plants

The first nine volumes were produced fully bound. Volumes 1 and 2 are out of print. The recent volumes will be bound before the end of 1986. Each volume contains eight issues each valued at \$2.00, another Society publication of at least \$10.00 value and the whole costs \$7.00 per copy to bind. The binding is top quality sewn with stiff vynex sheeted cover and gold lettering on cover and spine. A good quality product that graces your bookshelf. At \$21.00 they are good value.

What is value is the contents. Each issue of Australian Plants has the equivalent printed matter of a small book. Check the words. What is more important is that the material is authentic and invaluable, not the same old general statements reproduced in different forms in most commercially available books. The colour plates in the issues are unique and practical.

Each volume is a separate book in the sum total of our knowledge and a valuable reference. As well as your single issues, you need a copy of all bound volumes for future reference.

Australian Native Trees and Large Shrubs —

Suitable For Planting In The Lower Hunter, NSW

Produced by the Society — S.G.A.P., Newcastle Group, this small book is available for the residents of the area. A very good production in 42 pages with 42 colour plates. Details of expected heights, preferred soil conditions, locations and weather conditions are tabulated for a wide range of plants. A smaller group of trees and shrubs which are readily available and currently being grown in the area is described in more detail and illustrated in colour. The whole is rounded off with advice on planting and care. Available for \$3.50 plus \$1.50 postage from S.G.A.P., Newcastle, P.O. Box 76, Adamstown, NSW 2289.



Dryandra — 3

For Horticulture
By Tony Cavanagh

Dryandra drummondii Meissn.

Dryandra drummondii was described by Meissner in Volume II of "Plantae Preissianae" in 1847 from a specimen in James Drummond's 3rd collection (iii No. 229). Though the locality is not known, it may have been the Stirlings or the South Coast area towards Cape Riche and Mt Manypeaks as Drummond collected there in 1843-1844. It is not listed as having been grown in England or Europe, though I believe the plant illustrated in Curtis' Botanical magazine of 1898 (article No. 7642) as *D. calophylla* is in fact, *D. drummondii*. A rather nice picture of a cultivated specimen of *D. drummondii* is given on Plate 134 of Dr Brian Morley's book "Wildflowers of the World".

Dryandra drummondii is a short-stemmed, little branched, mounded, leafy, dense shrub, similar in appearance to the large form of *D. pteridifolia* and eventually reaching about 1 m × 1 m. Leaves are numerous, 25-30 cm long by up to 5 cm broad, divided to the mid-rib into very approximately triangular segments. The lobes are stiff, relatively flat, separated by relatively broad sinuses and sometimes bent inwards, the two lobes forming a shallow "V". The upper surface is a dull blue green showing a trace of the three to six prominent nerves underneath; the underside pale green, reticulated with three main nerves, these and the yellow brown mid-rib being less prominent than in *D. calophylla*. Flower heads are relatively large, up to 50 mm across, terminal, numerous, surrounded by leaves and sometimes appearing in 'layers' within the mass of foliage. They are brownish-yellow (sometimes reddish) the inside of the individual flowers and the style and stigma being yellow, the hairs on the perianth tube being brown or gingery. Styles up to 50 cm long.

Dryandra drummondii grows particularly well in deep sand, plants at Cranbourne having flowered in less than 18 months, though it also grows well, though more slowly, in raised beds of clay-loam in full sun.

Dryandra calophylla R.Br.

Dryandra calophylla was described by Robert Brown in the supplement to his Prodrromus in 1830 from specimens collected near King George Sound by William Baxter in ≈ 1829. It was introduced to England at about this time and grown at Cambridge Botanic Gardens and probably also at Kew. It was reintroduced to Kew in 1893, plants being grown from seed presented by the nurserymen Messrs Veitch and flowered in May, 1898. See Curtis' Botanical Magazine 1898, article No. 7642. (However, see note under *D. drummondii*).

Dryandra calophylla is a spreading, prostrate plant with lateral, subterranean shoots, the leaves growing almost vertically out of the ground, the flowers being found in large numbers at the edges of the plant and also appearing to grow out of the ground. Plants are usually 25-30 cm high by 1-2 m spread. Leaves are rather similar to those of *D. drummondii* but the lobes are often twisted and are more noticeable triangular with pungent tips and reach almost to the mid-rib, being separated by relatively large obtuse or acute sinuses. The upper surface is dark green, the under surface pale whitish-green with 3-5 prominent nerves and a prominent dull yellow mid-rib. Young growth is covered on both sides with fine, matted brownish hairs. Flower heads are terminal, small, about 2 cm diameter, numerous, whitish-brown and at ground level, the brownish other bracts giving a striped appearance to the flower-heads. Basal bracts are chocolate brown, densely hairy, the fine hairs on the perianth parts being white and contrasting strongly with the bracts. Style about 3.5 cm.

Dryandra calophylla has often been confused with *D. drummondii* Meissn. so at least some of our cultivation records are dubious. The plant described above is reliable and a relatively strong grower, two known records giving lives in excess of 5 and 8 years respectively. It does not grow very well in sandy soils or on raised beds and the numerous small brown-white flowers, though not outstanding, give it a novelty effect in the garden.

Dryandra calophylla grows well from seed. I grew my plant from a cutting/root division supplied from Western Australia but it has stubbornly resisted my further attempts to propagate it by this means. Some plants are doing well at Cranbourne.



Dryandra calophylla

Photographed by F. W. Humphreys

***Dryandra* Study Group and Publications**

The above article is reprinted from one of the study group newsletters. The most recent one, No. 12 is now available for \$4.00 incl. postage. Copies of all newsletters 1-12 are available for \$14.00 incl. postage from Keith Alcock.

This is a very active group operating mainly by mail so that all can join. The annual fee to meet their postage and paper bills is \$3.00 sent to the group leader, Keith Alcock, 59 Gordon Avenue, Montrose, Vic. 3765.

There is much to do. One project requires a few people to propagate all the species from seed, record results and sketch the seed and seedlings. Advice on propagation methods and the seed is available. What a marvellous project for someone with a little propagation experience who likes to work alone, possibly because of remoteness. This project will be part of a wider scientific study under the direction of professional scientists.

Possums and Gliders

Edited by Andrew Smith and Ian Hume

The colour plate on the rear cover is reprinted from this book. It shows the Eastern Pygmy-possums (*Cercatus nanus*) visiting a *Banksia ericifolia*. They are nectar, pollen and insect feeders and are found in coastal heaths and moist-forests of southeastern Australia. "Possums and Gliders" is a scientific book; a collection of 57 scientific research and review papers by 70 authors, that describe the life history, taxonomy, physiology, behaviour and conservation of Australia's unique forest dwelling marsupials: the possums, gliders and Koala. Published for the Australian Mammal Society. It may be obtained by mail for \$62.00 plus postage. Available from Surrey Beatty & Sons, 43 Rickard Road, Chipping Norton, NSW 2170.

A large 632-page book illustrated in colour, it is good value for the serious minded.

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. any day. New comprehensive catalogue now available \$2.00 posted.

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