DEPARTMENT OF
FISHERIES AND WILDLIFE
WESTERN AUSTRALIA

# REPORT Nº 42

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# A Guide to the Gazetted Rare Flora of Western Australia

BY

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AND

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1981

PERTH
WESTERN AUSTRALIA

Department of Fisheries and Wildlife

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PERTH

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# A GUIDE TO THE GAZETTED RARE FLORA OF WESTERN AUSTRALIA

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# A GUIDE TO THE GAZETTED RARE FLORA OF WESTERN AUSTRALIA

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*ABSTRACT*

*Descriptions and illustrations are provided for the first 100 taxa which have been gazetted as rare, likely to become extinct or in need of special protection under the Wildlife Conservation Act 1950-1979. Most of these rare taxa are restricted to the South-West Botanical Province and more than one-third occur in the Albany Wildlife District.*

*An outline is given of the means adopted to determine which taxa are gazetted as rare, the legal provisions for their protection and the biological data being sought for their management.*

## I INTRODUCTION

This report presents descriptions, illustrations and an introductory discussion of the first 100 Western Australian plants to have been gazetted as rare, likely to become extinct or in need of special protection under the Wildlife Conservation Act 1950-1979. It aims to assist interested persons in identifying these rare plants and to encourage further research on their distribution and reproductive biology.

Many of the rare plants are not yet known to occur in Nature Reserves or National Parks. The discovery of new populations may enable the acquisition of appropriate Nature Reserves, or at least allow officers of the Department of Fisheries and Wildlife to notify owners of Crown or private lands of the occurrence of rare plants on their properties. We therefore urge interested persons to contact staff at the Western Australian Wildlife Research Centre should they locate populations of these plants. Additionally, information on the reproductive biology of rare plants is sought to determine the best means of managing known populations on reserves and other lands.

### A. RARE FLORA LEGISLATION

The section of the Wildlife Conservation Act relating to rare flora is given in Table 1. Any plants that the Minister for Fisheries and Wildlife considers to be in need of special protection to ensure their continued survival in the wild may be declared rare flora throughout

Table 1. Provisions of the Western Australian Wildlife Conservation Act 1950-1979 relating to Rare Flora.

Rare or endangered species of flora.
Added by No. 86 of 1976, s. 17 (As amended by No. 28 of 1979, s. 7.).

**23F.** (1) In this section "rare flora" means flora for the time being declared to be rare flora for the purposes of this section.

(2) Where the Minister is of opinion that any class or description of protected flora is likely to become extinct or is rare or otherwise in need of special protection, he may, by notice published in the *Government Gazette* declare that class or description of flora to be rare flora for the purposes of this section throughout the State.

(3) The Minister may vary or revoke a notice published under subsection (2) of this section by subsequent notice or notices published in the *Government Gazette.*

(4) A person shall not, whether or not he is—

(a) the holder of a license issued under this Act to take protected flora;

(b) the owner or occupier of private land on which rare flora exists; or

(c) authorised by the owner or occupier of land on which rare flora exists,

take any rare flora unless—

(d) where he is not the holder of a license issued under this Act, he first obtains the consent thereto in writing of the Minister;

(e) where he is the holder of a license issued under this Act, he first obtains the further consent thereto in writing of the Minister.

(5) [*This subsection was in section 23F. as added by No. 86 of 1976, however it was repealed by No. 28 of 1979 at the time section 23F. came into operation.*]

Table 1 - cont'd...

(6) A person who takes any rare flora contrary to the provisions of this section is liable on conviction to a penalty not exceeding one thousand dollars.

(7) Where an owner or occupier of private land who has been refused consent to take rare flora on that land satisfies the Minister that he will suffer loss of use or enjoyment of the land by reason of that refusal, the Minister shall inform the Treasurer in writing accordingly and the owner or occupier shall be paid compensation for that loss at such rate or rates per annum as—

(a) is agreed between the owner or occupier and the Treasurer; or

(b) in default of agreement, is determined by a valuer appointed by agreement between the Treasurer and the owner or occupier, or in default of agreement on such an appointment, by a valuer appointed by the Minister,

for such period, not exceeding five years, as the loss continues.

(8) Where compensation has been paid under subsection (7) of this section for a period of five years in respect of any particular land, the Minister shall not refuse an application by the owner or occupier of that land to take rare flora on that part of the land for the loss of use or enjoyment of which compensation has been so paid.

(9) Notwithstanding that compensation has been paid under subsection (7) of this section, whether for a period of five years or for a lesser period, for the loss of use or enjoyment of any land, that land may at any time be taken by the Governor under and subject to the Public Works Act, 1902 for any of the purposes of this Act.

the State of Western Australia. Plants may be added to or deleted from the list of rare flora at the Minister's discretion by notice published in the Government Gazette.

Once a taxon (genus, species, subspecies or variety) has been gazetted as rare flora, no person is permitted to take* it from wild populations anywhere in Western Australia, either on Crown land or private land, unless he has the special written consent of the Minister†. This provision applies equally to Government agencies (since the act binds the Crown) and to private citizens. A fine of up to $1 000 may be imposed for a breach of the provision.

This should ensure that all proposed activities that may be detrimental to the persistence of rare flora in the wild are kept under close scrutiny by the Department of Fisheries and Wildlife. It should not hinder legitimate scientific and horticultural studies of rare flora. On the contrary, these studies are to be encouraged where they are likely to provide information that will improve the conservation status of rare plants.

A final provision of the rare flora section of the Act allows for compensation to be paid to owners or occupiers of private land who are refused consent to take wild growing rare flora and who can satisfy the Minister of Fisheries and Wildlife that such a refusal will lead to loss of use or enjoyment of the land. If, at the end of five years, no action in purchasing or resuming the land for reserves has been taken, the Minister must lift his restrictions on the land owner or occupier.

This provision is necessary because some of the gazetted rare taxa are only known in the wild from small populations on private land. Some are threatened by land clearance for agriculture, gravel mining and many other activities destructive to natural vegetation. While this last provision imposes restrictions on private citizens as to what they may choose to do on their own land, Parliament has decided that these restrictions are not unreasonable to ensure the successful conservation of rare plants. Moreover, in almost all cases, only very small areas of land are occupied by rare flora.

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*To take is defined in the Wildlife Conservation Act as to "gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora or cause or permit the same to be done by any means".

†Note that this provision relates only to wild populations of rare plants, not to cultivated or propagated specimens grown in domestication.

## B. COMPILATION OF THE LIST OF GAZETTED RARE FLORA

Several publications (Specht *et al.* 1974; Hartley and Leigh 1979; Marchant and Keighery 1979; Rye *et al.* 1980) list Western Australian native plants that appear to be rare, geographically restricted, heavily commercially exploited or otherwise vulnerable.

All of these lists suffer from the shortage of available data on the State's flora and there are large discrepancies between them, partly because each uses a different classifacatory system for rarity and vulnerability. Marchant and Keighery (1979) produced the most comprehensive list, based on a survey of herbarium specimens housed at the Western Australian Herbarium. They found that more than 2 000 species were either poorly collected (represented by less than 5 herbarium specimens) or had a geographical range of less than 160 kilometres.

This suggests that a very large number of Western Australian plants could be called 'rare' depending upon how the term is defined. Marchant and Keighery considered only 124 species to be 'rare' but did not define what they meant by the term. Indeed none of the publications listed above provided a precisely defined category that seemed appropriate to delimit the flora to be gazetted as rare.

The Flora Committee of the Western Australian Wildlife Authority decided to adopt the following operational criteria for taxa to qualify as gazetted rare flora under the Wildlife Conservation Act:

(1) The taxon has been formally named under conventions proposed in the International Code of Botanical Nomenclature;

(2) A reasonably thorough search has been made to locate wild populations and count the number of plants present;

(3) Less than a few thousand reproductively mature plants are known to exist in the wild.

These criteria were then applied to the 124 taxa listed as rare by Marchant and Keighery (1979) on the basis of the collective knowledge of Dr N.G. Marchant (W.A. Herbarium), Mr A.S. George (W.A. Herbarium), Mr G.J. Keighery (Kings Park and Botanic Garden) and the two present authors. Only 43 of the 124 species were considered sufficiently well known to be gazetted as rare. However, an additional 57 species not listed by Marchant and Keighery (1979) were known to satisfy the above criteria for gazettal, making a total of 100 taxa in all (Table 2).

It appears that these 100 taxa are only a small proportion of the rare plants that could be gazetted if they were better known. Hundreds of Western Australian species and

Table 2. Notice listing rare flora in the Government Gazette, W.A. of November 14, 1980.

WILDLIFE CONSERVATION ACT, 1950-1979.

(Section 23F.)

Notice.

F. & W. 616/80.

I, GORDON EDGAR MASTERS, Minister for Fisheries and Wildlife, acting under the provisions of subsection (2) of section 23F of the Wildlife Conservation Act, 1950-1979, hereby declare that protected flora of the taxa listed in the schedule to this Notice growing in its original state and not in its domesticated or cultivated state are rare flora throughout the whole of the State.

GORDON EDGAR MASTERS,
Minister for Fisheries and Wildlife.

Schedule.

*Acacia anomala*
*Acacia aphylla*
*Acacia argutifolia*
*Acacia depressa*
*Acacia guinetti*
*Acacia simulans*
*Adenanthos cunninghamii*
*Adenanthos detmoldii*
*Adenanthos dobagii*
*Adenanthos ellipticus*
*Adenanthos eyrei*
*Adenanthos ileticos*
*Adenanthos pungens*
*Adenanthos velutinus*
*Aponogeton hexatepalus*
*Asplenium obtusatum*
*Banksia brownii*
*Banksia goodii*
*Banksia tricuspis*
*Caladenia lavandulacea*
*Casuarina fibrosa*
*Conostylis misera*
*Coopernookia georgei*
*Darwinia acerosa*
*Darwinia carnea*
*Darwinia collina*
*Darwinia macrostegia*
*Darwinia masonii*
*Darwinia meeboldii*
*Darwinia squarrosa*
*Dodonaea hackettiana*
*Drosera occidentalis*
*Drummondita hassellii* var. *longifolia*
*Dryandra comosa*
*Dryandra pulchella*
*Eremophila denticulata*
*Eremophila virens*
*Eucalyptus aquilina*
*Eucalyptus burdettiana*
*Eucalyptus caesia*
*Eucalyptus calcicola*
*Eucalyptus carnabyi*
*Eucalyptus coronata*
*Eucalyptus desmondensis*
*Eucalyptus exilis*
*Eucalyptus insularis*
*Eucalyptus johnsoniana*
*Eucalyptus kruseana*
*Eucalyptus pendens*
*Eucalyptus rhodantha*
*Eucalyptus steedmanii*
*Franklandia triaristata*
*Gastrolobium appressum*
*Gastrolobium glaucum*
*Grevillea baxteri*
*Grevillea cirsiifolia*
*Grevillea drummondii*
*Grevillea dryandroides*
*Grevillea inconspicua*
*Grevillea infundibularis*
*Grevillea involucrata*
*Grevillea prostrata*
*Grevillea ripicola*
*Grevillea saccata*
*Hakea aculeata*
*Hakea megalosperma*
*Hibbertia bracteosa*
*Hibbertia miniata*
*Hydrocotyle lemnoides*
*Kennedia beckxiana*
*Kennedia glabrata*
*Kennedia macrophylla*
*Lambertia echinata*
*Lambertia orbifolia*
*Lambertia rariflora*
*Lasiopetalum bracteatum*
*Lechenaultia pulvinaris*
*Lechenaultia superba*
*Leucopogon obtectus*
*Melaleuca baxteri*
*Pentapeltis silvatica*
*Pityrodia augustensis*
*Pomaderris bilocularis*
*Pomaderris grandis*
*Ptychosema pusillum*
*Rhizanthella gardneri*
*Ricinocarpus trichophorus*
*Roycea pycnophylloides*
*Spirogardnera rubescens*
*Stachystemon axillaris*
*Stawellia dimorthantha*
*Stylidium coroniforme*
*Stylidium expeditionis*
*Stylidium galioides*
*Synaphea pinnata*
*Tegicornia uniflora*
*Urocarpus phebalioides*
*Verticordia helichrysantha*
*Verticordia staminosa*
*Villarsia calthifolia*

subspecies are still nameless, many of these having escaped attention partly because of their rarity. Very few of the named species have been subjected to detailed field surveys to determine their conservation status. Field surveys of specific rare plants recently have been commenced by the Department of Fisheries and Wildlife but only a handful are currently being completed each year.

As the Western Australian flora becomes better documented and as more emphasis is placed on the study of the rarer taxa, the gazetted rare flora will be expanded. Some revision of the taxa already gazetted may also be expected because some species may prove to be more common than was originally believed and taxonomic studies may result in changes of the names or status of currently recognised rare taxa.

## II SOURCES

Three sources of information were used to compile this report:

(a) Herbarium specimens housed in the Western Australian Herbarium and the Herbarium of the University of Western Australia.

(b) Type descriptions and other references cited in this report.

(c) Plant material, photographs, illustrations and notes provided by the many biologists (see Acknowledgements) who were consulted.

Specimen numbers or other sources consulted for the line drawings are given in Appendix II.

## III DATA PRESENTATION

Illustrations, distribution maps, flowering times and brief descriptions of appearance, distribution and habitat are provided for each of the gazetted rare taxa in Appendix I.

Table 3 shows the known distribution of natural populations of rare taxa in the Wildlife Districts administered by the Department of Fisheries and Wildlife. Other districts in which the taxa are likely to be found are also indicated. The table will allow Wildlife Officers to quickly determine which rare plants occur or may occur in their areas. Fig. 1 shows the positions of the Wildlife Districts in relation to the Western Australian Botanical Provinces as defined by Beard (1979).

Table 4 indicates which of the rare taxa are known to be in cultivation or commercially exploited and gives their flowering times for quick reference. Appendix III lists the published and proposed common names for all the rare taxa.

Table 3 : Distribution of the Gazetted Rare Flora in the Wildlife Districts administered by the Department of Fisheries and Wildlife.

| | 1 Wyndham | 2 Karratha | 3 Mt Magnet | 4 Carnarvon | 5 Geraldton | 6 Moora | 7 Wongan Hills | 8 Waroona | 9 Pingelly | 10 Kalgoorlie | 11 Busselton | 12 Albany | 13 Perth | 14 Manjimup | 15 Esperance | Other Likely Districts |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Acacia* | | | | | | | | | | | | | | | | |
| *anomala* | | | | | | | | | | | | | X | | | |
| *aphylla* | | | | | | | | | | | | | X | | | |
| *argutifolia* | | | | | | | | | | | | X | | | | |
| *depressa* | | | | | | | | | | | | X | | | | |
| *guinetii* | | | | | X | | | | | | | | | | | |
| *simulans* | | | | | | | | | | | | X | | | | |
| *Adenanthos* | | | | | | | | | | | | | | | | |
| *cunninghamii* | | | | | | | | | | | | X | | | | |
| *detmoldii* | | | | | | | | | | | X | | | | | |
| *dobagii* | | | | | | | | | | | | X | | | | |
| *ellipticus* | | | | | | | | | | | | X | | | | |
| *eyrei* | | | | | | | | | | | | | | | X | |
| *ileticos* | | | | | | | | | | | | | | | X | |
| *pungens* | | | | | | | | | | | | X | | | | |
| *velutinus* | | | | | | | | | | | | X | | | | |
| *Aponogeton* | | | | | | | | | | | | | | | | |
| *hexatepalus* | | | | | | | | X | | | X | | | | | |
| * *Asplenium* | | | | | | | | | | | | | | | | |
| *obtosatum* | | | | | | | | | | | | X | | X | | 15 |
| *Banksia* | | | | | | | | | | | | | | | | |
| *brownii* | | | | | | | | | | | | X | | | | |
| *goodii* | | | | | | | | | | | | X | | | | |
| *tricuspis* | | | | | | X | | | | | | | | | | |
| *Caladenia* | | | | | | | | | | | | | | | | |
| *lavandulacea* | | | | | | | | | X | | | | | | | |
| *Casuarina* | | | | | | | | | | | | | | | | |
| *fibrosa* | | | | | | | | | X | | | | | | | |
| *Conostylis* | | | | | | | | | | | | | | | | |
| *misera* | | | | | | | | | | | | X | | | | |
| *Coopernookia* | | | | | | | | | | | | | | | | |
| *georgei* | | | | | | | | | | | | X | | | | |
| *Darwinia* | | | | | | | | | | | | | | | | |
| *acerosa* | | | | | | X | | | | | | | | | | |
| *carnea* | | | | | | X | | | X | | | | | | | |
| *collina* | | | | | | | | | | | | X | | | | |
| *macrostegia* | | | | | | | | | | | | X | | | | |
| *masonii* | | | X | | | | | | | | | | | | | 7 |
| *meeboldii* | | | | | | | | | | | | X | | | | |
| *squarrosa* | | | | | | | | | | | | X | | | | |
| *Dodonaea* | | | | | | | | | | | | | | | | |
| *hackettiana* | | | | | | | | | | | | | X | | | |

* Also occurs in N.S.W., Queensland, Tasmania, Victoria & overseas

Table 3 - cont'd...

| | 1 Wyndham | 2 Karratha | 3 Mt Magnet | 4 Carnarvon | 5 Geraldton | 6 Moora | 7 Wongan Hills | 8 Waroona | 9 Pingelly | 10 Kalgoorlie | 11 Busselton | 12 Albany | 13 Perth | 14 Manjimup | 15 Esperance | Other Likely Districts |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Drosera occidentalis* | | | | | | | | | | | | | X | | | |
| *Drummondita hassellii* var. *longifolia* | | | | | | | | | | | | | | | X | |
| *Dryandra comosa* | | | | | | | X | | | | | | | | | |
| *Dryandra pulchella* | | | | | | | X | | | | | | | | | |
| *Eremophila denticulata* | | | | | | | | | | | | X | | | | |
| *Eremophila virens* | | | | | | | X | | | | | | | | | |
| *Eucalyptus aquilina* | | | | | | | | | | | | | | | X | |
| *Eucalyptus burdettiana* | | | | | | | | | | | | X | | | | |
| *Eucalyptus caesia* | | | | | | | X | | X | | | | | | | 8,10 |
| *Eucalyptus calcicola* | | | | | | | | | | | X | | | | | |
| *Eucalyptus carnabyi* | | | | | | | X | | | | | | | | | |
| *Eucalyptus coronata* | | | | | | | | | | | | X | | | | |
| *Eucalyptus desmondensis* | | | | | | | | | | | | X | | | | |
| *Eucalyptus exilis* | | | | | | | | | X | | | | | | | 8 |
| *Eucalyptus insularis* | | | | | | | | | | | | | | | X | |
| *Eucalyptus johnsoniana* | | | | | | X | | | | | | | | | | |
| *Eucalyptus kruseana* | | | | | | | | | | X | | | | | X | |
| *Eucalyptus pendens* | | | | | | X | | | | | | | | | | |
| *Eucalyptus rhodantha* | | | | | | X | | | | | | | | | | |
| *Eucalyptus steedmanii* | | | | | | | | | X | | | X | | | | |
| *Franklandia triaristata* | | | | | | | | | | | X | | | | | |
| *Gastrolobium appressum* | | | | | | X | | | | | | | | | | 7 |
| *Gastrolobium glaucum* | | | | | | | X | | | | | | | | | 6 |
| *Grevillea baxteri* | | | | | | | | | | | | | | | X | |
| *Grevillea cirsiifolia* | | | | | | | | X | | | | X | | | | 9,14 |
| *Grevillea drummondii* | | | | | | | | X | | | | | | X | | 11 |
| *Grevillea dryandroides* | | | | | | | X | | | | | | | | | 6 |
| *Grevillea inconspicua* | | | X | | | | | | | | | | | | | |
| *Grevillea infundibularis* | | | | | | | | | | | | X | | | | |
| *Grevillea involucrata* | | | | | | | | | X | | | | | | | 12 |
| *Grevillea prostrata* | | | | | | | | | X | | | | | | | 12 |
| *Grevillea ripicola* | | | | | | | X | | | | | | | | | 11 |
| *Grevillea saccata* | | | | | | X | | | | | | | | | | |
| *Hakea aculeata* | | | | | | | X | | X | | | | | | | |
| *Hakea megalosperma* | | | | | | X | | | | | | | | | | |

Table 3 - cont'd...

| | 1 Wyndham | 2 Karratha | 3 Mt Magnet | 4 Carnarvon | 5 Geraldton | 6 Moora | 7 Wongan Hills | 8 Waroona | 9 Pingelly | 10 Kalgoorlie | 11 Busselton | 12 Albany | 13 Perth | 14 Manjimup | 15 Esperance | Other Likely Districts |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Hibbertia* | | | | | | | | | | | | | | | | |
| *bracteosa* | | | | | | | | | | | | X | | | | |
| *miniata* | | | | | | X | | | | | | | | | | |
| *Hydrocotyle* | | | | | | | | | | | | | | | | |
| *lemnoides* | | | | | | | | | | | | | X | | | 6 |
| *Kennedia* | | | | | | | | | | | | | | | | |
| *beckxiana* | | | | | | | | | | | | | | | X | |
| *glabrata* | | | | | | | | | | | | | | X | | |
| *macrophylla* | | | | | | | | | | | X | | | | | |
| *Lambertia* | | | | | | | | | | | | | | | | |
| *echinata* | | | | | | | | | | | | | | | X | |
| *orbifolia* | | | | | | | | | | | X | X | | | | 14 |
| *rariflora* | | | | | | | | | | | X | | | | | |
| *Lasiopetalum* | | | | | | | | | | | | | | | | |
| *bracteatum* | | | | | | | | | | | | | X | | | |
| *Lechenaultia* | | | | | | | | | | | | | | | | |
| *pulvinaris* | | | | | | | | | X | | | | | | | |
| *superba* | | | | | | | | | | | | X | | | | |
| *Leucopogon* | | | | | | | | | | | | | | | | |
| *obtectus* | | | | | | X | | | | | | | | | | |
| *Melaleuca* | | | | | | | | | | | | | | | | |
| *baxteri* | | | | | | | | | | | | X | | | | |
| *Pentapeltis* | | | | | | | | | | | | | | | | |
| *silvatica* | | | | | | | | | | | X | | | X | | 8 |
| *Pityrodia* | | | | | | | | | | | | | | | | |
| *augustensis* | | | | X | | | | | | | | | | | | |
| *Pomaderris* | | | | | | | | | | | | | | | | |
| *biloculatis* | | | | | | | | | X | | | | | | | 8 |
| *grandis* | | | | | | | | | | | | X | | | | |
| *Ptychosema* | | | | | | | | | | | | | | | | |
| *pusillum* | | | | | | X | | | | | | | | | | 13 |
| *Rhizanthella* | | | | | | | | | | | | | | | | |
| *gardneri* | | | | | | | X | | X | | | X | | | | 6 |
| *Ricinocarpus* | | | | | | | | | | | | | | | | |
| *trichophorus* | | | | | | | | | | | | X | | | | |
| *Roycea* | | | | | | | | | | | | | | | | |
| *pycnophylloides* | | | | | | | | | X | | | | | | | |
| *Spirogardnera* | | | | | | | | | | | | | | | | |
| *rubescens* | | | | | | X | | | | | | | | | | |
| *Stachystemon* | | | | | | | | | | | | | | | | |
| *axillaris* | | | | | | X | | | | | | | X | | | |
| *Stawellia* | | | | | | | | | | | | | | | | |
| *dimorphantha* | | | | | | X | | | | | | | | | | 5 |

Table 3 - cont'd...

| | 1 Wyndham | 2 Karratha | 3 Mt Magnet | 4 Carnarvon | 5 Geraldton | 6 Moora | 7 Wongan Hills | 8 Waroona | 9 Pingelly | 10 Kalgoorlie | 11 Busselton | 12 Albany | 13 Perth | 14 Manjimup | 15 Esperance | Other Likely Districts |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Stylidium coroniforme* | | | | | | | X | | | | | | | | | 6 |
| *expeditionis* | | | | | | | | | X | | | | | | | |
| *galioides* | | | | | | | | | | | | X | | | | |
| *Synaphea pinnata* | | | | | | | | | | | | | X | | | |
| *Tegicornia uniflora* | | | | | | | | | | | | X | | | | |
| *Urocarpus phebalioides* | | | | | | X | | | | | | | | | | |
| *Verticordia helichrysantha* | | | | | | | | | | | | X | | | | |
| *staminosa* | | | | | | | X | | X | | | | | | | 6 |
| *Villarsia calthifolia* | | | | | | | | | | | | X | | | | |
| Number of Species Present | 0 | 0 | 2 | 1 | 1 | 16 | 11 | 4 | 15 | 1 | 8 | 35 | 8 | 4 | 9 | |

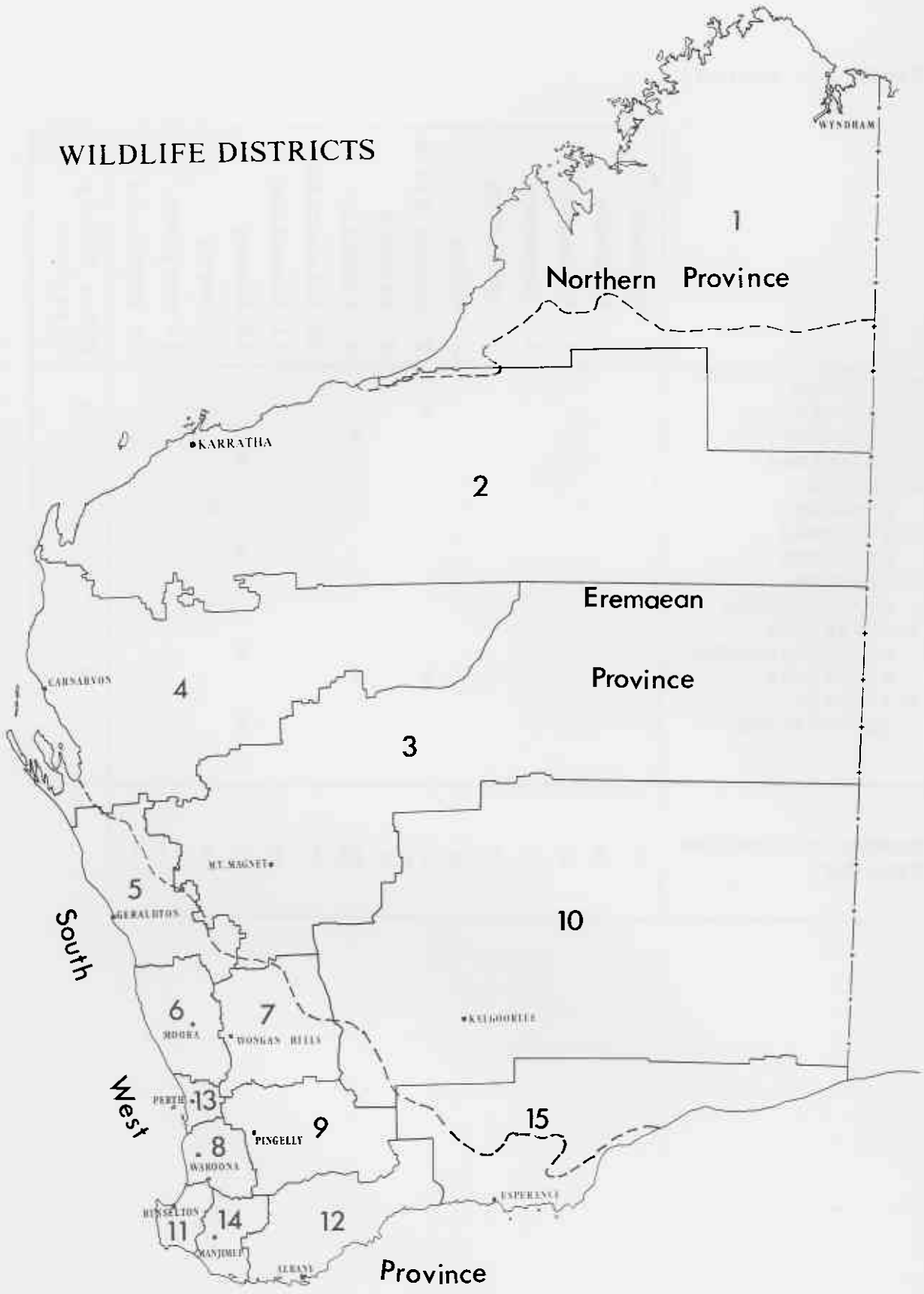


Figure 1. Wildlife Districts administered by the Department of Fisheries and Wildlife, and the Botanical Provinces of Western Australia.

Table 4. Flowering Times, Establishment in Cultivation and Commercial Exploitation of the Gazetted Rare Flora.

| | Known to be Cultivated (C) or Commercially Exploited (E) | Flowering Times (S - sori present) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | January | February | March | April | May | June | July | August | September | October | November | December |
| *Acacia* | | | | | | | | | | | | | |
| *anomala* | | | | | | | | | X | X | | | |
| *aphylla* | C | | | | | | | | X | X | | | |
| *argutifolia* | | X | | | | | | X | X | X | X | X | X |
| *depressa* | | X | | | | | | | | | | | X |
| *quinetii* | | | | | | | X | X | X | X | | | |
| *simulans* | | | | | | | | X | X | X | | | |
| *Adenanthos* | | | | | | | | | | | | | |
| *cunninghamii* | | | | | | | | | | X | X | | |
| *detmoldii* | | X | X | X | X | X | X | X | X | X | X | X | X |
| *dobagii* | | | | | | | | | X | X | X | X | |
| *ellipticus* | | X | | | X | | | | X | X | X | X | X |
| *eyrei* | | | | | | | | | | | X | X | |
| *ileticos* | C | | | | | | | | X | X | X | | |
| *pungens* | C | | | | | | | | X | X | X | X | |
| *velutinus* | | | | | | | | X | X | X | | | |
| *Aponogeton* | | | | | | | | | | | | | |
| *hexatelapus* | | | | | | | | | X | X | | | |
| *Asplenium* | | | | | | | | | | | | | |
| *obtusatum* | C | | S | | | S | | | | | | | |
| *Banksia* | | | | | | | | | | | | | |
| *brownii* | CE | | | | X | X | X | X | | | | | |
| *goodii* | CE | | | | | | | | | | | X | X |
| *tricuspis* | CE | | | X | X | X | X | X | X | X | | | |
| *Caladenia* | | | | | | | | | | | | | |
| *lavandulacea* | | | | | | | | | | X | X | | |
| *Casuarina* | | | | | | | | | | | | | |
| *fibrosa* | | | | | | | | | | X | X | X | |
| *Conostylis* | | | | | | | | | | | | | |
| *misera* | | | | | | | | | | | X | X | X |
| *Coopernookia* | | | | | | | | | | | | | |
| *georgei* | | | | | | | | X | | | X | X | |
| *Darwinia* | | | | | | | | | | | | | |
| *acerosa* | | | | | | | | | | X | X | | |
| *carnea* | CE | | | | | | | | | | X | X | X |
| *collina* | C | | | X | X | | | | X | X | X | X | |
| *macrostegia* | CE | | | X | X | X | | | X | X | X | X | |
| *masonii* | | | | | | | | X | X | X | X | X | |
| *meeboldii* | CE | | | | | | | | X | X | X | X | |
| *squarrosa* | C | | | | | | | | | X | X | X | |
| *hackettiana* | C | | | | | | | X | X | X | X | | |

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Table 4 - cont'd...

| | Known to be Cultivated (C) or Commercially Exploited (E) | Flowering Times | | | | | | | | | | | | Flowering Period Not Known |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | January | February | March | April | May | June | July | August | September | October | November | December | |
| *Drosera occidentalis* | | | | | | | | | | | X | X | | |
| *Drummondita hasselliii* var. *longifolia* | | | | | | | | | | X | X | X | | |
| *Dryandra comosa* | | | | | | | | | X | X | X | | | |
| *Dryandra pulchella* | | X | | | | | | | | | X | X | X | |
| *Eremophila denticulata* | CE | | | | | | | | | | X | X | | |
| *Eremophila virens* | C | | | | | | | | X | X | X | | | |
| *Eucalyptus aquilina* | | | | | | X | X | X | X | X | X | | | |
| *Eucalyptus burdettiana* | CE | X | X | X | | | | X | X | | | | X | |
| *Eucalyptus caesia* | CE | | | | | | X | X | X | | | | | |
| *Eucalyptus calcicola* | CE | | | | | | X | X | | | | | | |
| *Eucalyptus carnabyi* | CE | | | | | | | X | X | X | X | X | X | |
| *Eucalyptus coronata* | CE | | | | X | X | X | X | X | X | X | | | |
| *Eucalyptus desmondensis* | CE | X | X | X | X | X | X | X | X | X | X | X | X | |
| *Eucalyptus exilis* | | | | | | | | | | X | X | | | |
| *Eucalyptus insularis* | | | | | | | | | | | | | | X |
| *Eucalyptus johnsoniana* | | | | | | | | | | | | X | | |
| *Eucalyptus kruseana* | CE | | | X | X | X | X | | | | | | | |
| *Eucalyptus pendens* | | | | | | | X | X | X | X | X | | | |
| *Eucalyptus rhodantha* | CE | | | | | | X | X | X | X | | | | |
| *Eucalyptus steedmanii* | CE | X | | | | | | | | | | X | X | |
| *Franklandia triaristata* | | | | | | | | | X | X | X | | | |
| *Gastrolobium appressum* | | | | | | | | | | X | X | X | | |
| *Gastrolobium glaucum* | | | | | | | | | X | X | | | | |
| *Grevillea baxteri* | CE | | X | | | | X | X | X | X | | | | |
| *Grevillea cirsiifolia* | | | | | | | | | | X | X | X | X | |
| *Grevillea drummondii* | CE | | | | | | X | X | X | X | X | | | |
| *Grevillea dryandroides* | CE | | X | X | | | | | | X | X | | | |
| *Grevillea inconspicua* | | | | | | | | X | | | | | | |
| *Grevillea infundibularis* | | | | | | | | X | | | X | | | |
| *Grevillea involucrata* | | | | | | | X | X | | | | | | |
| *Grevillea prostrata* | | | | | | | | | X | X | X | | | |
| *Grevillea ripicola* | | | | | | | | | | X | X | | | |
| *Grevillea saccata* | CE | | | | | | X | X | X | | | | | |

Table 4 - cont'd...

| | Known to be Cultivated (C) or Commercially Exploited (E) | Flowering Times | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | January | February | March | April | May | June | July | August | September | October | November | December |
| *Hakea* | | | | | | | | | | | | | |
| *aculeata* | | | | | | | | | | X | X | | |
| *megalosperma* | CE | | | | X | X | X | | | | | | |
| *Hibbertia* | | | | | | | | | | | | | |
| *bracteosa* | | | | | | | | | | X | X | X | |
| *miniata* | CE | | | | | | | X | X | X | X | | |
| *Hydrocotyle* | | | | | | | | | | | | | |
| *lemnoides* | | | | | | | | | | X | X | | |
| *Kennedia* | | | | | | | | | | | | | |
| *beckxiana* | CE | | | | | | | | | | X | X | X |
| *glabrata* | CE | | | | | | | | | X | X | X | |
| *macrophylla* | CE | | | | | | | | | X | X | X | |
| *Lambertia* | | | | | | | | | | | | | |
| *echinata* | C | | | | | | | | X | X | X | | |
| *orbifolia* | | X | X | | | X | X | X | | | | | |
| *rariflora* | | X | X | X | | | | | | | | | |
| *Lasiopetalum* | | | | | | | | | | | | | |
| *bracteatum* | | | | | | | | | | | X | X | |
| *Lechenaultia* | | | | | | | | | | | | | |
| *pulvinaris* | | | | | | | | | | | X | X | |
| *superba* | C | X | X | X | X | X | X | X | X | X | X | X | X |
| *Leucopogon* | | | | | | | | | | | | | |
| *obtectus* | | | | | | | | | | | X | X | |
| *Melaleuca* | | | | | | | | | | | | | |
| *baxteri* | CE | | | | | | | | | | | X | X |
| *Pentapeltis* | | | | | | | | | | | | | |
| *silvatica* | | | X | X | X | X | X | | | | | | |
| *Pityrodia* | | | | | | | | | | | | | |
| *augustensis* | | | | | | | | | X | X | X | | |
| *Pomaderris* | | | | | | | | | | | | | |
| *biloculatis* | | | | X | X | | | | | | X | X | |
| *grandis* | C | | | | | | | X | X | X | | | |
| *Ptychosema* | | | | | | | | | | | | | |
| *pusillum* | | | | | | | | | | | X | X | |
| *Rhizanthella* | | | | | | | | | | | | | |
| *gardneri* | | | | | | X | X | | | | | | |
| *Ricinocarpus* | | | | | | | | | | | | | |
| *trichophorus* | | | | X | X | X | | | | | | | |
| *Roycea* | | | | | | | | | | | | | |
| *pycnophylloides* | | | | | | | | | | | | X | |
| *Spirogardnera* | | | | | | | | | | | | | |
| *rubescens* | | | | | | | | | X | X | X | X | |

Table 4 - cont'd'....

| | Known to be Cultivated (C) or Commercially Exploited (E) | Flowering Times | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | January | February | March | April | May | June | July | August | September | October | November | December |
| *Stachystemon axillaris* | | | | | | | X | X | X | X | | | |
| *Stawellia dimorphantha* | | | | | | | | | | | | X | X |
| *Stylidium coroniforme* | | | | | | | | | | X | | | |
| *expeditionis* | | | | | | | | | | X | X | | |
| *galioides* | | | | | | | | | | X | X | X | |
| *Synaphea pinnata* | | | | | | | | | | X | X | X | |
| *Tegicornia uniflora* | C | | | | | | | | | | X | X | X |
| *Urocarpus phebalioides* | | | | | | | | | X | X | | | |
| *Verticordia helichrysantha* | | | | | | | | | | X | X | | |
| *staminosa* | | | | | | | X | X | X | | | | |
| *Villarsia calthifolia* | | | | | | | | | | X | X | X | X |
| Number of Species in Flower | | 11 | 9 | 13 | 14 | 15 | 24 | 30 | 43 | 62 | 63 | 44 | 17 |

# IV DISCUSSION

## A. DISTRIBUTION AND REPRODUCTIVE PHENOLOGY

The gazetted rare flora is notable for the paucity of representatives in the Northern and Eremaean Botanical Provinces of Western Australia (Table 5). This reflects the inadequacy of botanical collecting in these relatively remote and inaccessible areas. Although many species have only been collected from single locations in the far north (e.g. *Cycas lane-poolei* and *Bauhinia carronii*) or in the arid zone (e.g. *Acacia anceps*), most are much too poorly known to be included in the present list and most occur in other States. It will probably be many years before any significant progress is made to overcome this problem.

TABLE 5 : DISTRIBUTION OF THE GAZETTED RARE FLORA IN THE BOTANICAL PROVINCES OF WESTERN AUSTRALIA COMPARED WITH THAT OF THE FLORA AS A WHOLE.

| Botanical Province | Gazetted Rare Flora (No. of Taxa) | Total No. Species in State Flora * |
|---|---|---|
| Northern | 0 | 1445 |
| Eremaean | 4 | 1822 |
| South-West | 96 | 3611 |
| Total | 100 | 5802 |

*Data from Beard (1969).

The South-West Botanical Province is isolated from areas of similar climate in the east of Australia by vast intervening arid regions. In contrast, the Eremaean Province continues uninterrupted across the continent and the Northern Province is also connected with more easterly regions of similar climate. Therefore a much greater proportion of the species from the two latter provinces are shared with other States of Australia. However, one of the gazetted species, *Asplenium obtusatum*, occurs both in the South-West Botanical Province and in four other Australian States. It is much more common in the other States where it appears to be in little danger of becoming extinct.

Table 2 highlights substantial differences in the number of rare taxa in each of the Wildlife Districts administered by the Department of Fisheries and Wildlife. The Albany District contains at least 35% of the rare taxa, its nearest rivals being Moora with 16% and Pingelly with 15%. The remaining districts each include 0-11% of the taxa. The Albany District is one of the largest in the south-west of the State, and in addition to Albany itself, includes such floristically rich areas as the Porongurups, Stirling Range and the Fitzgerald River National Park. Unless it is sub-divided or given staffing priority over other wildlife districts, it will be much less manageable in terms of monitoring rare species. It is also a major centre for wildflower harvesting (Rye *et al.* 1980).

From records on herbarium specimens, it appears that the major flowering months are August to November and the lowest numbers of rare species are in flower during January-March (Table 3). However, these data may be slightly biased because plant specimens are not collected uniformly throughout the year. At least two species, *Adenanthos detmoldii* and *Eucalyptus desmondensis*, may be found in flower in all seasons but they flower more prolifically in some months than in others.

The species of a few genera (e.g. *Hakea* and *Melaleuca*) bear mature unopened fruits throughout the year but most genera (e.g. *Caladenia, Darwinia, Gastrolobium* and *Stylidium*) shed their fruits, or at least the seeds, at a regular time each year. Usually, the fruits ripen within a few months of flowering, but in a few species, the fruits take a year or more to mature. Among those species which do not have a specific season for seed shed, the stimulus for seed release may be any factors (e.g. fire, drought, disease and breakage) that result in the death and drying out of branches to which the fruits are attached.

## B. CULTIVATION AND COMMERCIAL EXPLOITATION

Although 38 of the gazetted rare flora are known to have been grown in cultivation (Table 4), a few have only been grown once or twice for private or scientific purposes. These cultivated species include the 26 species (see Table 4) that are known to have been commercially exploited in 1977-79 (Rye *et al* 1980). All were sold by nurseries and/or seed dealers and one species, *Banksia brownii*, was sold in the cut flower trade as well.

We consider that every encouragement should be given to the establishment of cultivated stocks of rare plants to satisfy demand for them in the wildflower trade. This would ensure that these species are safely established in cultivation and eliminate any need for regular harvesting of wild populations. Indeed this is already the case for *Eucalyptus caesia* and *E. steedmanii*, which are far more common in cultivation than

in the wild.

The use of seed or cutting material from wild populations should be limited to horticultural or scientific research that is likely to improve the conservation status of the rare taxa. Ideally, all the gazetted rare species should be established in cultivation, and clearly much more work is required before this can be achieved. A few extremely rare plants, such as *Stylidium coroniforme* and *Leucopogon obtectus*, are in urgent need of attention because their known wild populations have dwindled to less than 10 individuals.

## C. SCOPE FOR FURTHER STUDIES

The distributions, habitats, flowering times and other details given in this report are incomplete for most species. The accumulation of information on them has been somewhat hindered by their rarity; indeed many have only recently been discovered and described. One quarter (24) of the gazetted rare taxa were named during the last 10 years, 12 of them since 1975.

A list of the main data being sought for the rare species is given below because it may assist interested persons to record relevant information about any species they may wish to monitor.

(1) Exact localities of populations, numbers of plants and ownership of the land they occupy.

(2) Habitat descriptions - topography, soil type, vegetation structure, dominant species.

(3) Flowering/fruiting schedules - times when flower buds, open flowers and fruits are present; times when the fruits ripen and shed seeds or drop from the plant.

(4) Pollination - types of animals and their behaviour on the flowers, evidence of wind pollination or special mechanisms.

(5) Recruitment - level of seed set, numbers and stages of seedlings, occurrence of lignotubers or suckers.

(6) Survival of mature plants - response to fire and summer drought, animal and pathogen damage.

(7) Miscellaneous observations - e.g. any obvious morphological variants, any information on cultivation if this has been attempted.

Any information on rare plants would be gratefully appreciated and should be forwarded to the Western Australian Wildlife Research Centre, P.O. Box 51, Wanneroo, W.A. 6065.

# V ACKNOWLEDGEMENTS

This project was funded by the Department of Fisheries and Wildlife. We are grateful to the following botanists who provided us with photographs or other illustrations, plant specimens and advice: Mr T.E.H. Aplin, Mr J. Briggs, Dr B. Dell, Mr I.R. Dixon, Mr K.W. Dixon, Mr A.S. George, Mr E. Griffin, the late Mr F.W.H. Humphreys, Ms B.M.J. Hussey, Dr S.H. James, Mr G.J. Keighery, Mr K.F. Kenneally, Dr N.G. Marchant, Mr B.R. Maslin, Mr D. McGillivray, Ms J. West, Mr P.G. Wilson, Mr E. Wittwer.

# APPENDIX I

## DESCRIPTIONS OF THE GAZETTED RARE TAXA

A glossary (page 205) is provided to define the botanical terms used in this appendix. Details of the rare flora are presented in the following form:

GENUS - At the start of each genus, the major distinguishing characteristics of the genus are outlined, avoiding the need to repeat them in each of the following species descriptions. A useful reference for many generic descriptions is Blombery (1979).

Name of Taxon - full scientific name and the common name.

Distribution and Habitat - a brief description of the geographical range and habitat, including areas in which the taxon is now believed to be extinct. For security, exact locations are not given.

Flowering Period - the known months in which the taxon flowers. In a few cases the fruiting period is also given.

Distinctive Characteristics - unique or unusual characteristics that are most useful for distinguishing the taxon. Other taxa with which it could be confused are often named.

Other Characteristics - a further aid to identification of the taxon.

References - selected references that provide photographs, drawings or more detailed descriptions of the taxon. In addition to these, a general reference work for most of the species is "How to Know Western Australian Wildflowers" Volumes 1,2,3,3A and 4 (Blackall & Grieve 1974, 1980; Grieve & Blackall 1975).

Illustrations - Unless otherwise indicated, the illustrations are life size to permit direct comparison with plants in the field. Since most of the illustrations were drawn from pressed and dried specimens, they often appear unnaturally flattened. Many taxa are very variable in their leaf size and other characters and the illustrations usually show their average form. Grid lines on maps correspond to the $1^{o}$ latitude by $1.5^{o}$ longitude boundaries of the Australian 1:250 000 topographical map series.

# ACACIA (MIMOSACEAE)

Commonly known as wattles, these shrubs or small trees have two distinct types of foliage. The juvenile leaves are invariably bipinnate (twice divided) with few to many leaflets. In many species, these are replaced by a mature 'foliage' consisting of phyllodes - expanded leaf stalks which assume the form and functions of leaves. The small yellow or cream flowers are densely packed into spherical or cylindrical clusters. Each flower has 5 or 4 petals and numerous stamens. The fruit (a pod) is dry and contains a single row of hard seeds, which are released when the pod splits down both sides.

## ACACIA ANOMALA *C.A. Gardner ex Court*

*Chittering Grass Wattle*

Distribution and Habitat: *A. anomala is confined to lateritic soils in the Darling Range, apparently occurring in forests or woodlands.*

Flowering Period: *August-September.*

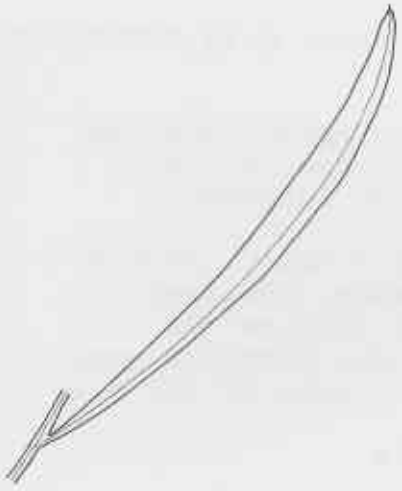
Distinctive Characteristics: *Its upper stems have prominent wings up to 0.2 cm wide on each side of the central axis. The yellow flower heads are solitary at the nodes, shortly stalked, cylindrical, up to 2.5 cm long and 1 cm wide.*

Other Characteristics: *Erect spindly shrub up to 45 cm high, with several dull green stems arising from near the base. The juvenile leaves apparently have few pairs of leaflets. Phyllodes scattered, up to 10 cm long and 0.7 cm wide, with a small sharp point. Pods unknown.*

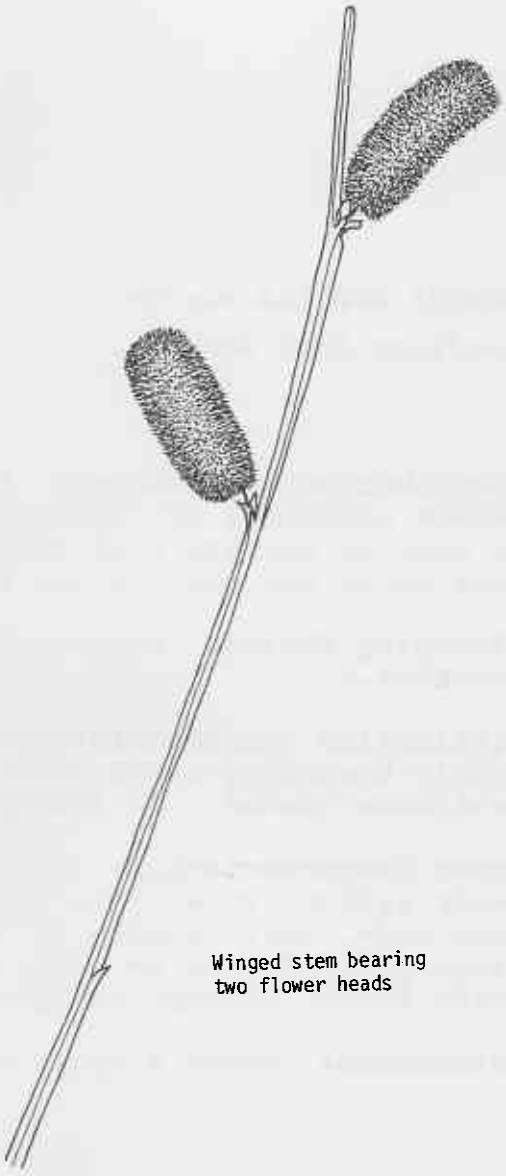
References: *Court 1978.*

# Acacia anomala

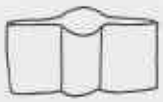
Juvenile leaf



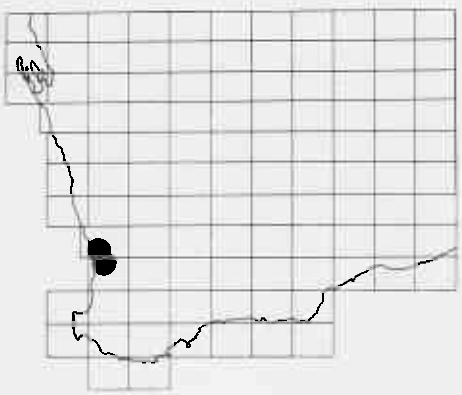
Phyllode



Winged stem bearing
two flower heads



Section of stem showing the
two prominent wings (x 10)



ACACIA APHYLLA *Maslin*

*Leafless Rock Wattle*

**Distribution and Habitat:** *This is restricted to granite outcrops within woodlands or forests and is the only wattle species known to grow in granite rock crevices. It occurs in the Darling Range near Perth and also in the Northam area.*

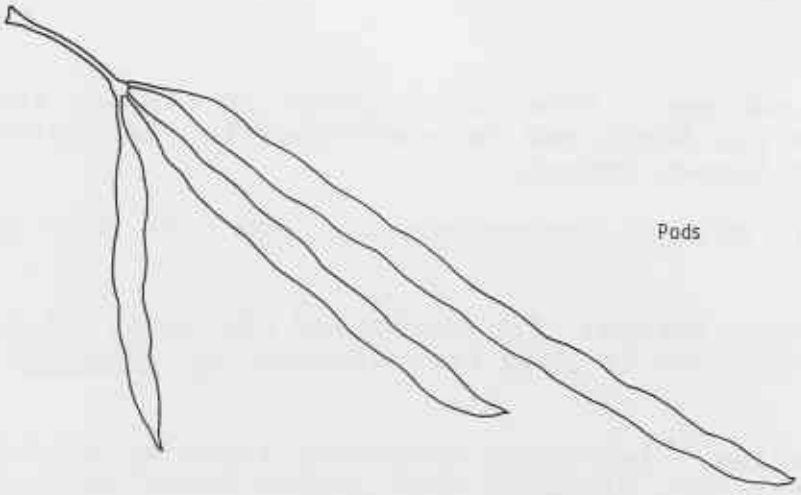
**Flowering Period:** *August-September. (The first pods mature in December.)*

**Distinctive Characteristics:** *A. aphylla has spiny glaucous widely-branching stems with the phyllodes reduced to small deciduous scales. It therefore appears quite leafless.*

**Other Characteristics:** *Erect shrub up to 2 m tall. Flower heads yellow, spherical, up to 0.7 cm diameter, solitary at each node, their stalks ca 1 cm long, each with ca 28 flowers. Pods 3-9 cm long, up to 0.4 cm wide, purplish grey. Seeds black, oblong, alligned along the long axis of the pod.*

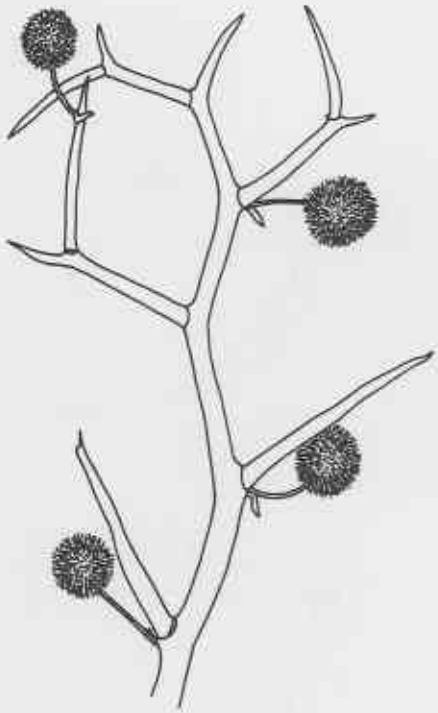
**References:** *Lucas & Synge 1978; Maslin 1974.*

# Acacia aphylla

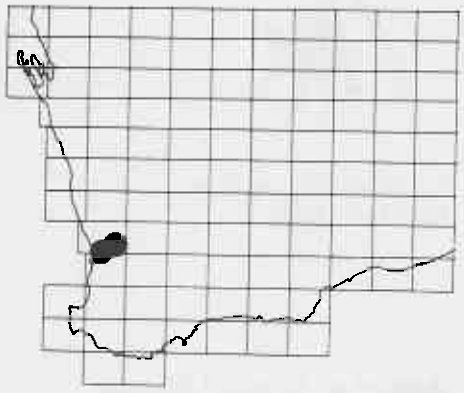


Pods

Juvenile leaf



Leafless stems with flower heads



ACACIA ARGUTIFOLIA *Maslin*

*East Barrens Wattle*

**Distribution and Habitat:** *This wattle grows in shallow sand over quartzite in low heath and is restricted to the eastern part of the Mount Barren ranges.*

**Flowering Period:** *Flowers intermittently from late July to January.*

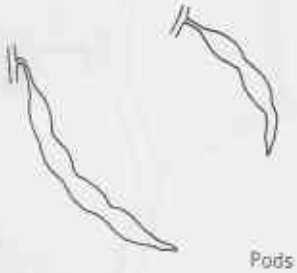
**Distinctive Characteristics:** *The scattered phyllodes of A. argutifolia distinguish it from its relative, A. simulans* *(see page 33).*

**Other Characteristics:** *Intricate spreading shrub up to 0.5 m tall and 1.7 m diameter, dividing near ground level into several main branches. Branches light grey, the tips of the branchlets reddish. Phyllodes crowded, rigid, sharply pointed, triangular in cross section, up to 1.3 cm long and ca 0.2 cm wide. Flower heads pale yellow, spherical, less than 0.5 cm in diameter, solitary, on 0.5 cm long stalks, with ca 24 flowers. Pods tan to grey-brown with yellow margins, up to 4 cm long and 0.4 cm wide, narrowed at both ends. Seeds dull brown with a darker brown line around the margins, ca 0.3 cm long, alligned along the long axis of the pod.*

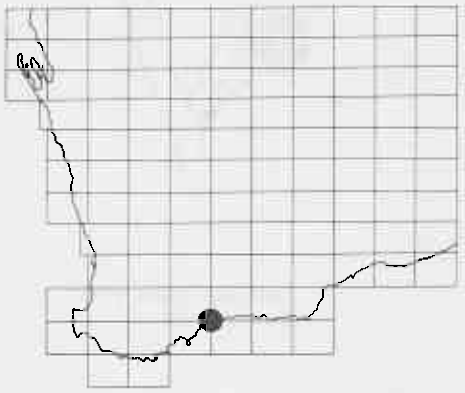
**References:** *Maslin 1976.*

Branch bearing phyllodes and flower heads

Phyllode (x 10)



Pods



Acacia argutifolia

ACACIA DEPRESSA *Maslin*

*Echidna Wattle*

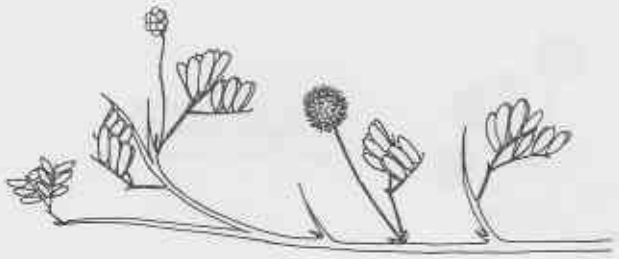
**Distribution and Habitat:** *This wattle appears to be restricted to lateritic hills in the Duggan area, west of Lake Grace.*

**Flowering Period:** *December-January.*

**Distinctive Characteristics:** *A. depressa has a cushion-like habit (see below) and short spiny branchlets. Its mature leaves have stalks up to 2.5 cm long and are divided into 2 parts, each bearing 3-4 pairs of leaflets.*

**Other Characteristics:** *Compact much-branched prostrate shrub, up to 5 cm tall and 50 cm or more in diameter. Flower heads yellow, solitary, spherical, ca 0.4 cm across, with 12-15 flowers, borne on 1-2 cm long stalks. Pods dark brown with paler margins, ca 1 cm long and 0.3 cm wide, few seeded.*

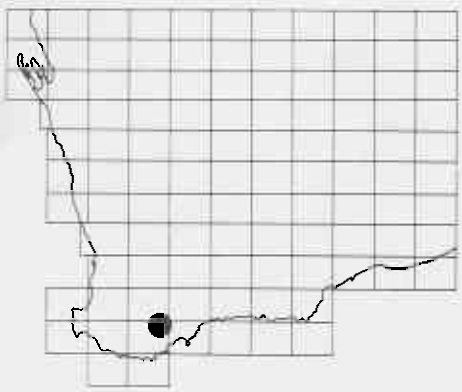
**References:** *Maslin 1975.*



Prostrate stem bearing spines, leaves and two flower heads

Bipinnate leaf

Pod



Acacia depressa

ACACIA GUINETII *Maslin*

*Guinet's Wattle*

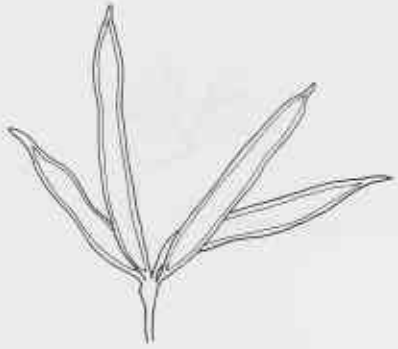
**Distribution and Habitat:** *A wattle species restricted to the hilly Nanson-Howatharra region, north of Geraldton. It grows either in rocky loam or lateritic gravel.*

**Flowering Period:** *June-September. (The first pods mature in October.)*

**Distinctive Characteristics:** *A. guinetii is related to Prickly Moses (A. pulchella) and to A. lasiocarpa but differs from both by its lack of spines.*

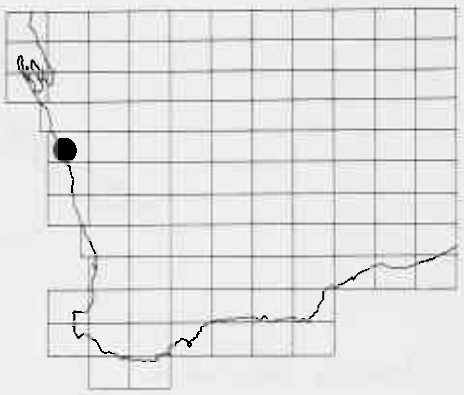
**Other Characteristics:** *Spindly, usually single-stemmed shrub with grey bark. Branches hairy; branchlets tend to arch downwards. Mature leaves shortly stalked, divided into two parts each comprising 2-5 pairs of leaflets, up to 0.3 cm long. Leaflets dark green above, paler below, hairy, with somewhat rolled margins. Flower heads yellow, spherical, nearly 1 cm in diameter, solitary, their stalks 1-2 cm long, with ca 70 flowers. Pods 2-4 cm long and 0.3 cm wide, very dark brown with yellow margins, pointed. Seeds shiny, greyish brown, 0.3 cm long, alligned along the long axis of the pod.*

**References:** *Maslin 1979.*



Pods

Hairy stem bearing bipinnate leaves and flower heads



Acacia guinetii

ACACIA SIMULANS *Maslin*

*Barrens Kindred Wattle*

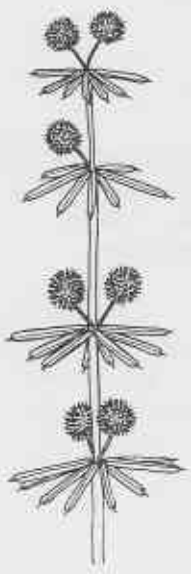
**Distribution and Habitat:** *A. simulans grows in sand in tall open shrubland dominated by Four-Winged Mallee (Eucalyptus tetraptera) and is restricted to the western portion of the Mount Barren ranges.*

**Flowering Period:** *July-September. (The first pods mature at the beginning of December.)*

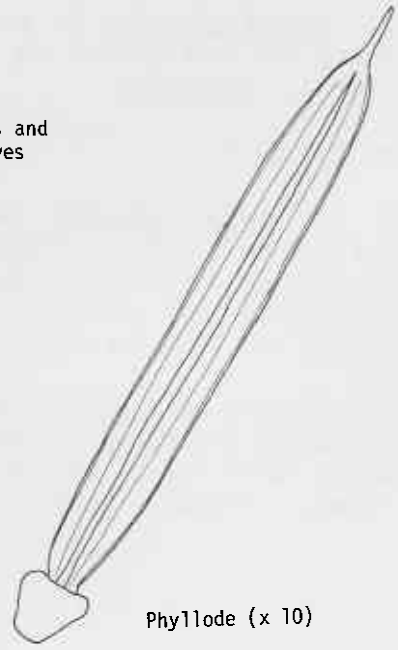
**Distinctive Characteristics:** *It differs from its relative, A. argutifolia (see page 30) by having its phyllodes arranged in whorls of 6-9. A superficially similar species, A. cedroides from the Mount Barren area differs from A. simulans by its thick grey-brown stems with distinct yellowish ribs and by its more dense upright phyllodes.*

**Other Characteristics:** *Open shrub up to 1 m tall, divided at the base into several slender spreading branches. Bark smooth grey on branches, brown on branchlets. Phyllodes rigid, sharply pointed up to 1.2 cm long, usually 4-sided in cross section, widely spreading. Flower heads one or more per leaf whorl, light yellow, more or less spherical, their stalks less than 0.5 cm long, with ca 18 flowers. Pods brown with yellow margins, up to 7 cm long and 0.4 cm wide, with a 0.6 cm long stalk. Seeds dark brown, slightly shiny, ca 0.4 cm long, alligned along the long axis of the pod.*

**References:** *Maslin 1976.*

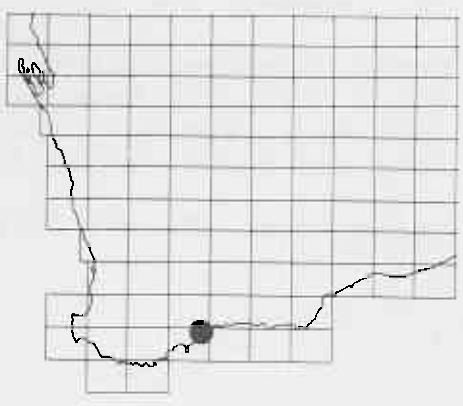


Flower heads and whorled leaves



Phyllode (x 10)

Pod



Acacia simulans

10427—3

## ADENANTHOS (PROTEACEAE)

Shrubs or small trees, some of which are known as woollybushes. They have hairy elongated flowers, each surrounded at the base by a whorl of overlapping bracts. The flowers are solitary or loosely grouped with several others. There are 4 stamens (occasionally 2 are sterile) attached close to the end of the floral tube, which usually separates into 4 short segments each bearing one of the stamens. The long style protrudes through a split running about halfway down one side of the floral tube. The dry, single-seeded fruit (a nut) is elliptical and its base is surrounded by the persistent flower bracts, which dry and spread out before it is shed from the plant.

### ADENANTHOS CUNNINGHAMII *Meisn.*

*Albany Woollybush*

Distribution and Habitat: *A. cunninghamii is restricted to the King George Sound area, growing in low scrub on sandy soil, associated with A. sericea and A. cuneata.*

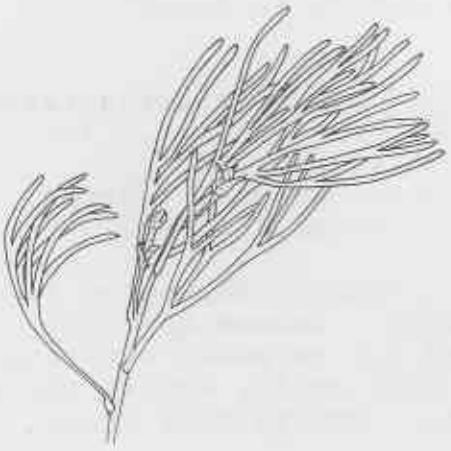
Flowering Period: *September-October.*

Distinctive Characteristics: *A. cunninghamii can be distinguished from other Adenanthos species in the Albany region by its leaves, which are ca 2.5 cm long and deeply divided into 3 parts, each further divided in 2, so that there are generally 6 segments. The segments are soft, hairy and ca 0.8 cm broad.*

Other Characteristics: *Erect, loosely spreading shrub up to 1.5 m tall, the branches initially bearing white hairs. Flowers dull red, terminal or axillary, solitary, their stalks ca 0.5 cm long and floral tubes 3 cm long. Styles 4 cm long.*

References: *Nelson 1978a.*

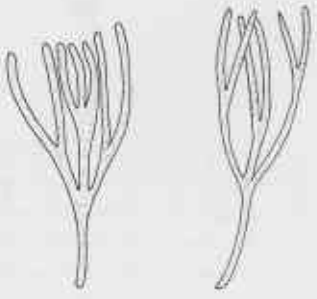
# Adenanthos cunninghamii



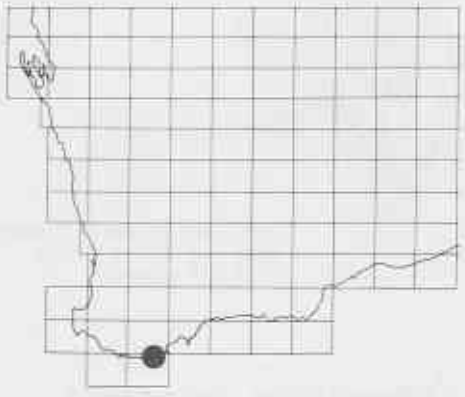
Stem bearing divided leaves, a young flower bud and the bracts of a fallen flower

Leafy stem

Flower bud with looped style



Two divided leaves



ADENANTHOS DETMOLDII *F. Muell.*

*Yellow Jugflower*

**Distribution and Habitat:** *This species is restricted to the Scott River area, occupying damp sandy flats that are waterlogged in winter. It grows with other shrubs, grasses and sedges.*

**Flowering Period:** *All year round, with a peak in August-November.*

**Distinctive Characteristics:** *A. detmoldii can be distinguished by its bright yellow flowers with orange-brown throats. Its closest relatives are apparently the scarlet-flowered A. obovatus, with which it occasionally produces natural hybrids, and A. barbigerus, a species with scarlet-orange flowers.*

**Other Characteristics:** *Erect, loosely spreading shrub, up to 4 m high, the young branches densely hairy. Leaves spirally arranged, elongated, up to 8 cm long and 0.5 cm wide, tapering towards the stem. Flowers solitary in leaf axils, erect, their stalks ca 0.7 cm long. Styles 4 cm long. Fruits pale brown, ca 0.7 cm long.*

**References:** *Keighery 1979; Nelson 1978a.*

Stem bearing hairy flower buds and leaves dotted with oil glands

Flower bud with looped style

Open flower

Adenanthos detmoldii

ADENANTHOS DOBAGII *Nelson*

*Fitzgerald Woollybush*

**Distribution and Habitat:** *This species is apparently confined to the Fitzgerald River National Park where it grows in sandy soil among low scrub.*

**Flowering Period:** *August-November.*

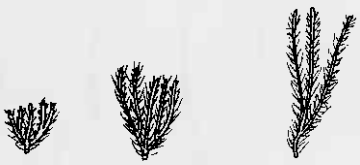
**Distinctive Characteristics:** *Its flowers, with floral tubes ca 1 cm long, are the smallest in the genus. Its consistently hairy leaves distinguish it from its relative, A. apiculatus, whose leaves are mostly hairless.*

**Other Characteristics:** *Open shrub up to 0.5 m tall, the branches always hairy. Leaves aggregated at the end of the branchlets, those surrounding the flowers longest, stalked, usually divided into 5 narrow segments, each segment 0.8 - 2.0 cm long. Flowers cream or pale pink, in groups of about 3, their stalks ca 0.2 cm long. Styles ca 2.5 cm long.*

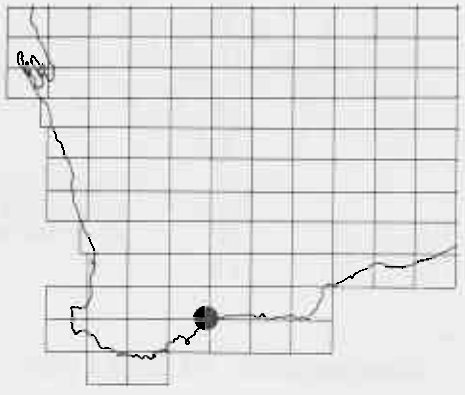
**References:** *Nelson 1978a.*

Branch with clustered leaves

Open flower



Three hairy divided leaves



Adenanthos dobagii

ADENANTHOS ELLIPTICUS *George*

*Oval-leaf Adenanthos*

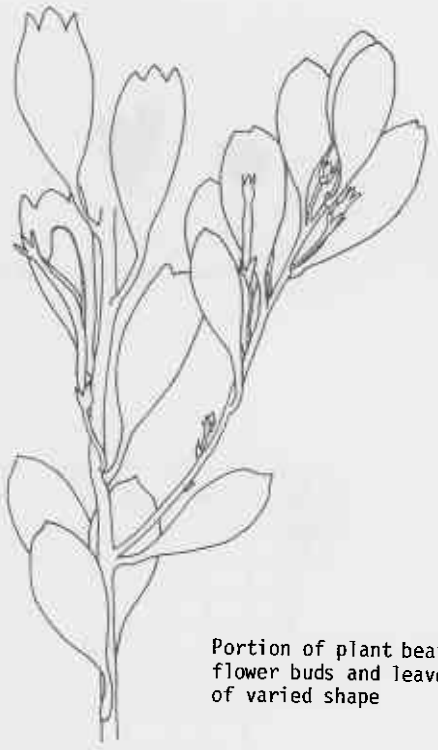
**Distribution and Habitat:** *Confined to the Fitzgerald River National Park, A. ellipticus grows in humus-rich siliceous sand on rocky hillsides among low shrubs.*

**Flowering Period:** *August-January; perhaps all year round since flowering specimens have also been collected in April.*

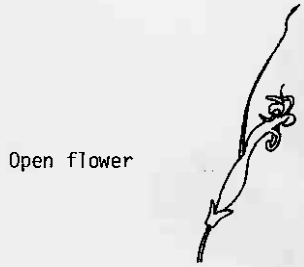
**Distinctive Characteristics:** *A. ellipticus can be distinguished from other Adenanthos species in the Fitzgerald River region by its leaves, which are up to 5 cm long and 1.5 cm wide, entire or with 3 rounded lobes at the tip, stalked, hairy only when young.*

**Other Characteristics:** *Erect, open shrub up to 4 m high. Branchlets hairy; branches with a smooth bark. Flowers orange-red (or pink) and cream, solitary in leaf axils; their stalks ca 0.8 cm long and floral tubes ca 2.5 cm long. Styles ca 3 cm long. Fruits ca 0.5 cm long, sparsely hairy.*

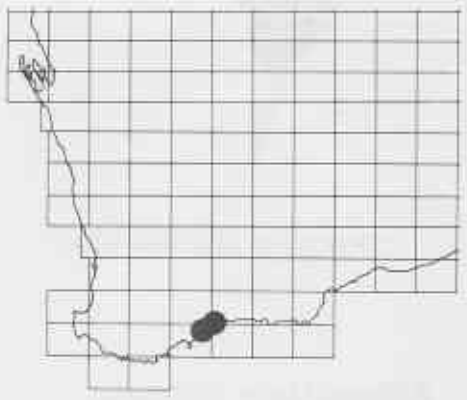
**References:** *George 1974b; Nelson 1978a.*



Portion of plant bearing flower buds and leaves of varied shape



Open flower



Adenanthos ellipticus

ADENANTHOS EYREI *Nelson*

*Toolinna Adenanthos*

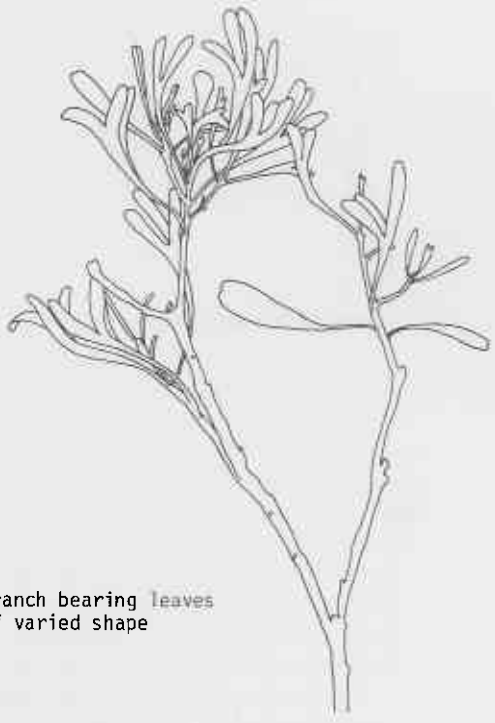
**Distribution and Habitat:** *This species is known only from the Toolinna area on the coast of the Great Australian Bight. It grows in deep siliceous sand dunes on cliffs, in low open scrub with Adenanthos forrestii and Banksia media.*

**Flowering Period:** *October-November.*

**Distinctive Characteristics:** *A. eyrei differs from the 2 other Adenanthos species in the Toolinna area by lacking a lignotuber and by its combination of deep crimson flowers with narrow leaves, which are mostly divided into 3 segments.*

**Other Characteristics:** *Erect open shrub up to 1 m tall. Branchlets hairy; older branches with a very warty bark. Leaves stalked, hairy, up to 1.5 cm long. Flowers solitary in leaf axils or terminal, their stalks ca 0.4 cm long and floral tubes ca 2.5 cm long. Styles ca 3.5 cm long.*

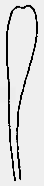
**References:** *Nelson 1978a.*



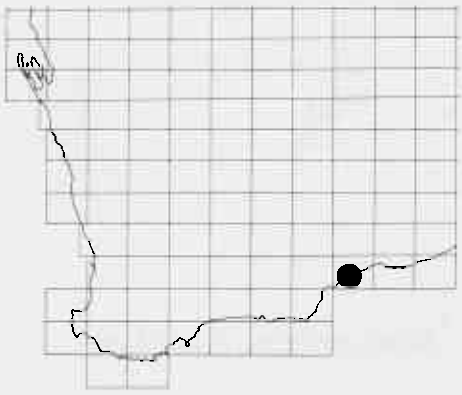
Branch bearing leaves of varied shape

Flower bud with looped style

Divided leaf



Lobed leaf



Adenanthos eyrei

ADENANTHOS ILETICOS *Nelson*

*Club-leaf Adenanthos*

**Distribution and Habitat:** *A. ileticos grows in sandy soil in tall open mallee shrubland, associated with Hakea multilineata. It occurs north of Esperance.*

**Flowering Period:** *August-October.*

**Distinctive Characteristics:** *Its leaves are up to 1 cm long, ca 0.5 cm wide, stalked, with 3 lobes at the end. They distinguish it from A. cuneatus and A. gracilipes, the only other Adenanthos species that possibly overlap its geographical range.*

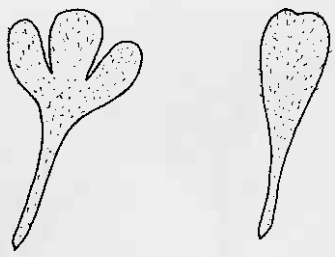
**Other Characteristics:** *Erect open shrub up to 2 m or more, with a lignotuber and hairy branchlets. Flowers pale pink-red and cream, solitary, terminal, very shortly stalked, their floral tubes ca 2.5 cm long. Style ca 3.2 cm long. Fruits ca 0.3 cm long, slightly hairy.*

**References:** *Nelson 1978a.*

Branch bearing divided leaves and a flower bud

Divided leaf

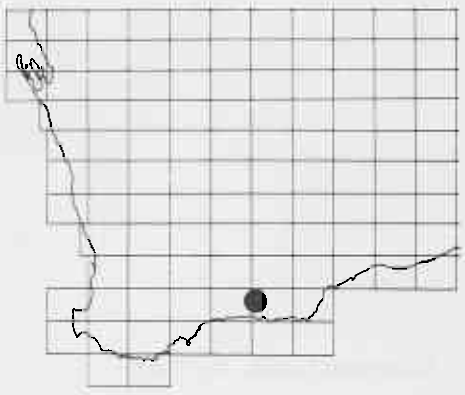
Lobed leaf



Leaves with short hairs (x 3)

Flower bud with looped style

Open flower



Adenanthos ileticos

ADENANTHOS PUNGENS *Meisn.*

*Spiky Adenanthos*

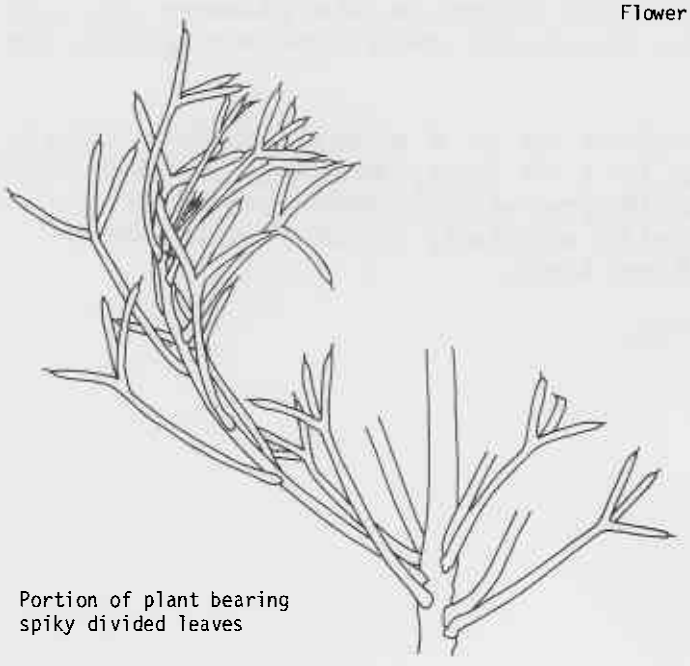
**Distribution and Habitat:** *This species ranges from the Tambellup area to the western end of the Stirling Range growing either in deep siliceous sand in Melaleuca scrub (ssp. effusa) or on hillsides in rocky soils among tall Banksia-Melaleuca scrub (ssp. pungens).*

**Flowering Period:** *August-November.*

**Distinctive Characteristics:** *Its leaves are up to 3 cm long, rigid, sharply pointed, usually divided into 3 segments, sometimes undivided.*

**Other Characteristics:** *Erect and up to 3 m tall (ssp. pungens) or prostrate (ssp. effusus) shrubs, with hairy branchlets. Flowers pale pink to bright red-pink, aggregated at tips of branchlets, their stalks 0.4 cm long and floral tubes ca 3 cm long. Styles ca 4 cm long. Fruits ca 0.5 cm long.*

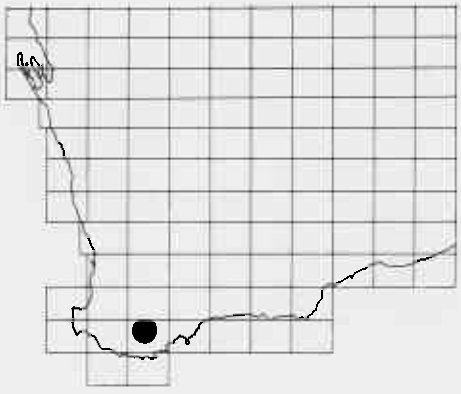
**References:** *Nelson 1978a.*



Portion of plant bearing spiky divided leaves

Flower bud with looped style

Open flower



Adenanthos pungens

ADENANTHOS VELUTINUS *Meisn.*

*Velvet Woollybush*

Distribution and Habitat: *Restricted to the Cranbrook area, A. velutinus grows in scant peaty soil among rocks on hill slopes, often dominant in dense scrub.*

Flowering Period: *July-September.*

Distinctive Characteristics: *In living plants the young stems are bright red clothed with dense whitish hairs, which also clothe the leaves. It has glandular hairs on the flowers whereas other Adenanthos species in the Cranbrook area have non-glandular hairs.*

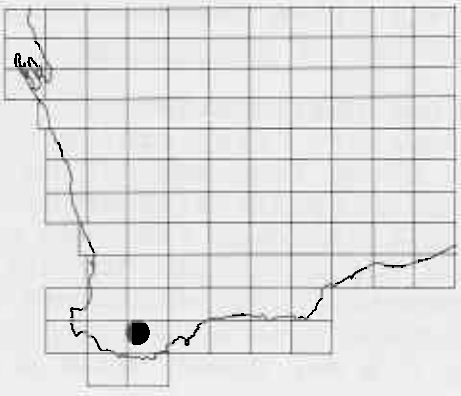
Other Characteristics: *Erect shrub up to 3 m tall, with a single main stem. Leaves stalked, up to 2 cm long, usually divided into 3-6 segments. Flowers cream with grey-black upper portions, terminal in groups of 3-5, shortly stalked, their floral tubes ca 2.5 cm long. Styles ca 3.5 cm long.*

References: *Nelson 1978a, 1978b.*

# Adenanthos velutinus

Branch bearing clusters of leaves, flower buds and open flowers

Hairy divided leaf



## APONOGETON (APONOGETONACEAE)

Perennial aquatic herbs of freshwater pools or streams. Australian species have a tuber (swollen storage organ) rooted in the soil. All the leaves and flowering stalks arise from the summit of the tuber, that is at ground level. The leaves have parallel veins.

### APONOGETON HEXATEPALUS *van Bruggen*

*Stalked Water-Ribbons*

**Distribution and Habitat:** *This species occupies small temporary ponds, 30-50 cm deep, which contain water during only 3-4 months a year. The tubers are rooted in loamy soil. A. hexatepalus grows with an aquatic Triglochin species and Swamp Lily (Ottelia ovalifolia). Its range is the coastal plain between Mandurah and Augusta.*

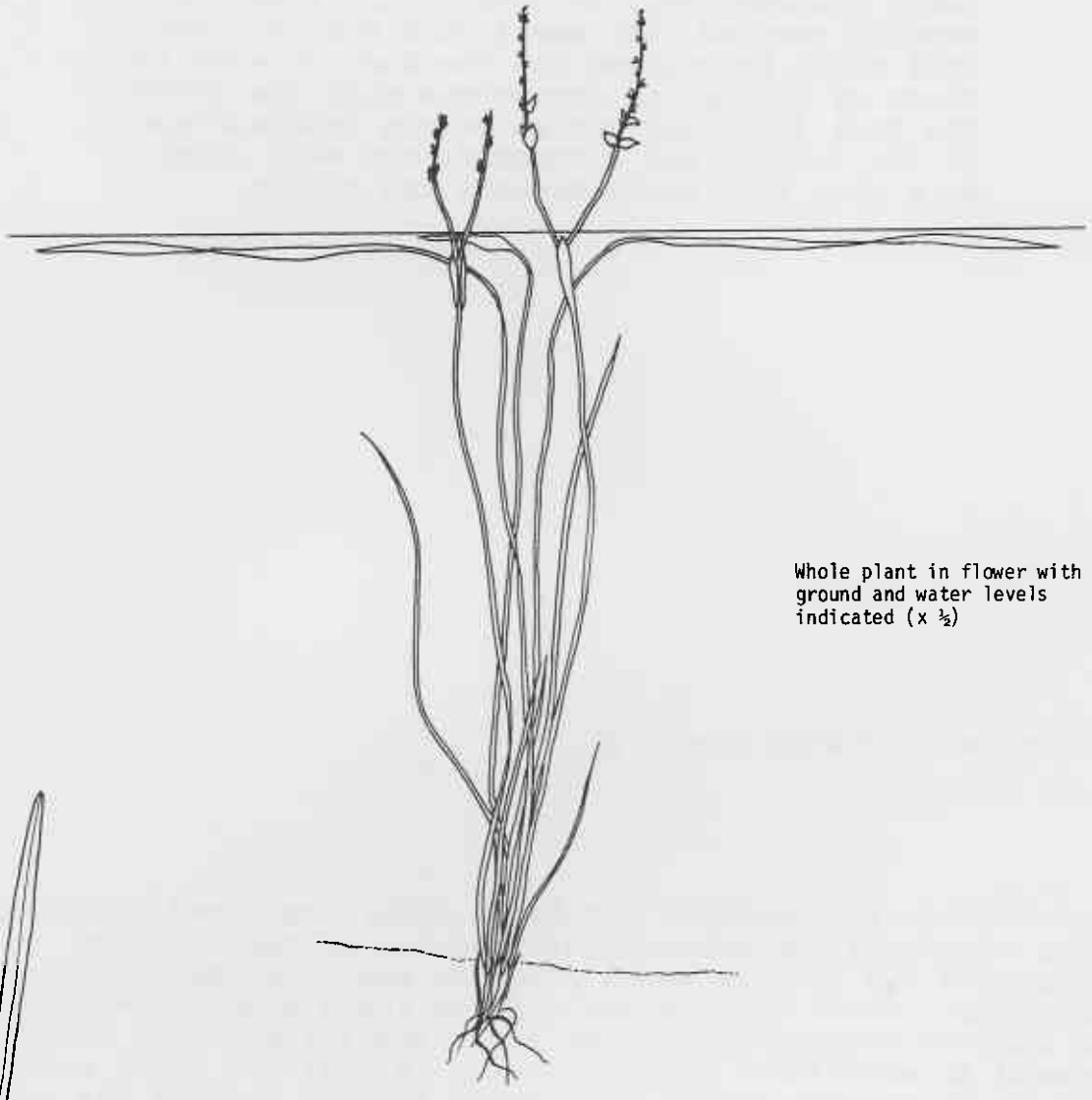
**Flowering Period:** *August-September.*

**Distinctive Characteristics:** *It is the only Western Australian species of Aponogeton.*

**Other Characteristics:** *Tuber brown, up to 5 cm long and 1 cm diameter. Leaf stalks 15-40 cm long. Leaf blades floating, up to 20 cm long and 0.6 cm wide, with 5-9 faint parallel main veins. Flower stalks slender with a bract 20-40 cm up, above which the stalk branches into two and protrudes above the water surface. The two main branches are up to 17 cm long, sometimes further branched, and bear loose groups of tiny green stalkless flowers. Flowers have 6 perianth parts and 6 stamens. Fruits ca 1 cm by 0.5 cm, green, with a terminal beak.*

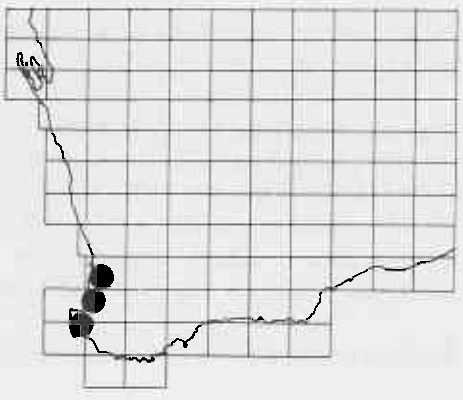
**References:** *Aston 1973; van Bruggen 1969.*

# Aponogeton hexatepalus



Whole plant in flower with ground and water levels indicated (x ½)

Leaf blade



## ASPLENIUM (ASPLENIACEAE)

These ferns are commonly known as spleenworts. Their rhizome (swollen underground stem) is usually covered with small dark scales. The leaf stalk is grooved and the base of each leaf blade or leaflet is continuous with the groove. The sori (fruiting bodies on the undersurface of the leaves) are elongated, and each covered by a skin that opens towards the midrib.

### ASPLENIUM OBTUSATUM *Forst. f.*

*Shore Spleenwort*

**Distribution and Habitat:** *It has a wide, scattered distribution along temperate and sub-antarctic coasts of the Southern Hemisphere but is only known from two small islands in Western Australia. These islands are off the south coast near Albany and Walpole respectively. The fern inhabits maritime cliffs exposed to salt-laden winds, growing in shallow, peaty soil pockets in granite-gneiss rock about 100-200 m above the sea.*

**Fruiting Period:** *Fruiting material has been collected in May and about February and can probably be found all year round.*

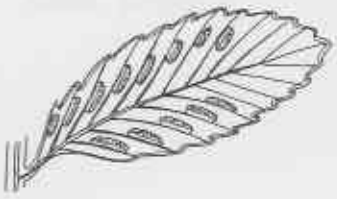
**Distinctive Characteristics:** *This is the only Western Australian Asplenium species.*

**Other Characteristics:** *Rhizome shortly creeping, thick, covered with purplish-brown scales. Leaves stout, erect, rigid, once divided, up to 40 cm high, with green stalks. Leaflets, shiny, dark green, stalked, thick, up to 4.5 cm long, with notched margins. Sori equal in size and parallel on each side of midrib; each sorus oblong, not reaching the margins of leaflets.*

**References:** *Jones & Clemesha 1976; Smith 1979.*

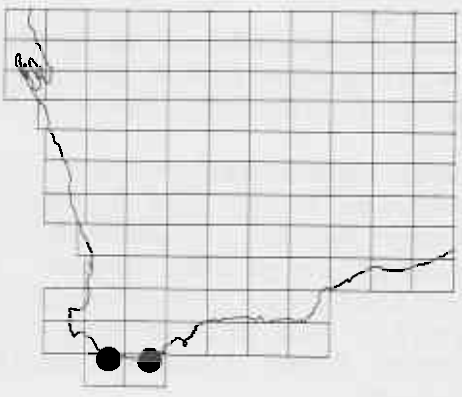
# Asplenium obtusatum

End of divided leaf
from top view



Underside of leaflet
bearing sori

Sorus adjacent
to vein (x 2)



# BANKSIA (PROTEACEAE)

This well-known genus of trees and shrubs is characterized by large woody cones. These cones initially bear masses of elongated stalkless flowers, which frequently change colour as they open. The four perianth segments of the flower each have a hollow near the tip containing a single stamen. The long styles are rarely enlarged at the tip. Later the cones bear scattered large woody fruits (follicles) which open in two valves - each containing a large, flat, winged seed.

## BANKSIA BROWNII *Baxter ex R.Br.*

*Feather-leaf Banksia*

**Distribution and Habitat:** *This occurs in the Stirling Range and the Albany area, growing on rocky slopes or fine sandy soils which remain wet in winter.*

**Flowering Period:** *April-July.*

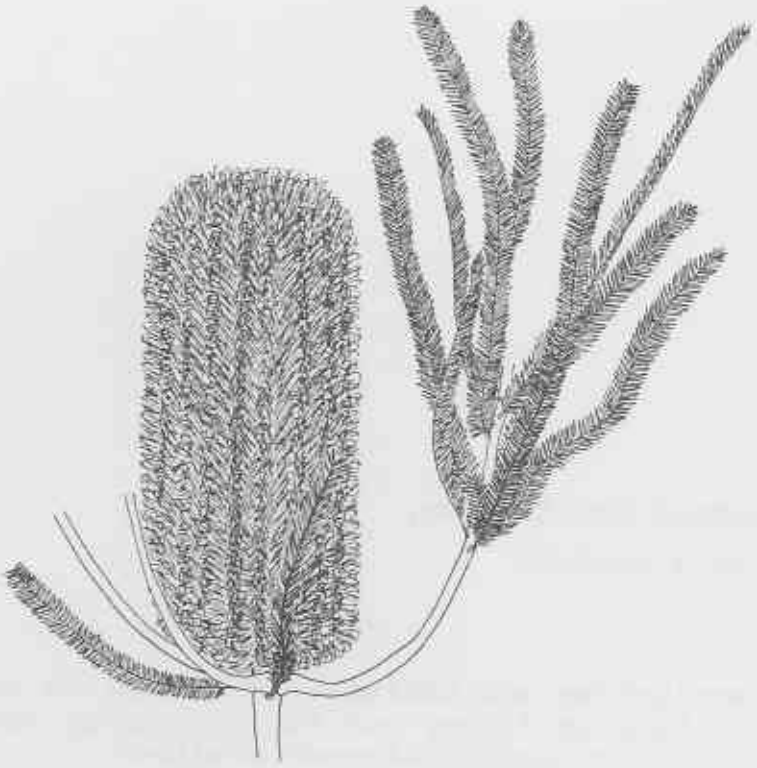
**Distinctive Characteristics:** *The soft, feathery leaves are bright green above and white below, up to 12 cm long and 0.8 cm wide, divided to the midrib, each division being ca 0.1 cm wide.*

**Other Characteristics:** *An erect shrub up to 6 m high with smooth brownish bark, the branches usually radiating from below the flower heads. Flower heads 10-20 cm long, up to 9 cm across, reddish to golden brown. The paired flowers are arranged in vertical rows, opening from the top downwards. Styles hooked, usually red with cream tips. Fruiting cones elongated, with narrow furry fruits almost hidden among the persistent dead flowers.*

**References:** *Holliday & Watton 1975.*

# Banksia brownii

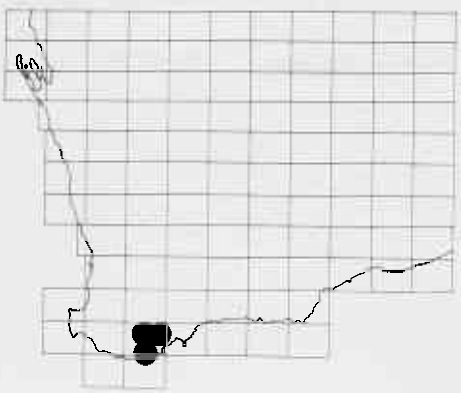
Divided leaf



Flower head and some of the surrounding branches and leaves (x ½)

Front view of follicle

Side view of follicle



Style

10427—4

BANKSIA GOODII *R.Br.*

*Good's Banksia*

**Distribution and Habitat:** *This banksia is limited to a small area between Albany and the Porongurup Range. It grows in sandy soil in low Banksia-Jarrah woodland.*

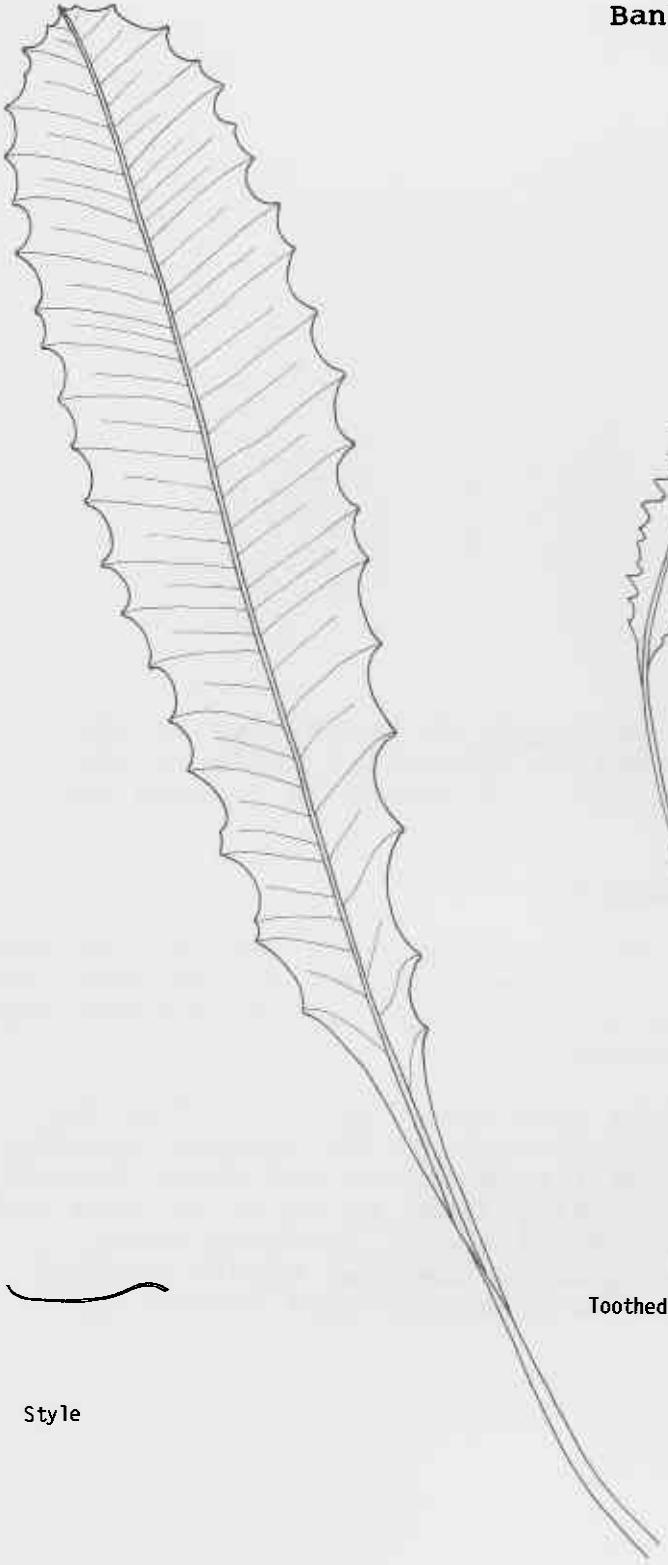
**Flowering Period:** *November-December.*

**Distinctive Characteristics:** *It is distinguished by its prostrate habit, its shortly and irregularly toothed leaves, which are borne closely surrounding the flower cones, and by the large woolly bracts around the base of the inflorescence.*

**Other Characteristics:** *Spreading hairy branches, either below or just above the ground, bearing erect leaves and cones. Young growth is greyish, softly hairy. Mature leaves green with prominent yellow midrib, up to 45 cm long, tapering to a very long thin stalk which is curved and attached to the underside of the branches. Flower cones up to 20 cm long, more or less cylindrical. Flower buds bronze-coloured, furry. The yellow styles curve upwards. Fruiting cones have scattered prominent furry brown fruits among the persistent dead flowers.*

**References:** *Holliday & Watton 1975.*

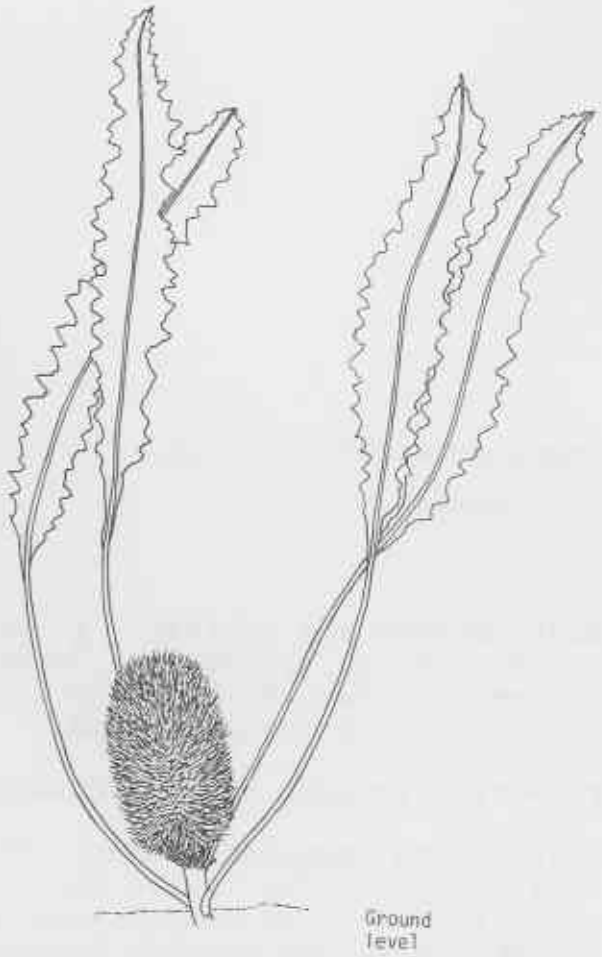
# Banksia goodii



Toothed leaf blade

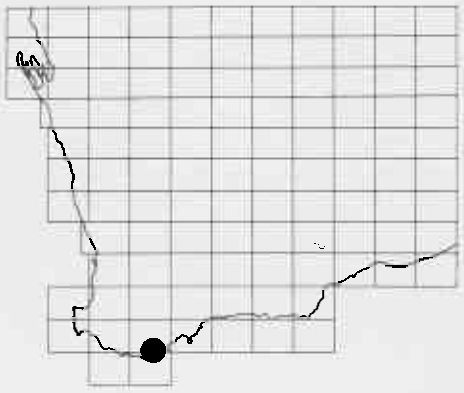


Style




Flower head and the surrounding leaves (x 1/3)

Winged seed



BANKSIA TRICUSPIS *Meisn.*

*Pine Banksia*

Distribution and Habitat: *B. tricuspis is restricted to the Gairdner Range, growing in lateritic (gravelly) soils on the slopes and near the bases of hills. It occurs in a dense low scrub or in an open woodland.*

Flowering Period: *March-September.*

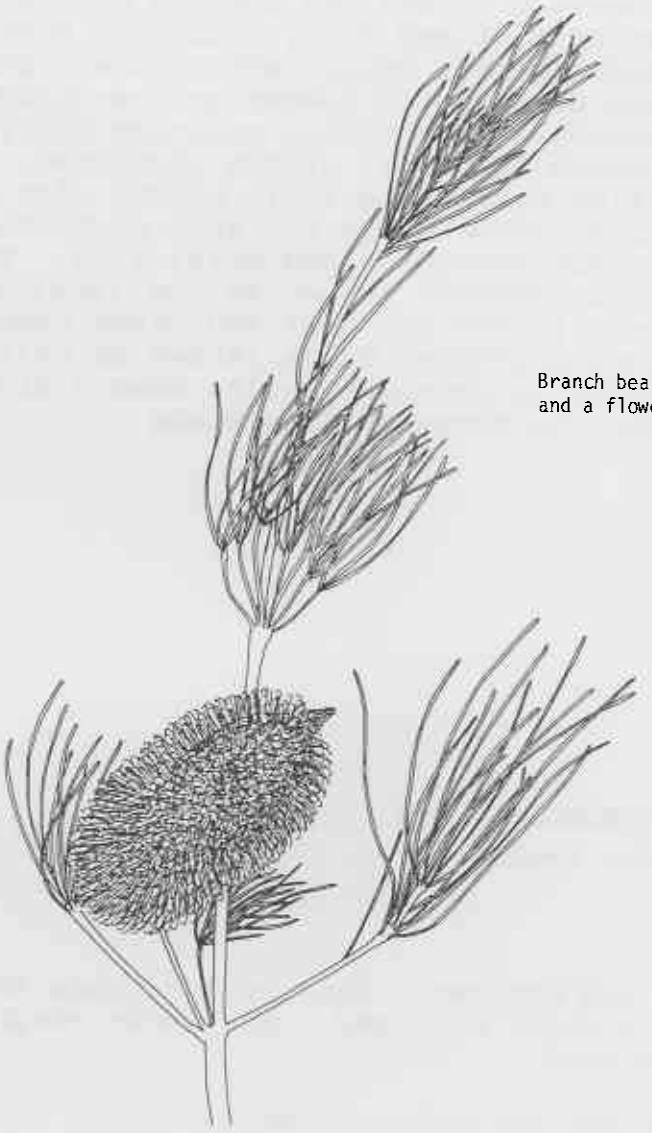
Distinctive Characteristics: *This species has a distinctive pine-like foliage. The leaves are 10-15 cm long, 0.1-0.2 cm wide, the edges rolled in to almost meet at the midrib and the notched tips of the leaves are roughly 3-pointed.*

Other Characteristics: *A fairly open shrub up to 4 m high but usually less with smooth grey-brown bark on the younger branches. Leaves scattered and crowded, dull green above and white beneath. Flowering cones cylindrical, bright yellow, up to 20 cm long and 10 cm diameter. Styles permanently hooked. Fruiting cones rapidly shed the dead flowers exposing numerous smooth crowded fruits, which are initially bright green but soon become light grey.*

References: *Holliday & Watton 1975.*

# Banksia tricuspis

Leaf

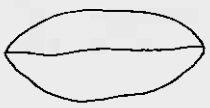


Branch bearing narrow leaves and a flowering cone

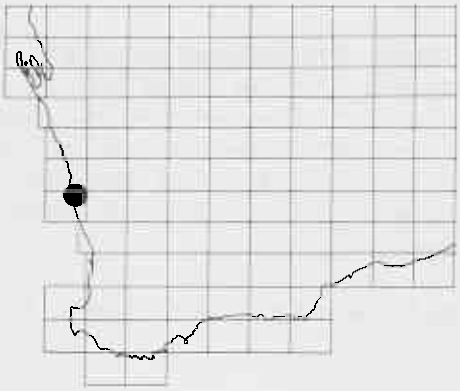
Tip of leaf (x 5)

Style

Side view of follicle



Front view of follicle



## CALADENIA (ORCHIDACEAE)

This genus includes the species popularly known as spider orchids and fairy orchids. They are perennial herbs, dying back to their underground storage organs each summer and re-sprouting in the autumn. They have a solitary hairy basal leaf which is almost always elongated. The flowering stalks and their bracts also tend to be hairy. Five of the perianth segments of the flower are spreading and petal-like. The remaining segment (known as the labellum) is smaller, folded and bent and bears rows of distinct glandular hairs (known as calli). The dry fruit (a capsule) splits down 3 sides to release the numerous tiny seeds.

### CALADENIA LAVANDULACEA *R.S. Rogers*
*Lavender Spider Orchid*

Distribution and Habitat: *This orchid grows in sandy loam, generally in a Marri woodland. Its known range is from Harrismith to York.*

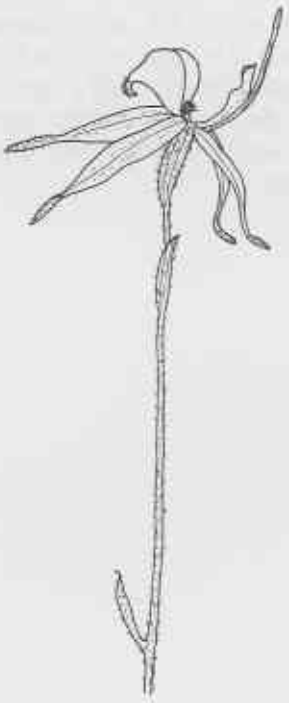
Flowering Period: *September-October.*

Distinctive Characteristics: *C. lavandulacea has lavender flowers with dark purple clubbed (broadened in the centre) extensions on the perianth segments and smooth margins on its labellum (the structure opposite the column).*

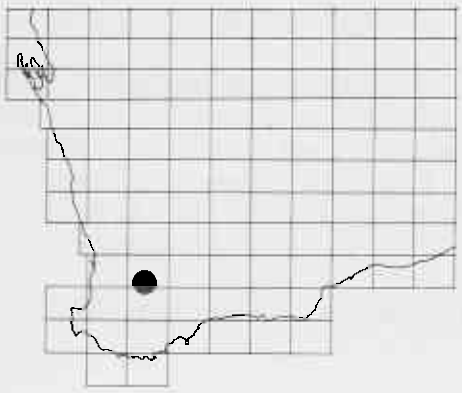
Other Characteristics: *A slender herb up to ca 25 cm, with a narrow hairy leaf ca 10 cm long. Stem hairy, reddish with a single slender bract above the middle. Flowers solitary, ca 5 cm in diameter, with conspicuous radiating dark lavender veins. Labellum mobile on a very slender claw with a dark purple tip and dark purple calli. Calli stalked, compactly crowded.*

References: *Erickson 1965; Rogers 1927.*

# Caladenia lavandulacea



Top portion of flowering stalk
with its solitary flower



# CASUARINA (CASUARINACEAE)

These shrubs or trees have a pine-like appearance and are known as sheoaks. The true leaves occur in whorls and are reduced to barely visible teeth while the green branchlets, which appear segmented by the leaf nodes, have taken over the normal functions of leaves. Sheoaks are wind pollinated and have very reduced unisexual flowers in red or brown hues. Male flowers, each with a solitary stamen, occur in a number of whorls enclosed in bracts. Female flowers occur in spherical or more elongated heads, their styles branched, protruding and usually red. The heads develop into woody fruiting cones and pairs of woody valves open to release solitary winged seeds.

## CASUARINA FIBROSA *C.A. Gardner*

*Woolly Sheoak*

Distribution and Habitat: *This sheoak grows in sand over laterite in a tall open heath and is confined to the Tammin-Yoting area.*

Flowering Period: *September-November.*

Distinctive Characteristics: *C. fibrosa can be identified by its very hairy cones - the numerous long coarse hairs partly hiding the woody valves.*

Other Characteristics: *A dense erect shrub up to 15 m high with a lignotuber. Branchlets up to 5 cm long, with 2-4 segments and sharply pointed tips. Leaf teeth 4, united at the base to form a sheath. Cones brown, borne directly on the older wood, up to 2.5 cm long and roughly spherical. Seeds glabrous, reddish-brown with a broad, pointed wing.*

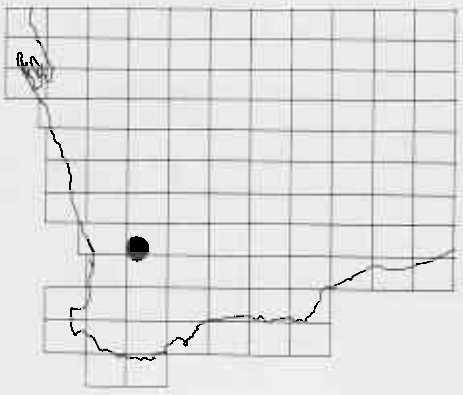
References: *Gardner 1927; Lucas & Synge 1978.*

# Casuarina fibrosa

Branch bearing male flowers
and leaf-like branchlets

Portion of female plant
bearing a hairy fruiting cone

Branchlet



Winged seed

## CONOSTYLIS (HAEMODORACEAE)

Perennial herbs. Their elongated sheathing leaves have parallel veins and are borne at or near ground level. The flower clusters may be borne near the ground among the leaves or on projecting stalks. The hairy, usually yellow flowers have a perianth tube which is deeply divided at the top into 6 equal segments. The 6 stamens are attached to the perianth tube. The dry fruits release the seeds through 3 splits.

### CONOSTYLIS MISERA *Endl.*

*Grass Conostylis*

Distribution and Habitat: *C. misera grows in winter wet depressions, generally in open woodlands. It occurs in the area surrounding the Porongurups and Stirling Range.*

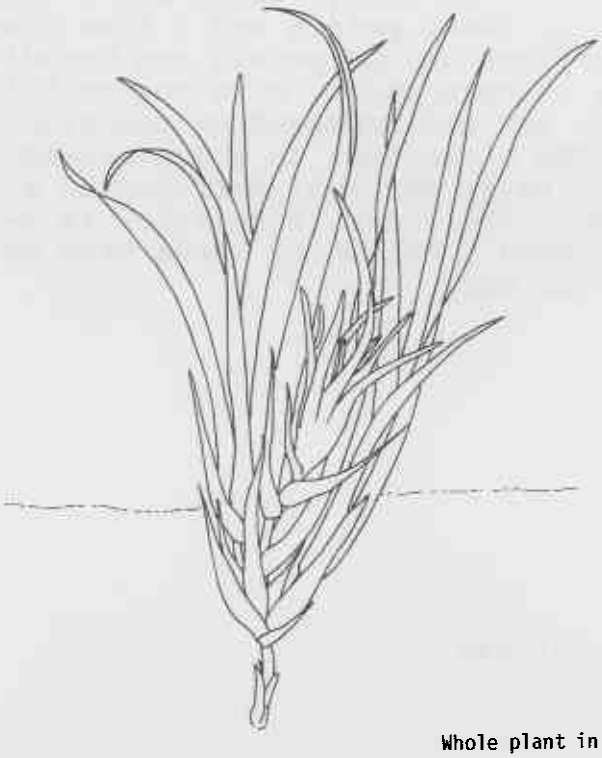
Flowering Period: *October-December.*

Distinctive Characteristics: *Leaves are up to 14 cm long and 0.5 cm wide, with tiny scattered hairs along the margins. The flowers are borne close to the ground, surrounded by the much taller leaves, and are usually solitary.*

Other Characteristics: *The leaves are crowded on short stems, finely lined. Flowering stems short, bearing brown pointed bracts. Flowers yellow, ca 2 cm long and 1 cm wide, shortly stalked. Perianth lobes longer than the fused section of the tube.*

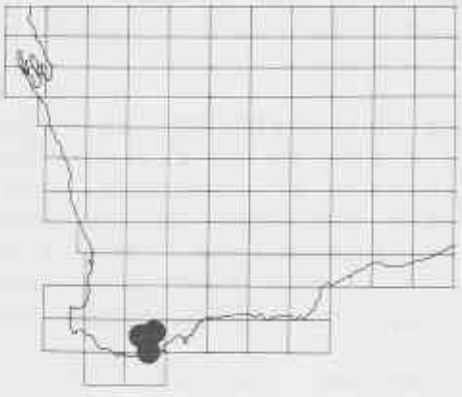
References: *Green 1960.*

# Conostylis misera




Whole plant in flower

Flower



## COOPERNOOKIA (GOODENIACEAE)

These are small perennial shrubs with more or less woody stems. The stems and leaves bear star-shaped hairs. The lower part of the flower consists of a somewhat bulbous tube enclosing the ovary. Above the ovary, there are 5 free sepals, 5 partly fused petals and 5 free stamens. The 5 free portions of the petals are broadly winged, hairy on both sides, with hooked hairs on the inside, and all arranged on one side of the flower. The style ends in a cup-shaped structure with hairy margins, surrounding a 2-lobed stigma. The fruit (a capsule) is 2-valved, few seeded. The shiny seeds have an appendage at one end.

### COOPERNOOKIA GEORGEI *Carolin*

*Mauve Coopernookia*

Distribution and Habitat: *Restricted to the Mount Barren ranges, occurring along creek beds in sheltered rocky gullies on hillsides.*

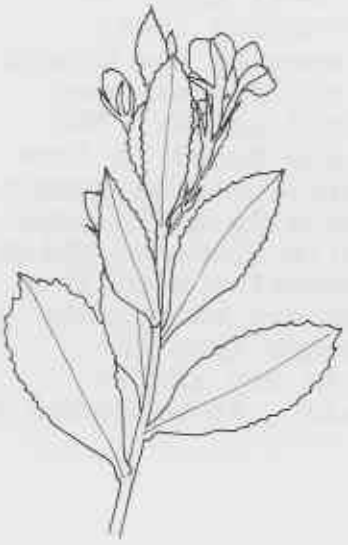
Flowering Period: *July; October-November.*

Distinctive Characteristics: *This species has the largest flowers in the genus, the petals being up to 2 cm long. Its flower colouration (mauve with a white throat) is also distinctive.*

Other Characteristics: *Slender erect shrub up to 1.5 cm tall, with stems up to 0.5 cm diameter. Leaves more or less stalkless, elliptical or narrower, 2-5 cm long, the margins toothed. Flowers solitary in the leaf axils, grouped towards the ends of the branchlets. The 2 outer petal lobes split off lower down than the central 3 lobes. Capsule oblong, ca 1 cm long with smooth yellow-brown seeds.*

References: *Carolin 1967.*

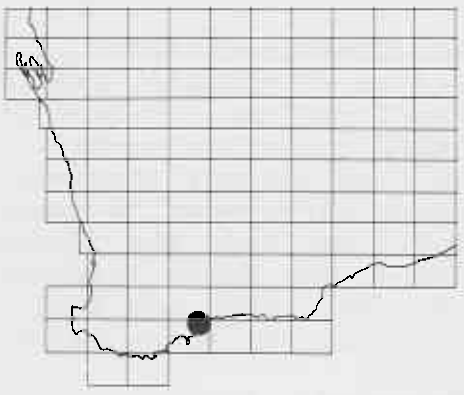
# Coopernookia georgei



Stem bearing toothed leaves,
flower buds and an open flower

Open flower

Petals spread out



## DARWINIA (MYRTACEAE)

Shrubs whose leaves produce a scent like eucalyptus oil when cut. Many species are known as bells owing to the bell shape of the conspicuous bracts surrounding their flower clusters. In other species the bracts are smaller or lacking and the flowers are sometimes solitary in the leaf axils. The sepals, petals and stamens are fused to form a floral tube above the ovary. At the summit of the tube there arise 5 usually small sepal lobes, 5 petals and 10 fertile stamens, which are arranged in a ring alternating with 10 sterile stamens. The styles are hairy near the tip and usually much longer than the petals. The fruit (a nut) is dry and is topped by the withered petals. It contains a single soft white seed.

### DARWINIA ACEROSA *W.V. Fitzg.*

*Fine-leaved Darwinia*

Distribution and Habitat: *This darwinia is restricted to the Mogumber area, growing in rocky soil on granite outcrops.*

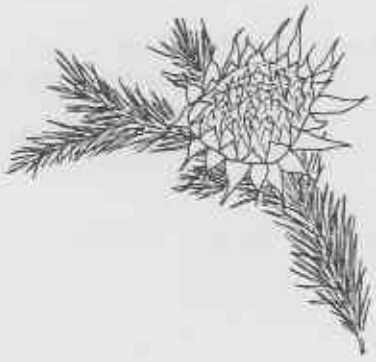
Flowering Period: *September-November.*

Distinctive Characteristics: *This species shows similarities with D. masonii, D. purpurea and several undescribed species. Its very fine foliage, small red styles (less than 0.5 cm long) and its pointed green involucral bracts with purplish-red margins help to distinguish it.*

Other Characteristics: *A densely branched, very spreading shrub up to ca 40 cm tall, with whitish branchlets. Leaves crowded, up to 1 cm long but less than 0.1 cm wide, the tips finely pointed and often hooked. Flower heads drooping, hemispherical, ca 1.5 cm across, terminating short branchlets, containing 40-50 flowers surrounded by numerous spreading bracts. Bracts longer (ca 1.2 cm) than the flowers but not hiding them, with distinct midribs, the outer leaf-like bracts grading into inner bracts with broad bases and long narrow points. Petals yellowish-green. Styles hairy below the stigma.*

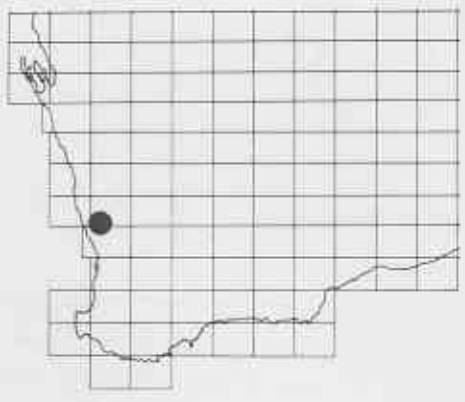
References: *Fitzgerald 1904.*

# Darwinia acerosa



Branch densely covered by leaves, bearing a flower head

Old Style (x 5)



DARWINIA CARNEA *C.A. Gardner*

*Mogumber Bell*

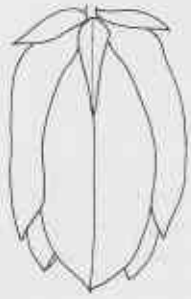
**Distribution and Habitat:** *The Mogumber Bell has been recorded from lateritic hills near Narrogin and Mogumber, growing in stony soil among dense scrub.*

**Flowering Period:** *October-December.*

**Distinctive Characteristics:** *D. carnea can be distinguished by its leaves, which are opposite and decussate, folded, up to 1.5 cm long and 0.4 cm wide when flattened, with an acute point. Its predominantly flesh-coloured bells are also distinctive.*

**Other Characteristics:** *Erect open shrub up to 4 m high. Flower clusters terminal, drooping, with ca 10-14 flowers surrounded by large multicoloured bracts, which are up to 3 cm long. Styles 1.5-2 cm long, hairy below the stigma, not protruding beyond the surrounding bracts.*

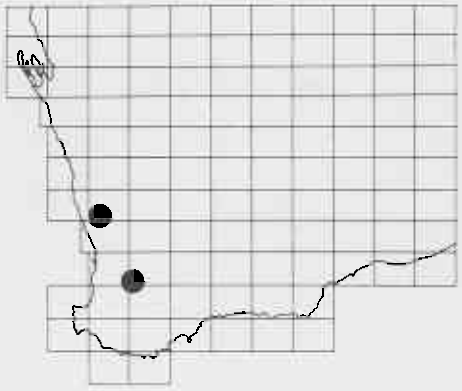
**References:** *Erickson et al 1979; Gardner 1928, 1972.*



Natural flower head

Pressed drooping flower head with two styles visible

Opposite and decussate leaves



Darwinia carnea

DARWINIA COLLINA *C.A. Gardner*

*Yellow Mountain Bell*

**Distribution and Habitat:** *This mountain bell is restricted to the upper slopes of mountains at the eastern end of the Stirling Range. It grows in low dense scrub on rocky soil.*

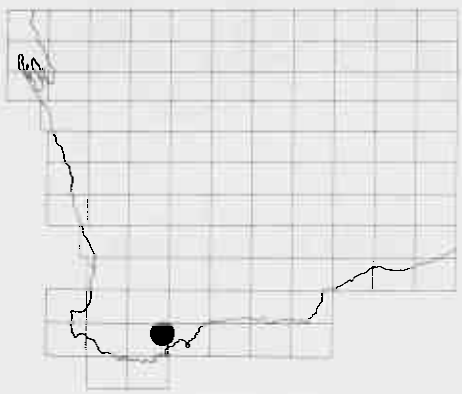
**Flowering Period:** *March-April, August-November.*

**Distinctive Characteristics:** *D. collina is the only species with yellow coloured bells.*

**Other Characteristics:** *Bushy, erect shrub up to ca 1 m tall, Leaves crowded, quite flat, up to 1 cm long and 0.5 cm wide, yellowish green, the margins minutely toothed and narrowly membranous. Flower clusters terminal, drooping with numerous flowers surrounded by broad bracts, which have blunt tips and range up to 2 cm long. Petals white. Styles ca 2 cm long, hairy below the stigma, not protruding beyond the surrounding bracts.*

**References:** *Gardner 1923, 1973; Morcombe 1968.*

Drooping flower head
and crowded leaves



Darwinia collina

10427—5

DARWINIA MACROSTEGIA *(Turcz.) Benth.*

*Mondurup Bell*

**Distribution and Habitat:** *This mountain bell occupies hillsides and valleys in the western part of the Stirling Range. It occurs in peaty sand among rocks, associated with mallees or Dryandra.*

**Flowering Period:** *March-May, August-November.*

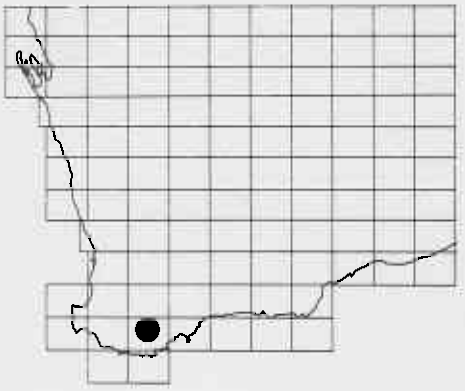
**Distinctive Characteristics:** *Its bells are distinctly coloured and the largest of the Darwinia bells, with bracts ranging up to 4 cm long. The bracts are cream streaked with red.*

**Other Characteristics:** *Erect, usually spindly shrub up to ca 2 m tall. Leaves scattered, up to 2 cm long and ca 0.5 cm wide, with smooth, curled under margins. Flower clusters terminal, drooping, with numerous flowers. Petals white. Styles 3-4 cm long, hairy below the stigma, not protruding beyond the surrounding bracts.*

**References:** *Bentham 1867; Morcombe 1968.*

Natural drooping flower head

Pressed leaves and flower head with two styles visible



Darwinia macrostegia

DARWINIA MASONII *C.A. Gardner*

*Mason's Darwinia*

**Distribution and Habitat:** *Restricted to the Ningham area where it grows in stony soil upon lateritic hills.*

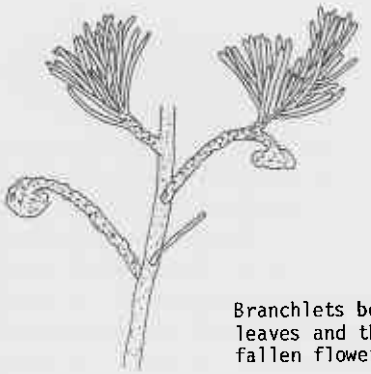
**Flowering Period:** *July-November.*

**Distinctive Characteristics:** *Its distinctive reddish bracts are up to 2 cm long and 0.5 cm wide, broad at the base, narrow and pointed at the top, with distinct midribs. It resembles D. acerosa* *(see p.62 ).*

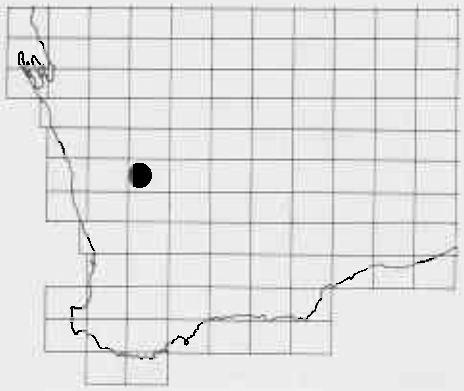
**Other Characteristics:** *Erect shrub 1.5 - 3 m tall. Leaves ca 1 cm long, narrow, almost triangular in cross section, densely crowded towards the end of the branchlets. Flower heads drooping, terminating short branchlets, ca 3 cm across; with numerous spreading bracts surrounding, but not hiding, the numerous flowers. Floral tubes ca 0.5 cm long, the sepal lobes minute. Styles ca 1.5 cm long, hairy below the stigma.*

**References:** *Gardner 1964.*

Pressed flower heads, with styles protruding, and crowded leaves



Branchlets bearing clusters of leaves and the bases of fallen flower/fruit heads



Darwinia masonii

DARWINIA MEEBOLDII *C.A. Gardner*

*Cranbrook Bell*

**Distribution and Habitat:** *Restricted to rocky hillsides in the western end of the Stirling Range and in adjacent hills which stretch towards Cranbrook. It grows among thick scrub.*

**Flowering Period:** *September-November.*

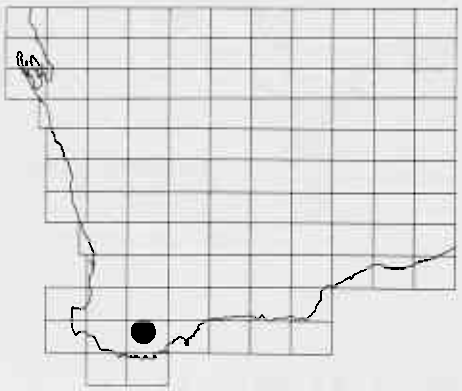
**Distinctive Characteristics:** *This has distinctive bells. The tips of the larger bracts are bright red, pointed and curved up, while the remainder of these bracts is white with some green.*

**Other Characteristics:** *An erect, open shrub up to 2 m high. Leaves crowded, narrow, up to 0.8 cm long and 0.2 cm wide. Flower clusters terminal, drooping, usually with less than 10 flowers; the large bracts up to 3 cm long; the smaller bracts green, grading into the leaves. Styles ca 2.5 cm long, hairy below the stigma, not protruding beyond the surrounding bracts.*

**References:** *Erickson et al 1979; Gardner 1973; Morcombe 1968.*

Pressed stem bearing crowded leaves and a flower head with several styles visible

Natural drooping flower head



Darwinia meeboldii

DARWINIA SQUARROSA *(Turcz.) Domin*

*Fringed Mountain Bell*

**Distribution and Habitat:** *This mountain bell is restricted to the eastern end of the Stirling Range. It grows in peaty soil among rocks on mountain slopes.*

**Flowering Period:** *September-November.*

**Distinctive Characteristics:** *It has distinctly hairy margins on its leaves and bracts.*

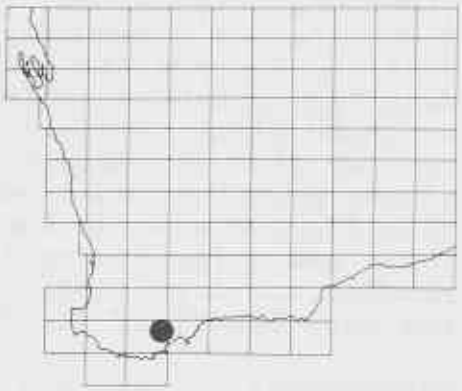
**Other Characteristics:** *An erect much branched shrub up to 1 m tall. Leaves broad, up to 1 cm long, fairly crowded. Flower clusters terminal, drooping, usually with less than 10 flowers, surrounded by bright pink-red bracts, which are up to 2 cm long. Styles ca 2 cm long, hairy below the stigma, not protruding beyond the bracts.*

**References:** *Erickson et al 1979; Gardner 1973.*

Natural drooping flower head with hairy-margined bracts

Hairy underside of leaf (x 2)

Pressed specimen bearing an immature flower head and a mature head with styles visible



Darwinia squarrosa

## DODONAEA (SAPINDACEAE)

Often known as hop bushes, these shrubs usually have unisexual flowers on separate male and female plants. Their leaves are often shiny and sticky. The tiny flowers have 3-5 sepals which are often deciduous, no petals and 6-10 (usually 8) stamens. The fruits are membraneous capsules, larger and more conspicuous than the flowers, with 3-4 (rarely more) lobes, each usually extended into a thin wing or horn.

### DODONAEA HACKETTIANA *W.V. Fitzg.*

*Perth Hop Bush*

**Distribution and Habitat:** *This hop bush grows near the edges of rivers and lakes in Perth and southward towards Kwinana-Medina. It grows in sand, sometimes near limestone.*

**Flowering Period:** *July-October.*

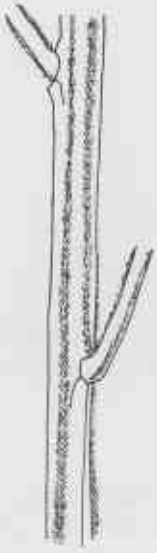
**Distinctive Characteristics:** *It has large wings on its fruits and is readily identified by the lines of white or brown hairs on its branches.*

**Other Characteristics:** *A spreading shrub up to 4 or more m high. Leaves alternate, up to 6 cm long and 0.8 cm wide, tapering towards the stem, smooth-margined. Flowers tiny, dangling, greenish yellow or with red tints, few or many arranged along terminal or axillary stalks which are much shorter than the leaves. Female flowers have 3 sepals and a glossy green to red-brown style, which has 3 lobes at the tip. Male flowers usually have 3 sepals and 6 stamens and sometimes there are a few bisexual flowers on the male plants. Fruits reddish, ca 1 cm long, 3-lobed with 3 large wings stretching the full length of the fruit. Seeds dull grey.*

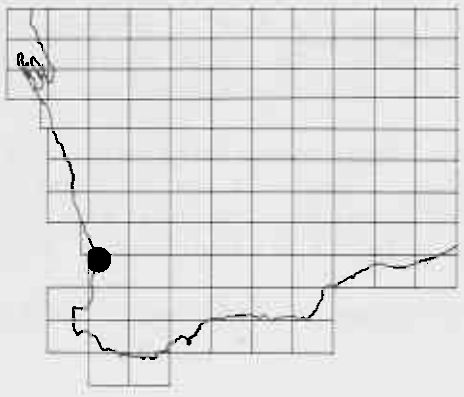
**References:** *Fitzgerald 1905.*

# Dodonaea hackettiana

Leafy stems with clusters of flower buds



Rows of hairs on the stems (x 2)



## DROSERA (DROSERACEAE)

Known as sundews, these insectivorous plants are annual or perennial herbs, sometimes twining. Their leaves have prominent glistening glandular hairs which trap insects. The flowers are borne at the top of long stalks or leafy stems. They usually have 5 sepals, 5 broad petals and 5 stamens, but may have 4 of each. There are 2-5 separate styles, each usually much divided. The fruit is a small urn-shaped capsule.

### DROSERA OCCIDENTALIS

*Minute Pygmy Sundew*

Distribution and Habitat: *D. occidentalis grows in sandy swamp flats on the coastal plain from Perth south to the Karnup area.*

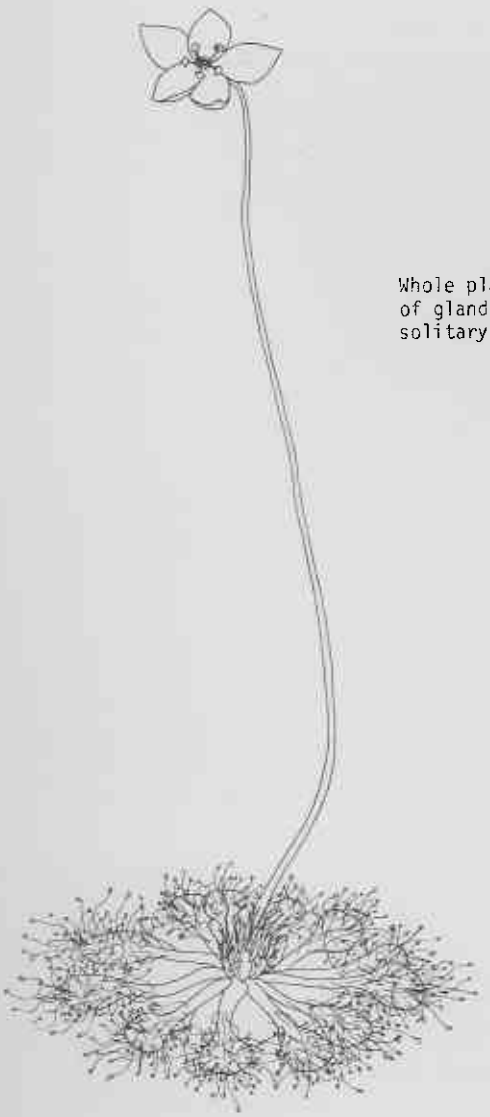
Flowering Period: *October-November.*

Distinctive Characteristics: *Like other pygmy sundews, D. occidentalis has a circle (rosette) of tiny leaves at ground level and its leaf stalks are long compared with the leaf blades. It is distinguished by its white, usually solitary flowers.*

Other Characteristics: *Rosettes ca 1 cm diameter with up to 20 leaves. Leaves ca 0.1 cm across, their stalks ca 0.4 cm long. 1-3 flowering stalks per plant. Flowers ca 0.3 cm across, with 5 petals, 5 stamens and 4 styles.*

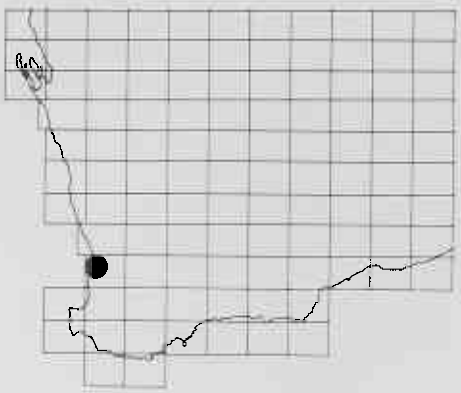
References: *Erickson 1968; Morrison 1912.*

# Drosera occidentalis



Whole plant with basal whorl of glandular leaves and solitary flower (x 5)

Whole plant



## DRUMMONDITA (RUTACEAE)

The leaves of these shrubs are alternate and produce a scent when cut. Flowers solitary, with 5 sepals and 5 elongated, often bract-like petals. The 5 fertile stamens opposite the petals alternate with 5 sterile ones. All the stamens are very hairy and united to form a tube for more than half their length. The style is red, has an enlarged flat end and protrudes above the stamens. The dry fruit opens by 3 valves and is normally 3-seeded.

### DRUMMONDITA HASSELLII *(F. Muell.) P.G. Wilson*
*var* LONGIFLORA *P.G. Wilson*

*Peak Charles Drummondita*

Distribution and Habitat: *Restricted to the Peak Charles region, this species grows in granite crevices on hillsides in open shrubland.*

Flowering Period: *September-November.*

Distinctive Characteristics: *This taxon can be distinguished from other drummonditas by the red colour of its petals and stamen tubes; and by its sharp-pointed, slender, somewhat wrinkled leaves, which are ca 1.7 cm long.*

Other Characteristics: *A shrub up to 1 m tall, with glossy somewhat spreading leaves. Flowers up to 2.5 cm long. Fruits ca 0.7 cm long.*

References: *Wilson 1971.*

# Drummondita hassellii
# var. longiflora

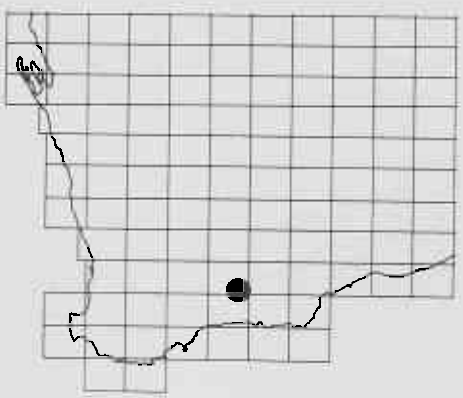
End of branch bearing a terminal flower and curved leaves

Leaf

Seed

Top view of fruit

Side view of fruit



## DRYANDRA (PROTEACEAE)

Shrubs or small trees, some known as honeypots, with hard alternate usually divided leaves. The flowers are clustered into dense heads, each surrounded by a whorl of numerous bracts. Each flower has 4 equal, elongated perianth parts whose lower portions remain fused after the flower opens and each perianth lobe bears a single stamen in a hollow near the end. The style is usually straight and slightly enlarged at the tip. The fruits (follicles) are borne more or less vertically and open by two valves to release 1 or 2 winged seeds.

### DRYANDRA COMOSA *Meisn.*

*Wongan Dryandra*

**Distribution and Habitat:** *This dryandra is restricted to the Wongan Hills region, growing on the tops and slopes of lateritic hills.*

**Flowering Period:** *August-October.*

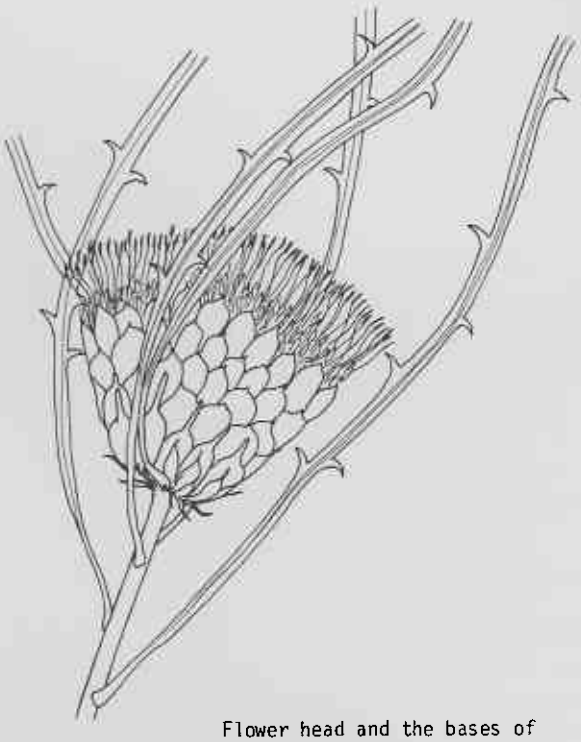
**Distinctive Characteristics:** *D. comosa is characterized by its long leaves, sometimes exceeding 30 cm, which are deeply divided, having curved, pointed lobes up to 0.3 cm long and up to 2 or more cm apart, separated by very narrow undivided portions. The midrib appears as a distinct furrow on the upper side of the leaf and a yellowish prominence on the lower side.*

**Other Characteristics:** *A compact shrub up to 1.5 m high. Flowers yellow, ca 2.5 cm long. Bracts brown, the lower ones with long divided points, up to 1.5 cm long not including the point.*

**References:** *Bentham 1870.*

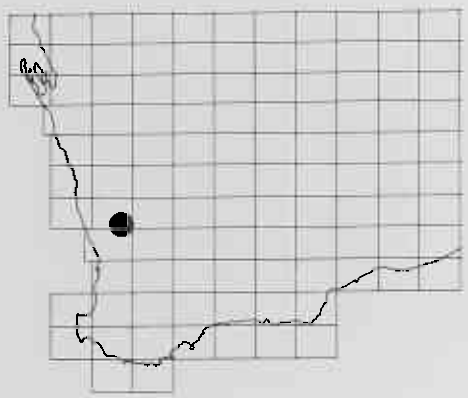
# Dryandra comosa

Upper side of a section of leaf



Flower head and the bases of the long leaves surrounding it

Lower side of a section of leaf



DRYANDRA PULCHELLA *Meisn.*

*Sprawling Dryandra*

**Distribution and Habitat:** *This species grows on lateritic hillsides among dense mallee scrub in the Wongan Hills region.*

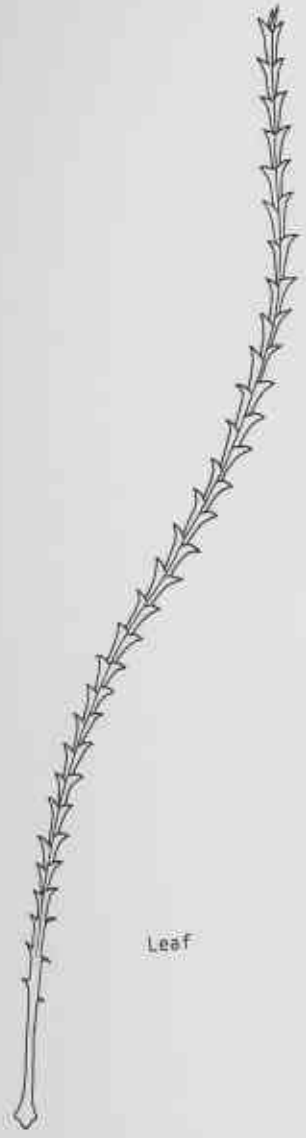
**Flowering Period:** *October-January.*

**Distinctive Characteristics:** *It is distinguished by its distinctly curved styles and its leaves, which are up to 20 cm or more long, and divided to the midrib into curved pointed lobes. The lobes extend up to 0.2 cm on each side of the midrib, have rolled-under margins and are slightly overlapping.*

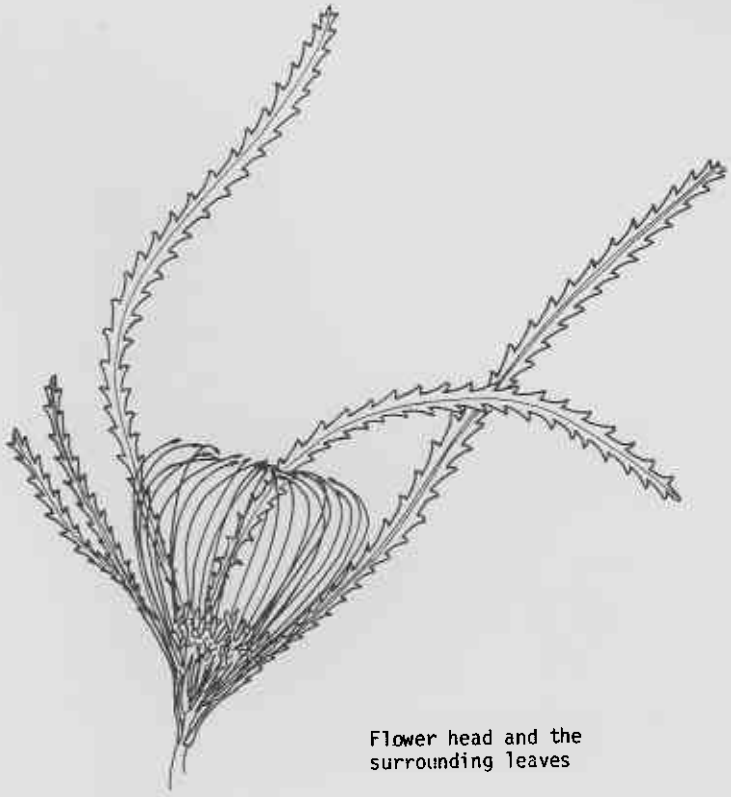
**Other Characteristics:** *Sprawling shrub up to 2m, with glaucous leaves. Flower heads surrounded by leaves, which grade into the hairy brown bracts. Flowers yellow, ca 4 cm long; the perianth segments hairy and only about half as long as style.*

**References:** *Bentham 1870; Kenneally 1977.*

# Dryandra pulchella



Leaf

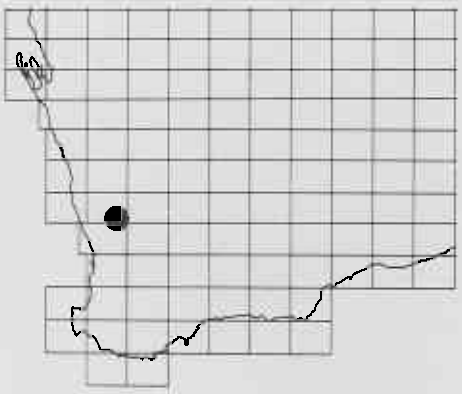


Flower head and the surrounding leaves

Flower bud with looped style

Upperside of a section of leaf

Underside of a section of leaf



## EREMOPHILA (MYOPORACEAE)

Shrubs or small trees, usually with alternate leaves and commonly known as poverty bushes or native fuchsias. The flowers are solitary or, rarely, 2-3 together in the leaf axils. Each flower has 5 free persistent sepals; 5 petals united to form a long 2 lipped or lop sided tube; 2 short and 2 long stamens and a long style. The fruit (a drupe) is dry or fleshy, with a stony centre enclosing 1-4 seeds.

### EREMOPHILA DENTICULATA *F. Muell.*

*Fitzgerald Eremophila*

**Distribution and Habitat:** *E. denticulata grows in loam along river banks in the region south-west of Ravensthorpe.*

**Flowering Period:** *October-November.*

**Distinctive Characteristics:** *The species has 4 petal lobes in the upper lip of the flower and the 5th petal lobe cut much deeper, forming the lower lip. It is distinguished by its yellow to red flowers borne on long S-shaped stalks and its shortly toothed leaf margins.*

**Other Characteristics:** *Sticky shrub ca 1 m high. Leaves up to 5 cm long (including stalk) and 1 cm wide, tapering towards the stem. Flowers ca 3 cm long, with stalks ca 1.5 cm long. The fruits are ca 1 cm long and 1 cm wide.*

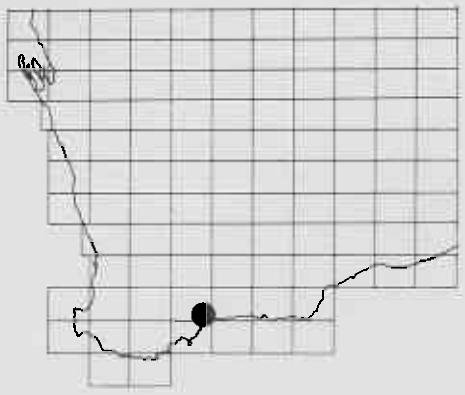
**References:** *Bentham 1870.*

# Eremophila denticulata

Stem bearing toothed leaves and flowers with S-shaped stalks

Fruit

Persistent sepals after the fruit has fallen



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EREMOPHILA VIRENS *C.A. Gardner*

*Campion Eremophila*

**Distribution and Habitat:** *Granite hillsides in the Lake Campion area, north of Merredin.*

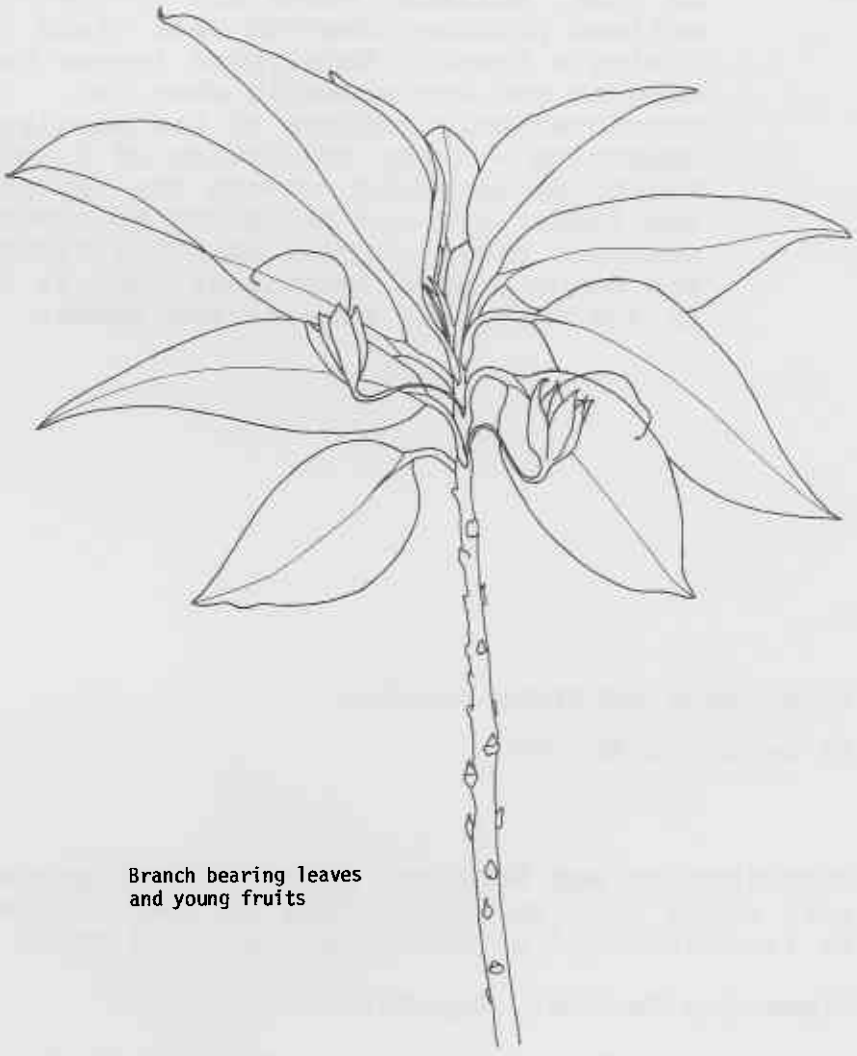
**Flowering Period:** *August-October.*

**Distinctive Characteristics:** *This has 4 petal lobes in the upper lip of the flower and the 5th lobe, cut much deeper, forming the lower lip. It is distinguished by its green flowers borne on long S-shaped stalks and its smooth leaf margins.*

**Other Characteristics:** *Erect shrub up to 5 m tall with sticky branchlets. Leaves up to 7 cm long and ca 2.5 cm wide, their stalks up to 1.5 cm or more long. Flowers ca 2.5 cm long with stalks ca 1 cm long. The sepals enlarge after the petals drop and the fruiting stage commences.*

**References:** *Gardner 1942.*

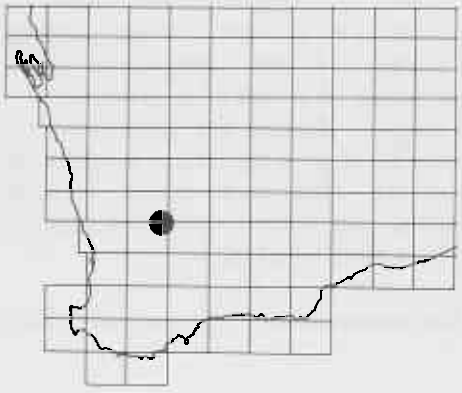
# Eremophila virens



Branch bearing leaves
and young fruits

Fruit

Open flower with
S-shaped stalk



## EUCALYPTUS (MYRTACEAE)

Trees or large shrubs, including species known as gums, mallees, boxes and bloodwoods. The mallees produce numerous main stems rather than a single trunk. Eucalyptus leaves have smooth margins and are aromatic when cut. The most characteristic feature of the eucalypts is their operculum - a cap consisting of fused sepals and/or petals which covers the top portion of the flower bud and falls off to reveal the numerous showy stamens when the flower opens. The woody fruits (capsules) open at the summit in 3-5 valves to release the seeds.

### EUCALYPTUS AQUILINA *Brooker*

*Mt Le Grand Mallee*

Distribution and Habitat: *This eucalypt grows in shallow loamy soil among granite rocks along gullies in dense mallee scrub. It is restricted to the Mount Le Grand area.*

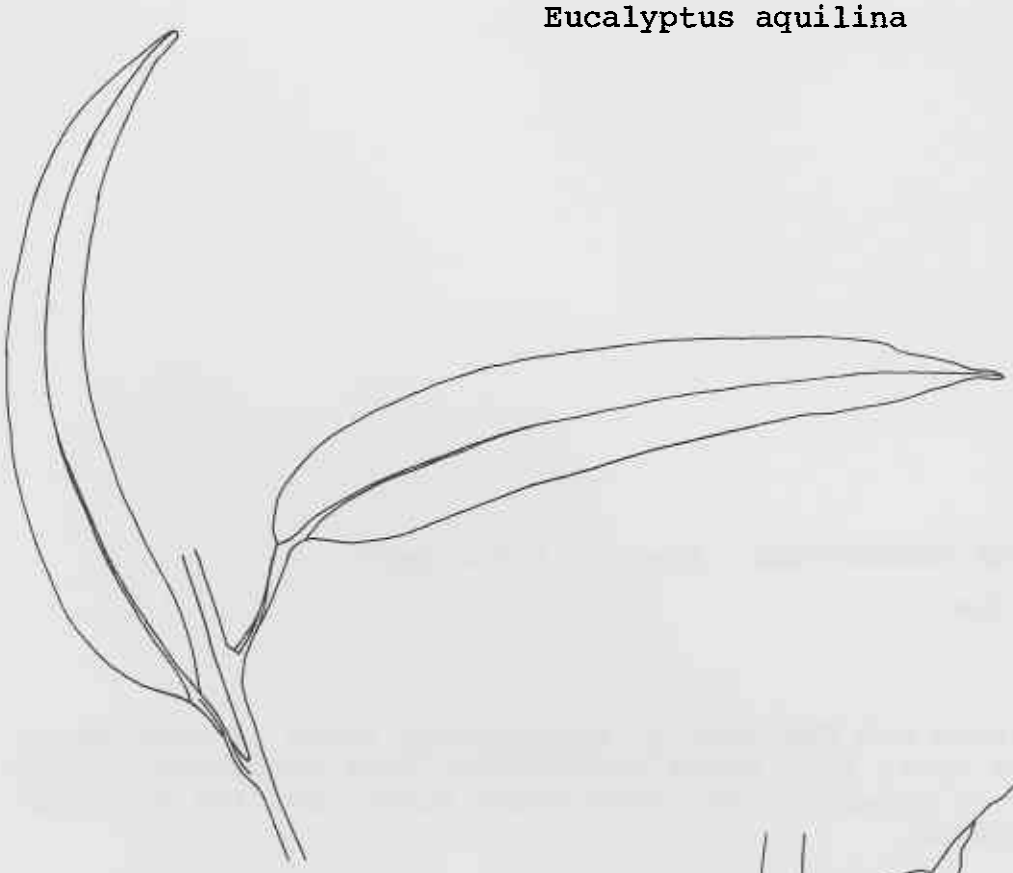
Flowering Period: *May-October.*

Distinctive Characteristics: *Related to Crowned Mallee, E. coronata (see page 92), it differs in its larger, practically unribbed buds and fruits and in its unbeaked bud cap. The buds are up to 3.5 cm long and the fruits up to 5 cm long.*

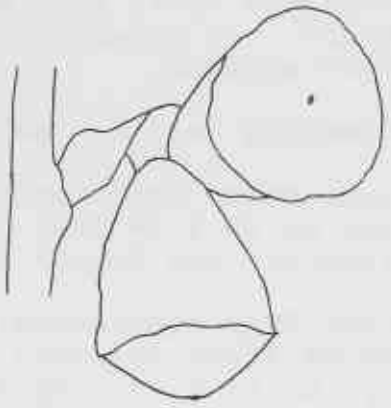
Other Characteristics: *A mallee up to 5 m tall with smooth slender stems, the young branchlets flattened. Adult leaves up to 13 cm long and 2.5 cm wide, narrowing to a long point, green, slightly glossy, their flattened stalks up to ca 2 cm long. Buds in groups of 3, directly attached to flattened axillary stalks, which are up to 3.5 cm long. Bud cap equal to or shorter than the base. Stamens pale yellow. Fruits more or less cone-shaped with a projecting rim and projecting rounded valves.*

References: *Brooker 1974; Brooker and Hall 1975a; Kelly 1978.*

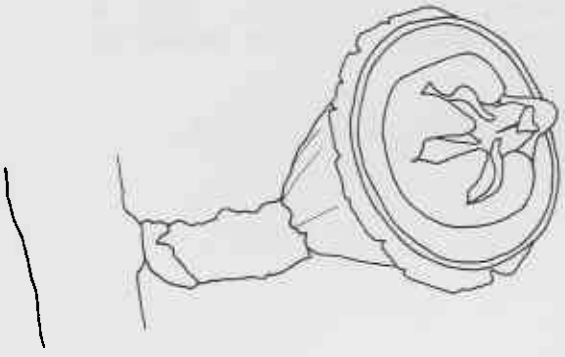
# Eucalyptus aquilina



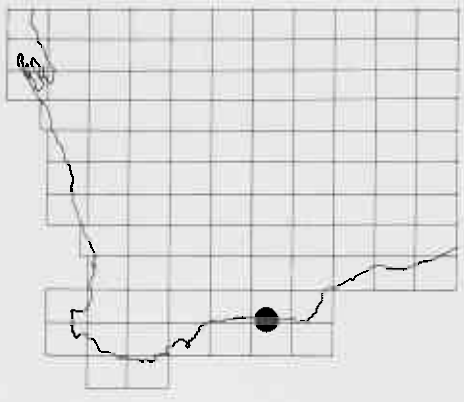
Leaves



Flower buds



Fruit



EUCALYPTUS BURDETTIANA *Blakely & Steedman*

*Burdett Gum*

Distribution and Habitat: *E. burdettiana grows in sand among quartzite rocks in a heath association with occasional taller shrubs. It occurs in the East Mount Barren and the Pallinup River regions.*

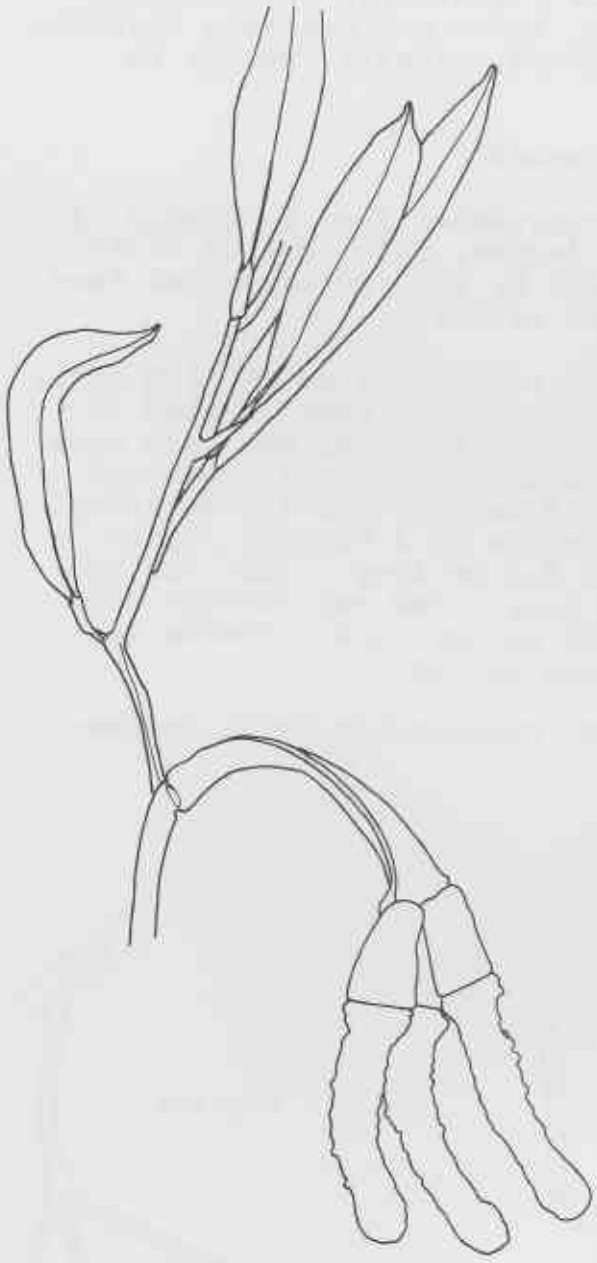
Flowering Period: *Mainly December-March, also July-August.*

Distinctive Characteristics: *Its drooping buds have green warty caps up to 4 cm long and smoother bases ca 1.5 cm long. It resembles the larger tree species, Warted Yate (E. megacornuta).*

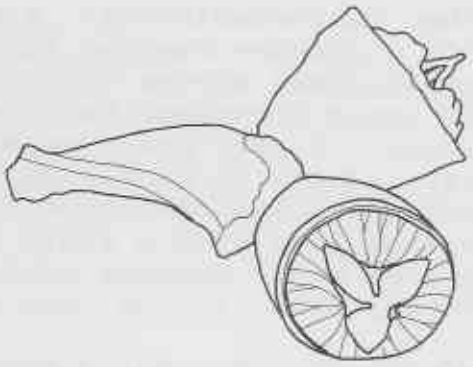
Other Characteristics: *Shrub or mallee up to 3.5 m high, with smooth light-coloured bark. Leaves shiny, shortly pointed at tip, up to 9 cm long and 2.5 cm wide, their stalks ca 1 cm long. Groups of 3-7 flower buds attached directly onto flattened curved stalks, which are up to 3.5 cm long. Stamens yellow-green. Fruits brown, up to 2.5 cm long, bell-shaped, with a narrow flat rim and 3 projecting valves whose points usually meet at the top.*

References: *Chippendale 1973; Gardner 1979; Kelly 1978.*

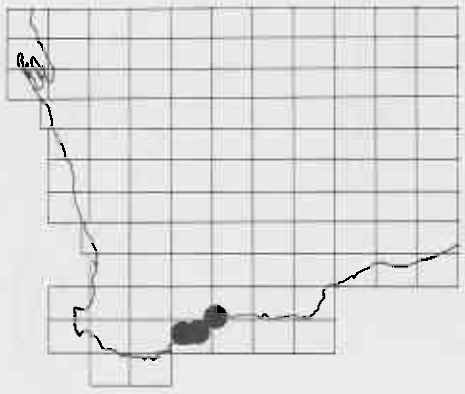
# Eucalyptus burdettiana



Portion of plant bearing erect leaves and a group of three pendent flower buds



Fruits



EUCALYPTUS CAESIA *Benth.*

*Caesia*

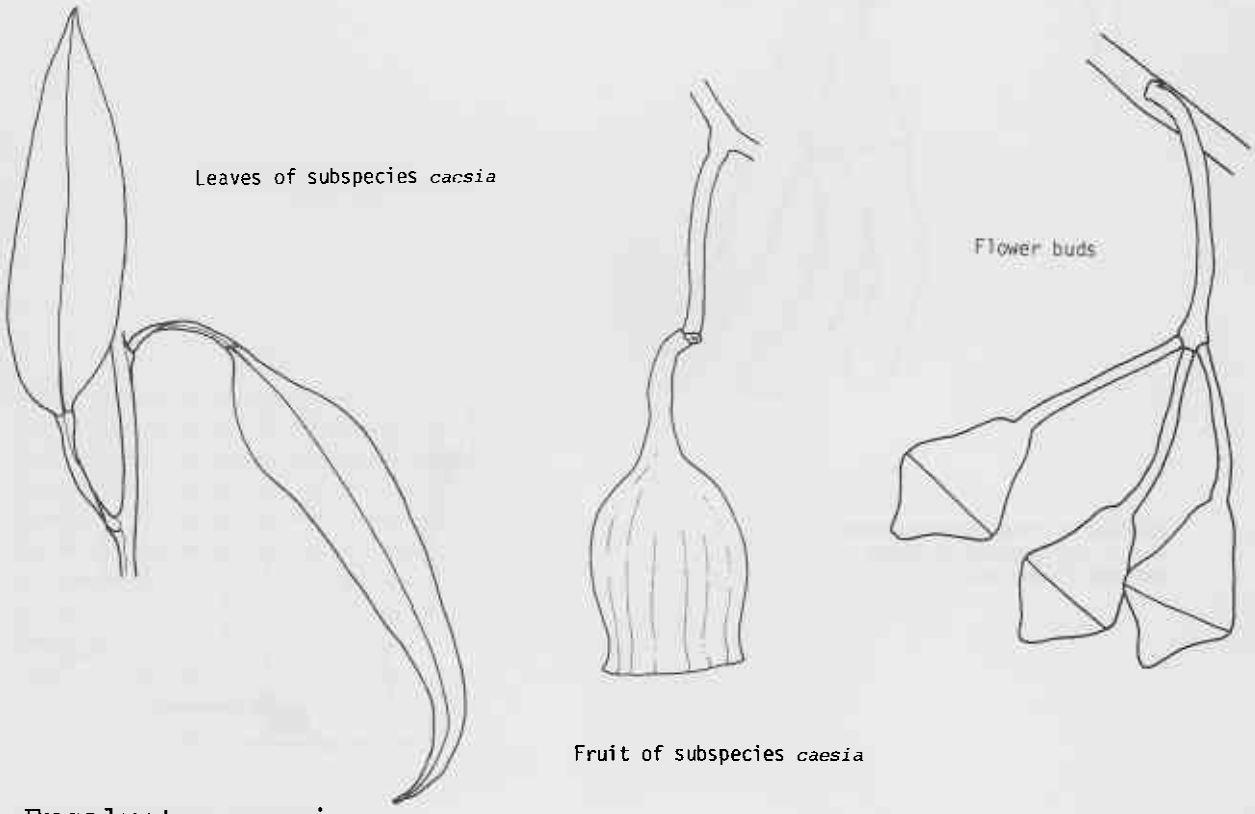
**Distribution and Habitat:** *This has a scattered distribution between the Wongan Hills, Pingelly, Hyden and Westonia regions. It is associated with granite outcrops, usually growing in shallow brown sandy loams.*

**Flowering Period:** *Normally June-August.*

**Distinctive Characteristics:** *Distinguished from E. crucis, E. ewartiana and E. orbifolia by its leaves, which are at least twice as long as they are broad, and by its fruits, which have distinctly sunken ends and enclosed valves.*

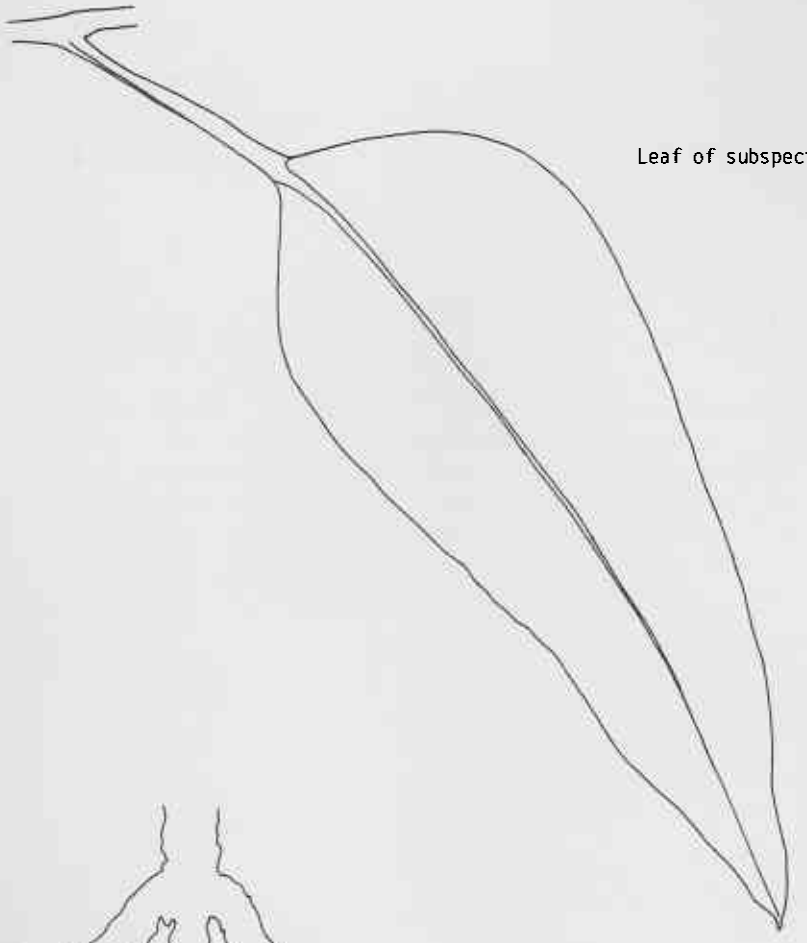
**Other Characteristics:** *A mallee or small tree up to 15 m high, with a slender weeping habit. The red brown bark is shed in longitudinal strips that remain curled, exposing new pale bark. The upper branches, buds and fruits are covered by a whitish powder. Leaves grey-green, up to 12 cm long and 4.5 cm wide, their stalks up to 2.5 cm long. Groups of 3 hanging flower buds are borne on common stalks ca 2.5 cm long. Each bud up to 3 cm long with a stalk ca 2 cm long. Bud cap shorter than base of bud. Stamens pink-red with yellow tips. Fruits urn-shaped, 1.5 - 3.0 cm long with broad valves.*

**References:** *Brooker & Hopper 1981; Chippendale 1973; Gardner 1979; Kelly 1977.*

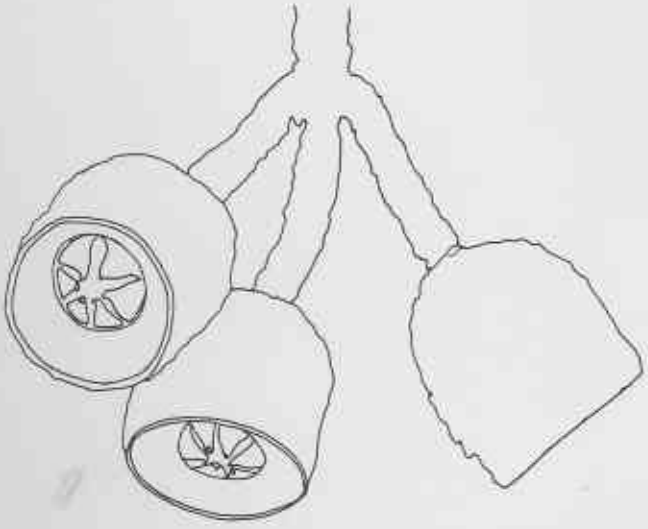



Eucalyptus caesia

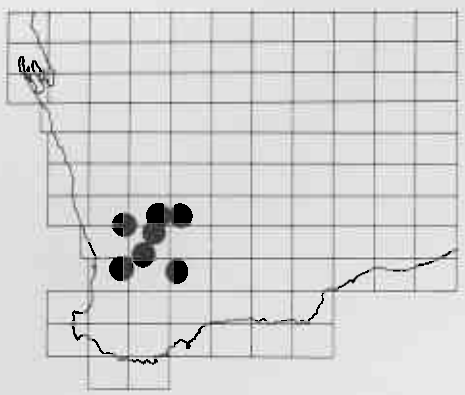
# Eucalyptus caesia



Leaf of subspecies *magna*



Large fruits of subspecies *magna*



EUCALYPTUS CALCICOLA *Brooker*

*Hamelin Bay Mallee*

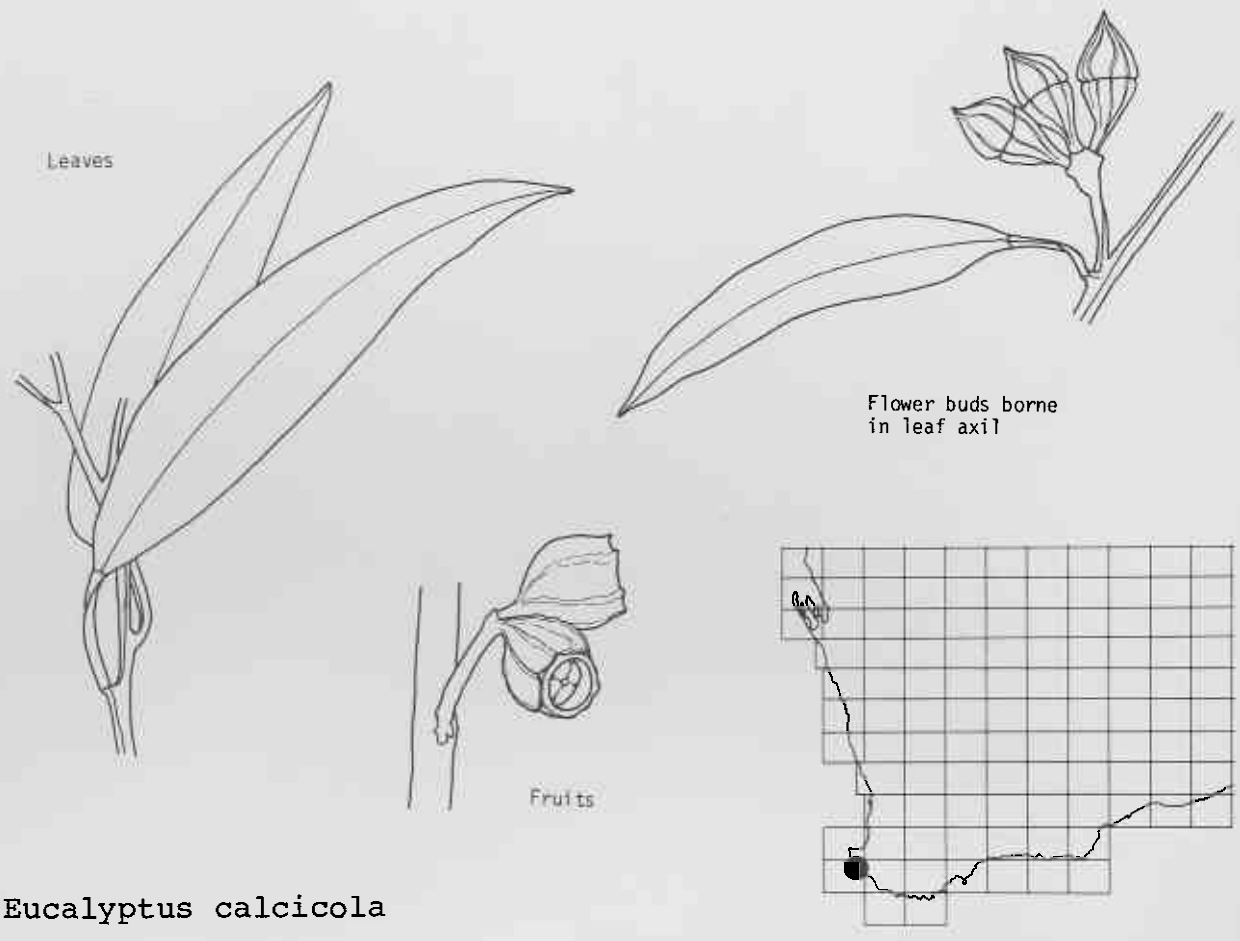
**Distribution and Habitat:** *This is restricted to the coast in the Hamelin Bay area, growing on the western slopes of dunes, often with outcropping limestone.*

**Flowering Period:** *May-June.*

**Distinctive Characteristics:** *A mallee species related to E. ligulata but differing in its broader, more strongly ribbed buds and fruits and in its bright, shining green seedling leaves.*

**Other Characteristics:** *Up to 2.5 cm tall, with smooth greyish bark, the young branchlets somewhat flattened. Adult leaves up to 10.5 cm long and 3 cm wide, their flattened stalks 1-2 cm long. Buds very shortly stalked, in groups of 7 attached to a flattened common stalk, which is up to 2 cm long. Bud caps up to 0.8 cm long and about equal to the bases. Fruits up to 1.5 cm long and wide, with ribs raised to 0.2 cm and 4 sunken valves.*

**Reference:** *Brooker 1974; Hall and Brooker 1974a; Kelly 1978.*




Eucalyptus calcicola

EUCALYPTUS CARNABYI *Blakely & Steedman*

*Carnaby's Mallee*

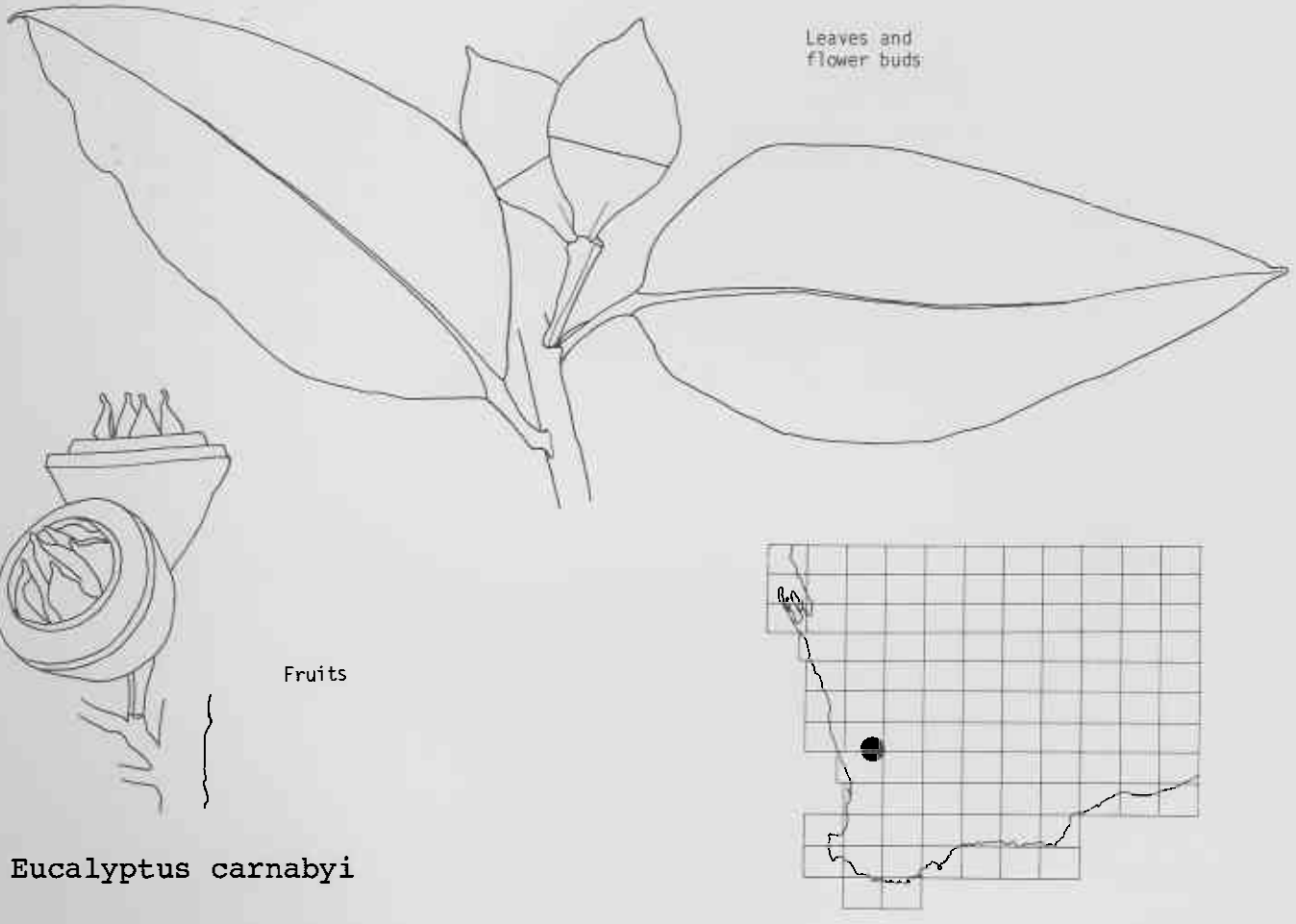
**Distribution and Habitat:** *The only known plant occurs near Piawaning on a gradual hillslope in pale brown sandy loam. It originally grew with E. macrocarpa.*

**Flowering Period:** *June-November.*

**Distinctive Characteristics:** *This mallee is related to E. macrocarpa and E. rhodantha, differing from both in its smaller fruits (up to 2 cm by 2.5 cm) and its cream stamens.*

**Other Characteristics:** *A spreading mallee ca 5 m high and 8 m wide, with powdery grey branchlets and buds. Mature leaves grey-green, up to 9 cm long and 3.5 cm wide, with a short point their flat stalks up to 1.5 cm long. Buds up to 2.5 cm long, in groups of 3-7 directly attached to a slightly flattened stalk, which is up to 1.5 cm long. Bud cap longer than base of bud. Stamens white to pale yellow. Fruit hemispherical, the top sloping upward towards the projecting valves.*

**References:** *Chippendale 1973; Gardner 1979; Kelly 1978; Lucas & Synge 1978.*




Eucalyptus carnabyi

EUCALYPTUS CORONATA *C.A. Gardner*

*Crowned Mallee*

**Distribution and Habitat:** *This is restricted to the Mount Barren area, growing in white sand among quartzite rocks on hillsides or summits of peaks.*

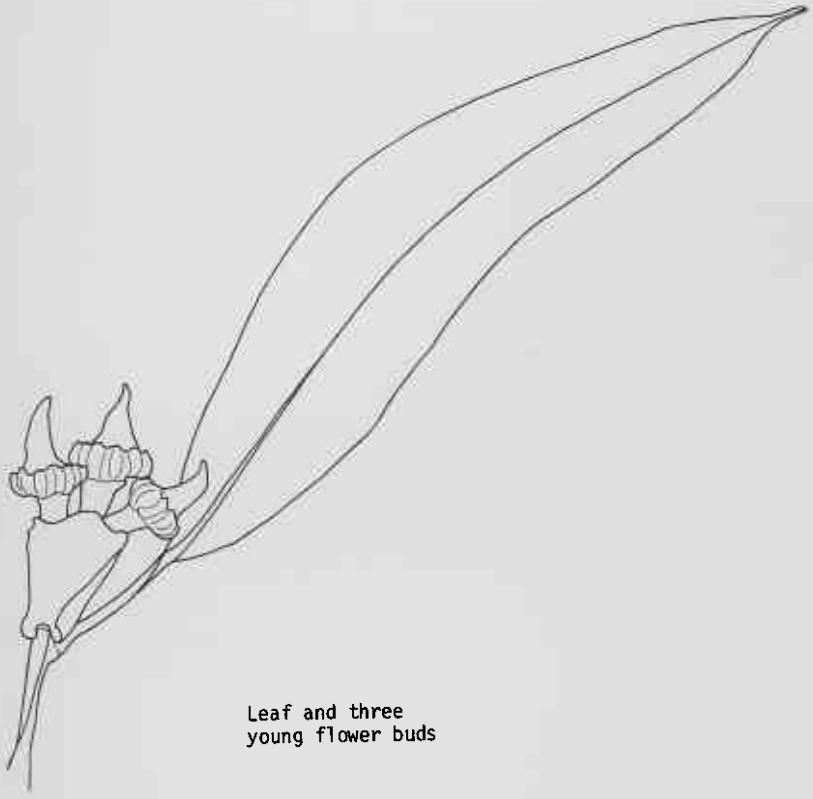
**Flowering Period:** *April-October.*

**Distinctive Characteristics:** *Its fruits and buds are both deeply corrugated and the fruits have prominent rounded projections at the end. It is related to E. aquilina* *(see page no. 84)*

**Other Characteristics:** *A mallee to 2 m high with smooth grey bark on the stems. Mature leaves shining, shortly pointed, up to 12 cm long and 3 cm wide, with a slightly flattened stalk up to 2.5 cm long. Buds in groups of 3, directly attached to flattened stalks which are up to 2 cm long. Bud cap green, longer than base of bud. Stamens yellow, sometimes creamy. Fruits up to 2.5 cm long and 3.5 cm diameter or, rarely, up to 5 cm diameter.*

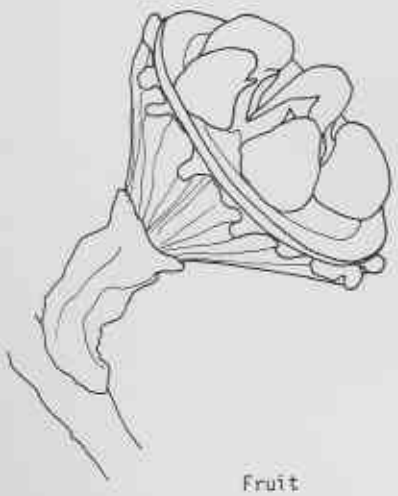
**References:** *Chippendale 1973; Gardner 1979; Kelly 1977.*

# Eucalyptus coronata

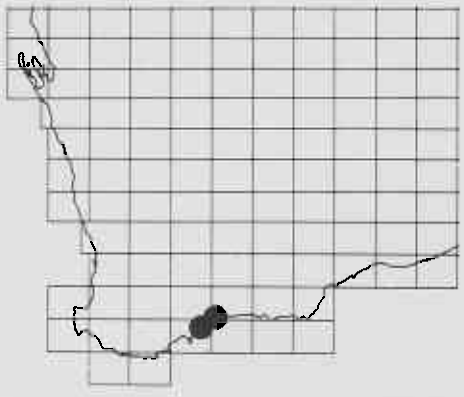


Leaf and three
young flower buds

Flower bud



Fruit



**EUCALYPTUS DESMONDENSIS** *Maiden & Blakely*

*Desmond Mallee*

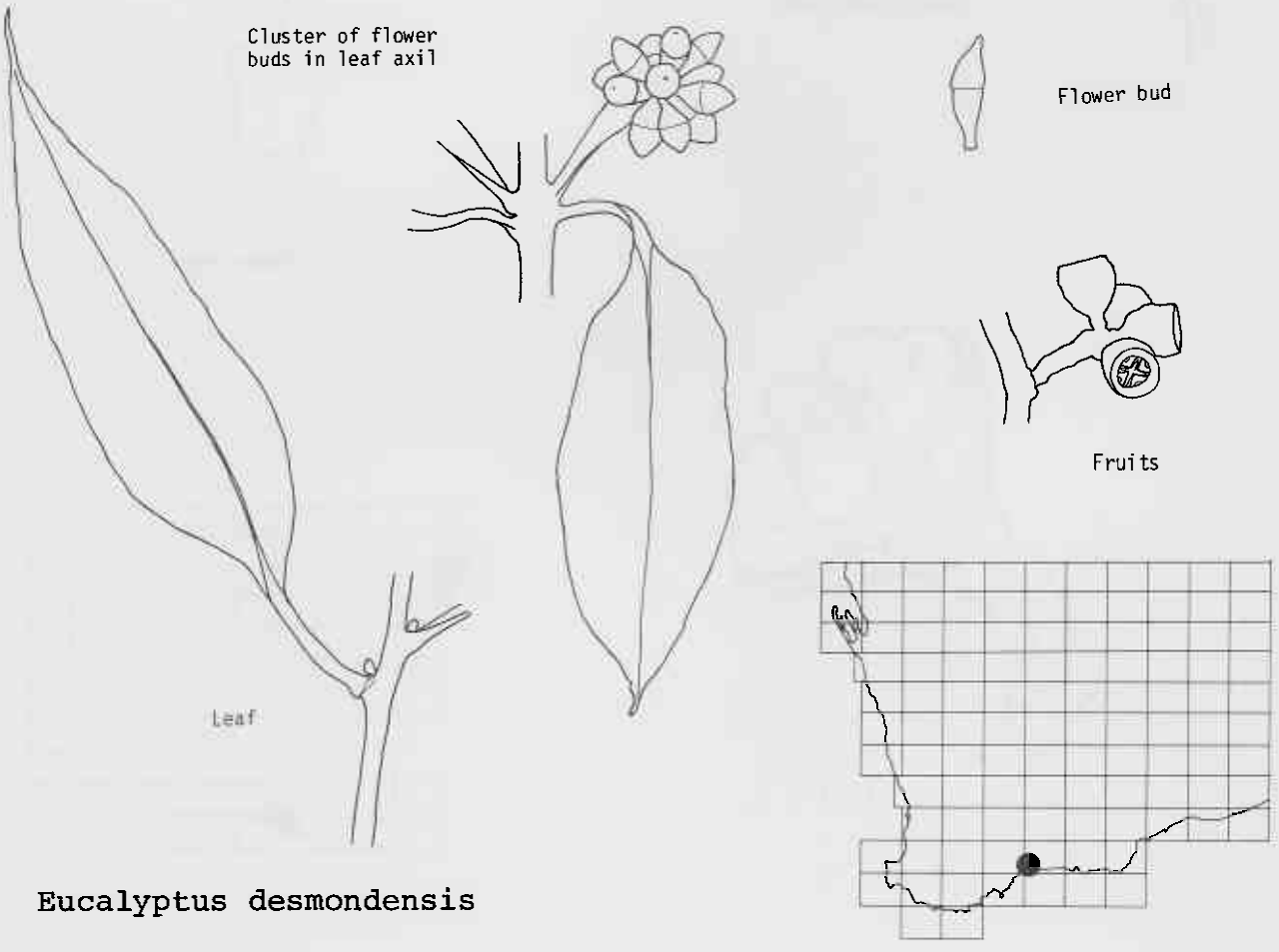
**Distribution and Habitat:** *This mallee grows in stony soil on the lower slopes of hills in the Ravensthorpe Ranges. It occurs in mallee scrub.*

**Flowering Period:** *January-December, intermittently.*

**Distinctive Characteristics:** *It is similar to E. gardneri but has less elongated fruits. It can be recognised by its slender willowy habit, powdery white bark, yellow stamens and (usually) bronze-red buds.*

**Other Characteristics:** *Mallee up to 4.5 m high, with a small amount of rough flaky bark at the base. Mature leaves thick, grey-green, mostly less than 10 cm long and 2.5 cm wide, often with a long point. Leaf stalk slightly flattened, up to 2 cm long. Clusters of up to 15 buds borne on a grey stalk, which is up to 2 cm long. Bud cap up to 0.8 cm long, longer than base of bud. Fruit cup- or bell-shaped, up to 1 cm by 0.8 cm, the valves usually sunken.*

**References:** *Chippendale 1973; Gardner 1979; Kelly 1977.*




Eucalyptus desmondensis

EUCALYPTUS EXILIS *Brooker*

*Boyagin Mallee*

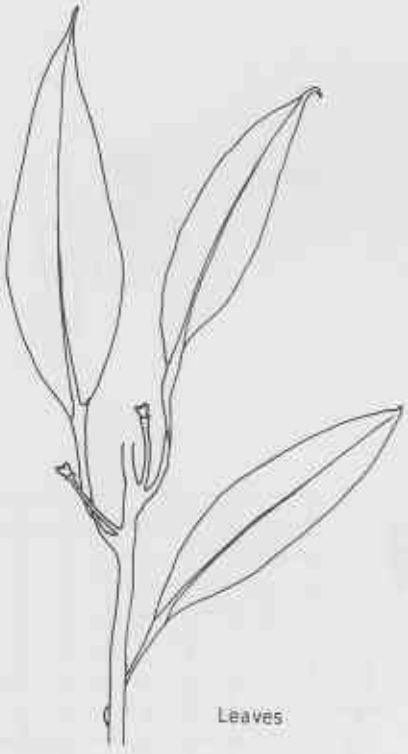
**Distribution and Habitat:** *Occurring in the Pingelly-Wickepin region, E. exilis grows in sand over laterite with other eucalypts and dense heath.*

**Flowering Period:** *September-October.*

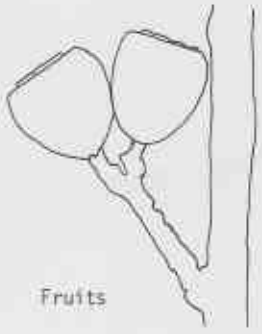
**Distinctive Characteristics:** *This is a very slender mallee, related to the weeping eucalypts, E. pendens and E. sepulcralis, but differs in its erect habit and smaller fruits. Its fruits are up to 1.5 cm long and wide.*

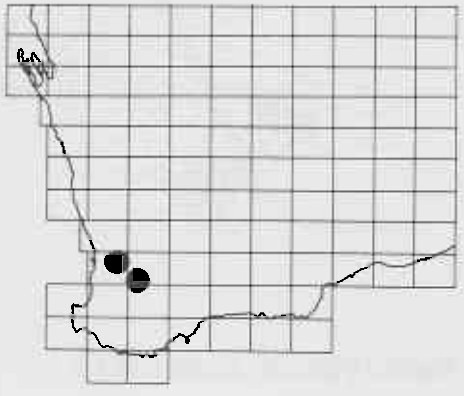
**Other Characteristics:** *It has a thin canopy, glaucous branchlets and smooth pale bark. Mature leaves with curved points, up to 7 cm long and 2 cm wide, their slender flattened stalks up to 1.5 cm long. Groups of 11 flower buds attached to erect stalks, which are up to 1.5 cm long. Each bud up to 0.8 cm long and 0.5 cm wide, its stalks up to 0.5 cm long, its cap shorter than its base. Fruits stalked with sunken valves.*

**References:** *Brooker 1974; Hall and Brooker 1974b; Kelly 1978.*




Flower buds



Eucalyptus exilis

EUCALYPTUS INSULARIS *Brooker*

*Twin Peak Island Mallee*

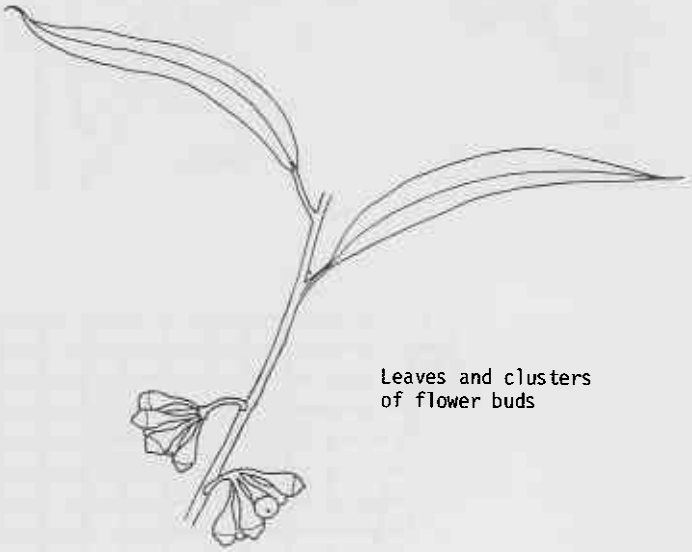
**Distribution and Habitat:** *E. insularis grows in granite rock crevices in dense scrub on coastal hills in the Recherche Archipelago region.*

**Flowering Period:** *Not known.*

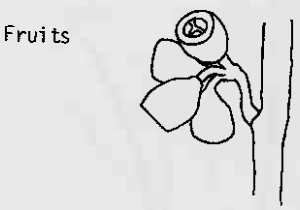
**Distinctive Characteristics:** *A mallee up to 8 m tall with light-coloured smooth bark on the stems, the larger specimens having basal red-brown fibrous bark and branches conspicuously wrinkled underneath at the base.*

**Other Characteristics:** *Mature leaves erect, with a long narrow point, up to 7.5 cm long and 0.8 cm wide. Leaf stalks slender, flattened, channelled above, up to 0.8 cm long. Flower buds up to 0.6 by 0.3 cm, the cap slightly narrower and shorter than the base, their stalks up to 0.5 cm long; grouped with several other buds on a common stalk, which is slender, usually curved under and up to 0.8 cm long. Fruits ca 0.8 cm by 0.6 cm, shallowly wrinkled, with 3 sunken valves in the shining red-brown top.*

**References:** *Brooker 1974; Brooker and Hall 1975b; Kelly 1978.*



Leaves and clusters of flower buds



Fruits

Eucalyptus insularis

EUCALYPTUS JOHNSONIANA *Brooker & Blaxell*

*Johnson's Mallee*

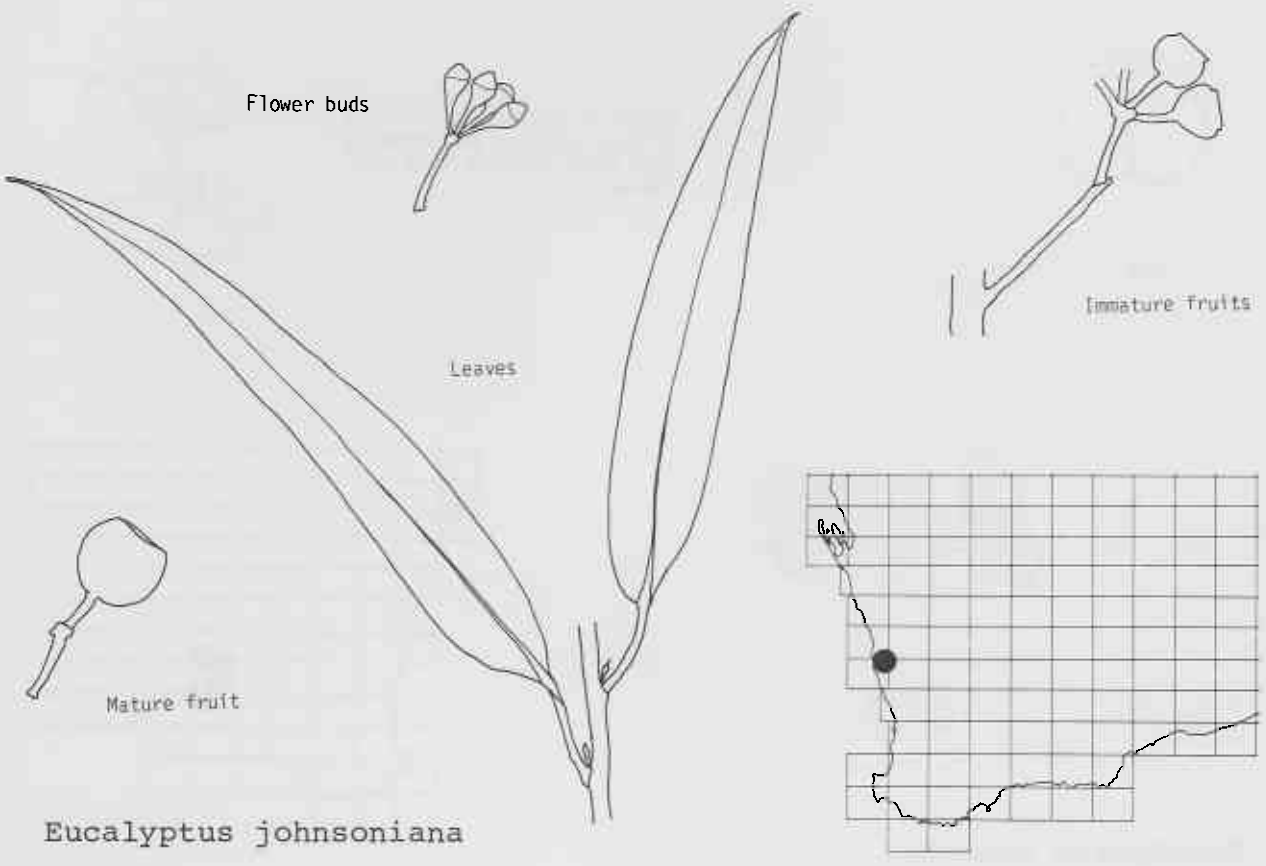
**Distribution and Habitat:** *Restricted to the Gairdner Range - Eneabba region, E. johnsoniana grows in sand over laterite in closed heath together with isolated patches of Prickly Bark, E. todtiana.*

**Flowering Period:** *November.*

**Distinctive Characteristics:** *A mallee up to 2 m high, forming dense clumps sometimes several metres across. Bark slightly rough, grey brown, peeling in strips from the stems. Fruits ca 1 cm by 1 cm, stalked, hemispherical to almost spherical, with sunken valves whose tips may protrude slightly.*

**Other Characteristics:** *Mature leaves up to 12 cm long and 1.5 cm wide, yellow green with paler midribs and leaf margins. Leaf stalks up to ca 1.5 cm long. Groups of 7 flower buds attached to slender axillary stalks, which are ca 1 cm long. Each bud ca 1 cm by 0.5 cm, the cap about equal to the base, its stalk ca 0.5 cm long. Fruits ca 1 cm, the valves probably just protruding.*

**Reference:** *Brooker & Blaxell 1978.*




Eucalyptus johnsoniana

10427—7

EUCALYPTUS KRUSEANA *F. Muell.*

*Bookleaf Mallee*

**Distribution and Habitat:** *Restricted to granitic soil, usually associated with rock outcrops in the Karonie-Binyarinyinna Rock region south east of Kalgoorlie.*

**Flowering Period:** *March-June.*

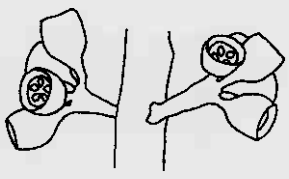
**Distinctive Characteristics:** *Leaves grey, almost circular, up to 2 cm long, stalkless, crowded and in opposite decussate pairs.*

**Other Characteristics:** *A thin-stemmed mallee or shrub up to 3 m high. Bark smooth, flaking in long strips to reveal pale new bark. Flower buds in groups of up to 7 attached to a common stalk which is ca 0.6 cm long. Each bud grey, often pink-red underneath, ca 1 cm long, the cap longer than the base, its stalk ca 0.3 cm long. Stamens yellow. Fruit glaucous, ca 0.6 cm long and wide, cylindrical, the triangular valves enclosed or just protruding from the top.*

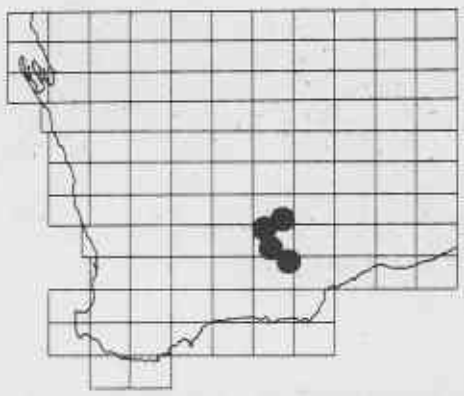
**References:** *Chippendale 1973; Gardner 1979; Kelly 1977.*

Leaf

A pair of leaves and a cluster of buds bent upright (normally they point outwards like the leaves)



Clusters of fruit



Eucalyptus kruseana

EUCALYPTUS PENDENS *Brooker*

*Badgingarra Mallee*

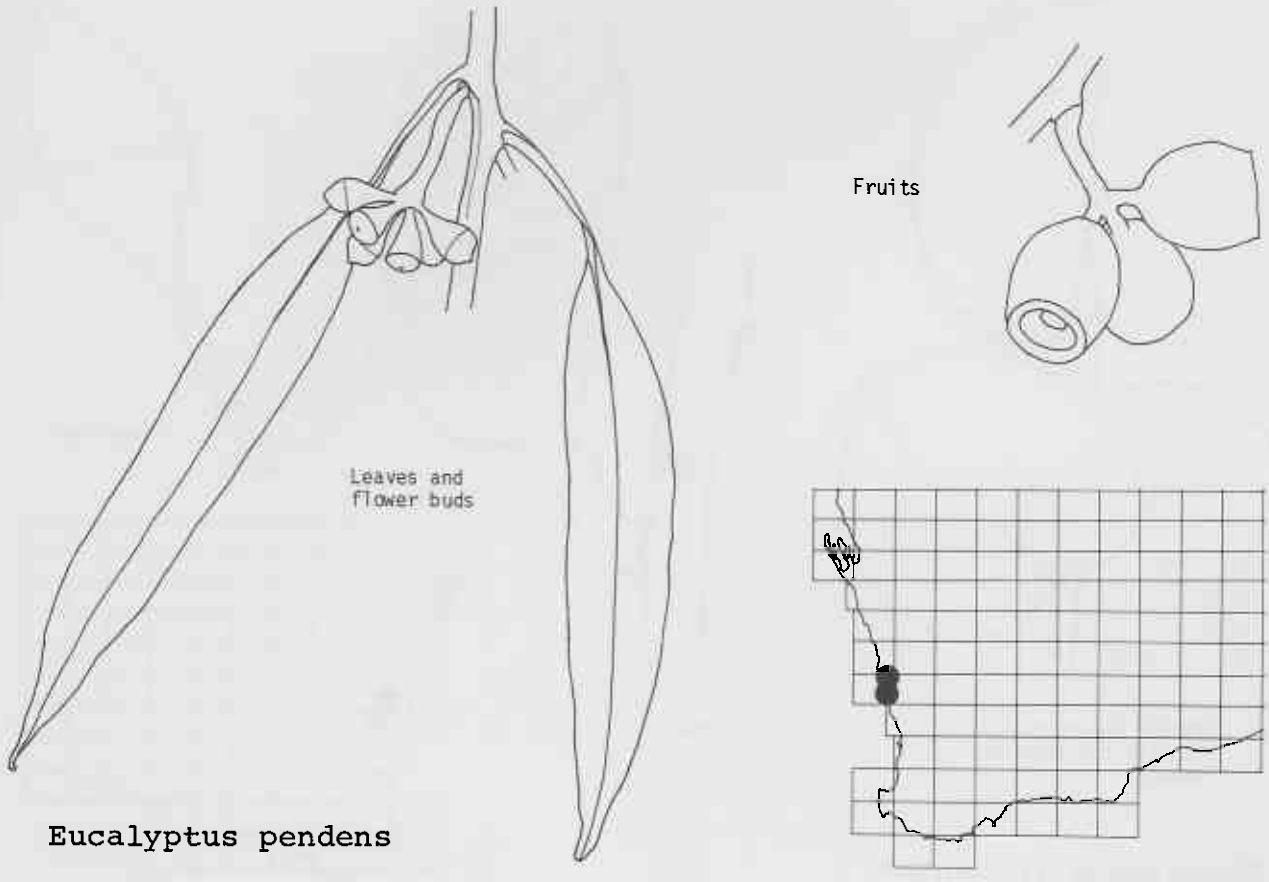
**Distribution and Habitat:** *This eucalypt occurs in the Hill River region in lateritic sandhills, emergent above low dense scrub.*

**Flowering Period:** *June-October.*

**Distinctive Characteristics:** *This very slender weeping plant is related to E. exilis, which differs in its erect habit, and E. sepulcralis, which has much larger more elongated fruits. E. pendens' fruits are up to 2 cm by 2 cm, wrinkled or slightly ribbed, with 4-5 deeply enclosed valves.*

**Other Characteristics:** *A mallee 2-5 m tall with a sparse canopy. The bark is smooth, dark red and shining on the new branchlets; smooth and pinkish-grey on the remaining branches. Leaves up to 12 cm long and 2 cm wide, their flat stalks ca 2.5 cm long. Flower buds usually in groups of 7-11, attached to a somewhat flattened stalk which is up to 4 cm long. Each bud up to 1.1 cm by 0.8 cm, tapering to its stalk which is up to 0.8 cm long, its cap equal to or shorter than its base. Stamens white.*

**Reference:** *Brooker 1972; Brooker & Hall 1975c; Kelly 1978.*




Eucalyptus pendens

EUCALYPTUS RHODANTHA *Blakely & Steedman*

*Rose Mallee*

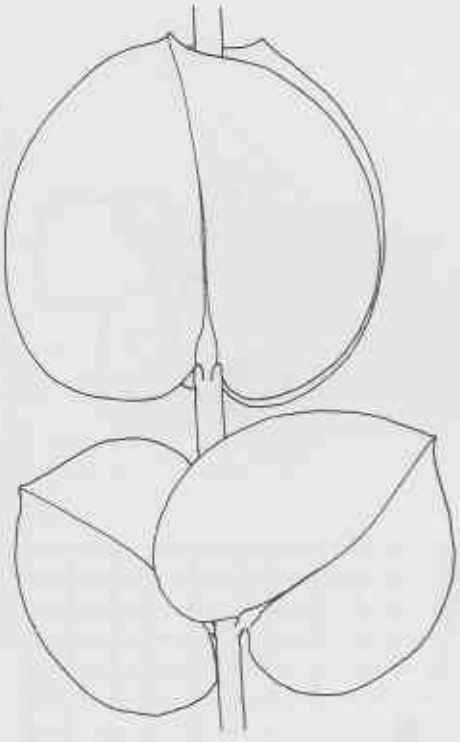
**Distribution and Habitat:** *This occurs in the Gunyidi-Three Springs region, growing in sandy soils with low heath in fairly flat country.*

**Flowering Period:** *June-August.*

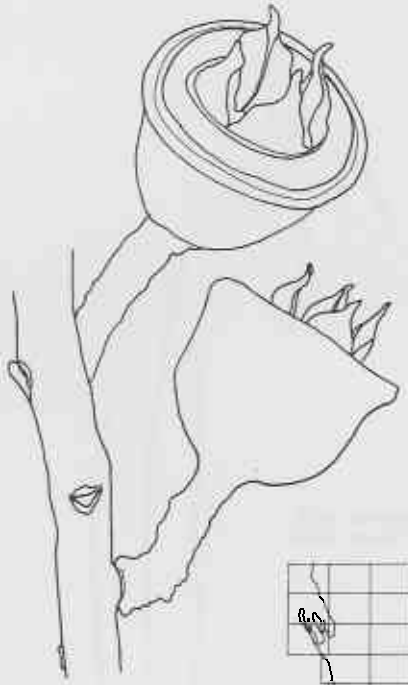
**Distinctive Characteristics:** *Leaves grey green, rounded, stalkless, up to 8 cm by 8 cm, opposite and decussate. Flowers red, up to 7.5 cm across. E. macrocarpa is similar but tends to have more elongated leaves and has larger stalkless flowers and fruits. Fruits, buds and flowers are borne on stalks 1-3.5 cm long.*

**Other Characteristics:** *A spreading mallee up to 3 m high, with smooth, grey-brown bark and white-grey branches. Leaves thick, pointed at the tip. Flower buds solitary or sometimes 2-3 together, attached to a thick grey stalk, which is up to 2 cm long. Each bud grey, up to 5.5 cm by 4 cm, the cap longer than the base, its stalk up to 4 cm long. Fruit more or less hemispherical, up to 3 cm by 5.0 cm, with protruding valves, containing dark brown winged seeds.*

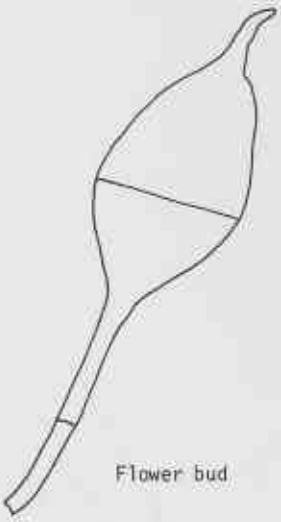
**References:** *Chippendale 1973; Kelly 1977; Lucas & Synge 1978.*



Pressed specimen with opposite and decussate leaves



Fruits



Flower bud

Eucalyptus rhodantha

EUCALYPTUS STEEDMANII *C.A. Gardner*

*Steedman's Gum*

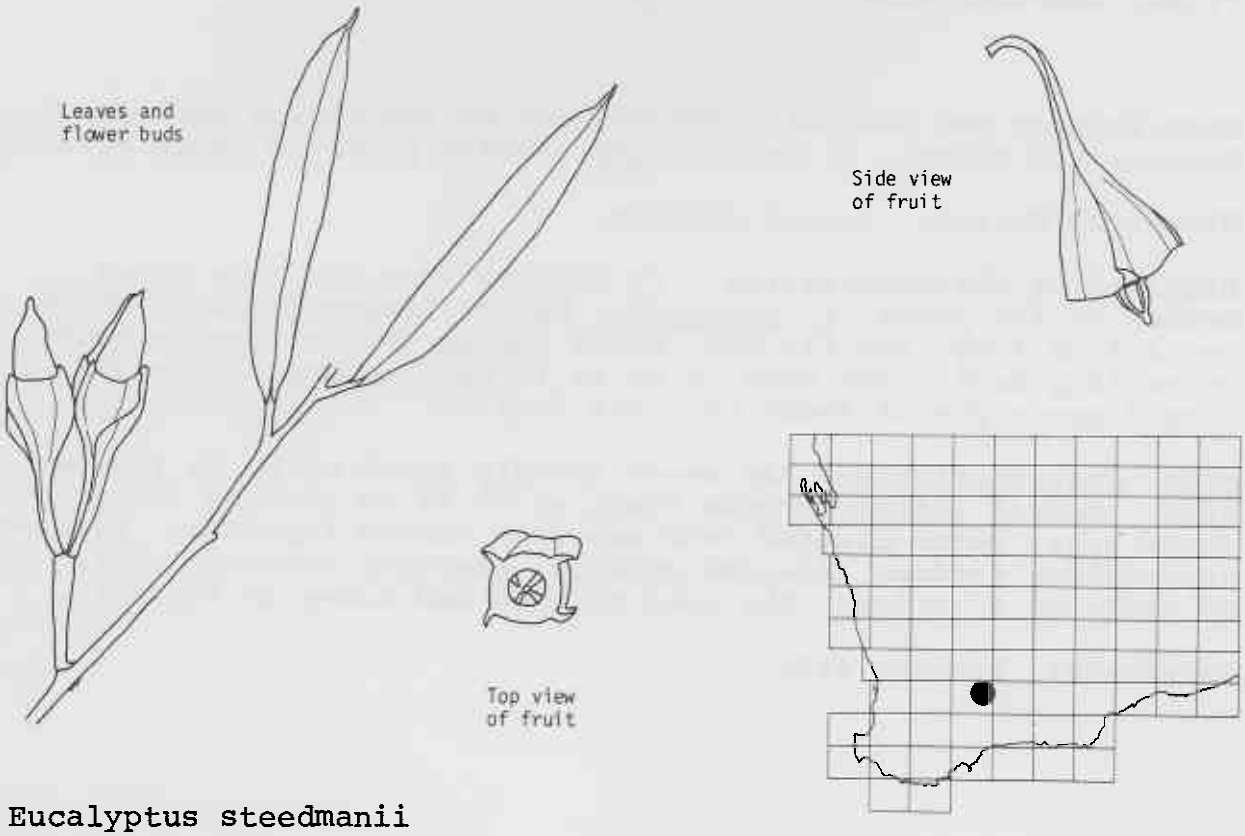
**Distribution and Habitat:** *This small tree grows in gravelly loam in low hills, forming a woodland and associated with other eucalypts. It occurs in the region south east of Forrestiana (east of Hyden).*

**Flowering Period:** *November-January.*

**Distinctive Characteristics:** *E. steedmanii has 4 sided, winged, green buds and fruits up to 1.8 cm by 1.5 cm with pointed, protruding valves. It is similar to E. tetraptera and E. forrestiana but both of these have red, much larger fruits.*

**Other Characteristics:** *A tree up to 12 m high; with smooth, red-brown bark and often having small strips of older bark adhering to the short trunk; with a rounded canopy. Mature leaves ca 6.5 cm long and 1.2 cm wide, with a stalk up to 0.6 cm long. Flower buds up to 2 cm long, pointed, the cap and base roughly equal in length, with a stalk up to 2 cm long, borne in groups of 3 on a common stalk ca 2.5 cm long. Flowers pendulous Stamens usually yellow, sometimes pink to red. Fruit green to brown, with 4 prominent wings.*

**References:** *Chippendale 1973; Kelly 1977; Lucas & Synge 1978.*




Eucalyptus steedmanii

## FRANKLANDIA (PROTEACEAE)

Shrubs with long very slender flowers clustered at the ends of the branchlets. Each flower has 4 perianth parts united in a tube with 4 equal spreading lobes at the summit. The 4 stamens are enclosed in the perianth tube, their stalks attached to the tube well below the free lobes. The fruit (a nut) is elongated, dry, single-seeded, crowned either by long hairs or a long hairy divided projection.

### FRANKLANDIA TRIARISTATA *Benth.*

*Plumed Lanoline Bush*

Distribution and Habitat: *Distributed in the region between Bunbury and Nannup, F. triaristata usually grows in sandy soil.*

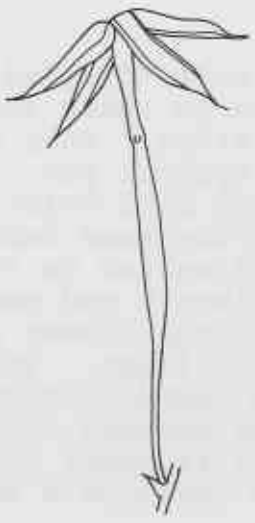
Flowering Period: *August-October.*

Distinctive Characteristics: *It differs from the only other member of its genus, E. fucifolia, by its larger flowers, which are 5-6 cm long, and its nut, which tapers into a slender hairy spiralling neck. The neck is up to 15 cm long and is divided into 3 parts for at least half its length.*

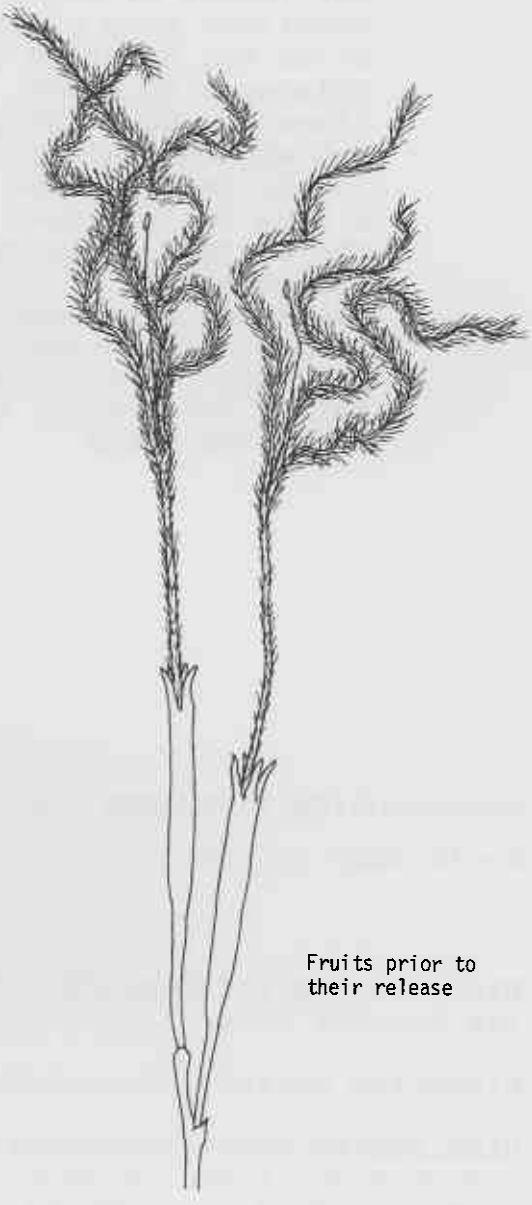
Other Characteristics: *An erect spindly shrub up to ca 100 cm high. Leaves sheathing onto stem, up to 30 cm or more long, their upper parts divided into numerous narrow segments. Flowers cream-white inside, red-pink outside, strongly scented. Base of fruit ca 2 cm long, the seed pointed and hairy at the base.*

Reference: *Bentham 1870.*

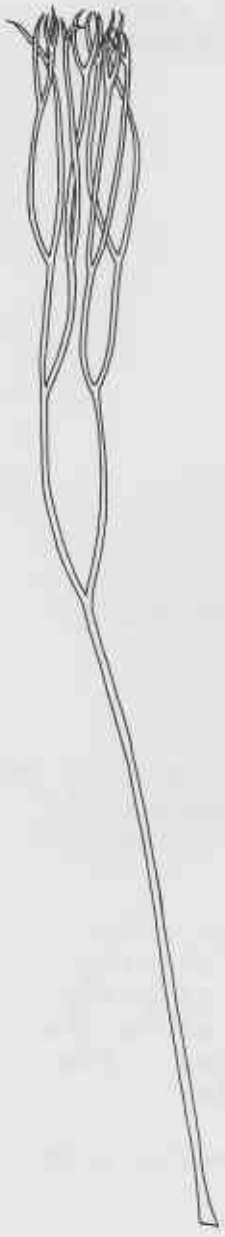
# Franklandia triaristata



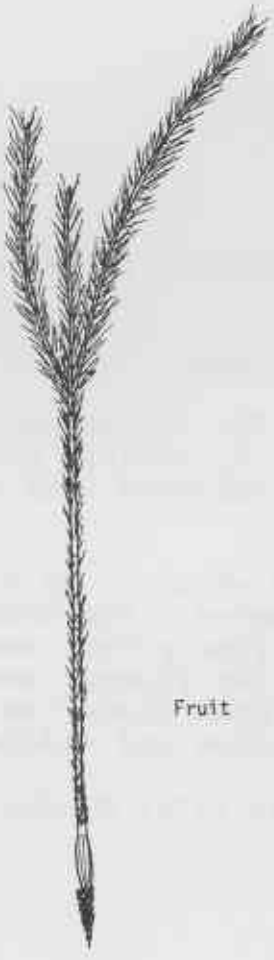
Flower



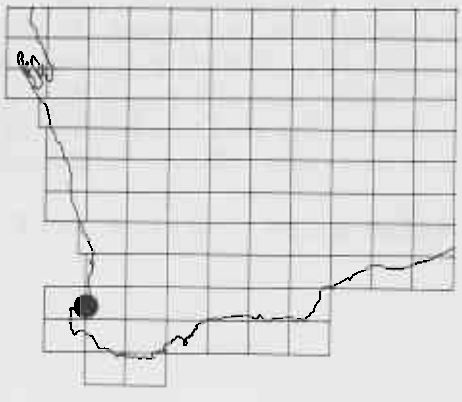
Fruits prior to their release



Divided leaf



Fruit



## GASTROLOBIUM (FABACEAE)

The leaves of these shrubs are never divided and sometimes have a distinct groove on their lower sides but never on their upper sides. Many are poisonous to stock. They have typical pea flowers, which are yellow, red or both colours and arranged along the stems in the same fashion as the leaves. The 5 sepals are united to form a tube for at least half their length and usually the 2 sepal lobes at the back of the flower are united higher up than the other 3 lobes. The standard (the largest petal) is round or kidney shaped. There are 10 equal free stamens surrounding the very hairy ovary. The fruit is short and squat, unlike the typical pea pod, and contains a maximum of 2 hard seeds.

### GASTROLOBIUM APPRESSUM *C.A. Gardner*

*Scale Leaf Poison*

Distribution and Habitat: *Restricted to gravelly hillocks in the Gunyidi area.*

Flowering Period: *September-November.*

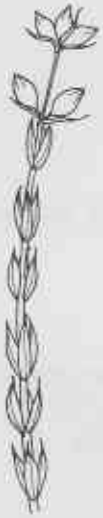
Distinctive Characteristics: *The leaves are up to 1 cm long and 0.3 cm wide, borne in whorls of 3, closely pressed against the stem and often overlapping the adjacent leaf whorls. There are no stipules.*

Other Characteristics: *A dense shrub up to 0.3 m high, the branchlets covered with white hairs. The leaves are shortly stalked, leathery, ending in a fine point, sometimes slightly hooked, hairless, pale green. The flowers are borne above the leaves in several whorls of 3, each flower ca 1 cm long. The petals are two-toned: orange-yellow and reddish purple.*

References: *Aplin 1973; Everist 1974; Gardner & Bennetts 1956.*

# Gastrolobium appressum

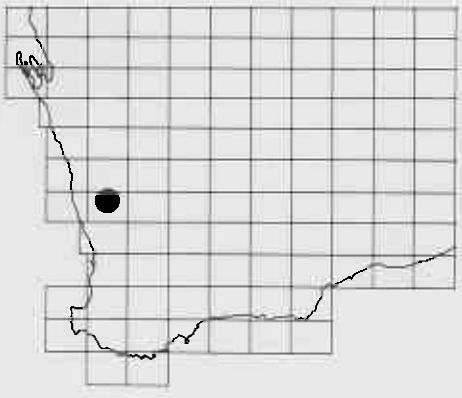
Flowers



Stalk bearing flower buds and leaves in whorls of three

Leaves

Fruit



GASTROLOBIUM GLAUCUM *C.A. Gardner*

*Wongan Poison*

**Distribution and Habitat:** *This is limited to the Wongan Hills region, growing in scrub on gravelly loam soil.*

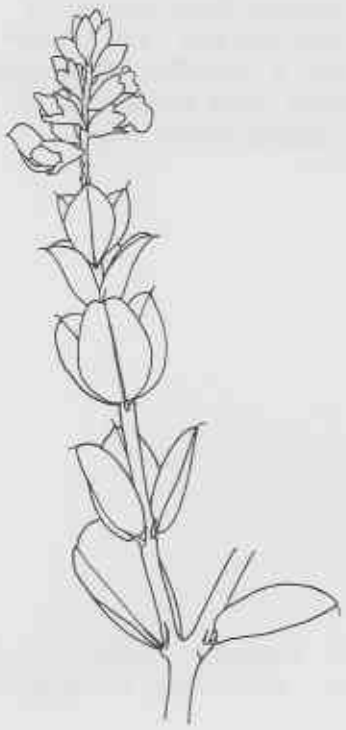
**Flowering Period:** *August-September.*

**Distinctive Characteristics:** *Its leaves are blue-green or almost grey, up to 1.7 cm long and 1.3 cm wide, flat, leathery, with a fine rigid point, erect and borne in whorls of 3. The stipules are small and black.*

**Other Characteristics:** *A compact shrub up to 0.6 m high, with many stems arising from a woody stock. The flowers are orange and red, well under 1 cm long, in closely clustered whorls of 3, borne above the leaves. The sepals and flower stalks are densely hairy.*

**References:** *Aplin 1973; Everist 1974; Gardner & Bennetts 1956.*

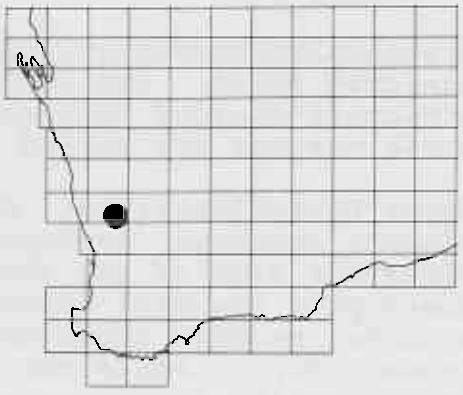
# Gastrolobium glaucum



Branch bearing flower buds and leaves in whorls of three

Flower

Underside of leaf



## GREVILLEA (PROTEACEAE)

Shrubs or trees with alternate, often divided, leaves. The flowers are usually loosely arranged in few or many-flowered clusters. Each flower bud has 4 perianth parts, united to form a tube, which is usually dilated at the base and curled under on one side at the top. The tips of the perianth segments tend to separate as the flower opens and each bears a single stamen in a hollow. The long style is bent over in the bud, protruding from a split down one side of the perianth tube, and is released as the flower opens but usually remains curved. The fruit (a follicle) is thin-walled, rounded, containing 1 or 2 seeds, opening along the upper margin to release the seeds and falling from the plant in the same year as flowering occurred.

### GREVILLEA BAXTERI *R. Br.*

*Cape Arid Grevillea*

**Distribution and Habitat:** *This species ranges from the Mt Ragged-Cape Arid region to near Scadden, growing in sand in shrubland.*

**Flowering Period:** *June-September, February.*

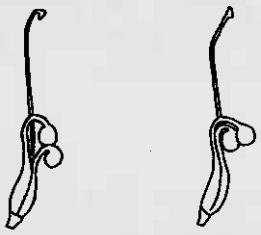
**Distinctive Characteristics:** *It has a hairy ovary (inside the perianth tube). The leaves are generally 8-13 cm long, pinnately divided into many long narrow fairly erect segments, whose margins are rolled under to the central vein.*

**Other Characteristics:** *Spreading shrub up to 2 m or more tall. Flowers numerous, arranged in rather dense terminal clusters along one side of the stem. Each flower 2-2.5 cm long, the lower part greenish brown, the ends of the perianth segments a deeper reddish brown and the style usually orange or reddish brown. Tip of style cup-shaped. Fruits woody, ca 4.5 cm long including the long persistent style.*

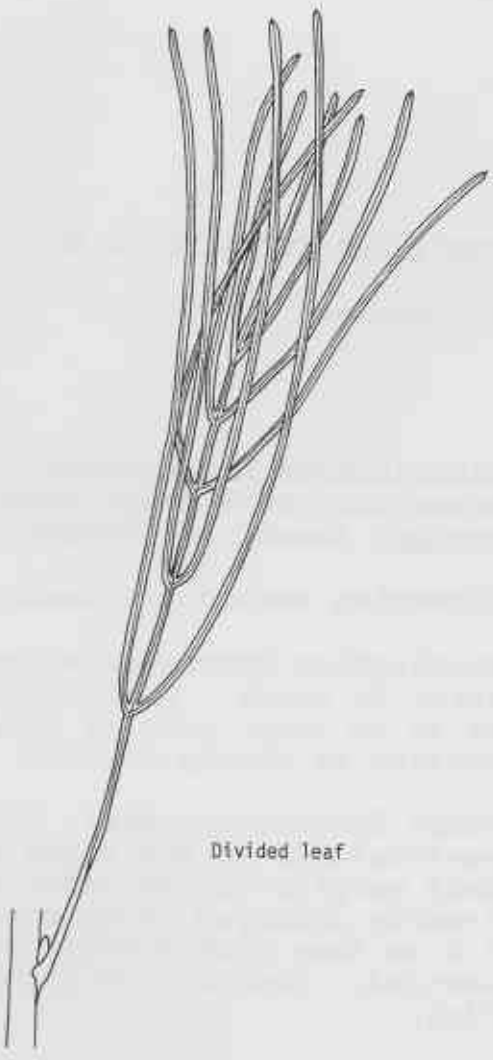
**References:** *Bentham 1870.*

# Grevillea baxteri

Flower buds



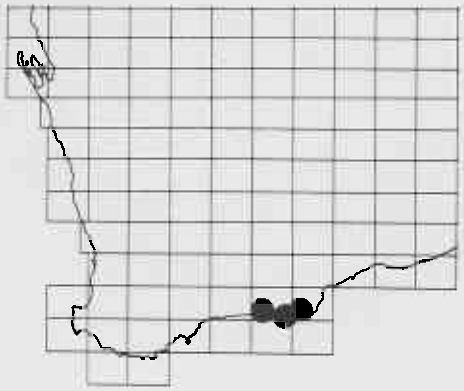
Open flowers



Divided leaf

Fruit

Open fruit



GREVILLEA CIRSIIFOLIA *Meisn.*

*Varied-leaf Grevillea*

**Distribution and Habitat:** *G. cirsiifolia grows in gravelly soil, associated with thick scrubland and occasional Wandoo (Eucalyptus wandoo) trees. It occurs from Darkan to Tenterden.*

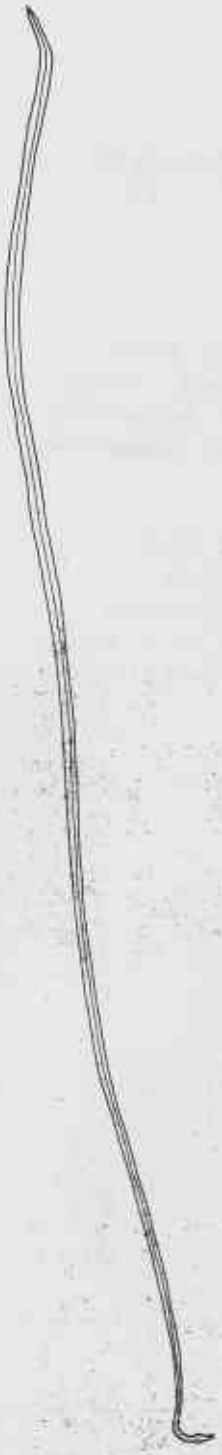
**Flowering Period:** *September-December.*

**Distinctive Characteristics:** *The ovary (inside the perianth tube) is hairy. A prostrate shrub whose leaves are erect, up to 20 cm long, usually very narrow. Leaf margins entire, toothed or deeply divided.*

**Other Characteristics:** *Stems with few branches. Shortly hairy, particularly on the young growth and undersides of the leaves. Leaf margins rolled under slightly. Flowers very numerous, loosely arranged along erect leafless stalks. Each flower ca 0.5 cm long with a stalk ca 0.7 cm long, pale yellow, sweetly scented. Fruits 1 cm or more long, ca 0.8 cm wide and rather flat.*

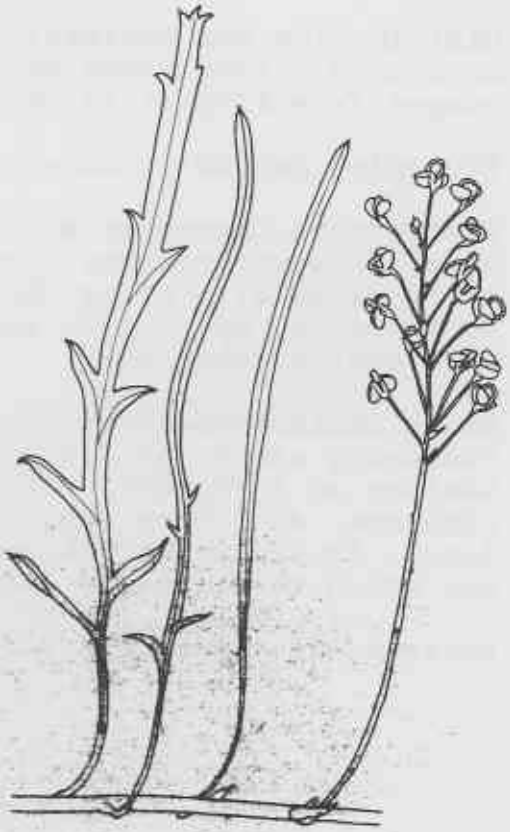
**References:** *Bentham 1870.*

# Grevillea cirsiifolia



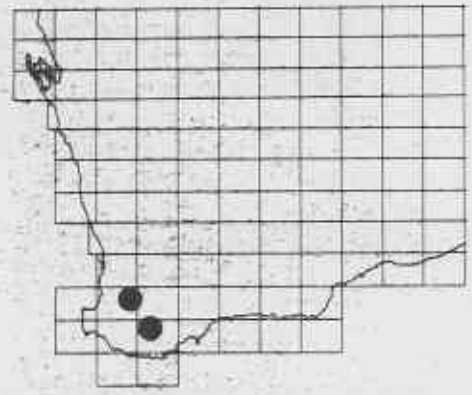
Long leaf

Divided leaf



Prostrate stem bearing leaves of varied shape and a flowering stalk

Fruit



GREVILLEA DRUMMONDII *Meisn.*

*Drummond's Grevillea*

**Distribution and Habitat:** *This species occurs in Eucalypt woodlands, often close to large rocks, in sandy soil. It ranges from Bolgart to the Shannon River area.*

**Flowering Period:** *June-October.*

**Distinctive Characteristics:** *Its style and ovary are both hairy; its upper stems very hairy. Leaves not divided, very hairy especially along the margins, shortly pointed, tapering to the stem, up to 4 cm long and almost 1 cm wide but sometimes much smaller than this.*

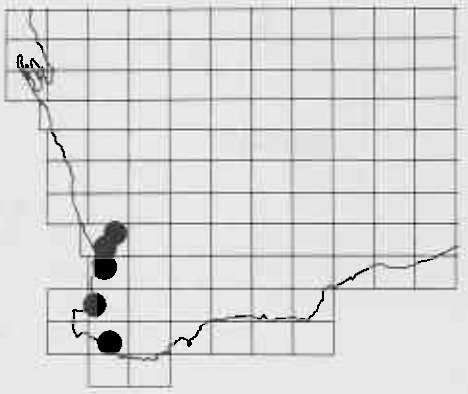
**Other Characteristics:** *Spreading shrub up to ca 1 m tall. Flowering stalks ca 0.3 cm long in the leaf axils, each bearing ca 7 flowers. Flowers yellow, becoming orange-red with age, ca 0.7 cm long, their individual stalks ca 0.2 cm long. Fruits up to 1.5 cm or more long and 0.7 cm wide, with the short curved style attached.*

**References:** *Bentham 1870; Morcombe 1968.*

Hairy leaves and a cluster of flower buds

Young fruit

Older fruit



Grevillea drummondii

# SOME GAZETTED RARE WESTERN AUSTRALIAN PLANTS

The leafless blue-grey stems with their widely spreading forks identify this wattle, shown in full flower.
(Photo: B. R. Maslin)

*Acacia aphylla* Leafless Rock Wattle

Several *A. aphylla* plants growing in crevices on a granite rock in the Darling Range. This is an unusual, if not unique, habitat for a wattle species.
(Photo: B. R. Maslin)

*Acacia aphylla* Leafless Rock Wattle

*Acacia argutifolia* East Barrens Wattle

The spreading habit of an *A. argutifolia* shrub, growing in shallow sand on a rocky hillside in the Fitzgerald River National Park.
(Photo: B. R. Maslin)

*Acacia depressa* Echidna Wattle

The upright spines of this ground-hugging wattle are visible among the golden flower heads and divided leaves. It bears a closer resemblance to an echidna when it is not in flower.
(Photo: B. R. Maslin)

This photograph could have been taken in any season because the species flowers all year round. However, the peak flowering period is from August to November.
(Photo: A. S. George)

*Adenanthos detmoldii* Yellow Jugflower

Red flower cones among the clusters of feathery leaves. Fruiting cones derived from the previous year's growth occur below on the bare wood.
(Photo: G. J. Keighery)

*Banksia brownii* Feather-leaf Banksia

*Banksia goodii* Good's Banksia

A two-toned cone borne at ground level and closely surrounded by leaves. The red flower buds become brown as they open progressively from the base of the cone upwards.
(Photo: S. D. Hopper)

*Banksia tricuspis* Pine Banksia

Flowering cones with long yellow hooked styles and leaves resembling pine needles.
(Photo: G. J. Keighery)

*Banksia tricuspis* Pine Banksia

A very spreading shrub 3 m tall dominating dense low heath on gravelly soil in the Gairdner Range.
(Photo: S. D. Hopper)

Although these drooping flower heads are red-brown, a paler greenish colour is more typical. The styles are capped with a shining globule of sticky pollen.
(Photo: B. L. Rye)

*Darwinia acerosa* Fine-leaved Darwinia

*Darwinia carnea* Mogumber Bell

*D. carnea* is by far the rarest of the true bell species. The strict opposite and decussate arrangement of both its leaves and colourful bell bracts distinguish it from all the Stirling Range (mountain) bells.
(Photo: Unknown)

*Darwinia collina* Yellow Mountain Bell

The yellow colour of these bells is distinctive and the species also has the most rounded leaves and bracts among the mountain bells. It occupies the highest altitudes of any mountain bell in the Stirling Range.
(Photo: G. J. Keighery)

Nestled among other species in the Stirling Range, this darwinia shrub does not appear outstanding, but its bells are the largest and probably the most spectacular in its genus.
(Photo: G. J. Keighery)

*Darwinia macrostegia* Mondurup Bell

*Darwinia meeboldii* Cranbrook Bell

The green-white-red colour scheme of *D. meeboldii's* bells is very striking. It occurs both in the Stirling Range and nearby hills stretching towards Cranbrook.
(Photo: F. W. Humphreys)

The beautiful deep pink bracts of this bell are fringed with hairs and the leaves are also hairy. The species grows among rocks on mountain slopes at the eastern end of the Stirling Range.
(Photo: G. J. Keighery)

*Darwinia squarrosa* Fringed Mountain Bell

*Dodonaea hackettiana* Perth Hop Bush

This species is one of the few plants entirely confined to the Perth metropolitan area. Its large papery fruits may be yellow or red.
(Photo: I. R. Dixon)

*Dryandra comosa* Wongan Dryandra

A yellow flowering head surrounded by numerous attractive brown bracts next to several fruiting heads from the previous season's flowers. Normally the flower heads are hidden below a tangled mass of extremely long leaves.
(Photo: B. L. Rye)

Distinctive looking *Dryandra pulchella* shrubs 1 m tall (in the foreground) growing near the larger rounded shrubs of *Dryandra comosa* (background).
(Photo: S. D. Hopper)

*Dryandra pulchella* and *Dryandra comosa*

*Dryandra pulchella* Sprawling Dryandra

*D. pulchella* produces numerous golden flower heads nestled along the stem among its spreading silvery leaves. The flower buds in the heads pictured are almost ready to open.
(Photo: S. D. Hopper)

A shrub growing in loam along a river bank in the Fitzgerald River National Park.
(Photo: S. D. Hopper)

*Eremophila denticulata* Fitzgerald Eremophila

This interesting and pretty flower, presumably adapted for bird pollination, is strongly two-lipped and borne horizontally on an S-shaped stalk. The leaves have serrated margins.
(Photo: S. D. Hopper)

*Eremophila denticulata*
Fitzgerald Eremophila

*Eremophila virens* Campion Eremophila

This species occurs north of Merredin on sandy loam near to exposed granite rock. It has large leaves and its green flowers are borne on S-shaped stalks.
(Photo: B. Dell)

*Eucalyptus burdettiana* Burdett Gum

Two plants of this mallee growing in sand among quartzite rocks on coastal slopes in the Fitzgerald River National Park.
(Photo: S. D. Hopper)

*Eucalyptus caesia* subspecies *magna* photographed at sunset in winter on one of the spectacular granite ridges of Chiddarcooping Hill Nature Reserve. The sprawling mallee habit is characteristic of the subspecies.
(Photo: S. D. Hopper)

*Eucalyptus caesia* Caesia

A New Holland Honeyeater feeding from one of the pendent red flowers of *E. caesia* subspecies *caesia*. The silvery frosting is fairly intact on the buds and upper parts of the flowers but little remains on the stems and fruits.
(Photo: S. D. Hopper)

*Eucalyptus caesia* Caesia

*Eucalyptus carnabyi* Carnaby's Mallee

The only plant of the species ever to have been discovered is still surviving in a farmer's paddock The extreme rarity of the plant suggests that it may be a hybrid but this has yet to be proven
(Photo: S D. Hopper)

*Eucalyptus carnabyi* Carnaby's Mallee

An attractive combination of grey-green leaves with creamy yellow flowers approximately 3 cm across.
(Photo: S. D. Hopper)

Pale blue-grey stems bearing leaves, buds and fruits. This species is related to the whipstick mallees *E. pendens* and *E. sepulcralis.*
(Photo: S. D. Hopper)

*Eucalyptus exilis* Boyagin Mallee

**Clusters of yellow flowers packed between the paired, more or less round leaves. This species is confined to granite rocks east of Kalgoorlie.**
**(Photo: A. S. George)**

***Eucalyptus kruseana* Bookleaf Mallee**

Pendent banches, leaves and buds. The glossy dark red appearance of the young branches is typical of the species.
(Photo: S. D. Hopper)

*Eucalyptus pendens* Badgingarra Mallee

*Eucalyptus exilis* Boyagin Mallee

A small mallee with erect slender silvery stems, growing in sand over laterite near Pingelly.
(Photo: S D. Hopper)

***Eucalyptus pendens* Badgingarra Mallee**

**This photograph shows the remarkable spindly habit of *E. pendens*, emergent above a very low heath. From a distance, these whipstick mallees, are hard to see unless silhouetted against the sky because they blend into the background vegetation.**
**(Photo: S. D. Hopper)**

The stalked red flowers of Rose Mallee are smaller than those of the related species, Mottlecah *(E. macrocarpa)*, but are still spectacular. Their abundant nectar attracts several species of honeyeaters.
(Photo: S. D. Hopper)

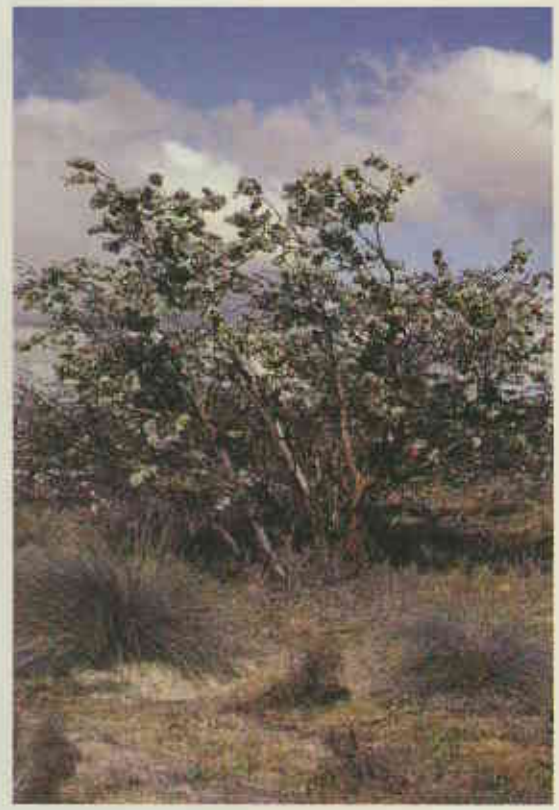
*Eucalyptus rhodantha* Rose Mallee

*Eucalyptus steedmanii* Steedman's Gum

These trees of *E. steedmanii* were photographed in a morning mist soon after the rediscovery of the species in 1978 by officers of the Department of Agriculture.
(Photo: S. D. Hopper)

A mallee with white branches and silvery foliage, growing over low heath in sandy soil near Gunyidi.
(Photo: S. D. Hopper)

*Eucalyptus rhodantha* Rose Mallee



*Eucalyptus steedmanii* Steedman's Gum

The decorative buds and fruits are four-sided and distinctly winged.
(Photo: J. Briggs)

The petals of these elongated flowers are white on top, reddish underneath and usually widely spreading when mature. The species occurs between Bunbury and Nannup.
(Photo: A. S. George)

*Franklandia triaristata* Plumed Lanoline Bush

Some of the notable variability in leaf shape of this species is evident in the plant pictured here in full bloom.
(Photo: E. Wittwer)

*Grevillea cirsiifolia* Varied-Leaf Grevillea

*Gastrolobium appressum*
Scale Leaf Poison

The leaves of this poison plant are in threes and are closely held against the stem. The species occurs on gravel in the Gunyidi area.
(Photo: T. E. H. Aplin)

*Gastrolobium glaucum* Wongan Poison

Known from only one location near Wongan Hills, this species has distinctive blue-green leaves arranged in threes.
(Photo: T. E. H. Aplin)

*Grevillea baxteri* Cape Arid Grevillea

Large divided leaves and a stalk with the flowers opening from the base upwards are illustrated. This species ranges from Mt Ragged to near Scadden.
(Photo: A. S. George)

A spreading shrub with quite bluish foliage growing in the Darling Range.
(Photo: G. J. Keighery)

*Grevillea drummondii* Drummond's Grevillea

Decorative clusters of yellow buds and flowers. The numerous long soft hairs in the undersurfaces of the leaves are highlighted in the sunshine.
(Photo: G. J. Keighery)

*Grevillea drummondii*
Drummond's Grevillea

*Grevillea dryandroides* Phalanx Grevillea

A trailing flower stalk with the flowers opening progressively towards the tip. The large red upright flowers should attract birds to feed on the ground and act as pollinators. The large divided leaves are normally held in a much more upright position than that pictured.
(Photo: A. S. George)

*Grevillea dryandroides* Phalanx Grevillea

Many of these plants are probably interconnected by underground stems. Vegetative reproduction by means of rhizomes is common at this site near Cadoux.
(Photo: B. L. Rye)

Attractive fan-shaped leaves, clasping the stem and some holding clusters of bright red buds and flowers.
(Photo: K. Newbey)

*Grevillea infundibularis*
Fan-leaf Grevillea

An attractive shrub growing in a forest near a watercourse in the Collie area.
(Photo: A. S. George)

*Grevillea ripicola* Collie Grevillea

*Grevillea involucrata* Lake Varley Grevillea

The red bracts at the bases of the flowers are an unusual feature in the genus and add extra colour to this species.
(Photo: A. S. George)

*Grevillea ripicola* Collie Grevillea

The unusual shape of the divided leaves distinguishes this species. The flower clusters with their long radiating styles are also rather distinctive.
(Photo: A. S. George)

The remarkable growth habit of *H. aculeata* with its erect unbranching stems resembling columns is shown here.
(Photo: A. S. George)

*Hakea aculeata* Column Hakea

This *Hakea* is restricted to a few road verges in the Cunderdin area. It has needle-pointed leaves and bears a profusion of strongly scented flowers.
(Photo: A. S. George)

*Hakea aculeata* Column Hakea

*Hakea megalosperma* Lesueur Hakea

An attractive many-stemmed shrub with young white flowers and numerous older red flowers, growing in cultivation at Kings Park.
(Photo: I. R. Dixon)

*Hakea megalosperma* Lesueur Hakea

This hakea's fruit is perhaps the largest in the genus, rivalled only by the more rounded fruit of *H.platysperma.* Clusters of red flowers are borne in the leaf axilis.
(Photo: A. S. George)

Looking down on *H. lemnoides* with its *Lemna*-like leaves floating on shallow fresh water and its stems rooted in the clay below.
(Photo: G. J. Keighery)

*Hydrocotyle lemnoides* Aquatic Pennywort

*Kennedia macrophylla* Augusta Kennedia

*K. macrophylla* forming a carpet over bracken and other low coastal vegetation. It may also climb up to 4 m high in timbered areas. Its bright red flowers with yellow throats and large leaflets in threes are visible.
(Photo: G. J. Keighery)

This individual has yellow stamens but many have deep purple-black anthers contrasting with the bright orange petals.
(Photo: I. R. Dixon)

*Hibbertia mineata* Orange Hibbertia

Beautiful pink flowers protruding above Holly-like leaves. Like most members of its genus, *L. echinata* bears leaves in whorls of 3 and flowers in clusters of an odd number, 7.
(Photo: A. S. George)

*Lambertia echinata* Prickly Honeysuckle

*Lambertia orbifolia* Round-leaf Honeysuckle

The leaves are almost round and borne in opposite pairs, both unique features in this genus. The arrangement of the bright red flowers in groups of about 4 is also unusual.
(Photo: A. S. George)

Several cushion-shaped plants growing on a sandy road verge.
(Photo: E. Wittwer)

*Lechenaultia pulvinaris* Cushion Lechenaultia

Spreading blue flowers partially carpeting the fine dense foliage.
(Photo: E. Wittwer)

*Lechenaultia pulvinaris* Cushion Lechenaultia

*Lechenaultia superba*
Barrens Lechenaultia

Brightly coloured flowers terminating the branchlets. The soft leaves are very narrow and are crowded on the upper branches.
(Photo: A. S. George)

*Lechenaultia superba* Barrens Lechenaultia

A flowering shrub growing in a rocky gully on a hillside in the Fitzgerald River National Park.
(Photo: J. S. Beard)

A plant in flower growing on the steep rocky slopes of Mt Augustus.
(Photo: E. Wittwer)

*Pityrodia augustensis* Mt Augustus Foxglove

This species occurs in open woodlands of Powderbark Wandoo on lateritic ridges east of Pingelly.
(Photo: A. S. George)

*Pomaderris bilocularis*
Tutanning Pomaderris

*Pomaderris grandis* Large Pomaderris

This has by far the largest leaves in the genus. Its clusters of tiny flowers are borne in groups on branching stalks, producing a massed display. It is confined to the Mount Manypeaks region.
(Photo: F. W. Humphreys)

*Rhizanthella gardneri*
Underground Orchid

A partially excavated plant. The bracts surrounding the flower head had raised and cracked the surface of the soil but were not protruding above the soil prior to the excavation.
(Photo: S. D. Hopper)

*Rhizanthella gardneri*
Underground Orchid

Although these colourful flowers are normally hidden below the ground, they attract, and are pollinated by insects which reach them through cracks in the soil.
(Photo: H. Foote)

The unmistakable appearance of *Spirogardnera*, with its spirals of white flower clusters. The species occurs between Bindoon and Eneabba.
(Photo: G. J. Keighery)

*Spirogardnera rubescens* Spiral bush

Despite its numerous fruits, this solitary plant failed to set seed, probably because it requires cross-pollination. Each fruiting stalk arises from a separate rosette of leaves.
(Photo: S. D. Hopper)

*Stylidium coroniforme*
Wongan Triggerplant

*Stylidium coroniforme*
Wongan Triggerplant

The last flower of the 1980 season borne on the only known surviving plant of the species. The petals are creamy yellow when they first open but soon become white. They are each about 6 mm long.
(Photo: K. F. Kenneally)

*Tegicornia uniflora* Mat Samphire

*T. uniflora* grows on the margins of salt lakes near South Stirling and Ongerup.
(Photo: A. S. George)

*Verticordia staminosa* Wongan Verticordia

The glossy red bracts on the buds and flowers are a distinctive feature of this feather flower. It is also unusual in having long protruding stamens in its winter flowering season.
(Photo: A. S. George)

GREVILLEA DRYANDROIDES *C.A. Gardner*

*Phalanx Grevillea*

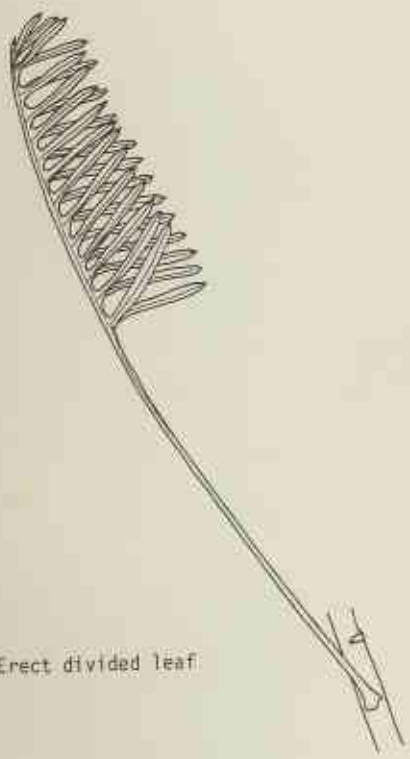
Distribution and Habitat: *G. dryandroides grows in yellow sandy soil in low heath, usually under taller shrubs. It occurs in the Ballidu-Cadoux region.*

Flowering Period: *September-October, February-March.*

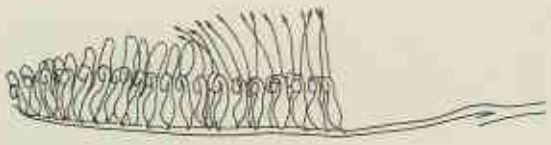
Distinctive Characteristics: *The style terminates in a cone. Leaves up to ca 12 cm long, deeply divided into numerous narrow segments, each up to 1.5 cm long. A prostrate shrub with scattered erect stems bearing erect leaves.*

Other Characteristics: *Leaf segments have fine short hairs and end in a short dark point. Leaf margins curled under towards the central prominent vein. Flowers very numerous, borne along the upper sides of prostrate stems. Each flower shortly stalked, red, hairy, ca 2 cm long including the long style. Fruit hairy, ca 1 cm long.*

References: *Erickson et al 1979; Gardner 1933.*

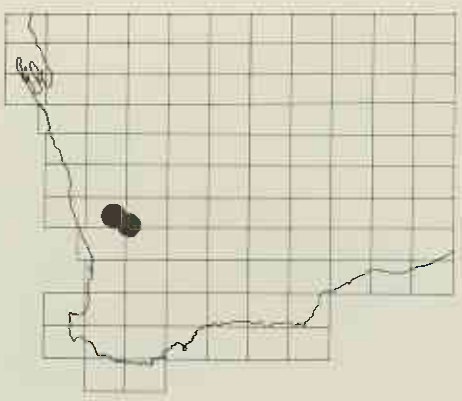


Erect divided leaf



Prostrate flowering branch

Fruit



Grevillea dryandroides

10427—8

GREVILLEA INCONSPICUA *Diels*

*Cue Grevillea*

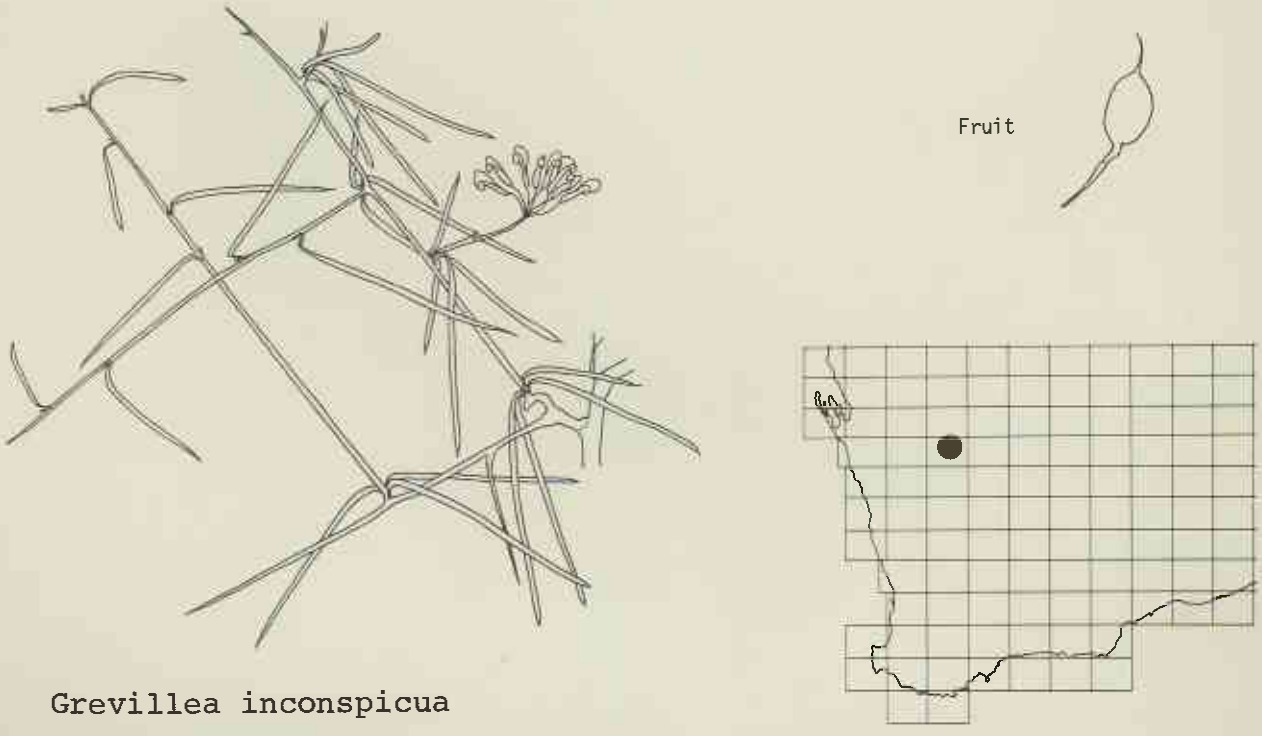
**Distribution and Habitat:** *This occurs in the Cue region, growing along rocky watercourses, which are dry most of the year.*

**Flowering Period:** *July.*

**Distinctive Characteristics:** *Branches very widely spreading, ending in spikes. Leaves not divided, up to 4 cm long but very narrow (ca 0.1 cm), slightly hairy, very widely spreading.*

**Other Characteristics:** *A much branched but fairly open shrub, up to 2 m high, with descending leaves. Leaves green with a short dark point at tip. Flowering stalks ca 1 cm long, in the leaf axils, bearing ca 8 flowers. Flowers narrow, pinkish white, less than 1 cm long including the long curved style, their individual stalks ca 0.2 cm long. Fruits ca 1 cm long and 0.5 cm wide with a long narrow point.*

**References:** *Diels 1904.*




Grevillea inconspicua

GREVILLEA INFUNDIBULARIS *George*

*Fan-leaf Grevillea*

**Distribution and Habitat:** *Restricted to the Mount Barren ranges, G. infundibularis grows on hill slopes among quartzite rocks, in scrub.*

**Flowering Period:** *July, October.*

**Distinctive Characteristics:** *Leaves stem-clasping, fan-shaped and curved around the stem, up to ca 1.5 cm long, broader than long, the margin divided into ca 8 large, shortly pointed teeth, with a prominent vein to each tooth.*

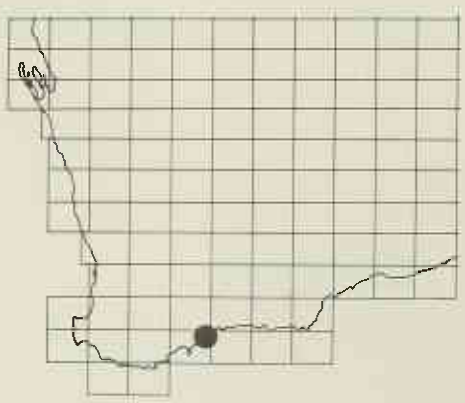
**Other Characteristics:** *A sprawling shrub up to 1 m tall, the young growth hairy. Flowers red, hairy except for the style, in few-flowered terminal clusters; each flower ca 1.5 cm long including the curved style, with a stalk ca 0.6 cm long. Fruits ca 1.5 cm by 0.8 cm with a long narrow point formed by the persistent style.*

**References:** *George 1974a.*

Flowers and pressed leaves

Fruit

Top view of fan-shaped leaf



Grevillea infundibularis

GREVILLEA INVOLUCRATA *George*

*Lake Varley Grevillea*

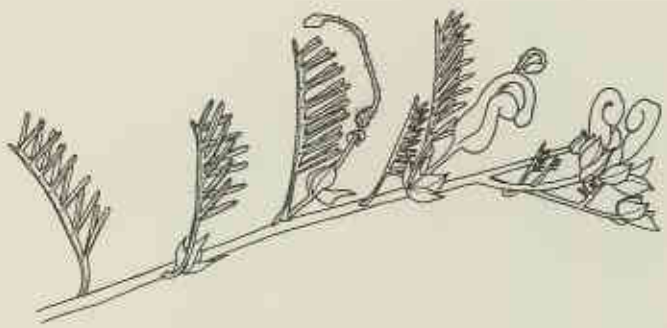
Distribution and Habitat: *G. involucrata grows in shallow sand over laterite in open heath between Hyden and Lake Magenta.*

Flowering Period: *June-July.*

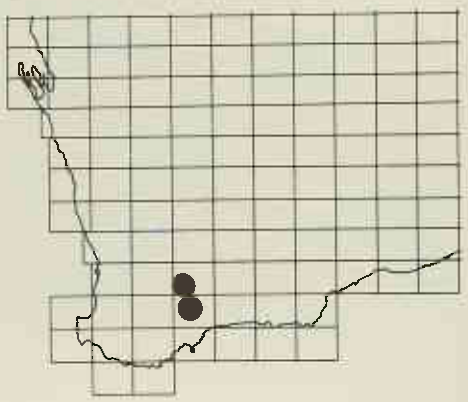
Distinctive Characteristics: *Ovary and style both hairy. The terminal and axillary clusters of 1-3 flowers are surrounded by a whorl of persistent bracts, which are deep pink, pointed and ca 0.5 cm long. Leaves deeply divided, up to 3 cm long.*

Other Characteristics: *A spreading shrub up to 0.5 m tall and 2 m broad, the branches hairy. Leaf segments ca 5-13 per leaf, sharply pointed, narrow, usually ca 0.5 cm long, the margins curled under towards the prominent central vein. Flowers broad at base, nearly 2 cm long including the curved style, apparently orange, their stalks up to 1 cm long.*

Reference: *George 1974a.*



Flowering stem with divided leaves



Grevillea involucrata

GREVILLEA PROSTRATA *C.A. Gardner & George*

*Pallarup Grevillea*

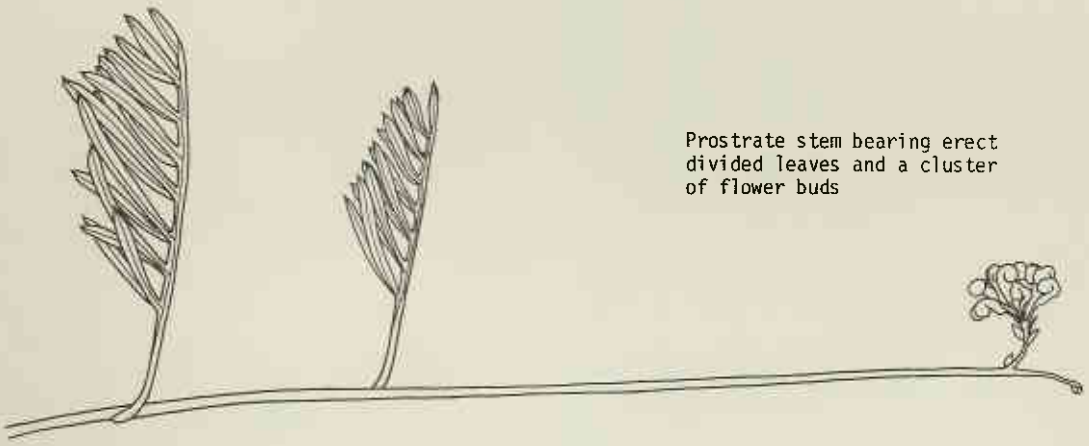
**Distribution and Habitat:** *G. prostrata grows in low shrubland on white-yellow sand in the Newdegate-Lake King region.*

**Flowering Period:** *August-October.*

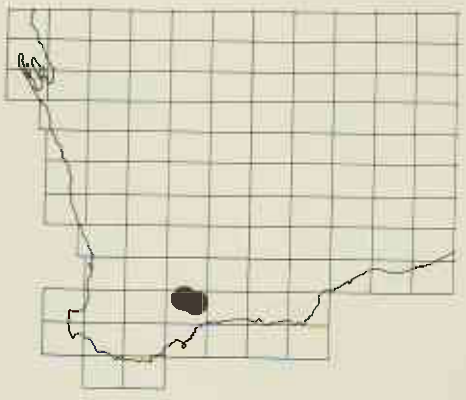
**Distinctive Characteristics:** *A prostrate shrub whose leaves are erect, scattered, deeply divided and up to ca 6 cm long. There are usually 11-21 shortly pointed leaf segments, each up to 4 cm long and less than 0.2 cm across, their margins rolled under towards the central vein.*

**Other Characteristics:** *Stems not much branched, hairy when young. Flower clusters arranged along the leafless ends of long stems, each cluster many flowered. Flowers pale pink to reddish purple, ca 0.75 cm long, the style curved and no longer than the perianth segments, their stalks ca 0.5 cm long. Fruit more or less oval shaped, ca 1 cm long and 0.8 cm wide, with a long narrow point formed by the persistent style.*

**References:** *Gardner & George 1963.*





Grevillea prostrata

GREVILLEA RIPICOLA *George*

*Collie Grevillea*

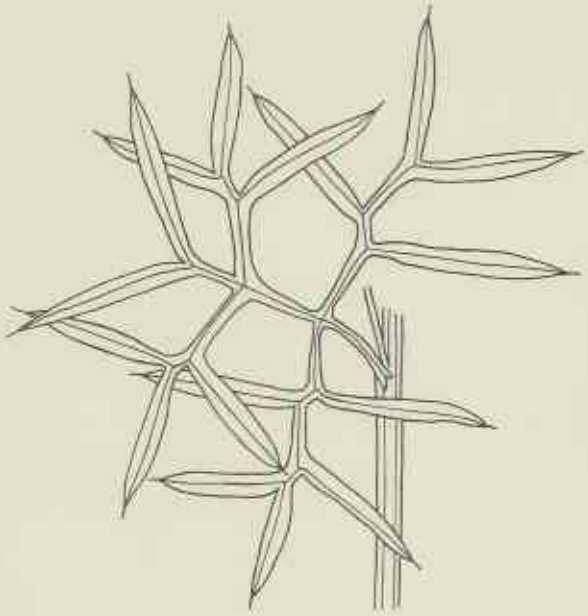
**Distribution and Habitat:** *This grevillea is restricted to the Collie region, growing in gravelly loam along river banks.*

**Flowering Period:** *September-November.*

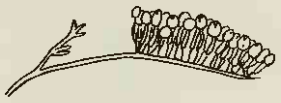
**Distinctive Characteristics:** *The perianth segments are hairy in their throat and on their margins. Leaves up to ca 4 cm long, divided widely into 3-5 lobes, the lower lobes again divided into 2-5 lobes. All segments 3-veined, sharply pointed, flat with slightly curved-in margins, up to 3 cm long and 0.4 cm wide.*

**Other Characteristics:** *A densely branched shrub up to 3 m tall, the young growth hairy. Flowers pink (becoming red with age) with green tips, ca 3 cm long including the very long style, on stalks up to 0.5 cm long in many-flowered clusters, their common stalk ca 3 cm long. Fruits ca 2 cm long and 0.5 cm wide with the persistent style ca 2.5 cm long.*

**References:** *George 1974a.*



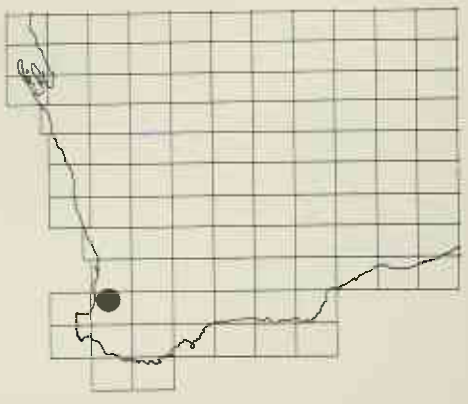
Divided leaf



Young flower buds

Flowers

Fruit



Grevillea ripicola

GREVILLEA SACCATA *Benth.*

*Pouched Grevillea*

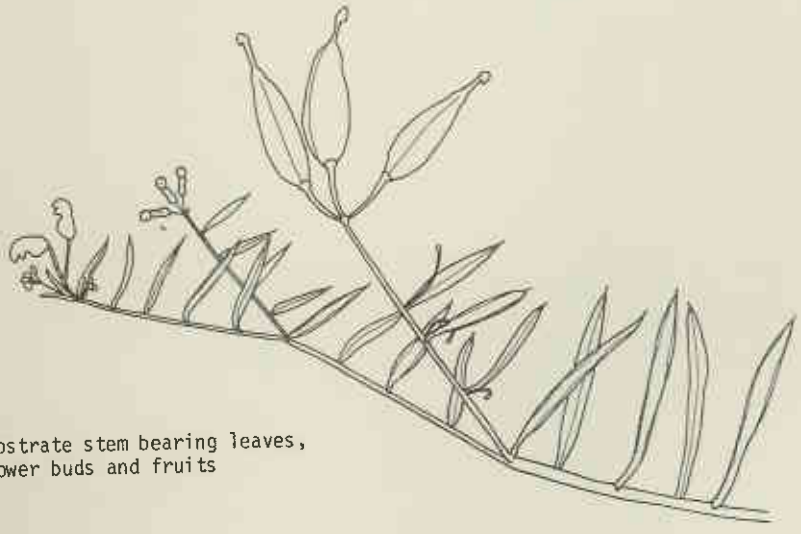
**Distribution and Habitat:** *Restricted to the Hill River region, growing in sandy soil, often with Prickly Bark (Eucalyptus todtiana).*

**Flowering Period:** *June-August.*

**Distinctive Characteristics:** *Flowers very broad (ca 0.5 cm) and ca 0.8 cm long, with a 2 distinct rows of hairs along the inside. Style and ovary hairy. Leaves not divided.*

**Other Characteristics:** *A spreading, apparently prostrate shrub, the branches and young leaves shortly hairy. Mature leaves stalkless, elongated, up to 3 cm long, more or less upright. Flowers in small groups, terminal or in upper leaf axils, their stalks up to 1 cm long. Style just protruding, with a one-sided enlargement at the tip. Fruit ca 3 cm long including style.*

**References:** *Bentham 1870.*



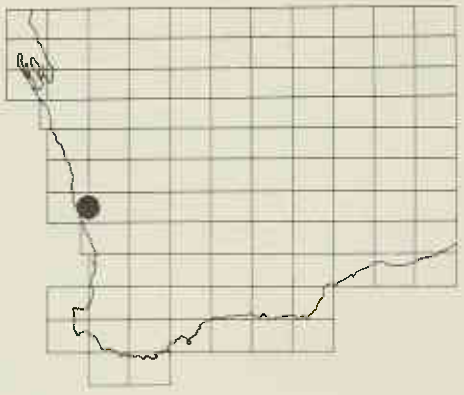
Prostrate stem bearing leaves, flower buds and fruits

Open flowers

Young fruit

Upperside of leaf

Underside of leaf



Grevillea saccata

# HAKEA (PROTEACEAE)

Shrubs or trees, usually with alternate, tough leaves. The flowers are usually in axillary clusters pressed closely between the stem and leaf. Each of the 4 narrow perianth segments of the flower has a hollow near the tip containing a single stamen. The woody fruit (a follicle) is very thick-walled, opening by two valves to release 1 or 2 winged seeds. The fruits remain on the plants for an indefinite period.

## HAKEA ACULEATA *George*

*Column Hakea*

Distribution and Habitat: *H. aculeata grows on sandy loam in the Cunderdin area. Originally, it probably grew in thick tall shrubland.*

Flowering Period: *September-October.*

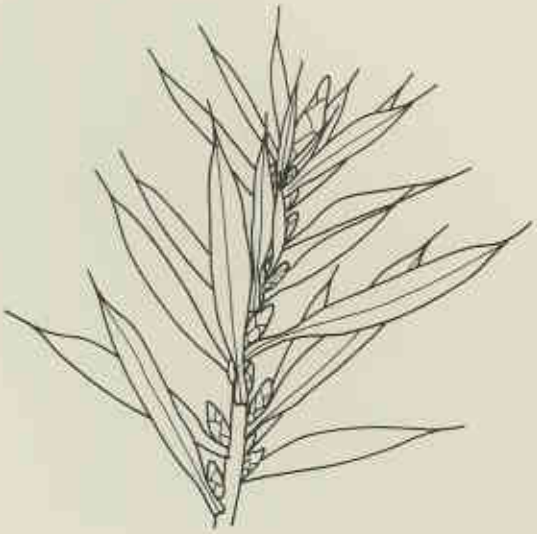
Distinctive Characteristics: *It is closely related to H. ruscifolia, differing in its larger fruit (ca 1.6 cm by 1.4 cm), its elliptical seed with a continuous black wing and its slightly longer style (ca 1 cm). Both species are unusual in having terminal flower clusters and hairy branchlets.*

Other Characteristics: *A shrub up to 3 m tall with a lignotuber and several upright stems. Branchlets numerous, spreading, mostly 1-5 cm long, making the branches look like dense columns. Leaves scattered but more crowded towards the ends of branchlets, up to 4 cm long and 0.8 cm wide, ending in a sharp brown point, shortly stalked or stalkless, initially hairy. Flowers yellow, strongly-scented, directly attached along a short stalk (ca 0.2 cm long) bearing 15-22 flowers. Ovary red, style red at tip, yellow below. Fruits pale brown.*

References: *George 1979.*

# Hakea aculeata

Leaf

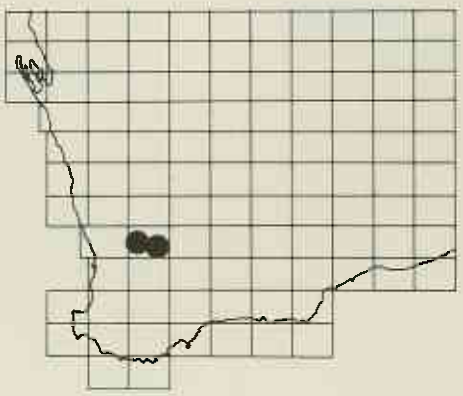


End of branchlet

Open flowers

Cluster of flowers after the perianths have fallen

Fruit



HAKEA MEGALOSPERMA *Meisn.*

*Lesueur Hakea*

Distribution and Habitat: *This hakea grows in grey sand on lateritic hills in a low open heath. It occurs in the Gairdner Range - Eneabba region.*

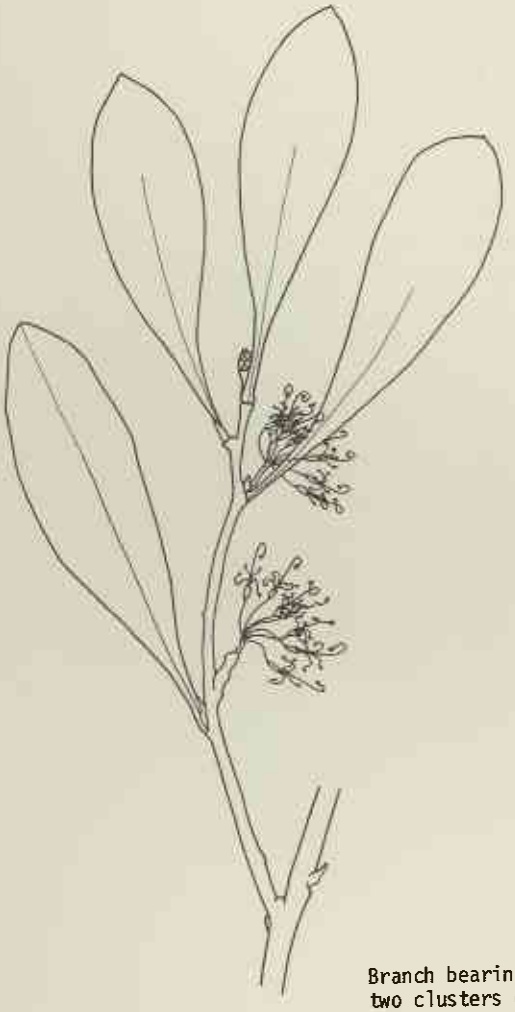
Flowering Period: *April-June.*

Distinctive Characteristics: *Its fruits are up to 8 cm long and 4 cm wide, grey-brown and prominently beaked. These fruits are probably the longest, but not the heaviest, in the genus. The pale green leaves of H. megalosperma are also fairly distinctive.*

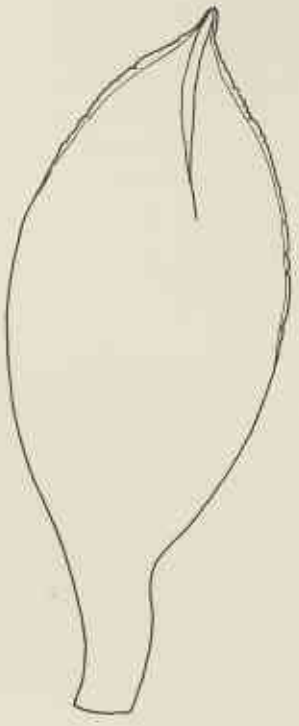
Other Characteristics: *Erect, glabrous, many-stemmed shrub, up to 1 m or more tall and 2 m across. Leaves alternate, up to ca 10 cm long and 4 cm wide, rounded at the end, tapering to the stem, thick, with faint veins. Flowers ca 0.5 cm long, on long stalks (ca 0.5 cm), clustered in groups of 5-10 in the leaf axils, white to pink, becoming red with age.*

References: *Bentham 1870; Erickson et al 1979.*

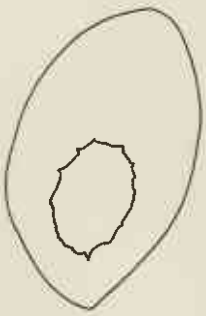
# Hakea megalosperma



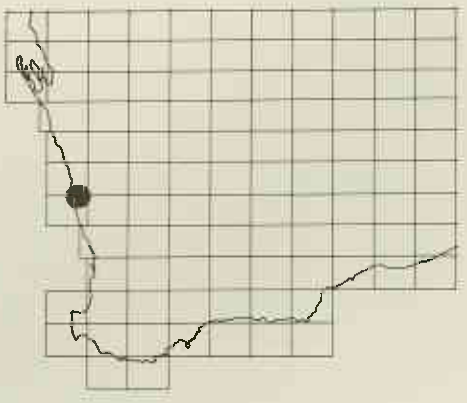
Branch bearing leaves and two clusters of flowers



Fruit



Winged seed



## HIBBERTIA (DILLENIACEAE)

Shrubs, subshrubs or rarely climbers, commonly known as native buttercups. Their flowers are usually yellow, sometimes orange or white. Each flower has 5 persistent sepals, 5 soft spreading petals, few to numerous stamens and 2-5 distinct ovaries and styles. The stamens are often grouped on one side of the styles and sterile stamens may be present. The fruit consists of distinct seed sacks, each of which splits to release the seeds.

### HIBBERTIA BRACTEOSA *Turcz.*

*Porongurups Hibbertia*

**Distribution and Habitat:** *H. bracteosa grows in crevices or moss cushions on granite mountain slopes in the Porongurups.*

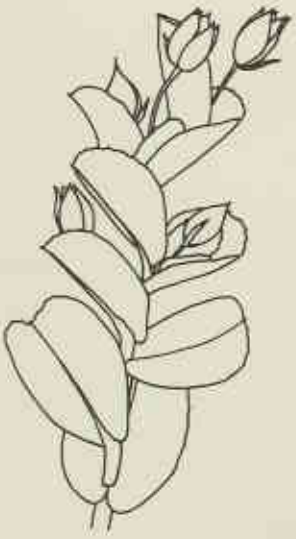
**Flowering Period:** *September-November.*

**Distinctive Characteristics:** *The species has very numerous stamens surrounding its 5 ovaries and a few small sterile stamens outside the fertile ones. Its broad sessile leaves have rounded projections (auricles) at the base.*

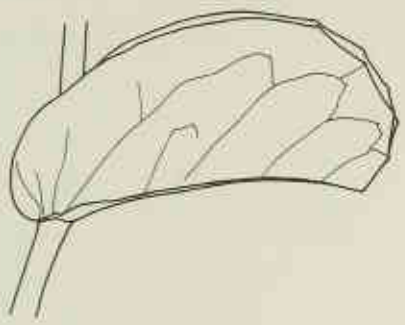
**Other Characteristics:** *A shrub up to ca 1 m high, with erect slightly compressed, 4 sided stems. Leaves rounded, alternate, up to ca 5 cm long and 5 cm wide, folded, closely clasping the stem. Flowers yellow, solitary in leaf axils, ca 3 cm across, their slender stalks 2-3 cm long. Petals broad, barely lobed. A solitary, fairly, narrow bracteole, ca 0.6 cm long, at the base of each flower.*

**Reference:** *Bentham 1863.*

# Hibbertia bracteosa

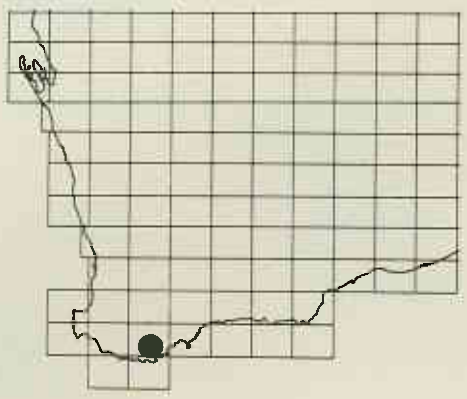


Stem bearing leaves
and flower buds



Large stem-clasping leaf

Flower



HIBBERTIA MINIATA *C.A. Gardner*

*Orange Hibbertia*

**Distribution and Habitat:** *H. miniata occurs in the Bindoon region, growing in dry gravelly soil in Jarrah and Wandoo woodlands.*

**Flowering Period:** *July-October.*

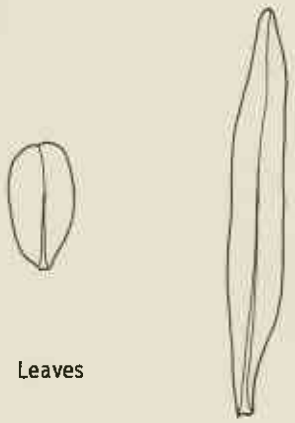
**Distinctive Characteristics:** *Flowers orange, with numerous fertile purple-black or yellow stamens surrounding 5 ovaries.*

**Other Characteristics:** *An erect dense shrub up to 45 cm high. Leaves stalkless, tapering to the stem, with grey hairs and a prominent midrib on the underside, up to 4 cm long and 1 cm wide, their margins tending to curl under. Flowers ca 4 cm across, solitary or 2-3 together, shortly stalked, each with several dark brown bracts, which range up to ca 1 cm long. Sepals have white hairs. Petals broad, deeply lobed.*

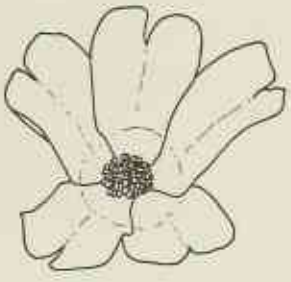
**References:** *Erickson et al 1979; Gardner 1936, 1972.*

# Hibbertia miniata

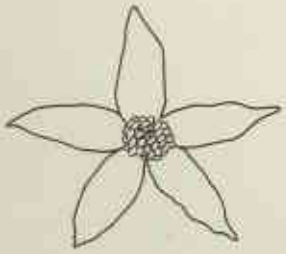
Stalk bearing leaves, flower buds and an open flower



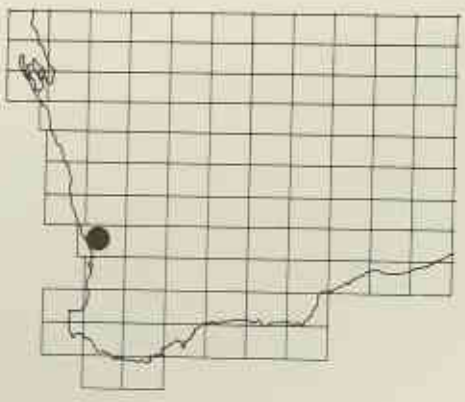
Leaves



Flower



Flower after petals have fallen



## HYDROCOTYLE (APIACEAE)

Perennial or annual herbs, usually creeping and rooting at the nodes. They are commonly known as pennyworts. In Western Australia, all are aquatic or wetland plants. Their soft thin leaves are rounded, lobed or deeply divided and borne on long stalks with 2 thin dry stipules at the base. The tiny flowers are grouped in umbels, that is, with equal-sized stalks radiating from a single point of attachment. Each flower has 5 sepals, 5 petals, 5 stamens opposite the sepals, and 2 swollen styles. The fruit (a schizocarp) is dry, flattened, with prominent wings, its two sides each containing a single seed.

### HYDROCOTYLE LEMNOIDES *Benth.*

*Aquatic Pennywort*

**Distribution and Habitat:** *This occurs in the region directly north of Perth. It grows in shallow fresh water pools, its stem rooted in clay and its leaves floating.*

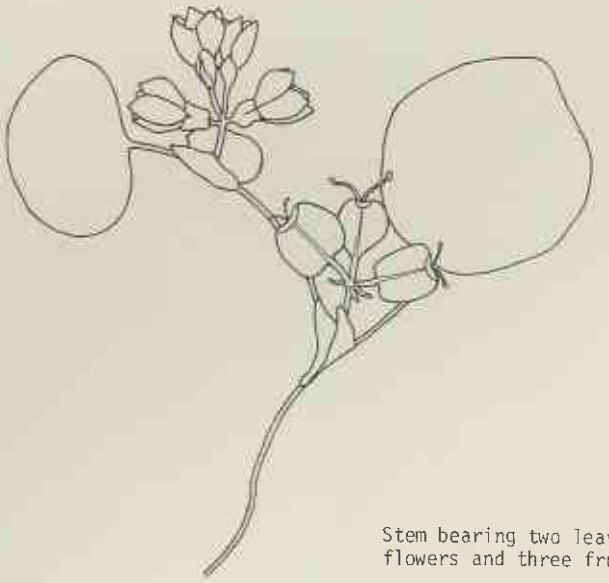
**Flowering Period:** *September-October.*

**Distinctive Characteristics:** *It is the only truly aquatic species in its genus, the others being wetland plants.*

**Other Characteristics:** *Stems extremely fine, narrow, strap-like and usually hairy. Leaves more or less round, up to 0.5 cm across, on slender stalks. Stipules relatively large. Flowers apparently unisexual, with mauve petals, 0.1 cm long, in umbels of 3-6, shortly stalked. Fruits ca 0.1 cm long and broad, somewhat flattened, on distinct individual stalks and a longer common stalk.*

**References:** *Aston 1973; Bentham 1867.*

# Hydrocotyle lemnoides



Stem bearing two leaves, four flowers and three fruits (x 10)

Stem bearing leaves, flowers and fruits

## KENNEDIA (FABACEAE)

The leaves of these creeping or climbing vines are divided into 3 leaflets with small stipules (stipillae) at the base of each leaflet. They have pea flowers, usually pink or red, and 4 of the 5 petals are roughly equal in length. The remaining petal (known as the standard) is generally broader, a different length and widely separated from the other petals. There are 10 stamens, the upper one free and the remaining 9 united to form a sheath, which is open on the upper side. The elongated fruit (a pod) has a single row of hard seeds and splits down both sides when ripe.

### KENNEDIA BECKXIANA *(F. Muell.) F. Muell.*

*Cape Arid Kennedia*

**Distribution and Habitat:** *This species grows in peaty soil among granite rocks on hills in the region east of Esperance.*

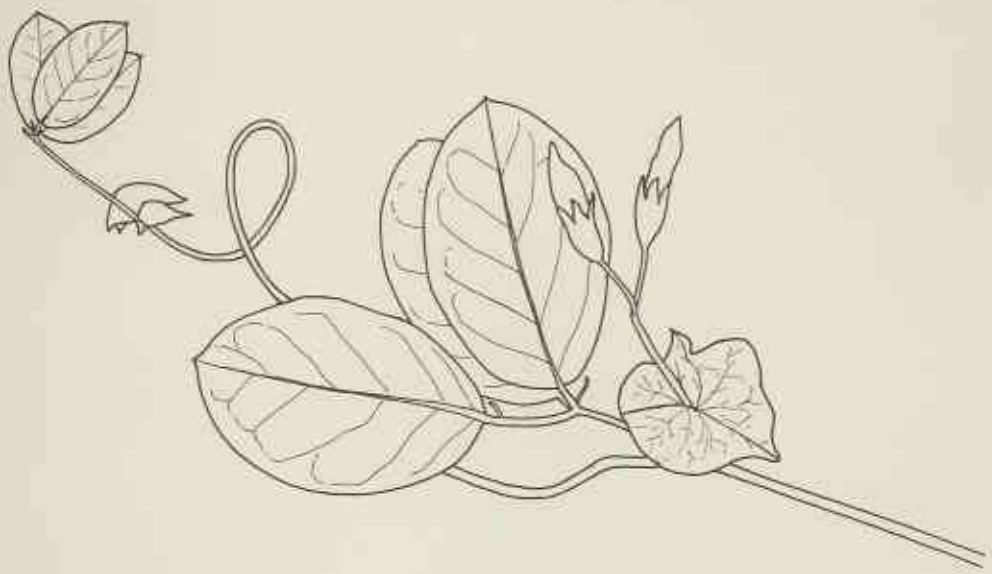
**Flowering Period:** *October-December.*

**Distinctive Characteristics:** *K. beckxiana has 1-3 large red flowers, with yellow throats, arising from 2 large bracts, which are ca 1 cm long and fused to form a broad sheath.*

**Other Characteristics:** *A woody twiner with slight ridges running along the stems. Stipules up to 0.7 cm long, pointed, broad. Leaf stalks ca 2 cm long. Leaflets green with yellow veins, up to 7.5 cm long and 6 cm wide but usually much smaller. Flowers ca 5 cm long, elongated, their individual stalks ca 1 cm long and the common stalk ca 1.5 cm long. Fruits dark, ca 10 cm long, usually tapering to a long narrow point.*

**References:** *Blombery 1978; Jones & Gray 1977.*

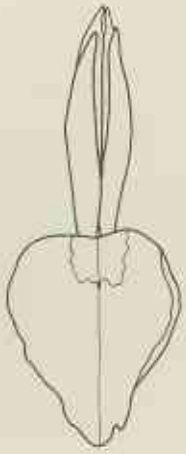
# Kennedia beckxiana



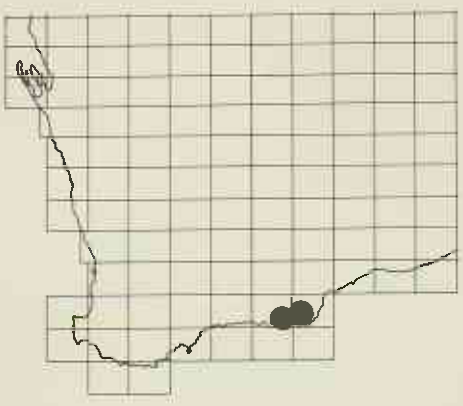
Twining stem bearing flower buds,
fused stipules and divided leaves

Pod

Side view
of flower



Front view
of flower



KENNEDIA GLABRATA *(Benth.) Lindl.*

*Northcliffe Kennedia*

**Distribution and Habitat:** *K. glabrata grows in soil pockets on granite outcrops in the region north of Point D'Entrecasteaux.*

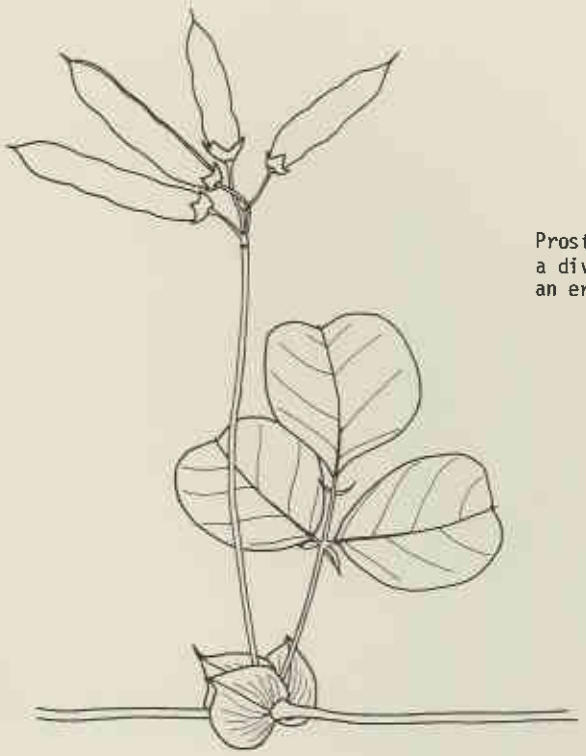
**Flowering Period:** *September-November.*

**Distinctive Characteristics:** *A prostrate creeper. The erect flowering stalks are up to 15 cm long, with leaf-like bracts at the base, usually bearing 4-8 red flowers, each ca 1.2 cm long.*

**Other Characteristics:** *All stems and stalks hairy, with slight ridges. Stipules up to ca 1 cm long and 1 cm wide, pointed at the tip. Leaf stalks up to 5 cm long. Leaflets up to ca 2.5 cm long and wide. Individual flower stalks less than 0.5 cm long. Fruits up to ca 2.5 cm long, with a short narrow point at the end, often several grouped together.*

**References:** *Bentham 1864; Jones & Gray 1977.*

# Kennedia glabrata



Prostrate stem bearing stipules, a divided leaf and pods on an erect stalk

Flower Bud

Open flowers

KENNEDIA MACROPHYLLA *(Meisn.) Benth.*

*Augusta Kennedia*

**Distribution and Habitat:** *This species is restricted to the Augusta region, growing in dark humus-rich soils, often among granite outcrops, in coastal scrubland or in Karri forests.*

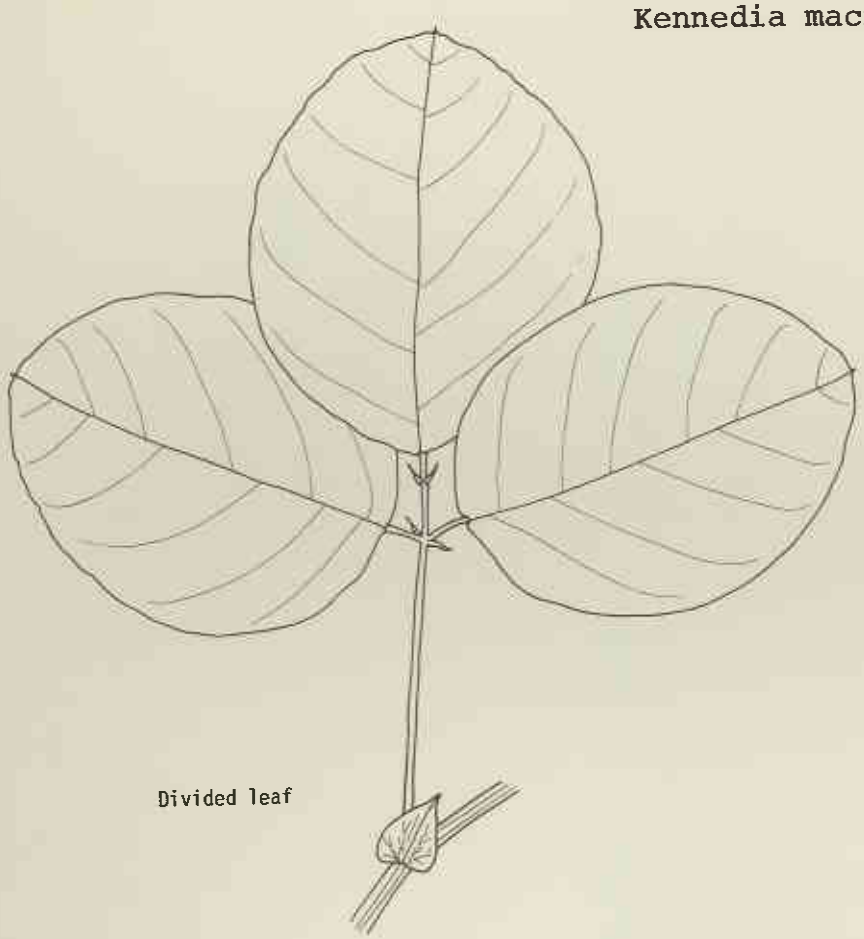
**Flowering Period:** *September-November.*

**Distinctive Characteristics:** *A woody twiner, climbing up to 4 m high. Flowers red with a yellow throat, ca 1.5 cm long, borne in scattered 3s along a long stalk, which often exceeds 20 cm.*

**Other Characteristics:** *Spreading hairs on the stems. Stipules very broad, often united. Leaflets glossy, more or less round up to 7 cm long. Leaf stalks ca 4 cm long. Individual flower stalks slender, ca 0.8 cm long. Pod ca 4 cm long, brown, with a long curved point and black seeds.*

**References:** *Bentham 1864; Jones & Gray 1977.*

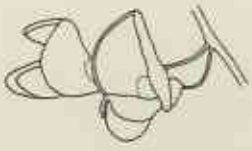
# Kennedia macrophylla



Divided leaf

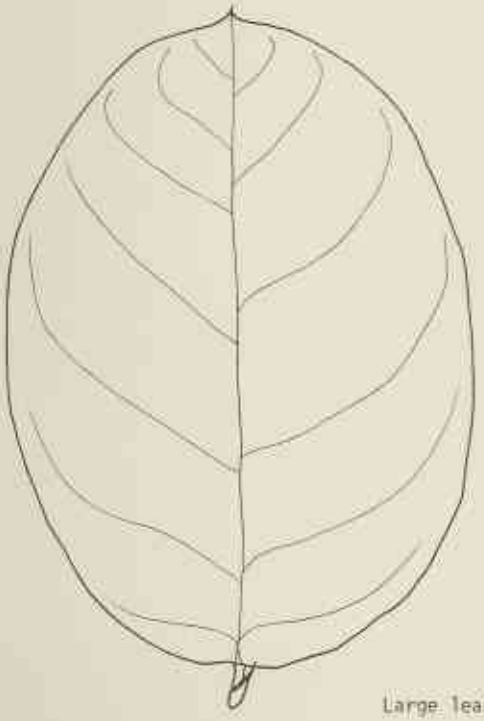
Flower bud beginning to open

Pod



Open flowers

Seed



Large leaflet

## LAMBERTIA (PROTEACEAE)

Shrubs, commonly known as native honeysuckles. Their leaves are stalkless, or nearly so, and are usually arranged in whorls of 3. The flowers are stalkless, solitary or in groups usually 7 together, occurring in the leaf axils and surrounded by a whorl of bracts. The 4 perianth segments of the flower are united to form a long tube which is usually fairly broad towards the top. Four narrow free segments at the top of the perianth tube each bear a single stamen, but are not hollowed. As the flowers open, the segments coil down spirally enclosing the stamens. The style is long, slender and not conspicuously knobbed. The woody fruit (a follicle) is usually beaked and opens by 2 valves to release 1 or 2 flat seeds.

### LAMBERTIA ECHINATA *R.Br.*

*Prickly Honeysuckle*

Distribution and Habitat: *This occupies windswept rocky coastal slopes in the Lucky Bay area.*

Flowering Period: *August-October.*

Distinctive Characteristics: *It can be identified by its spiny leaves and pink-red flowers, its closest relative being L. propinqua.*

Other Characteristics: *A much-branched shrub up to 1 m tall, with hairy stems. Leaves up to 4 cm long, tapering towards the stems, with prominent veins on the underside, usually divided into 5 sharply pointed lobes, in whorls of 3. Flowers ca 5 cm long, including styles, in groups of 7. Fruits nearly 2 cm long including the beak, grey, shiny.*

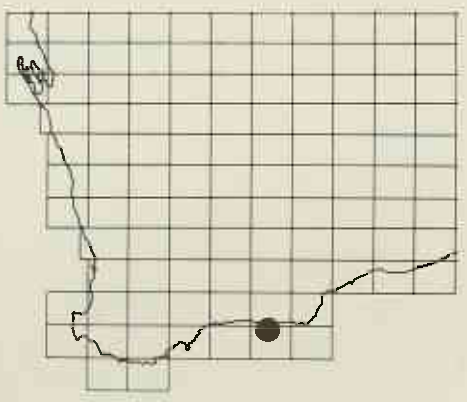
References: *Bentham 1870, Erickson et al 1979.*

# Lambertia echinata

Stem with spiny leaves
in whorls of 3

Cluster of
flowers

Fruit



LAMBERTIA ORBIFOLIA *C.A. Gardner*

*Round-leaf Honeysuckle*

Distribution and Habitat: *This species grows in sandy soil, generally with laterite, in the Busselton, Scott River and Narrikup areas.*

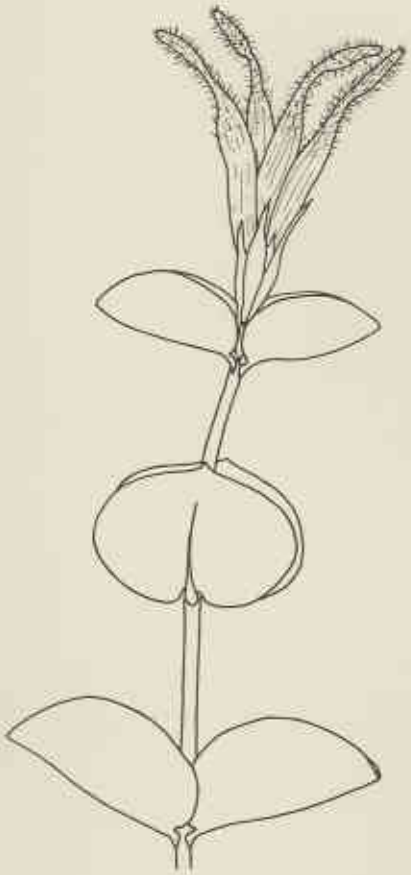
Flowering Period: *January-February, May-July, perhaps all year.*

Distinctive Characteristcs: *L. orbifolia has more or less round, opposite and decussate leaves.*

Other Characteristics: *Erect shrub up to 3 m high, the stems and branches generally hairy. Leaves spreading, not overlapping, up to ca 5 cm long and 4 cm wide. Flowers usually ca 5 cm long, red, in groups of 4-6. Fruits ca 1 cm long, brown, barely beaked.*

References: *Gardner 1964.*

# Lambertia orbifolia



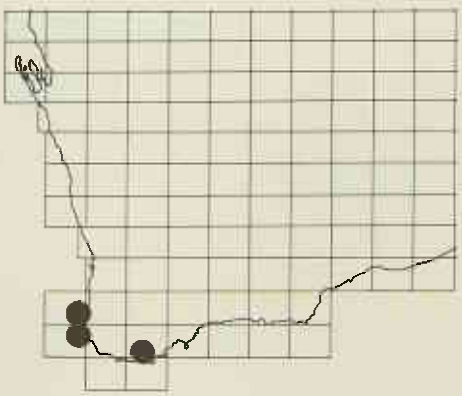
Stem bearing terminal flower
buds and opposite decussate leaves

Leaf

Open flower

Fruit

Seed



LAMBERTIA RARIFLORA *Meisn.*

*Green Honeysuckle*

Distribution and Habitat: *L. rariflora is restricted to the Wicher Range region, growing in Jarrah woodlands in heavy clay on ephemeral creek banks or in low swampy ground.*

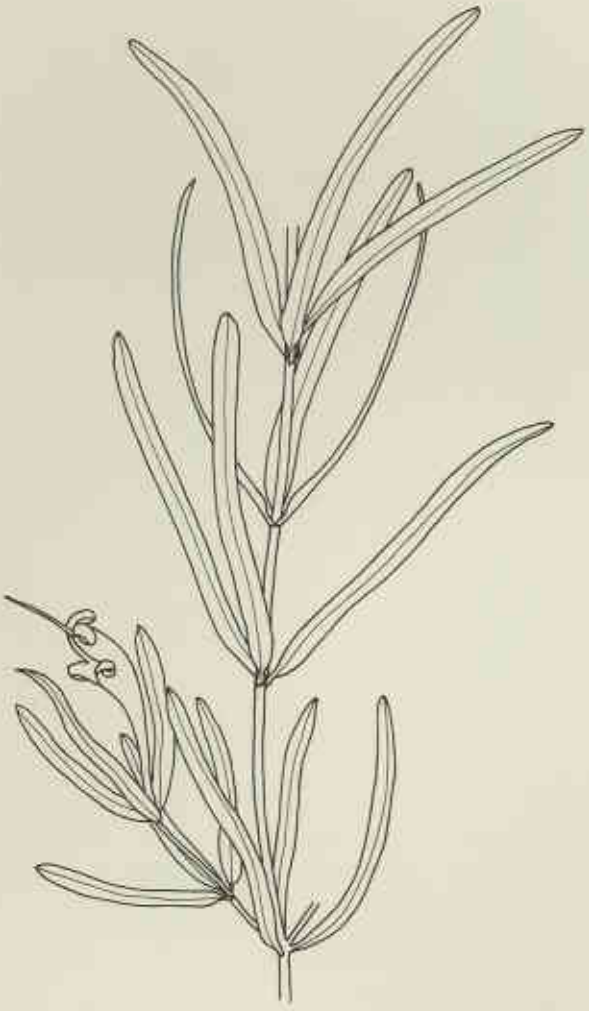
Flowering Period: *January-March.*

Distinctive Characteristics: *This species can be recognised by its solitary green flowers, which become yellow with age.*

Other Characteristics: *An erect shrub to 7 m tall, the young branches hairy. Mature leaves hairless, shortly stalked, up to ca 8 cm long and 0.5 cm wide, in whorls of 3. Flowers ca 2.5 cm long not including the long style, which is ca 3.5 cm long. Fruit smooth, ca 2 cm long including its beak.*

References: *Bentham 1870; Halford 1980.*

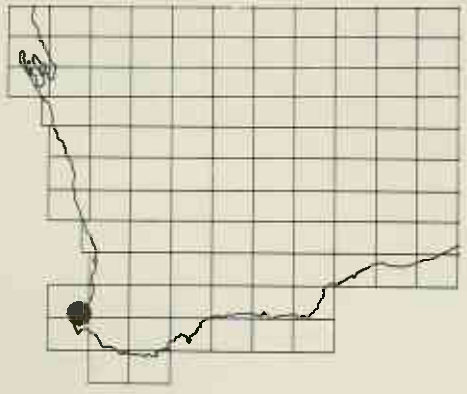
# Lambertia rariflora



Portion of plant bearing leaves in whorls of three and a solitary flower

Fruit

Seed



## LASIOPETALUM (STERCULIACEAE)

Shrubs with star-shaped hairs on most parts of the plants and stalked, usually large leaves. Flower clusters loose, borne on long stalks in the leaf axils. Each flower has 1-3 bracteoles, 5 sepals, which have taken over the attractive role of the 5 tiny or absent petals, and 5 short stamens closely surrounding the ovary. The sepals are persistent and do not have obvious veins. The fruit (a capsule) usually has 3 sections each releasing a single seed.

### LASIOPETALUM BRACTEATUM *(Endl.) Benth.*

*Helena Velvet Bush*

Distribution and Habitat: *This species occurs among granitic outcrops near streams in the Darling Range near Perth.*

Flowering Period: *October-November.*

Distinctive Characteristics: *It has numerous brown star-shaped hairs on the stems and undersides of the broad leaves, solitary broad pink bracteoles near the bases of the flower stalks and a very hairy style.*

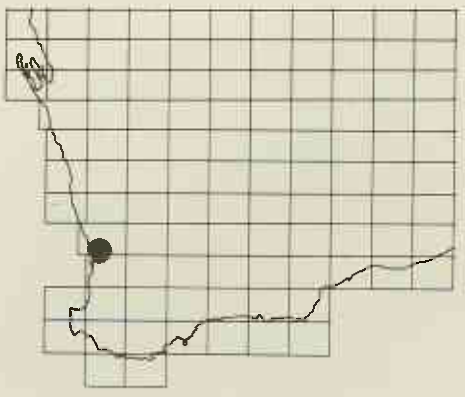
Other Characteristics: *A shrub up to 4 m tall. Leaves alternate, usually heart-shaped, up to 8 cm long and 6 cm wide, their stalks up to 2.5 cm long. Flowers numerous, borne along a branching stalk, which is up to ca 9 cm long. Each flower deep pink with a dark centre, a stalk ca 0.5 cm long and a bracteole also ca 0.5 cm long. Style hairs pale yellow, longer at base of style.*

References: *Bentham 1863.*

# Lasiopetalum bracteatum

Hairy stems, leaves and fruits

Flowers



Star-shaped hair (x 10)

## LECHENAULTIA (GOODENIACEAE)

Small shrubs with narrow leaves. The 5 narrow sepals are fused at the base. The 5 petals are also fused at the base to form a tube and all (or just the upper 3 petals) are winged. The 5 stamens closely surround the style and are hidden within the petal tube. The end of the style is greatly enlarged and 2-lipped. The dry fruit (a capsule) is elongated and generally opens by 4 long valves down its sides.

### LECHENAULTIA PULVINARIS *C.A. Gardner*

*Cushion Lechenaultia*

Distribution and Habitat: *Occurs on sandplain between Corrigin and Harrismith.*

Flowering Period: *October-November.*

Distinctive Characteristics: *A prostrate shrub up to ca 3 cm tall and 30 cm diameter, with hairy leaves and sepals.*

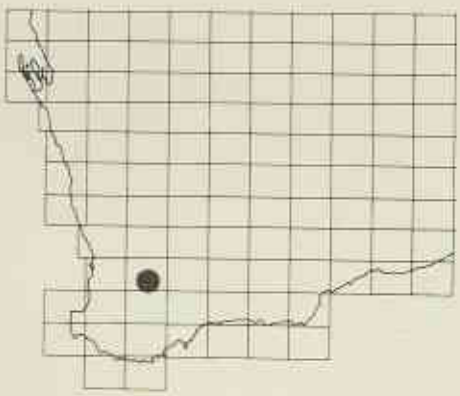
Other Characteristics: *Leaves fine, rigid, with long points, up to ca 1 cm long, densely clustered at the ends of branchlets. Flowers solitary in the upper leaf axils. Petals blue, hairy on the inner side, the tube ca 0.8 cm long and the lobes ca 0.3 cm long. Petal wings present on all the lobes, as broad or broader than the petal centre, ending in a small point.*

References: *Gardner 1964.*

# Lechenaultia pulvinaris

Leaves and
flower buds

Flower



10427—10

LECHENAULTIA SUPERBA *F. Muell.*

*Barrens Lechenaultia*

Distribution and Habitat: *This species grows in rocky gullies in the Mount Barren ranges among thick scrub.*

Flowering Period: *Apparently all year round.*

Distinctive Characteristics: *Leaves soft, up to 2 cm long, very narrow. Petals all winged, yellow to red, the flowers up to 2.5 cm long. The style is hairy especially at the base, otherwise the plant appears quite hairless.*

Other Characteristics: *A rather slender erect shrub up to 0.7 m tall. Leaves crowded along the branchlets. Flowers solitary in the upper leaf axils. Fruits ca 2.5 cm long, crowned by the persistent sepals.*

References: *Bentham 1869; Erickson et al 1979.*

# Lechenaultia superba

Flower bud

Crowded leaves and a flower

Flower

Fruit

## LEUCOPOGON (EPACRIDACEAE)

Shrubs with small, usually white flowers. Each flower has 5 tiny bract-like sepals, 5 petals united to form a tube at their base and 5 stamens. The 5 widely spreading petal lobes are curved over to reveal the dense hairs on their inner surfaces. The stamens are attached to the floral tube and are visible at its throat, alternating with the petals. The fruit (a drupe) is small and sometimes coloured.

### LEUCOPOGON OBTECTUS *Benth.*

*Hidden Beard-heath*

**Distribution and Habitat:** *Restricted to the Eneabba region, growing in sand or loam in scrubland.*

**Flowering Period:** *October-November.*

**Distinctive Characteristics:** *Its leaves are stalkless, broad, overlapping, curved and embracing the stem. The 2-3 flowers in each leaf axis are just visible above the top of the leaf.*

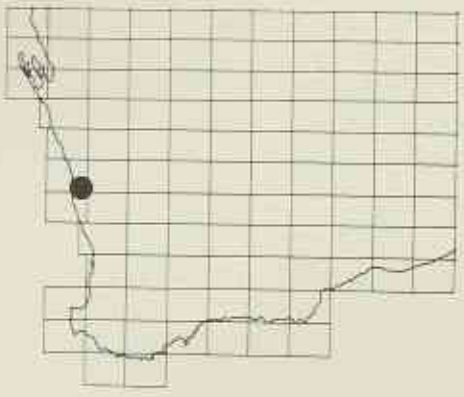
**Other Characteristics:** *An erect open shrub up to ca 1.5 m tall. Leaves are rigid, finely lined, very shortly pointed, up to ca 1 cm long and 1 cm wide. Flowers cream-yellow.*

**References:** *Bentham 1869.*

# Leucopogon obtectus

Overlapping leaves and flower buds in the leaf axils

Fruit



## MELALEUCA (MYRTACEAE)

Shrubs or trees, including most of the paperbarks and many species known as honeymyrtles. The leaves are aromatic when cut and the flowers are stalkless. Above the cup-shaped base of the flower, there arise 5 sepals, 5 petals and numerous stamens. The petals and sepals are usually rather small and papery. The long conspicuous stamens are united in 5 bundles opposite the petals but their free portions are often much longer than the fused portions. The ends of the stamens (anthers) are generally elongated and dangling. The woody capsules open in 3 valves at the top to release numerous small seeds.

### MELALEUCA BAXTERI *Benth.*

*Albany Paperbark*

Distribution and Habitat: *M. baxteri is restricted to the Albany region, growing in sandy soil amongst granite close to the coast.*

Flowering Period: *November-December.*

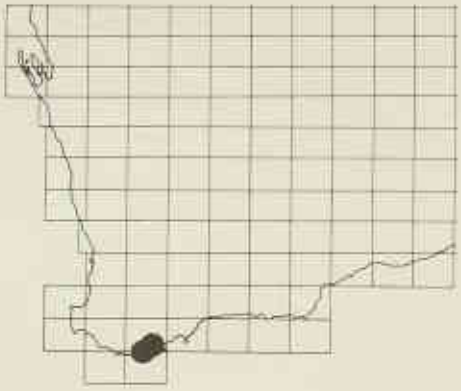
Distinctive Characteristics: *A paperbark tree up to 7 m high, with more or less spherical heads of small yellow flowers and dense spherical clusters of fruits.*

Other Characteristics: *Leaves alternate, up to more than 4 cm long and 0.3 cm wide. Flower heads ca 1.5 cm across. Fruit clusters ca 1.5 cm across, grey, encircling the woody branches below the level of the leaves.*

References: *Bentham 1867.*

# Melaleuca baxteri

Portion of plant with a cluster of woody fruits and a terminal flower head



## PENTAPELTIS (APIACEAE)

Perennial herbs with broad toothed leaves on long stalks. The tiny flowers are grouped in umbels - that is, with their stalks equal in size and radiating from a single point of attachment. Each flower has 5 sepals, 5 petals, 5 stamens and 2 styles, but the petals and stamens may drop off before the styles separate and protrude. The persistent sepals are coloured and attached by their centres rather than their lower edges. The fruit is flattened and 2 lobed, with at least 6 prominent ribs.

### PENTAPELTIS SILVATICA *(Diels) Domin*

*Southern Pentapeltis*

**Distribution and Habitat:** *P. silvatica occurs in gravelly soils in Jarrah forests from Collie to Walpole.*

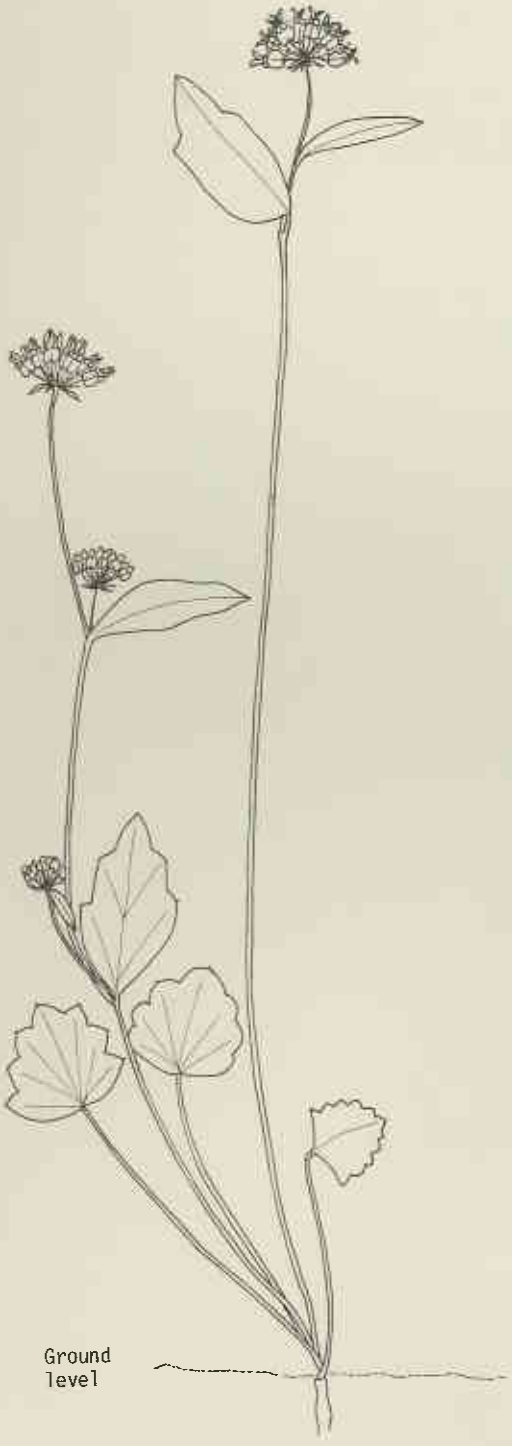
**Flowering Period:** *February-June.*

**Distinctive Characteristics:** *The purple sepals, simple flower clusters and narrower leaves distinguish it from its relative P. peltigera.*

**Other Characteristics:** *An almost prostrate herb. Basal leaves up to nearly 3 cm long and 2.5 cm wide, with 7 or more shortly pointed lobes, their slender stalks up to ca 6 cm long. Leaves on the flowering stalks tend to be much narrower and often have no lobes. Flower clusters of ca 10-20 flowers ca 1.5 cm across. Each flower ca 0.4 cm long with a stalk approximately the same length and with a narrow pointed bract ca 0.3 cm long at the base.*

**References:** *Keighery 1980.*

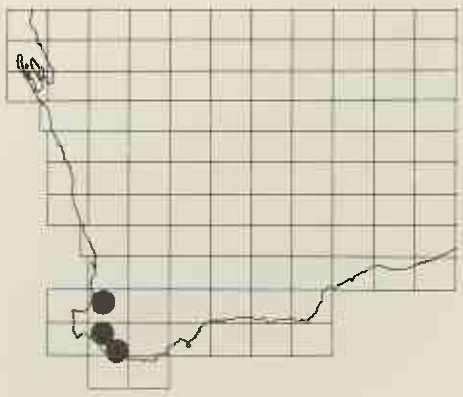
# Pentapeltis silvatica




Whole plant
in flower

Flower with mature
stamens (x 5)

Flower with mature styles after
the petals and stamens have
fallen (x 5)



## PITYRODIA (CHLOANTHACEAE)

Commonly known as foxgloves these shrubs are usually hairy or scaly. Their leaves are usually opposite and decussate. The flowers have 5 persistent sepals, fused at the base to form a tube; 5 deciduous petals fused in a tube, the upper lip 2-lobed and the lower lip 3-lobed; 4 stamens inserted in the petal tube and 2 bracteoles. The fruit (a drupe) is dry and separates into 2 parts, each with 1-2 seeds.

### PITYRODIA AUGUSTENSIS *Munir*

*Mt Augustus Foxglove*

**Distribution and Habitat:** *This grows on rocky hill sides in the Mt Augustus area.*

**Flowering Period:** *August-October.*

**Distinctive Characteristics:** *It differs from the related species, P. axillaris and P. terminalis, by its leaves, which are up to 5 cm long, up to 1.2 cm wide and wedge-shaped at each end.*

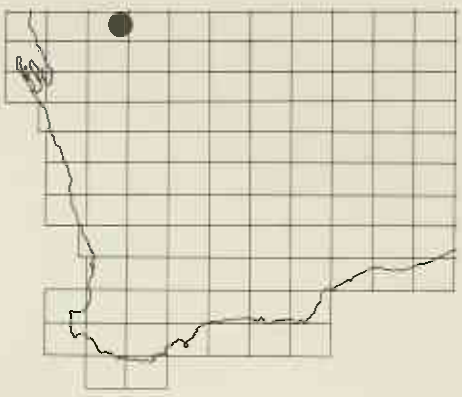
**Other Characteristics:** *A hairy shrub ca 1 m tall. Leaves opposite, tapering to the stem. Flowers numerous, arranged along terminal stems in clusters of 1-5 flowers to each stem bract. Flowers lilac, ca 2 cm long, hairy, their stalks ca 0.5 cm long. Style up to 1.8 cm long, 2-lobed at the end. Fruit more or less spherical, hairy, up to 0.35 cm long, enclosed within the persistent calyx.*

**References:** *Munir 1978.*

# Pityrodia augustensis

Stalk with young leaves
and flower buds

Flower



## POMADERRIS (RHAMNACEAE)

Shrubs with alternate leaves. The young growth and undersides of the leaves are hairy, the upper sides of the leaves often shiny. Flowers stalked, loosely clustered, each comprising 5 conspicuous sepals, 5 smaller (or absent) petals, and 5 stamens with large oblong dangling ends (anthers). The fruit (a schizocarp) separates into 3 (or 2) dry fruitlets, each splitting to release a single seed.

### POMADERRIS BILOCULARIS *George*

*Tutanning Pomaderris*

Distribution and Habitat: *P. bilocularis grows in lateritic soil on ridges east of Pingelly, occurring in open woodlands of Powderbark Wandoo, E. accedens.*

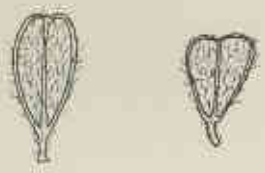
Flowering Period: *March-April, October-November.*

Distinctive Characteristics: *It has no petals, leaves less than 1 cm long and slightly 2-lobed stigmas.*

Other Characteristics: *A slender shrub up to 0.5 m tall, densely covered in simple and star-shaped hairs. Leaves shortly stalked, up to ca 0.5 cm across, broader and slightly lobed at the end. Stipules ca 0.2 cm long, brown, pointed. Flowers yellow, ca 15 in terminal clusters and at the ends of small side branchlets. Flower stalks ca 0.4 cm long. The fruit splits into 2 single-seeded parts.*

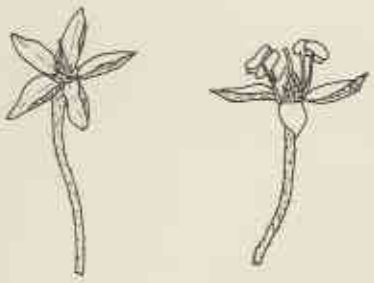
References: *George 1967.*

# Pomaderris bilocularis

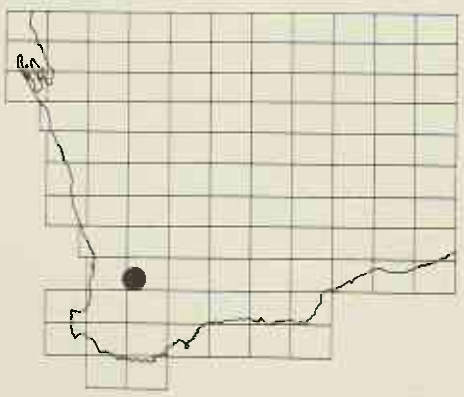


Leaves (x 2)

Leafy branch with clusters of flower buds



Flowers (x 5)



POMADERRIS GRANDIS *F. Muell.*

*Large Pomaderris*

**Distribution and Habitat:** *This species grows along creek gullies on hillsides in the Mt Manypeaks region.*

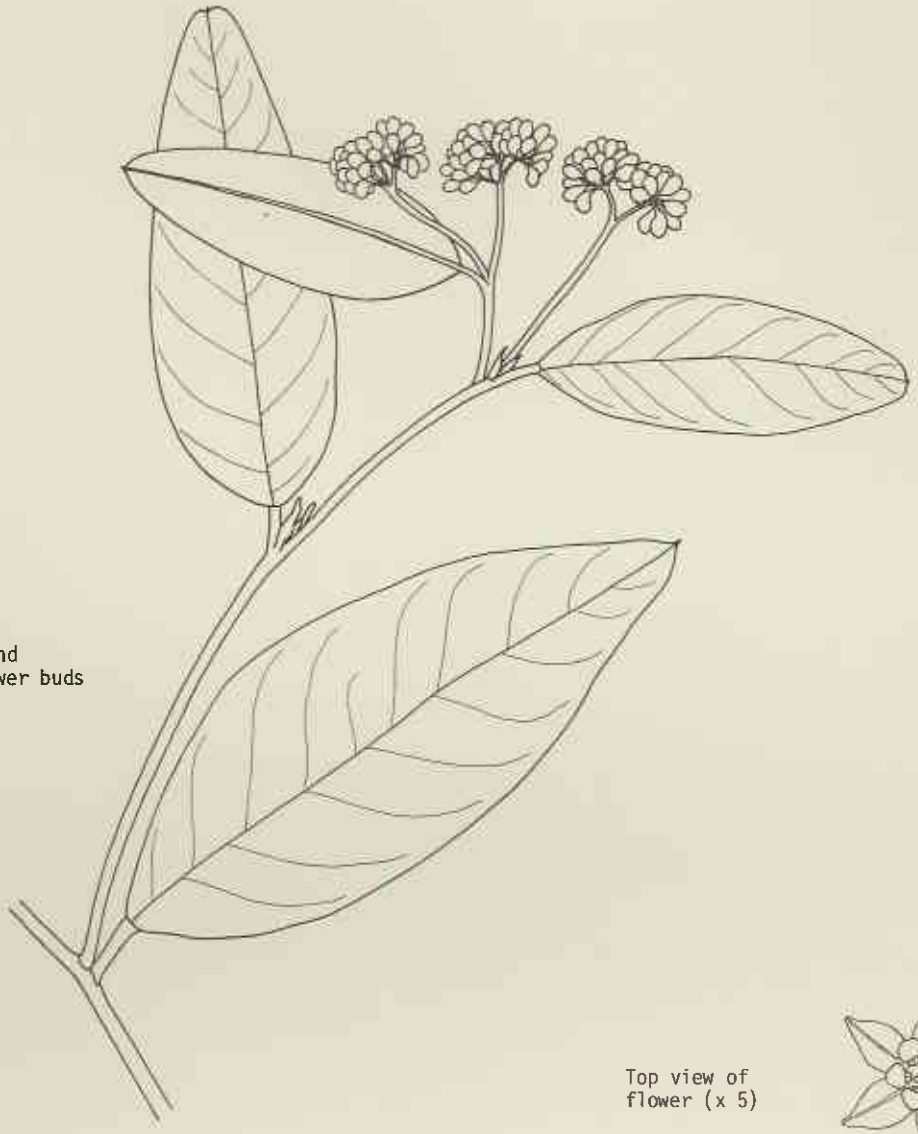
**Flowering Period:** *July-September.*

**Distinctive Characteristics:** *It has much larger leaves (up to 11 cm long and 5.5 cm wide) than other species in its genus.*

**Other Characteristics:** *An erect shrub up to 5 m high with silvery white hairs. Leaf stalks up to 1 cm long. Stipules up to 0.8 cm long, greyish, pointed. Flowers white, ca 0.4 cm across on stalks ca 0.4 cm long, compacted into terminal clusters grouped on branching stalks, which are up to 3 cm long. End of style 3-lobed.*

**References:** *Bentham 1863.*

# Pomaderris grandis



Stems, leaves and clusters of flower buds

Top view of flower (x 5)

Side view of flower (x 5)

## PTYCHOSEMA (FABACEAE)

Tiny shrubs with pinnate leaves. The margins of the 5-11 leaflets are smooth. The flowers are usually solitary and are typical of the pea family. Of the 10 stamens, 9 are united in a sheath which is open down the upper side and the 10th is free at the top. The fruit (a pod) is dry, stalked, apparently flattened, occurs within the persistent sepals and splits down both sides to release the hard seeds.

### PTYCHOSEMA PUSILLUM *Benth. ex lindl.*

*Dwarf Pea*

Distribution and Habitat: *This pea is only known from the Gingin region, growing in sand in Banksia-Jarrah woodland.*

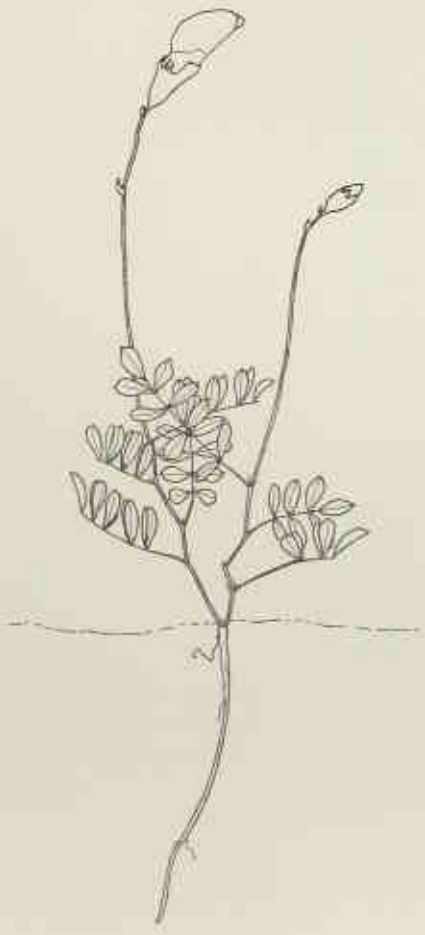
Flowering Period: *October-November.*

Distinctive Characteristics: *This is the only Western Australian species of Ptychosema.*

Other Characteristics: *Erect fine-stemmed plant, usually 5-10 cm high, slightly hairy. Leaves up to almost 4 cm long including the stalks. Flowers deep red to brown and yellow, ca 1.5 cm long, solitary and terminal on slender erect stalks up to 5 cm long. Pods few-seeded.*

References: *Lee 1973.*

# Ptychosema pusillum



Ground level

Whole plant bearing divided leaves and two flower buds

Largest petal

10427—11

# RHIZANTHELLA (ORCHIDACEAE)

The Underground Orchid, described below, is the only species in this genus.

## RHIZANTHELLA GARDNERI *R.S. Rogers*

*Underground Orchid*

**Distribution and Habitat:** *This orchid has a very wide range through the wheatbelt from Wubin to Munglinup and grows only in close association with Melaleuca uncinata.*

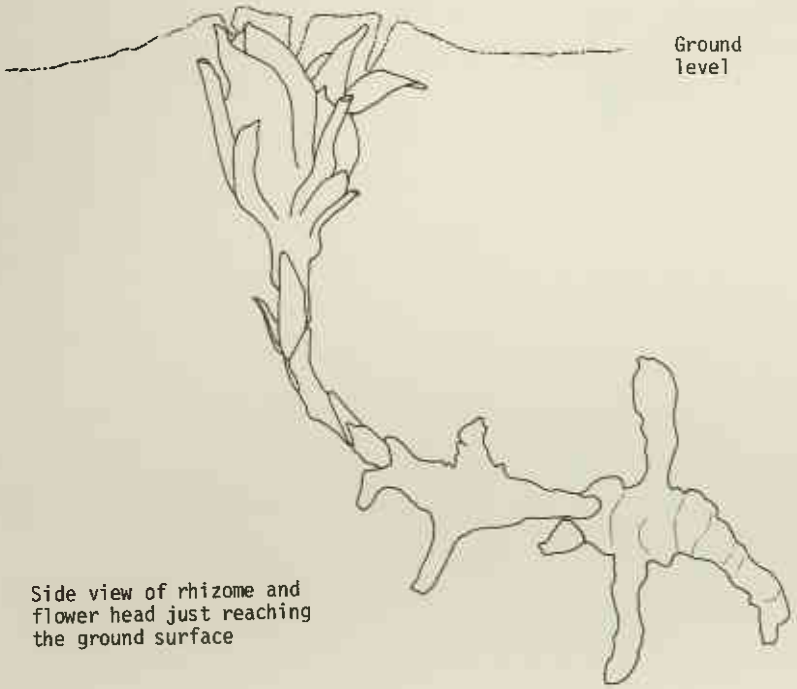
**Flowering Period:** *May-June.*

**Distinctive Characteristics:** *It produces mature flowers below the soil surface. The bracts surrounding the flower heads crack (but do not penetrate) the soil surface allowing insects access to the flowers from above.*

**Other Characteristics:** *Succulent saprophytic herb with a short thickened horizontal branching rhizome. If any part of the plant is cut it produces a strong formalin-like scent. Flowers sessile, deep reddish purple, in dense heads of 50-100 surrounded by 6-12 large spreading bracts. The flower heads are erect, terminal, ca 70 cm across and the bracts are up to 60 cm long.*

**References:** *Erickson 1965; George 1980; Nicholls 1969; Rogers 1928.*

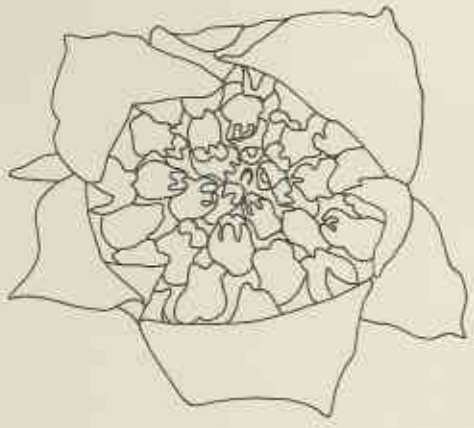
# Rhizanthella gardneri



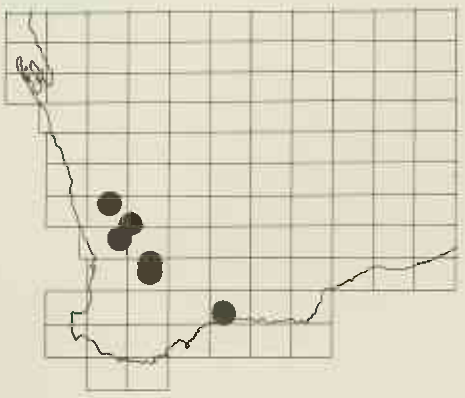

Side view of rhizome and
flower head just reaching
the ground surface

Front view
of flower

Side view
of flower



Top view of
flower head



## RICINOCARPUS (EUPHORBIACEAE)

Shrubs with alternate, usually narrow leaves and unisexual flowers. The flowers usually have 5 sepals, 5 petals (occasionally absent); the male flowers with numerous stamens joined at the base and forming a central column; the females with 3 divided styles. The fruit (a capsule) splits to release 3 shiny seeds.

### RICINOCARPUS TRICHOPHORUS *Muell. Arg.*

*Barrens Wedding Bush*

**Distribution and Habitat:** *This species grows along watercourses in rocky ground in the western part of the Mount Barren Range.*

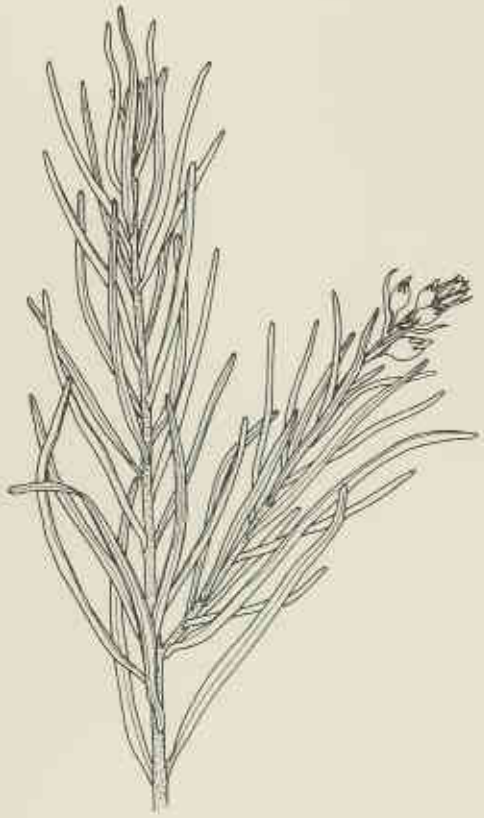
**Flowering Period:** *March-May, September-October.*

**Distinctive Characteristics:** *The young growth has rusty-coloured hairs. There are usually 6-10 flowers arranged along the end of each flowering stem, with one flower in each leaf axil.*

**Other Characteristics:** *A dense erect shrub to 0.6 m high. Leaves dark green above, greyish below, up to ca 8 cm long and 0.6 cm wide, tapering to the stem. Flowers more than 1 cm across, white, their stalks up to 2 cm long. Fruits ca 1 cm long, grey, hairy, surrounded by the persistent sepals, splitting in 3 slits to release the dark glossy seeds, which are ca 0.5 cm long.*

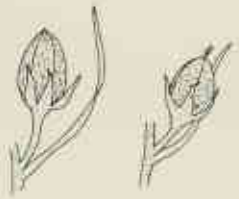
**References:** *Bentham 1873.*

# Ricinocarpus trichophorus



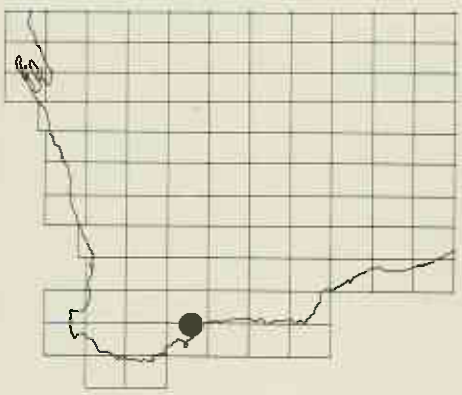
Stems, leaves and flower buds

Flower



Fruits

Seed



## ROYCEA (CHENOPODIACEAE)

Tiny shrubs growing on salt flats. Their tiny leaves are stalkless, fleshy and overlapping. The flowers are unisexual, green, solitary in the leaf axils, with 4 or 5 perianth segments. The male flowers have 4 or 5 stamens opposite the perianth segments and occur on separate plants from the female flowers, whose styles are long, purple and divided into 2 or 3 parts. The fruit is single-seeded and probably does not open.

### ROYCEA PYCNOPHYLLOIDES *C.A. Gardner*

*Saltmat*

Distribution and Habitat: *This species grows in the saline salt flats of the Mortlock river in the Meckering-Cunderdin area.*

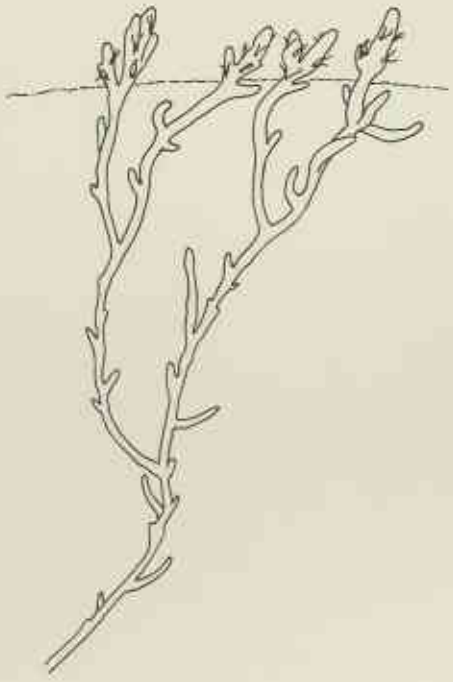
Flowering Period: *November.*

Distinctive Characteristics: *It differs from R. spinescens, the only other member of the genus, by its lack of spines and by the crowded leaves on its stems.*

Other Characteristics: *A much-branched low spreading plant, less than 10 cm tall. Leaves ca 0.15 cm long, rather silky, the margins membranous and hairy. Flowers stalkless, inconspicuous, partly hidden by the leaves, the perianth ca 0.1 cm long. Styles ca 0.3 cm long, protruding beyond the leaves. Stamens just longer than the perianth parts.*

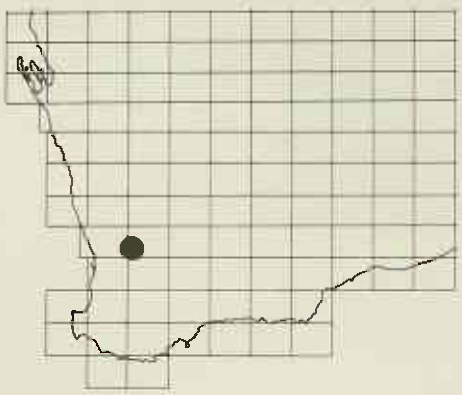
References: *Gardner 1946.*

# Roycea pycnophylloides




Flowering branch

Female flowers and
overlapping leaves (x5)



## SPIROGARDNERA (SANTALACEAE)

The only species in this genus of leafless parasitic shrubs is described below.

### SPIROGARDNERA RUBESCENS *Stauffer*

*Spiral Bush*

**Distribution and Habitat:** *S. rubescens grows in lateritic and granitic soil between Bindoon and Eneabba.*

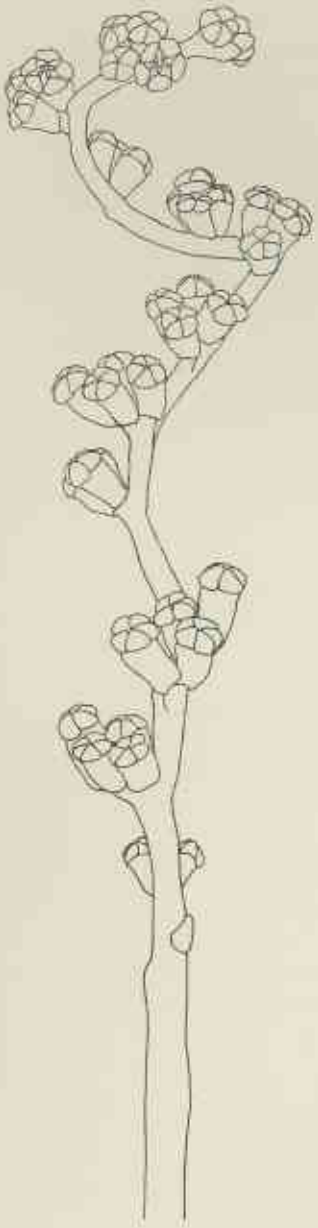
**Flowering Period:** *August-November.*

**Distinctive Characteristics:** *The tiny flowers are in sessile clusters of 4, up to ca 20 clusters being arranged along the flowering stalks, which twist in a spiral shape.*

**Other Characteristics:** *An erect, spindly shrub up to 1.6 m tall. Bracts on the flowering stalks are reddish, up to 0.4 cm long, and are often shed. Flowering stalks succulent, light green to olive, their spirals up to ca 5 cm long. Flowers ca 0.2 cm long. Perianth segments 5, white on the outside and yellow green with fine hairs inside, but becoming deep red in the fruit. Stamens 5, cream-coloured, opposite the perianth segments.*

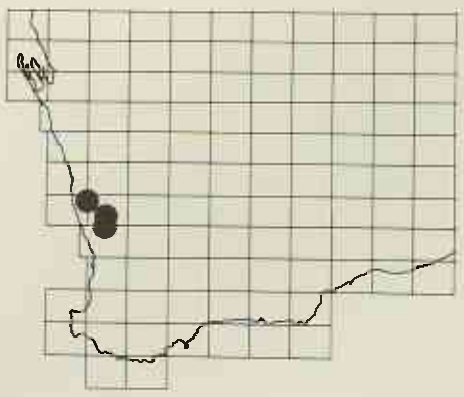
**References:** *Stauffer 1968.*

# Spirogardnera rubescens



Spiral stalk bearing flowers
at the top and fruits
lower down (x 3)

Branch with three flowering/
fruiting stalks



## STACHYSTEMON (EUPHORBIACEAE)

Small shrubs with leathery leaves and unisexual flowers. The male flowers have 10 to numerous stamens, united at the base and forming a central column, while the female flowers have 2 thick widely spreading stigmas attached directly to the top of the ovary. Both types of flowers have 6 perianth parts and occur on each plant. The fruits are single-seeded.

### STACHYSTEMON AXILLARIS *George*

*Leafy Stachystemon*

Distribution and Habitat: *S. axillaris ranges from Wanneroo to the Arrowsmith River, growing in sand.*

Flowering Period: *June-September.*

Distinctive Characteristics: *The flowers are solitary or several in the leaf axils, the male flowers tending to be above the females but often with 1 female flower between 2 males.*

Other Characteristics: *A slender, erect shrub up to 0.7 m tall. Leaves shortly stalked up to 3 cm long and 2.5 cm wide, with stipules. Flowers green or red; the males stalked, ca 0.2 cm across and with numerous short unequal stamens; the females shortly stalked, their styles divided into 2 or 3 branches. Fruit green, ca 0.6 cm long, its seed ca 0.5 cm long.*

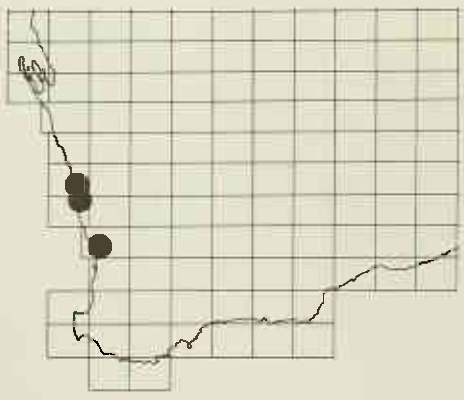
References: *George 1967.*

# Stachystemon axillaris

Stalk with buds, flowers
and fruits in the leaf axils

Leaf

Seed



## STAWELLIA (LILIACEAE)

Perennial herbs with long, very narrow leaves. The flowers are in a head surrounded by overlapping bracts. Each flower has 3 stamens and 6 perianth parts arising below the ovary. The fruit (a capsule) opens in 3 valves to release a few black seeds.

### STAWELLIA DIMORPHANTHA *F. Muell.*

*Arrowsmith Stilt-lily*

**Distribution and Habitat:** *This species occurs in the Arrowsmith region.*

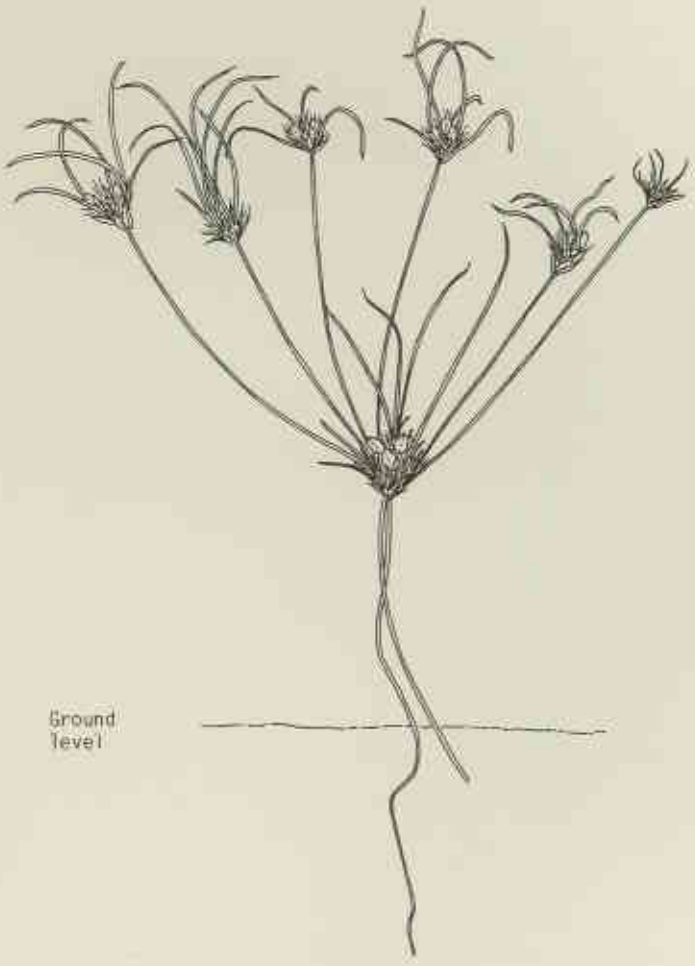
**Flowering Period:** *November-December.*

**Distinctive Characteristics:** *Unlike the only other Stawellia species, S. gymnocephala, S. dimorphantha has a whorl of leaves surrounding each flower head.*

**Other Characteristics:** *A slender stilted plant up to ca 15 cm tall. The basal leaves are up to ca 4 cm long, the stem leaves generally shorter, and both types of leaves are ca 0.05 cm wide. Flowers up to ca 0.6 cm long, the head up to 0.8 cm across. The inner flowers of each head are shorter and broader than the outer ones. Capsules ca 0.15 cm long, grey.*

**References:** *Bentham 1878.*

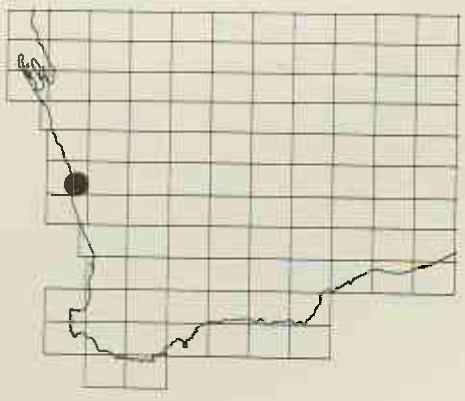
# Stawellia dimorphantha




Whole plant with
flower buds



Fruit



## STYLIDIUM (STYLIDIACEAE)

Perennial or annual herbs, known as trigger-plants because of their unusual pollination mechanism. The leaves usually are clustered in tufts or whorls. Each flower has 5 sepals, 4 paired petals and 1 much smaller petal (the labellum) united at the base to form a tube. There are usually several appendages arising from the throat of the petal tube. The trigger consists of 2 stamens fused to the bent style and, when poised, rests against the narrow labellum below the 4 large petals. When stimulated, the trigger flicks over, then slowly resets. The papery, usually elongated, fruit (a capsule) releases numerous fine seeds through 2 slits.

**STYLIDIUM CORONIFORME** *R. Erickson & Willis*

*Wongan Triggerplant*

**Distribution and Habitat:** *Restricted to the Wongan Hills area where it grows with Dryandra comosa on shallow sandy soil over laterite.*

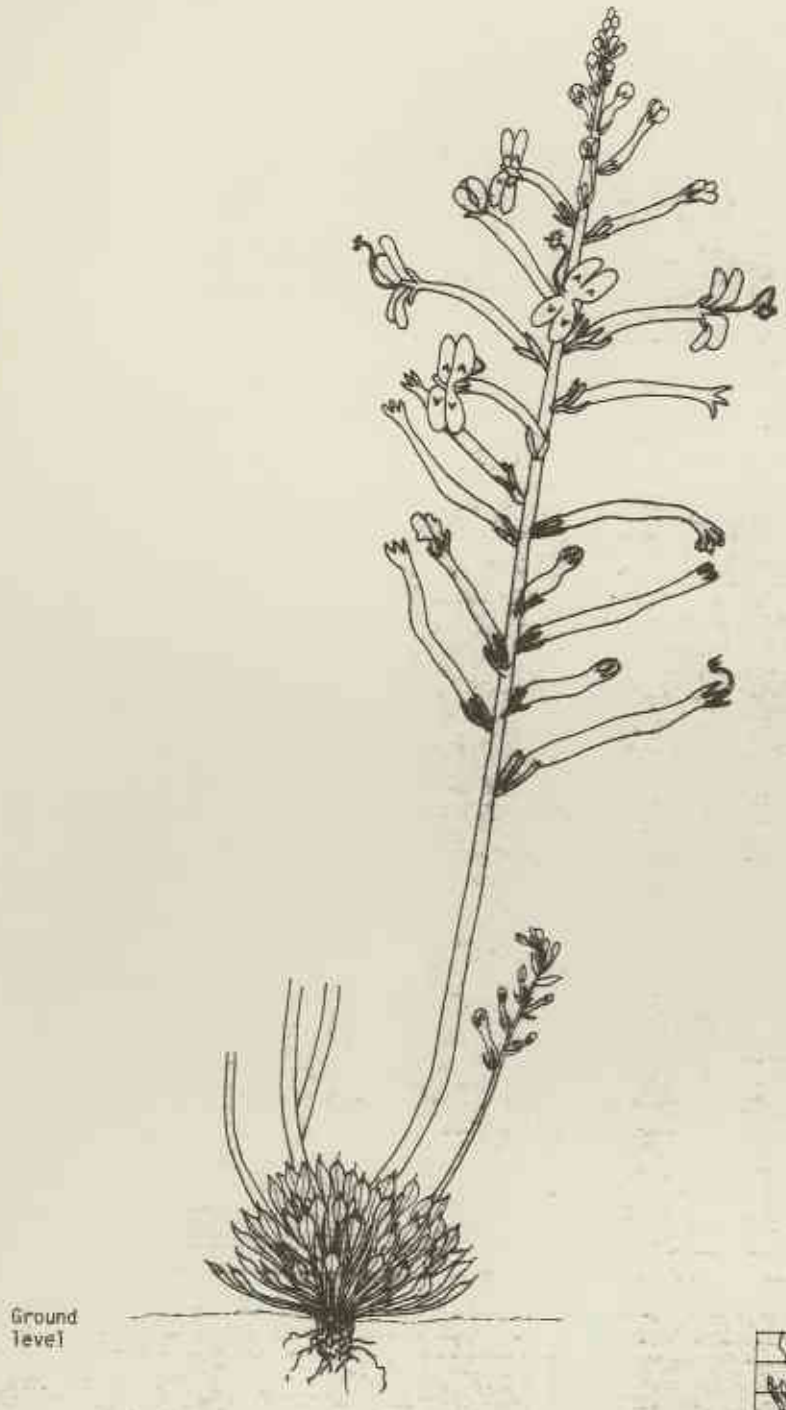
**Flowering Period:** *September.*

**Distinctive Characteristics:** *Leaves numerous, all arising at the base in a cluster of rosettes, grey-green with conspicuous white margins and rib down the underside, up to 3 cm long, narrow at the base, widening (up to 0.25 cm wide) towards the top, ending in a long narrow point.*

**Other Characteristics:** *A perennial with a thick stock and one flowering stalk per rosette. Stalks erect ca 10-15 cm tall, dark-coloured, with tiny glandular hairs bearing many scattered, shortly stalked flowers, each with 3 bracts at the base. Petals ca 1 cm across, creamy pink with red spots at the throat and dark red lines on their outer surface. There are 2 narrow throat appendages. End of trigger has finger-like projections. Ovary ca 1.5 cm long and fruit up to 2 cm long. Both have one functional lobe and 1 narrow abortive lobe.*

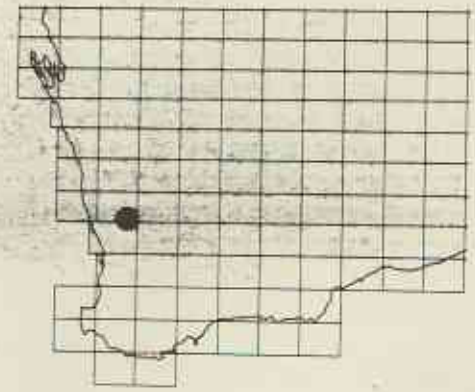
References: *Erickson & Willis 1966.*

# Stylidium coroniforme




Pressed leaves (actually several rosettes) and flowering stalks, the larger one probably greater than life size

Leaf (x 2)



STYLIDIUM EXPEDITIONIS *Carlquist*

*Tutanning Triggerplant*

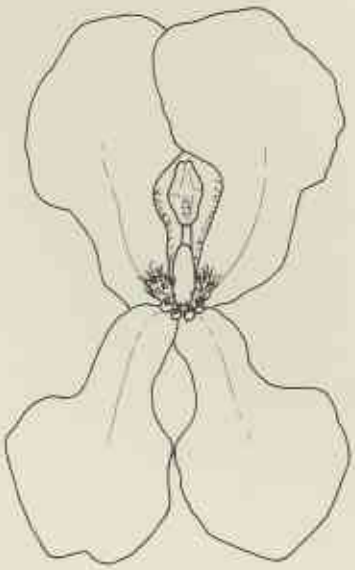
**Distribution and Habitat:** *This triggerplant grows in white sand among shrubs in the region east of Pingelly.*

**Flowering Period:** *September-October.*

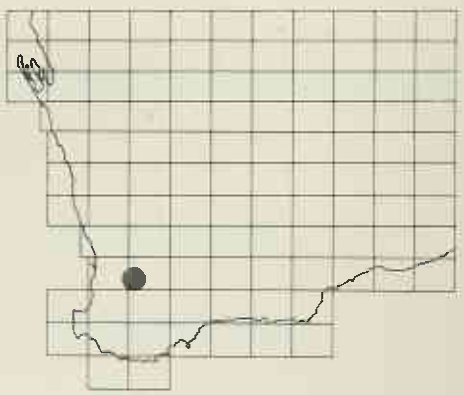
**Distinctive Characteristics:** *It resembles S. caricifolium but can be identified by its 6 very small, red-tipped throat appendages.*

**Other Characteristics:** *A perennial with erect basal leaves and leafless branched flowering stalks up to 45 cm tall. Leaves up to 14 cm long and 0.2 cm wide, with 2 grooves along each surface. Membranous scales ca 2.5 cm long at base of plant. Flowering stalks have some glandular hairs and several terminal flowers, their individual stalks ca 0.5 cm long. Petal lobes white, almost equal, ca 0.7 cm long and 0.45 cm wide, the upper pair overlapping. The 2 largest appendages look wing-like. Trigger 0.7 cm long. Capsule ca 0.6 cm long, with glandular hairs.*

**References:** *Carlquist 1976.*



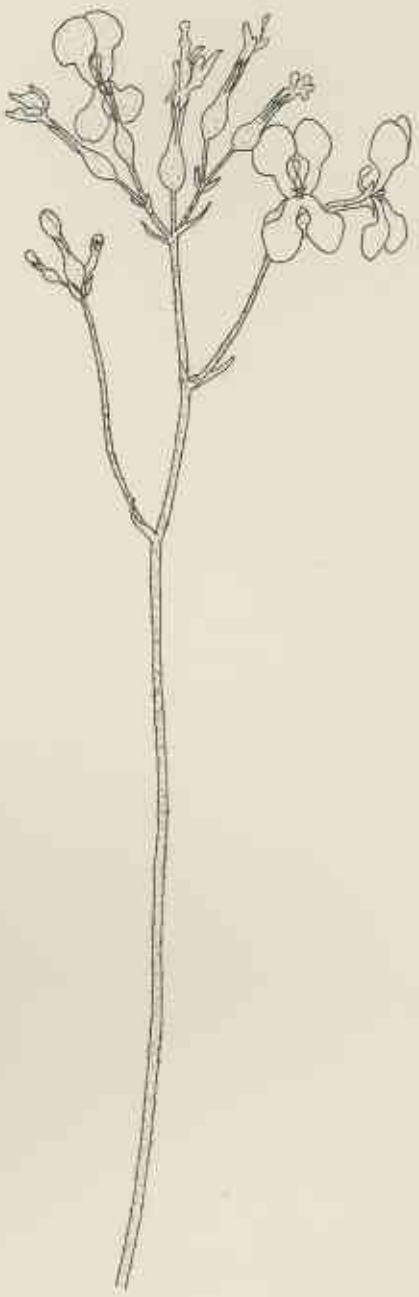
Top view of flower (x 5)



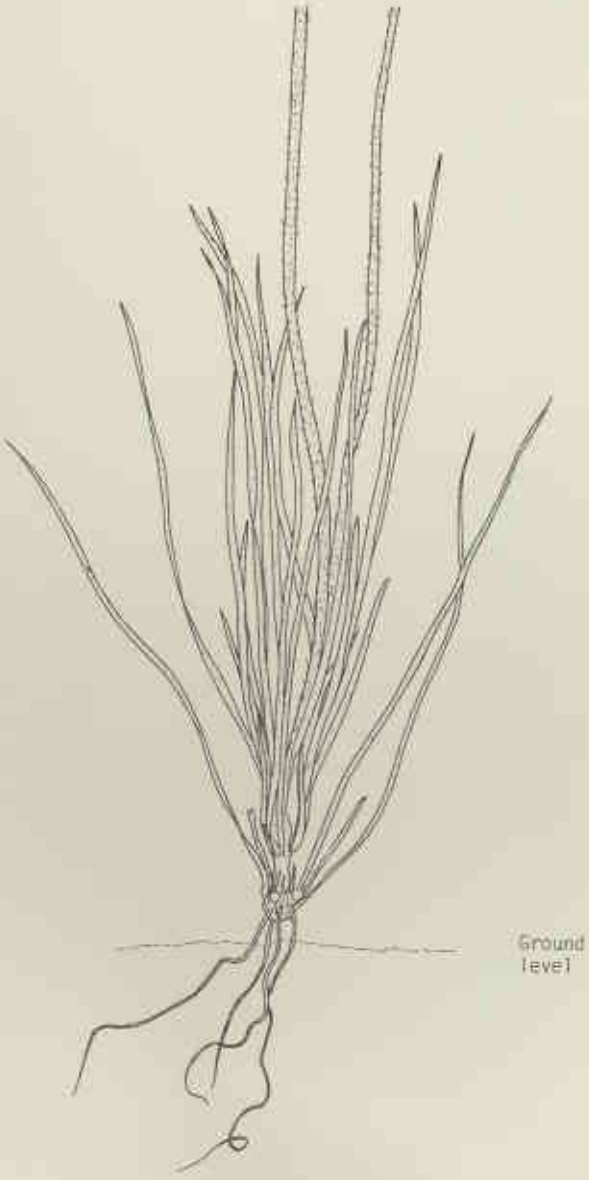
Stylidium expeditionis

# Stylidium expeditionis

Fruits



Flowering stalk




Leaves and bases
of flowering stalks

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STYLIDIUM GALIOIDES *C.A. Gardner*

*Yellow Mountain Triggerplant*

Distribution and Habitat: *This grows among quartzite rocks in heath on hill slopes in the eastern part of the Mount Barren Range.*

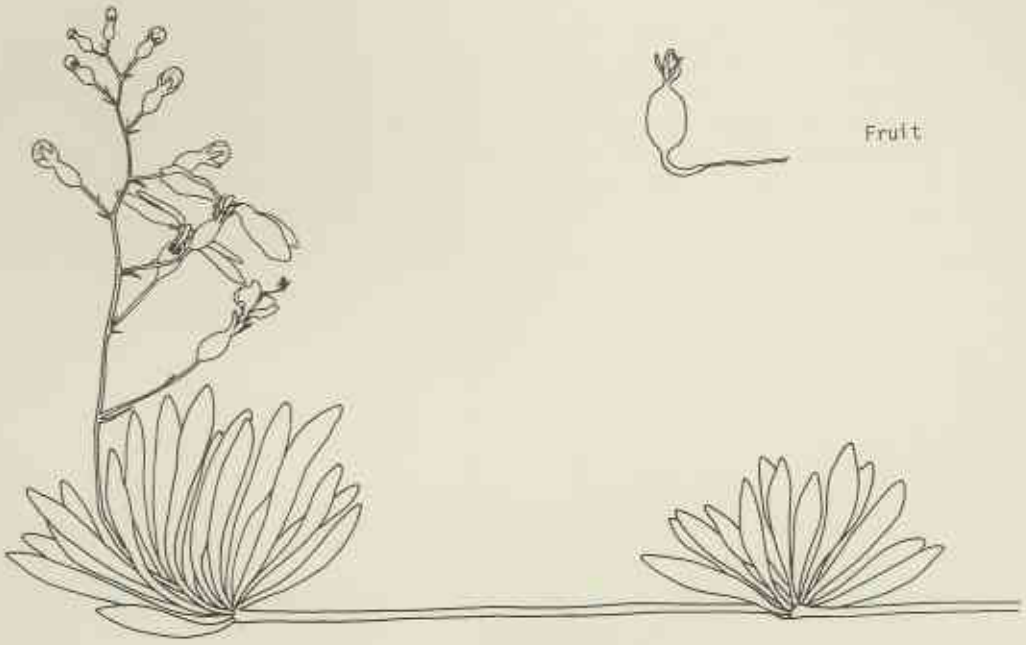
Flowering Period: *September-November.*

Distinctive Characteristics: *It has widely spaced whorls of 8 or more leaves at its base and along its trailing stems. Each leaf is up to ca 3 cm long and 0.5 cm wide, tapering to the stem.*

Other Characteristics: *A smooth long-stemmed plant with few branches and few-flowered terminal flower clusters. Petal lobes pale yellow, almost equal, ca 0.75 cm long. There are 2 broad conspicuous throat appendages and 6 smaller pointed ones. Fruit ca 1 cm long and 0.6 cm across, topped by the shrivelled remains of the flowers.*

References: *Erickson 1968.*

# Stylidium galioides

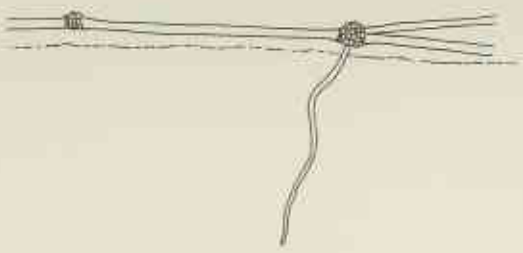




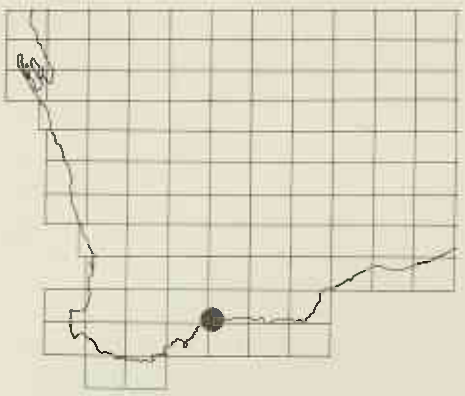
Fruit

Prostrate stem bearing
whorls of leaves and
an erect flowering stalk.

Ground
level



Prostrate branched
stem showing bases
of fallen leaves



## SYNAPHEA (PROTEACEAE)

The hard leaves of these shrubs are usually divided and have long stalks, which are expanded and sheathing at the base. The yellow flowers are stalkless and loosely arranged along leafless stems. The 4 perianth segments of the flower are fused at the base to form a short tube. Each segment bears a single stamen near the end, but not in a hollow, and the uppermost stamen is sterile. The fruit is a small nut.

### SYNAPHEA PINNATA *Lindl.*

*Helena Synaphea*

Distribution and Habitat: *S. pinnata grows on the foothills of the Darling Range near Perth. It occurs in clay soil among granite rocks.*

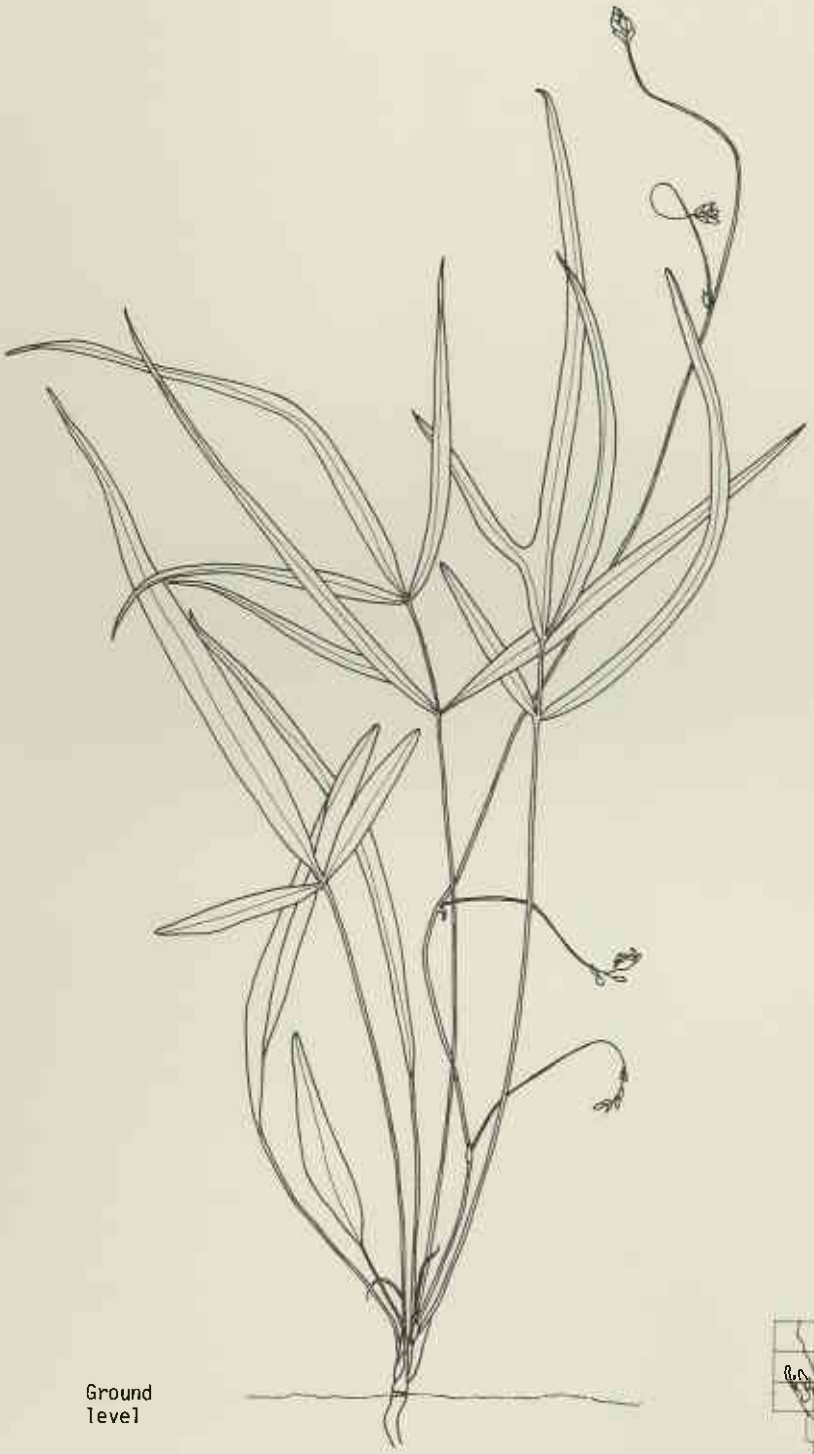
Flowering Period: *September-November.*

Distinctive Characteristics: *The leaves have very long narrow stalks, are usually pinnate at the top with up to ca 10 narrow, smooth-margined segments. Each segment is 6-15 cm long and up to 1 cm wide, the margins rolled under.*

Other Characteristics: *Short thick stems near ground level give rise to upright leaves and leafless flowering stalks up to ca 0.6 m tall. Leaves up to ca 0.3 m tall. Flowering stalks branching with a pointed bract ca 1 cm long at each branch, initially with drooping terminal flower bud clusters but straightening and elongating as the flowers mature. Mature flowers widely spaced along the stem, yellow, ca 0.7 cm long, each with a single pointed bract.*

References: *Bentham 1870.*

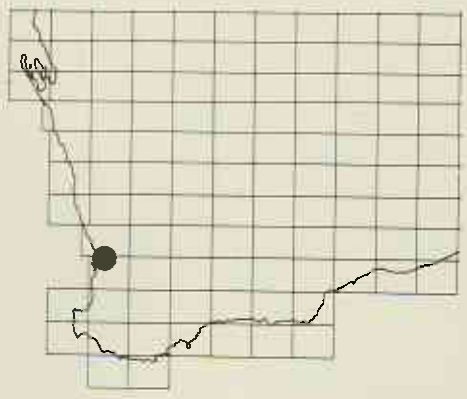
# Synaphea pinnata



Ground level

Whole plant with divided leaves and flower buds (x ½)

Flowers



## TEGICORNIA (CHENOPODIACEAE)

Perennial prostrate herbs, commonly known as samphires, together with several related genera. The branches appear jointed because the fleshy opposite leaves envelope the stem in a sheath. The flowers are unisexual and solitary in the leaf axils. The perianth is fleshy and 3-lobed at the summit. The male flowers have a solitary stamen and occur on separate plants from the female flowers, which have 2 stigmas. The fruit is fleshy and single seeded.

### TEGICORNIA UNIFLORA *P.G. Wilson*

*Mat Samphire*

Distribution and Habitat: *This samphire grows in slightly salty loam periodically subject to inundation and occurs in the Ongerup and South Stirling regions.*

Flowering Period: *October-December.*

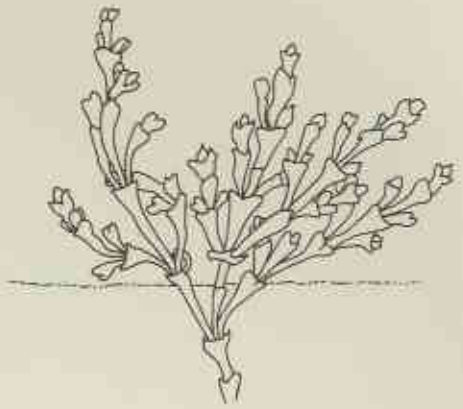
Distinctive Characteristics: *It appears to be the only member of its genus.*

Other Characteristics: *The plants form prostrate mats up to 1.5 m wide but less than 0.1 m tall. Stem segments often deep red, up to 1.5 cm long and 0.6 cm wide at the top, narrowing to the base.*

References: *Wilson 1980.*

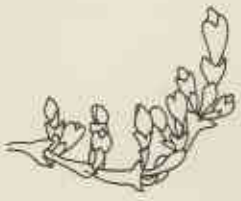
# Tegicornia uniflora

Ground level

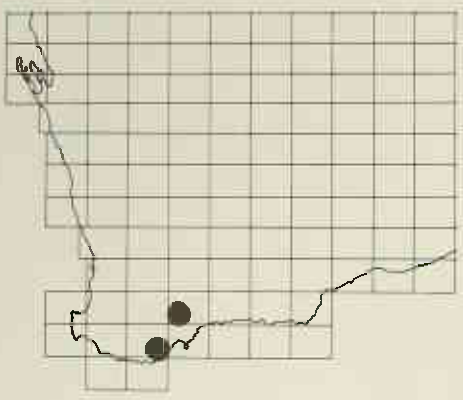


Pressed specimen

Male flowers (x 10)



Glasshouse-grown specimen



## UROCARPUS (RUTACEAE)

Shrubs with alternate leaves, which are aromatic when cut. The flowers have long stalks, inconspicuous or absent sepals, 5 hairy petals 10-numerous stamens and a hairy 2-or 3-lobed ovary. The stigma is also 2- or 3-lobed. The fruit has 2 or 3 beaked parts, each of which splits down the inner side to release a seed.

### UROCARPUS PHEBALIOIDES *Drumm. ex Harv.*

*Gairdner Range Starbush*

Distribution and Habitat: *This grows on lateritic hillsides among low open heath in the Gairdner Range.*

Flowering Period: *August-September.*

Distinctive Characteristics: *It has white petals, 10 stamens, a 2-lobed stigma and numerous brown star-shaped hairs on the flowers, stems and leaves.*

Other Characteristics: *Erect, single-stemmed shrub to ca 45 cm tall. Leaves up to 2 cm long and 1 cm wide, with a stalk ca 0.2 cm long. Flowers 2-3 together in the upper axils or in larger terminal clusters, on stalks 1-2 cm long, each flower ca 1 cm across. Ovary has 2 parts but is not markedly lobed. Seeds black.*

References: *Bentham 1863; Wilson 1971.*

# Urocarpus phebalioides

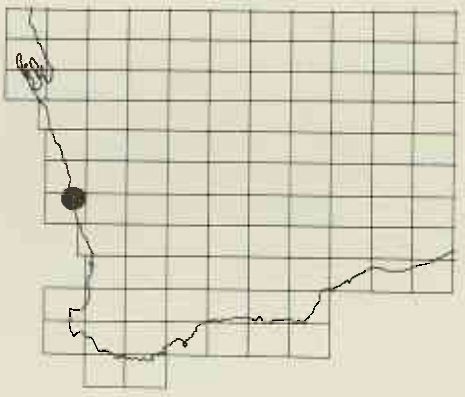
Leaf

Front view
of flower

Back view
of flower

Stems, leaves and
clusters of flower buds

Fruits



## VERTICORDIA (MYRTACEAE)

Shrubs whose leaves are aromatic when cut. They are known as featherflowers because the floral parts, particularly the sepals, tend to be greatly divided, appearing woolly or feathery. Each flower bud is enclosed in 2 glossy pointed bracts which often fall off when the flower opens. There are 5 sepals, sometimes alternating with 5 further but distinct-looking sepals, 5 petals and 10 fertile stamens usually alternating with 10 sterile stamens (rarely 5 fertile and 15 sterile). The dry fruit (a nut) is crowned by the persistent divided sepals and contains a single soft white seed.

### VERTICORDIA HELICHRYSANTHA *F. Muell. ex Benth.*

*Barrens Featherflower*

Distribution and Habitat: *This featherflower is restricted to the Mt Barren Range, growing in rocky loam on hillsides.*

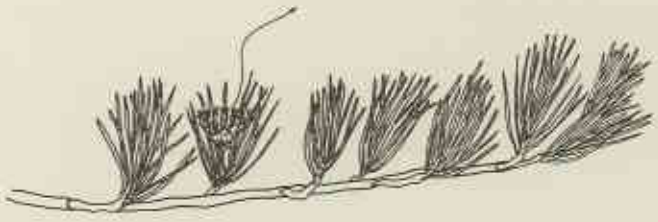
Flowering Period: *September-October.*

Distinctive Characteristics: *Its yellow flowers are partly hidden in the dense foliage but the very long (ca 2 cm) styles protrude. The petals are less than 0.5 cm long, hairy but not divided.*

Other Characteristics: *An erect or spreading shrub up to ca 75 cm tall. Leaves fine, up to 1.5 cm long, with large bases on the stems, crowded on the branchlets. Flowers scattered, their stalks ca 0.5 cm long. Sepals 5, each deeply divided into 5-7 narrow hairy lobes. Style shortly bearded near the tip.*

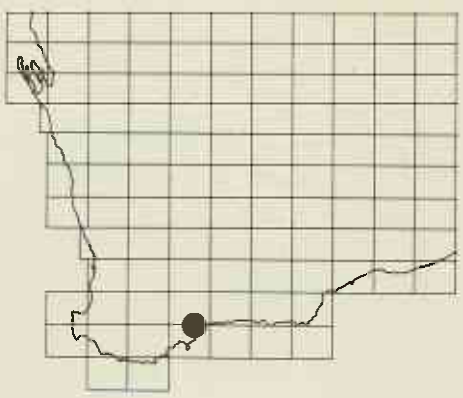
References: *Bentham 1867.*

# Verticordia helichrysantha



Prostrate stem with
one flower

Erect stem with two partly
hidden flowers



VERTICORDIA STAMINOSA *C.A. Gardner & George*

*Wongan Featherflower*

**Distribution and Habitat:** *This featherflower is only known from granite outcrops near Wongan Hills and Hyden.*

**Flowering Period:** *June-August.*

**Distinctive Characteristics:** *This species is distinguished by its 10 very long protruding stamens, which are bright red with yellow tips. Below these are yellow, very feathery sepals and 2 bright red persistent bracts.*

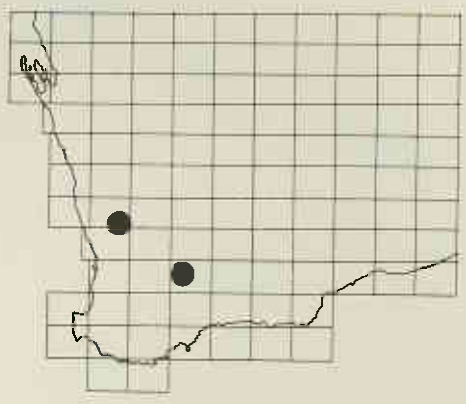
**Other Characteristics:** *A small spreading, much-branched shrub. Branchlets hairy, with the leaves crowded at their tips. Leaves very narrow, up to 1.5 cm long, more or less stalkless. Flowers ca 1 cm across, solitary in the upper leaf axils, their stalks ca 0.5 cm long. Sterile stamens do not protrude from the flower. Style not hairy.*

**References:** *Erickson et al 1979; Gardner & George 1963.*

# Verticordia staminosa

Leafy branch bearing one bud, two flowers and the persistent bracts of a fallen flower

Flower (x 2)



## VILLARSIA (GENTIONACEAE)

Herbs, growing in wet habitats. Their leaves are broad, have long stalks and mostly arise from the base of the plant. The yellow or white flowers are borne on long, usually leafless stalks. Each flower has 5 sepals, 5 petals, which are united at the base, and 5 stamens fused to the petal tube. The fruit (a capsule) opens at the top in 4 valves to release the seeds.

### VILLARSIA CALTHIFOLIA *F. Muell.*

*Mountain Villarsia*

Distribution and Habitat: *This occurs in moist crevices among granite rocks on hills in the Porongurup Range.*

Flowering Period: *September-December.*

Distinctive Characteristics: *V. calthifolia has yellow flowers with broad sepals, very large leaves (up to ca 15 cm across) and flattened stems.*

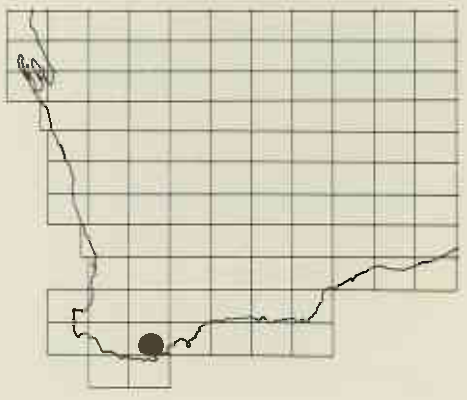
Other Characteristics: *Maximum height at least 40 cm when not in flower and 75 cm when flowering. Stems and leaf stalks grooved, the former up to 1 cm wide. Leaves virtually round except for a slit on one side of the stalk, shaped like a shallow funnel or cup, their margins toothed. Erect, much-branched stems bear numerous flowers, each flower ca 1 cm long including the protruding style. Capsules ca 1 cm long.*

References: *Aston 1969.*

# Villarsia calthifolia

Leaf blade and top
of a fruiting stalk

Small sheathing leaf



## APPENDIX II

### SPECIMEN NUMBERS AND OTHER SOURCES CONSULTED FOR THE ILLUSTRATIONS OF RARE FLORA

All specimens, photographs and cultivated plants were at the Western Australian Herbarium unless stated otherwise.

| Species | Sources for Drawings |
|---|---|
| *Acacia anomala* | H. Kretchmar s.n. - leaf, phyllode<br>H. Kretchmar's photographs - flower heads<br>W.H. Loaring s.n. - stems, flower heads |
| *A. aphylla* | J.W. Green 4895 - stems, flower heads, leaf<br>A.S. George s.n. - fruits |
| *A. argutifolia* | A.S. George 1954 |
| *A. depressa* | B.R. Maslin 4378 - all parts<br>Maslin (1975:422) - all except fruit |
| *A. guinetii* | D. & N. McFarland NM1005 - fruits<br>A.M. Ashby 4614 combined with other specimens probably - stems, leaves, flower heads |
| *A. simulans* | A.S. George 10044 - stem, phyllodes, flower heads<br>K. Newbey s.n. - fruits |
| *Adenanthos cunninghamii* | Collector unknown, specimen cultivated at Sydney? - leaves, flowers<br>E.C. Nelson (ANU 17135) - leaves |
| *A. detmoldii* | C.A. Gardner s.n. |
| *A. dobagii* | E.C. Nelson (ANU 16957) ISOTYPE |
| *A. ellipticus* | A.S. George 3677A |
| *A. eyrei* | E.C. Nelson (ANU 17044) ISOTYPE |
| *A. ileticos* | A.S. George 14312 - all except lobed leaf<br>E.C. Nelson (ANU 17007) ISOTYPE - lobed leaf |

| Species | Sources for Drawings |
|---|---|
| *A. pungens* | K. Newbey 917 |
| *A. velutinus* | F.W. Humphries s.n. |
| *Aponogeton hexatepalus* | R.D. Royce 4344 |
| *Asplenium obtusatum* | I. Abbott (University W.A. Herbarium) |
| *Banksia brownii* | A.S. George 6330 - style<br>A.S. George 14584 - leaves<br>Holliday & Watton (1975:31) - flower head<br>K.F. Kenneally 6953 - fruit |
| *B. goodii* | A. Gray s.n. - leaf<br>A.J. Gray s.n. - seed<br>K. Newbey s.n. - flower head, leaves, style |
| *B. tricuspis* | E. Griffin 1028 - all except fruit<br>Collector unknown, specimen in carpological collection - fruit |
| *Caladenia lavandulacea* | J. Tonkinson s.n. |
| *Casuarina fibrosa* | C.A. Gardner 12117 - seed<br>C.A. Gardner specimens (several combined) - remainder |
| *Conostylis misera* | E.M. Canning 6898 - leaves<br>S.D. Hopper 127 - flowers |
| *Coopernookia georgei* | A.S. George 10095 |
| *Darwinia acerosa* | Probably C.A. Gardner s.n. |
| *D. carnea* | Spirit collection of N.G. Marchant - leaves, unpressed flower head |
| *D. collina* | K. Newbey 1884 - leaves<br>A. William 46 - flower head |
| *D. macrostegia* | C.A. Gardner s.n. - pressed specimen<br>Morcombe (1968:17) - flower head |
| *D. masonii* | C.A. Gardner s.n. - leaves, bases of fruits<br>C.A. Gardner s.n. - flower heads<br>C.A. Gardner 12148 - styles |

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| Species | Sources for Drawings |
|---|---|
| *D. meeboldii* | Erickson *et al* (1979:71) - flower head<br>N.G. Marchant 77/301 - pressed specimen |
| *D. squarrosa* | Erickson *et al* (1979:74) - flower head<br>N.G. Marchant 77/358 - pressed specimen |
| *Dodonaea hackettiana* | J.W. Green & B.A.R. Stokes 297 - hairy branches<br>B.L. Rye, specimen discarded (from Forrest Road/Mason Road intersection, Jandakot) - leaves, flower buds |
| *Drosera occidentalis* | R.J. Cranfield s.n. - leaves<br>Goodall B13 - flower |
| *Drummondita hasselliii* var. *longiflora* | J.S. Beard 3815 - fruit, seed<br>R.J. Hnatiuk 760905 - flower, leaves |
| *Dryandra comosa* | K. Newbey 1997 |
| *D. pulchella* | C.A. Gardner s.n. |
| *Eremophila denticulata* | C.A. Gardner s.n. - fruit, sepals<br>A.S. George 7088 - stem, flowers, leaves |
| *E. virens* | H. Demarz 5904 - leaves<br>C.A. Gardner 2765 - flower, fruits |
| *Eucalyptus aquilina* | M.I.H. Brooker B4473 |
| *E. burdettiana* | C.A. Gardner 1435 - buds, leaves<br>Probably P.G. Wilson 5490 - fruits |
| *E. caesia* | G.E. Brockway s.n. - buds, large leaf<br>A.R. Main s.n. - small leaves, small fruit<br>H. Shugg s.n. - large fruits |
| *E. calcicola* | W.H. Butler s.n. |
| *E. carnabyi* | K.M. Allan 720 |
| *E. coronata* | M.I.H. Brooker 2304 - leaf, young buds<br>A.S. George 3678A - large bud |

| Species | Sources for Drawings |
|---|---|
| *E. desmondensis* | C.A. Gardner 16184 - side view of bud<br>P.R. Jefferies 573031 - remainder |
| *E. exilis* | M.I.H. Brooker 3703 - fruits<br>H.B. Shugg s.n. - buds, leaves |
| *E. insularis* | M.I.H. Brooker 3637, B3637 |
| *E. johnsoniana* | J.S. Beard 7814 - immature fruits<br>M.I.H. Brooker 5002 - buds, leaves<br>M.I.H. Brooker 5003 - mature fruit |
| *E. kruseana* | M.I.H. Brooker 2460 - fruits<br>R. Gould s.n. - buds, leaves |
| *E. pendens* | D.F. Blaxell W75/85 - fruits<br>M.I.H. Brooker s.n. - buds, leaves |
| *E. rhodantha* | K.M. Allan 649 - bud, leaves<br>M.I.H. Brooker 2362 - fruits |
| *E. steedmanii* | R.D. Royce s.n. - buds<br>L.J. Teakle s.n. - fruits, leaves |
| *Franklandia triaristata* | C. Andrews s.n. - leaf<br>C.A. Gardner 598a - flower<br>J. Thomson s.n. - fruits |
| *Gastrolobium appressum* | C.A. Gardner s.n. - buds, leaves, fruits<br>Aplin (1973) - flowers |
| *G. glaucum* | C.A. Gardner 12120 - branch with buds, leaves<br>C.A. Gardner 14327 - leaf<br>Aplin (1973) - flower |
| *Grevillea baxteri* | D.J. McGillivray 3631 & A.S. George |
| *G. circiifolia* | A.S. George 6455 - leaves, flowers<br>D.J. McGillivray 3480 & A.S. George - divided leaf, fruit<br>M.E. Phillips s.n. - long leaf, flowers |
| *G. drummondii* | B.G. Briggs 6533 - large fruit<br>M.E. Phillips s.n. - leaves, buds, small fruit |

| Species | Sources for Drawings |
|---|---|
| *G. dryandroides* | W.E. Blackall B791 - flowers, fruit<br>D.J.McGillivray 3421 & A.S. George - leaf |
| *G. inconspicua* | Gardner & Blackall 119 - flowers<br>D.J. McGillivray 3373 & A.S. George - stems, leaves, fruit |
| *G. infundibularis* | K. Newbey 2727 - fruit<br>A.S. George s.n. HOLOTYPE - flowers, pressed leaves<br>Photograph of HOLOTYPE - leaf |
| *G. involucrata* | A.S. George 9890 HOLOTYPE |
| *G. prostrata* | D.J. McGillivray 3559 & A.S. George - fruit<br>M.D. Tindale 3770 - leaves, stem<br>E. Wittwer 162 - flowers |
| *G. ripicola* | A.S. George 6848 HOLOTYPE |
| *G. saccata* | C.A. Gardner 9002 - young fruit<br>D.J. McGillivray 3278 & A.S. George - stems, leaves, flowers, mature fruits |
| *Hakea aculeata* | A.S. George 15770 - stem, leaves<br>A.S. George 14960 HOLOTYPE - fruit, flowers |
| *H. megalosperma* | C.A. Gardner s.n. - seed<br>E.A. Griffin 1032 - remainder |
| *Hibbertia bracteosa* | R.D. Hoogland 12186 - buds, small leaves<br>R.D. Hoogland 12187 - large leaf<br>W. Rogerson 36 - flower |
| *H. miniata* | Photograph by R.D. Hoogland - top view of flower<br>W. Cook s.n. - old flower<br>C.A. Gardner 7693 - stem with leaves, flower<br>W.E. Blackall s.n. - large leaf<br>C.A. Gardner s.n. - small leaf |
| *Hydrocotyle lemnoides* | P.G. Wilson 11667 |

| Species | Sources for Drawings |
|---|---|
| *Kennedya beckxiana* | A.S. George 2177 - side view of flower<br>A.S. George 2085 - fruit<br>G. Lullfitz s.n. - front view of flower<br>J.W. Wrigley s.n. - buds, leaves |
| *K. glabrata* | A.S. George 3214 - stems, leaves, fruits<br>A.S. George 14379 - flower bud<br>Blombery (1978:119) - flowers |
| *K. macrophylla* | C. Rivers s.n. - bud, divided leaf<br>E.M. Watson s.n. - fruit, leaflet |
| *Lambertia echinata* | A.S. George 7468 - fruit<br>E.M. Scrymgeour 898B - stem, leaves<br>Erickson *et al* (1979:82) - flowers |
| *L. orbifolia* | K. Newbey 1231 - stem, paired leaves<br>R.D. Royce 67 - buds, flower, leaf<br>A.S. George 11771 - fruit, seed |
| *L. rariflora* | G.M. McCutcheon 561 - stem, leaves, fruit, seed |
| *Lasiopetalum bracteatum* | A. Morrison s.n. - stems, leaves<br>J. Seabrook 328 - flowers, hair<br>A. Morrison 12001 - fruits |
| *Lechenaultia pulvinaris* | C.A. Gardner 13620 - leaves<br>K. Newbey 2489 - buds, flower |
| *L. superba* | A.S. George 563 - bud<br>A.S. George 7198 - fruit, flower with equal petals<br>C.A. Gardner 14022 - leaves, stems<br>Erickson *et al* (1979:92) - flower with unequal petals |
| *Leucopogon obtectus* | E.A. Griffin 1382 |
| *Melaleuca baxteri* | K. Newbey 1873 |
| *Pentapeltis silvatica* | A.S. George 6104 - some of leaves<br>J.W. Green 402 - flowers, some leaves |

| Species | Sources for Drawings |
|---|---|
| *Pityrodia augustensis* | E. Wittwer 1089 - stem, leaves, buds (reduced)<br>Munir (1979:122) - flower |
| *Pomaderris biloculariis* | A.S. George 6437 - branch with buds, small leaf<br>A.S. George s.n. - flowers, large leaf |
| *P. grandis* | C.A. Gardner 3308 - stems, leaves, flowers<br>R.D. Royce 4275 - buds |
| *Rhizanthella gardneri* | Photographs by K.W. Dixon and A.S. George - top and side views<br>Spirit collection of A.S. George - flowers |
| *Ptychosema pusillum* | A.S. George 11153 |
| *Ricinocarpus trichophorus* | C.A. Gardner 9240 - fruits, seed<br>C.A. Gardner 14767 - stems, leaves, flowers |
| *Roycea pycnophylloides* | R.D. Royce 8406 |
| *Spirogardnera rubescens* | C. Chapman s.n. - life size stalks<br>Photograph by G.J. Keighery (Kings Park and Botanic Garden) - enlarged stalk |
| *Stachystemon axillaris* | A.S. George 7814 |
| *Stawellia dimorphantha* | F.W. Humphreys s.n. |
| *Stylidium coroniforme* | M. Rogers s.n. - leaves, flower buds<br>Erickson & Willis (1966:109) - flowering stalks |
| *S. expeditionis* | S.H. James (University W.A. Herbarium) - leaves, fruits<br>Drawings by S.H. James - flowering stalks, top view of flower<br>Carlquist (1976:454) - flower |
| *S. galioides* | W.E. Blackall 1431 - stem with leaves<br>K. Newbey 1598 - flowers<br>T.E.H. Aplin 2715 - fruit<br>C.A. Gardner 14880 - buds, stem with leaf bases |

| Species | Sources for Drawings |
|---|---|
| *Synaphea pinnata* | C. Andrews s.n. - whole plant<br>J. Seabrook 186 - flowers |
| *Tegicornia uniflora* | A.S. George 14228 - large branch<br>Glasshouse grown specimen - small branch<br>Wilson (1980:84) - male flowers |
| *Urocarpus phebalioides* | C.A. Gardner 9359 - leaves, fruits<br>C.A. Gardner s.n. - buds, flowers |
| *Verticordïa helichrysantha* | C.A. Gardner 9148 - upright branch<br>K. Newbey 2763 - prostrate branch |
| *V. staminosa* | W.H. Butler s.n. - stems, leaves, persistent bracteoles<br>Erickson *et al* (1979:133) - bud, flowers |
| *Villarsia calthifolia* | A.S. George 6477 - small leaf<br>J. Hale s.n. - large leaf, fruiting stalk |

APPENDIX III

BOTANICAL AND VERNACULAR NAMES OF GAZETTED RARE FLORA

| Species | Vernacular Name | Other Vernacular Names that have been Published |
|---|---|---|
| *Acacia* | | |
| *anomala* | **Chittering Grass Wattle* | |
| *aphylla* | **Leafless Rock Wattle* | |
| *argutifolia* | **East Barrens Wattle* | |
| *depressa* | **Echidna Wattle* | |
| *guinetii* | **Guinet's Wattle* | |
| *simulans* | **Barrens Kindred Wattle* | |
| *Adenanthos* | | |
| *cunninghamii* | **Albany Woollybush* | |
| *detmoldii* | **Yellow Jugflower* | |
| *dobagii* | **Fitzgerald Woollybush* | |
| *ellipticus* | **Oval-leaf Adenanthos* | |
| *eyrei* | **Toolinna Adenanthos* | |
| *ileticos* | **Club-leaf Adenanthos* | |
| *pungens* | **Spiky Adenanthos* | |
| *velutinus* | **Velvet Woollybush* | |
| *Aponogeton* | | |
| *hexatepalus* | **Stalked Water-Ribbons* | |
| *Asplenium* | | |
| *obtusatum* | *Shore Spleenwort* | |
| *Banksia* | | |
| *brownii* | **Feather-leaf Banksia* | *Brown's Banksia* |
| *goodii* | **Good's Banksia* | |
| *tricuspis* | *Pine Banksia* | |
| *Caladenia* | | |
| *lavandulacea* | **Lavender Spider Orchid* | *Lavender Orchid* |
| *Casuarina* | | |
| *fibrosa* | **Woolly Sheoak* | *Fibrous-coned Sheoak* |
| *Conostylis* | | |
| *misera* | **Grass Conostylis* | |
| *Coopernookia* | | |
| *georgei* | **Mauve Coopernookia* | |

*Vernacular names not previously published

Appendix III cont.

| Species | Vernacular Name | Other Vernacular Names that have been Published |
|---|---|---|
| *Darwinia* | | |
| *acerosa* | **Fine-leaved Darwinia* | |
| *carnea* | *Mogumber Bell* | |
| *collina* | *Yellow Mountain Bell* | |
| *macrostegia* | *Mondurup Bell* | |
| *masonii* | **Mason's Darwinia* | |
| *meeboldii* | *Cranbrook Bell* | |
| *squarrosa* | **Fringed Mountain Bell* | *Pink Mountain Bell* |
| *Dodonaea* | | |
| *hackettiana* | **Perth Hop Bush* | *Hackett's Hop Bush* |
| *Drosera* | | |
| *occidentalis* | **Minute Pygmy Sundew* | *Western Sundew* |
| *Drummondita* | | |
| *hassellii* | **Peak Charles Drummondita* | |
| *Dryandra* | | |
| *comosa* | **Wongan Dryandra* | |
| *pulchella* | **Sprawling Dryandra* | |
| *Eremophila* | | |
| *denticulata* | **Fitzgerald Eremophila* | *a native fuchsia* |
| *virens* | **Campion Eremophila* | *a native fuchsia* |
| *Eucalyptus* | | |
| *aquilina* | *Mt Le Grand Mallee* | |
| *burdettiana* | *Burdett Gum* | |
| *caesia* | **Caesia* | *Gungurru, Gungunnu* |
| *calcicola* | *Hamelin Bay Mallee* | |
| *carnabyi* | **Carnaby's Mallee* | |
| *coronata* | *Crowned Mallee* | *Mitre Gum* |
| *desmondensis* | *Desmond Mallee* | |
| *exilis* | *Boyagin Mallee* | |
| *insularis* | *Twin Peak Island Mallee* | |
| *johnsoniana* | **Johnson's Mallee* | |
| *kruseana* | *Bookleaf Mallee* | *Kruse's Mallee* |
| *pendens* | *Badgingarra Mallee* | |
| *rhodantha* | *Rose Mallee* | *Rose Gum* |
| *steedmanii* | *Steedman's Gum* | |
| *Franklandia* | | |
| *triaristata* | **Plumed Lanoline Bush* | |

Appendix III cont.

| Species | Vernacular Name | Other Vernacular Names that have been Published |
|---|---|---|
| *Gastrolobium* | | |
| *appressum* | *Scale Leaf Poison* | |
| *glaucum* | *Wongan Poison* | *Spike Poison* |
| *Grevillea* | | |
| *baxteri* | **Cape Arid Grevillea* | |
| *circiifolia* | **Varied-leaf Grevillea* | |
| *drummondii* | **Drummond's Grevillea* | |
| *dryandroides* | *Phalanx Grevillea* | |
| *inconspicua* | **Cue Grevillea* | |
| *infundibularis* | **Fan-leaf Grevillea* | |
| *involucrata* | **Lake Varley Grevillea* | |
| *prostrata* | **Pallarup Grevillea* | |
| *ripicola* | **Collie Grevillea* | |
| *saccata* | *Pouched Grevillea* | |
| *Hakea* | | |
| *aculeata* | **Column Hakea* | |
| *megalosperma* | *Lesueur Hakea* | |
| *Hibbertia* | | |
| *bracteosa* | **Porongurups Hibbertia* | |
| *miniata* | *Orange Hibbertia* | |
| *Hydrocotyle* | | |
| *lemnoides* | **Aquatic Pennywort* | |
| *Kennedia* | | |
| *beckxiana* | **Cape Arid Kennedia* | |
| *glabrata* | **Northcliffe Kennedia* | |
| *macrophylla* | **Angusta Kennedia* | |
| *Lambertia* | | |
| *echinata* | *Prickly Honeysuckle* | *Prickly Lambertia* |
| *orbifolia* | **Round-leaf Honeysuckle* | |
| *rariflora* | **Green Honeysuckle* | |
| *Lasiopetalum* | | |
| *bracteatum* | **Helena Velvet Bush* | |
| *Lechenaultia* | | |
| *pulvinaris* | **Cushion Lechenaultia* | |
| *superba* | *Barrens Lechenaultia* | |
| *Leucopogon* | | |
| *obtectus* | **Hidden Beard-heath* | |

Appendix III cont.

| Species | Vernacular Name | Other Vernacular Names that have been published |
|---|---|---|
| *Melaleuca baxteri* | **Albany Paperbark* | |
| *Pentapeltis silvatica* | **Southern Pentapeltis* | |
| *Pityrodia augustensis* | **Mt Augustus Foxglove* | |
| *Pomaderris bilocularis* | **Tutanning Pomaderris* | |
| *grandis* | **Large Pomaderris* | |
| *Ptychosema pusillum* | **Dwarf Pea* | |
| *Rhizanthella gardneri* | *Underground Orchid* | |
| *Ricinocarpus trichophorus* | **Barrens Wedding Bush* | |
| *Roycea pycnophylloides* | **Saltmat* | |
| *Spirogardnera rubescens* | **Spiral Bush* | |
| *Stachystemon axillaris* | **Leafy Stachystemon* | |
| *Stawellia dimorphantha* | **Arrowsmith Stilt-lily* | |
| *Stylidium coroniforme* | **Wongan Triggerplant* | |
| *expeditionis* | **Tutanning Triggerplant* | |
| *galioides* | *Yellow Mountain Triggerplant* | |
| *Synaphea pinnata* | **Helena Synaphea* | |
| *Tegicornia uniflora* | **Mat Samphire* | |
| *Urocarpus phebalioides* | **Gairdner Range Starbush* | |

Appendix III cont.

| Species | Vernacular Name | Other Vernacular Names that have been published |
|---|---|---|
| *Verticordia helichrysantha staminosa* | **Barrens Featherflower* *Wongan Featherflower* | |
| *Villarsia calthifolia* | **Mountain Villarsia* | |

## Glossary

Alternate - where leaves (or other structures) are solitary at each point on the stem, adjacent ones occurring on opposite sides of the stem.

Axil - the angle between the stem and the upper part of a leaf or other organ arising from the stem.

Axillary - in the axils.

Bisexual - having both male and female structures.

Bract - modified leaf occurring between the normal leaves and the flowers. Bracts are usually smaller and more membranous than normal leaves but they vary enormously in form.

Capsule - a dry fruit with 2 or more seed compartments which split to release the seeds.

Deciduous - falling off, either in response to a season or as part of the normal sequence in flowering and fruiting periods.

Decussate - leaf arrangement in which the leaves are opposite (paired) and the alternating leaf pairs up the stem are arranged at right angles to each other.

Drupe - a stone fruit - the seed(s) are within the hard centre of the fruit which is surrounded by a fleshy or leathery layer.

Floral tube - tubular portion of the flower produced by fusion of the petals or other whorls.

Herb - a plant with no persistent stem above the ground, usually with soft stems and leaves.

Follicle - a fruit with a single seed chamber, opening by valves on either side of a structure (partial partition) to which the seeds are attached .

Glandular hair - a secreting hair, usually with an enlarged end.

Glaucous - having a pale blue-greyish appearance.

Head - densely packed flower cluster.

Leaflet - one of the distinct divisions of a fully divided leaf.

Lignotuber - a woody swelling at base of a trunk from which new shoots can arise if the trunk is damaged.

Midrib - major central vein of a leaf or other organ.

Node - position on the stem where leaves or bracts arise.

Nut - a dry, single-seeded fruit which does not split - the seed germinates *in situ* and grows out through the fruit casing.

Opposite - (1) borne at the same level on opposite sides of the stem. (2) the alignment of 2 structures such that one is directly in front of the other.

Ovary - the central part of the flower containing the eggs, which become seeds after fertilization.

Perennial - lasting - surviving from one year to the next.

Perianth - a single term for the petals and sepals, used when the petals and sepals appear alike or when either is missing.

Pod - a dry, usually many-seeded fruit which splits down both sides to release the seeds.

Prostrate - lying along the ground, trailing.

Saprophytic - subsisting on humus or similar material.

Schizocarp - a fruit that separates into several single-seeded portions.

Sepal - outer whorl of flower, usually green.

Sheathing - enclosing in a tube, as in the bases of some leaves, which surround the stem.

Stamen - the pollen bearing organ, usually yellow, occurring within the petal whorl.

Stigma - the region at the end of the style which receives the pollen.

Style - the stigma and its stalk, attached to the summit of the ovary.

Valve - the opening structure of a fruit.

Whorl - a set of leaves or floral parts that arise from the same level and are arranged in a circle around the central axis.

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