

DUPLICATE



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A Guide to the Gazetted Rare Flora of Western Australia: Supplement 1

BY

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AND

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PERTH
WESTERN AUSTRALIA

1982

Department of Fisheries and Wildlife

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PERTH

R E P O R T

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**GUIDE TO THE GAZETTED RARE FLORA OF
WESTERN AUSTRALIA : SUPPLEMENT 1**

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ABSTRACT

On March 12, 1982 36 plants were added to and 4 plants were deleted from the schedule of flora proclaimed by the Minister for Fisheries and Wildlife to be rare, likely to become extinct or otherwise in need of special protection under Section 23F of the Wildlife Conservation Act 1950-1979. Descriptions and drawings of each of the 36 additions to the schedule are provided.

All 36 rare taxa are confined to the South West Botanical Province, most being concentrated in the Albany, Pingelly, Moora and Wongan Hills wildlife districts. There is an urgent need for further studies on the conservation status, biology and cultivation requirements of most of the plants gazetted as rare flora.

I INTRODUCTION

This is the first supplement to Rye and Hopper's (1981) "Guide to the Gazetted Rare Flora of Western Australia". Like its predecessor, it aims to assist persons interested in identifying plants gazetted as rare flora under Section 23F of the Wildlife Conservation Act 1950-1979.

The Act gives the Minister for Fisheries and Wildlife the authority to confer legislative protection upon plants considered likely to become extinct, rare, or otherwise in need of special protection. Protection is achieved by declaring plants to be rare flora throughout the State by notices published in the Government Gazette.

Plants gazetted as rare flora cannot be taken or destroyed in the wild, either on Crown land or private land, without the special written consent of the Minister. Because the Act binds the Crown, this requirement applies to Government officers as well as to private citizens. A fine of up to \$1 000 may be imposed on persons who destroy rare flora without written ministerial permission. Private landowners may apply for

compensation if they are refused permission by the Minister to take gazetted rare flora. For a fuller explanation of the Wildlife Conservation Act and its administration, readers are advised to contact officers of the Department of Fisheries and Wildlife.

The first 100 plants gazetted as rare flora (Rye and Hopper 1981) were listed in the Government Gazette of November 14, 1980. At the time of their gazettal, each of these plants had been searched for and each was believed to have less than a few thousand reproductively mature plants alive in the wild. Subsequently, further surveys of these and other reputedly rare plants were undertaken by officers and consultants working for the Department of Fisheries and Wildlife, and by other botanists working on the State's flora.

These surveys established that four of the first 100 gazetted rare plants were far more common than was previously thought and each was adequately represented in nature reserves and national parks (Dryandra comosa, D. pulchella, Melaleuca baxteri and Pentapeltis silvatica were the species in question). Additionally, evidence was obtained that a further 36 species should be gazetted as rare. A recommendation to this effect was put to and accepted by the Flora Committee of the Western Australian Wildlife Authority, by the Wildlife Authority itself, and by the Minister. Consequently, on 12 March 1982, a revised schedule of rare flora was published by the Minister in the Government Gazette (Table 1).

This report presents descriptions and illustrations of the 36 new plants that were added to the schedule of rare flora in March 1982. It is anticipated that further additions and some deletions to the gazetted rare flora will be made as surveys continue and new discoveries are made.

II SOURCES

The illustrations and descriptive notes given herein were derived from specimens housed at the Western Australian Herbarium and at the Western Australian Wildlife Research Centre, from the literature cited under each species, and from photographs and unpublished notes provided by botanists listed in the Acknowledgements.

Specimen numbers and 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 36 new gazetted rare taxa in Appendix I.

Table 2 shows the known distribution of wild populations of rare taxa in the Wildlife Districts administered by the Department of Fisheries and Wildlife. The table will allow

Table 1. Notice listing rare flora in the Government Gazette, W.A. of March 12, 1982.

WILDLIFE CONSERVATION ACT 1950-1980.

Section 23F.

Notice.

F & W 616/80.

THE Minister for Fisheries and Wildlife acting under the provisions of subsection (2) of section 23F of the Wildlife Conservation Act 1950-1980 hereby declares 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.

The previous Notice relating to rare flora published in the *Government Gazette* on 14 November 1980 is hereby cancelled.

GORDON MASTERS,

Acting Minister for Fisheries and Wildlife.

Schedule.

<i>Acacia anomala</i>	<i>Diuris purdiei</i>	<i>Halosarcia entrichoma</i>
<i>Acacia aphylla</i>	<i>Dodonaea hackettiana</i>	<i>Hibbertia bracteosa</i>
<i>Acacia argutifolia</i>	<i>Drosera occidentalis</i>	<i>Hibbertia miniata</i>
<i>Acacia depressa</i>	<i>Drummondita ericoides</i>	<i>Hydrocotyle lemnoides</i>
<i>Acacia guinetii</i>	<i>Drummondita hassellii</i>	<i>Kennedia beckxiana</i>
<i>Acacia simulans</i>	var. <i>longifolia</i>	<i>Kennedia glabrata</i>
<i>Adenanthos cunninghamii</i>	<i>Eremophila denticulata</i>	<i>Kennedia macrophylla</i>
<i>Adenanthos detmoldii</i>	<i>Eremophila inflata</i>	<i>Lambertia echinata</i>
<i>Adenanthos dobagii</i>	<i>Eremophila merrallii</i>	<i>Lambertia orbifolia</i>
<i>Adenanthos ellipticus</i>	<i>Eremophila microtheca</i>	<i>Lambertia rariflora</i>
<i>Adenanthos eyrei</i>	<i>Eremophila resinosa</i>	<i>Lasiopetalum bracteatum</i>
<i>Adenanthos ileticus</i>	<i>Eremophila serpens</i>	<i>Lechenaultia pulvinaris</i>
<i>Adenanthos pungens</i>	<i>Eremophila virens</i>	<i>Lechenaultia superba</i>
<i>Adenanthos velutinus</i>	<i>Eremophila viscida</i>	<i>Leucopogon oblectus</i>
<i>Aponogeton hexatepalus</i>	<i>Eucalyptus aquilina</i>	<i>Myoporum salsoloides</i>
<i>Asplenium obtusatum</i>	<i>Eucalyptus bennettiae</i>	<i>Pityrodia augustensis</i>
<i>Baeckea arbuscula</i>	<i>Eucalyptus brachyphylla</i>	<i>Pomaderris bilocularis</i>
<i>Banksia brownii</i>	<i>Eucalyptus burdettiana</i>	<i>Pomaderris grandis</i>
<i>Banksia chamaephyton</i>	<i>Eucalyptus caesia</i>	<i>Prasophyllum lanceolatum</i>
<i>Banksia cuneata</i>	<i>Eucalyptus calcicola</i>	<i>Prasophyllum triangulare</i>
<i>Banksia goodii</i>	<i>Eucalyptus carnabyi</i>	<i>Ptychosema pusillum</i>
<i>Banksia meisneri</i>	<i>Eucalyptus coronata</i>	<i>Pultenaea skinneri</i>
var. <i>ascendens</i>	<i>Eucalyptus desmodensis</i>	<i>Rhizanthella gardneri</i>
<i>Banksia sphaerocarpa</i>	<i>Eucalyptus exilis</i>	<i>Ricinocarpus trichophorus</i>
var. <i>dolichostyla</i>	<i>Eucalyptus insularis</i>	<i>Roycea pycnophylloides</i>
<i>Banksia tricuspis</i>	<i>Eucalyptus johnsoniana</i>	<i>Sowerbaea multicaulis</i>
<i>Boronia tenuis</i>	<i>Eucalyptus kruseana</i>	<i>Spirogardnera rubescens</i>
<i>Caladenia bryceana</i>	<i>Eucalyptus pendens</i>	<i>Stachystemon axillaris</i>
<i>Caladenia gemmata</i>	<i>Eucalyptus rhodantha</i>	<i>Stawellia dimorphantha</i>
forma <i>lutea</i>	<i>Eucalyptus steedmanii</i>	<i>Stylidium coroniforme</i>
<i>Caladenia lavandulacea</i>	<i>Franklandia triaristata</i>	<i>Stylidium expeditionis</i>
<i>Caladenia triangularis</i>	<i>Gastrolobium appressum</i>	<i>Stylidium galioides</i>
<i>Casuarina fibrosa</i>	<i>Gastrolobium glaucum</i>	<i>Synaphea pinnata</i>
<i>Conostylis misera</i>	<i>Grevillea baxteri</i>	<i>Tegicornia uniflora</i>
<i>Conostylis pauciflora</i>	<i>Grevillea cirsiifolia</i>	<i>Thelymitra fuscolutea</i>
<i>Coopernookia georgei</i>	<i>Grevillea drummondii</i>	var. <i>stellata</i>
<i>Darwinia acerosa</i>	<i>Grevillea dryandroides</i>	<i>Thelymitra macmillanii</i>
<i>Darwinia carnea</i>	<i>Grevillea inconspicua</i>	<i>Thelymitra psammophila</i>
<i>Darwinia collina</i>	<i>Grevillea infundibularis</i>	<i>Urocarpus niveus</i>
<i>Darwinia macrostegia</i>	<i>Grevillea involucrata</i>	<i>Urocarpus phebalioides</i>
<i>Darwinia masonii</i>	<i>Grevillea prostrata</i>	<i>Verticordia helichrysantha</i>
<i>Darwinia meeboldii</i>	<i>Grevillea ripicola</i>	<i>Verticordia staminosa</i>
<i>Darwinia oxylepis</i>	<i>Grevillea saccata</i>	<i>Villarsia calthifolia</i>
<i>Darwinia squarrosa</i>	<i>Hakea aculeata</i>	<i>Wurmbea humilis</i>
<i>Darwinia witwerorum</i>	<i>Hakea megalosperma</i>	<i>Wurmbea tubulosa</i>
<i>Daviesia euphorbioides</i>	<i>Halosarcia bulbosa</i>	

WILDLIFE DISTRICTS

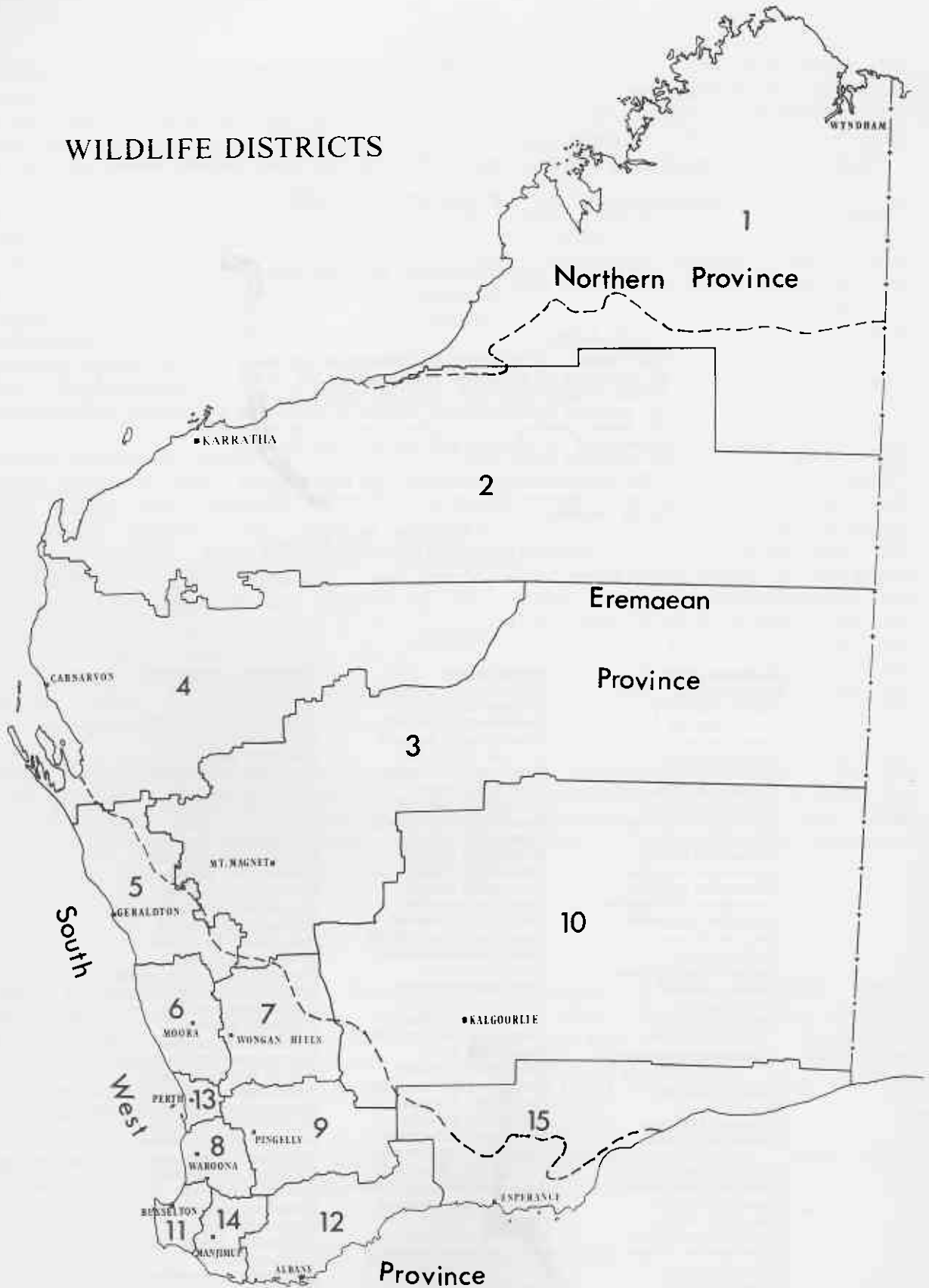


Figure 1. Wildlife Districts administered by the Department of Fisheries and Wildlife, and the Botanical Provinces of Western Australia.

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

IV DISCUSSION

All 36 gazetted rare plants described herein are confined to the South West Botanical Province of Western Australia. The majority have very restricted distributions. With the addition of these 36 plants, the Albany wildlife district has by far the highest number of gazetted rare plants in it (48, Table 2). Other districts with large numbers include Pingelly (24), Moora (22) and Wongan Hills (16). The need for major surveys and monitoring of rare plant populations in these districts is apparent.

Most of the 36 plants added to the gazetted rare flora list flower in spring (Table 3). Fourteen have been grown in cultivation, and one (Eucalyptus brachyphylla) is commercially exploited for seed (Rye et al. 1980).

As stressed by Rye and Hopper (1981), there is an urgent need for further study of the conservation status, biology and cultivation requirements of most of the plants gazetted as rare flora. We hope that this report will serve as a stimulus to this end.

V ACKNOWLEDGEMENTS

We are indebted to the Curator and staff of the Western Australian Herbarium for making available facilities and specimens for this project. For assistance and expert advice we specifically wish to thank A. Brown, R.J. Chinnock, R.J. Cranfield, I.R. Dixon, G.J. Keighery, T.D. Macfarlane, N.G. Marchant, B.L. Rye, M.E. Trudgen, A.S. Weston, P.G. Wilson and members of the W.A. Native Orchid Study and Conservation Group. The work was completed while S.J.P. was employed as a consultant from funds provided by the Western Australian Department of Fisheries and Wildlife.

Table 2. Distribution of the recently Gazetted Rare Flora in the Wildlife Districts administered by the Department of Fisheries and Wildlife.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Wyndham	Karratha	Mt Magnet	Carnarvon	Geraldton	Moora	Wongan Hills	Waroona	Pingelly	Kalgoorlie	Busseton	Albany	Perth	Manjimup	Esperance
Baekkea															
arbuscula	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
Banksia															
chamaephyton	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
cuneata	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
meisneri															
var. ascendens	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
sphaerocarpa															
var. dolichostyla	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Boronia															
tenuis	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
Caladenia															
bryceana	-	-	-	-	X	-	-	-	-	-	-	X	-	-	-
gemmata															
forma lutea	-	-	-	-	-	X	X	-	-	-	-	X	X	X	-
triangularis	-	-	-	-	-	-	-	-	X	-	-	X	X	X	-
Conostylis															
pauciflora	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-
Darwinia															
oxylepis	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
wittwerorum	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
Daviesia															
euphorbioides	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
Diuris															
purdiei	-	-	-	-	-	-	-	X	-	-	-	-	X	-	-
Drummondita															
ericoides	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Eremophila															
inflata	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
merrallii	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
microtheca	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
resinosa	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
serpens	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
viscida	-	-	-	-	X	X	X	-	X	-	-	-	-	-	-
Eucalyptus															
bennettiae	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
brachyphylla	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
Halosarcia															
bulbosa	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
entrichoma	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-

cont'd

Table 2 - 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
Myoporum salsoloides	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
Prasophyllum lanceolatum	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
triangulare	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
Pultenaea skinneri	-	-	-	-	-	-	-	X	-	-	X	-	-	-	-
Sowerbaea multicaulis	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
Thelymitra fuscolutea var. stellata	-	-	-	-	-	X	-	-	X	-	-	-	X	-	-
macmillanii	-	-	-	-	-	-	X	-	X	X	-	X	-	-	X
psammophila	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
Urocarpus niveus	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-
Wurmbea humilis	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-
tubulosa	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Total present	0	0	0	0	5	6	7	3	9	2	2	14	5	2	1
Grand Total for 132 gazetted rare plants	0	0	2	1	7	22	16	7	24	3	9	48	13	5	10

Table 3. Flowering Times, Establishment in Cultivation and Commercial Exploitation of the recently Gazetted Rare Flora.

	Known to be Cultivated (C) or Commercially Exploited (E)	Flowering Times											
		January	February	March	April	May	June	July	August	September	October	November	December
Baeckea arbuscula	- -	X	X	-	-	-	-	-	X	-	-	-	X
Banksia chamaephyton	C -	-	-	-	-	-	-	-	-	-	X	X	X
cuneata	C -	-	-	-	-	-	-	-	-	X	X	X	X
meisneri	- -	-	-	-	-	-	-	-	-	-	-	-	-
var. ascendens	C -	-	-	-	X	X	X	X	X	-	-	-	-
sphaerocarpa	- -	-	-	-	-	-	-	-	-	-	-	-	-
var. dolichostyla	C -	-	-	X	X	X	-	-	-	-	-	-	-
Boronia tenuis	- -	-	-	-	-	-	-	-	X	X	-	-	-
Caladenia bryceana	- -	-	-	-	-	-	-	-	X	X	X	-	-
gemmata	- -	-	-	-	-	-	-	-	-	X	-	-	-
forma lutea	- -	-	-	-	-	-	-	-	-	X	-	-	-
triangularis	C -	-	-	-	-	-	-	-	X	X	X	-	-
Conostylis pauciflora	- -	-	-	-	-	-	-	-	X	X	X	-	-
Darwinia oxylepis	- -	-	-	-	-	-	-	-	X	X	X	X	-
wittwerorum	- -	-	-	-	-	-	-	-	-	X	X	X	-
Daviesia euphorbioides	- -	-	-	-	-	-	-	-	-	X	X	-	-
Diuris purdiei	- -	-	-	-	-	-	-	-	-	X	X	-	-
Drummondita ericoides	- -	-	-	-	-	-	-	-	-	X	X	-	-
Eremophila inflata	C -	-	-	-	-	-	-	-	-	-	-	X	X
merrallii	C -	-	-	-	-	-	-	-	X	X	X	X	X
microtheca	C -	-	-	-	-	-	-	-	X	X	-	-	-
resinosa	C -	-	-	-	-	-	-	-	-	X	X	X	X
serpens	C -	-	X	-	-	X	-	-	-	X	-	X	-
viscida	C -	-	-	-	-	-	-	-	-	X	X	-	-
Eucalyptus * bennettiae	- -	-	-	-	-	-	-	-	-	-	-	-	-
brachyphylla	C E	-	X	-	-	X	X	-	X	-	-	-	-

* Flowering period not known

cont'd.

Table 3 - cont'd...

	Known to be Cultivated (CE or Commercially Exploited (E))	Flowering Times											
		January	February	March	April	May	June	July	August	September	October	November	December
Halosarcia													
bulbosa	- -	-	-	-	X	-	-	-	-	-	-	-	-
entricoma	- -	-	-	-	-	-	-	X	-	X	-	-	-
Myoporum													
salsoloides	C -	-	-	-	-	-	-	X	X	-	-	-	-
Prasophyllum													
lanceolatum	- -	-	-	-	-	-	-	-	X	X	-	-	-
triangulare	- -	-	-	-	-	-	-	-	X	X	X	-	-
Pultenaea													
skinneri	- -	-	-	-	-	-	X	X	X	-	-	-	-
Sowerbaea													
multicaulis	- -	-	-	-	-	-	-	-	-	-	X	-	-
Thelymitra													
fuscolutea													
var. stellata	C -	-	-	-	-	-	-	-	-	X	X	-	-
macmillanii	- -	-	-	-	-	-	-	-	X	X	-	-	-
psammophila	- -	-	-	-	-	-	-	-	X	X	-	-	-
Urocarpus													
niveus	- -	-	-	-	-	-	-	X	X	-	-	-	-
Wurmbea													
humilis	- -	-	-	-	-	-	-	X	-	-	-	-	-
tubulosa	- -	-	-	-	-	X	X	-	-	-	-	-	-
Total in flower		1	3	1	3	4	3	3	15	23	19	11	6
Grand total for 132 gazetted rare plants		11	11	13	16	18	26	33	57	84	80	53	21

APPENDIX I

DESCRIPTIONS OF THE GAZETTED RARE TAXA

A glossary is provided in Rye and Hopper (1981) 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° latitude by 1.5° longitude boundaries of the Australian 1:250 000 topographical map series.

BAECKEA (MYRTACEAE)

These are glabrous shrubs or small trees, similar to the tea trees (Leptospermum spp.) but with opposite leaves. The flowers are solitary or in small cymes, and are small, and five petalled, varying in colour from white to deep pink. Each flower usually has 5 to 10 stamens, or sometimes up to 20. The fruit is a small 3-celled capsule, containing a number of small fine seeds, and opening at the top by 2 or 3 valves.

BAECKEA ARBUSCULA Benth.

Albany Baeckea

Distribution and habitat: Known from the Albany area and from near the Kalgan River. Often grows in peat swamps. It has not been collected since 1936.

Flowering Period: December - February, August.

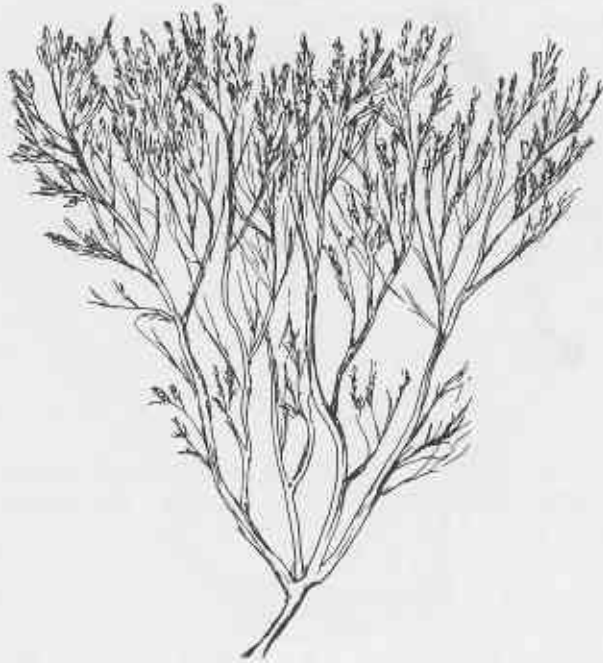
Distinctive Characteristics: This species has very small flowers, with petals of 1 mm length or less, and five or fewer stamens. The leaves are also very short, being 1-2 mm in length.

Other Characteristics: These are small heath-like shrubs, up to about 45 cm in height, erect and bushy in appearance, with many slender glabrous branches. The leaves are linear to erect or slightly flattened.

The flowers are axillary and solitary, with five spreading petals each just under 1 mm in length, being not quite twice as long as the calyx lobes. Flower colour is not mentioned in the literature but it appears from herbarium material to be deep pink.

References: Bentham 1867.

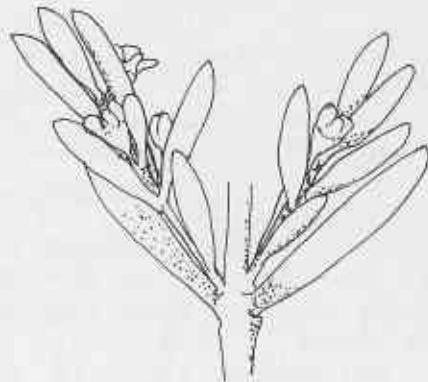
Baeckea arbuscula



Habit of plant reconstructed from herbarium specimen approx. 45cm in height



Leaves and flowers



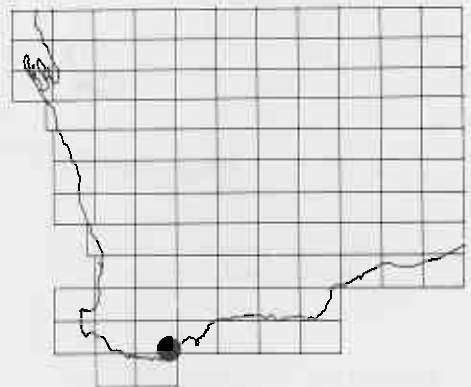
Flowers and leaves (x10)



Top view of flower (x15)



Side view of flower (x15)



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 CHAMAEPHYTON A.S. George

Fishbone Banksia

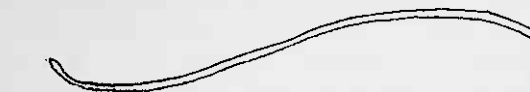
Distribution and Habitat: This is restricted to an area near the west coast between Mogumber and Eneabba, and grows in open heath on grey-white sand over laterite.

Flowering Period: Late October - early December.

Distinctive Characteristics: This species is similar to *B. gardneri* var. *hiemalis* but is distinguished from it by its underground stems, larger leaves, 20-50 cm in length, with longer lobes, 2-8 cm long, and large follicles and seeds, the follicles being 25-40 mm long, 12-20 mm high, 15-20 mm wide and the seeds 27-36 mm long.

Other Characteristics: It is a low shrub, up to .5 m tall with all stems prostrate and underground. The leaves are divided almost to the midrib by the entire lobes. The flowering cones are 6-12 cm long and the flowers are cream and brown with pink apical buds. There are up to 15 follicles on the fruiting cone, on which the old perianths and styles are persistent, with the follicles protruding. They are 25-40 mm in length, 12-20 mm high and 15-20 mm wide and open only with fire.

References: George 1981.



Style



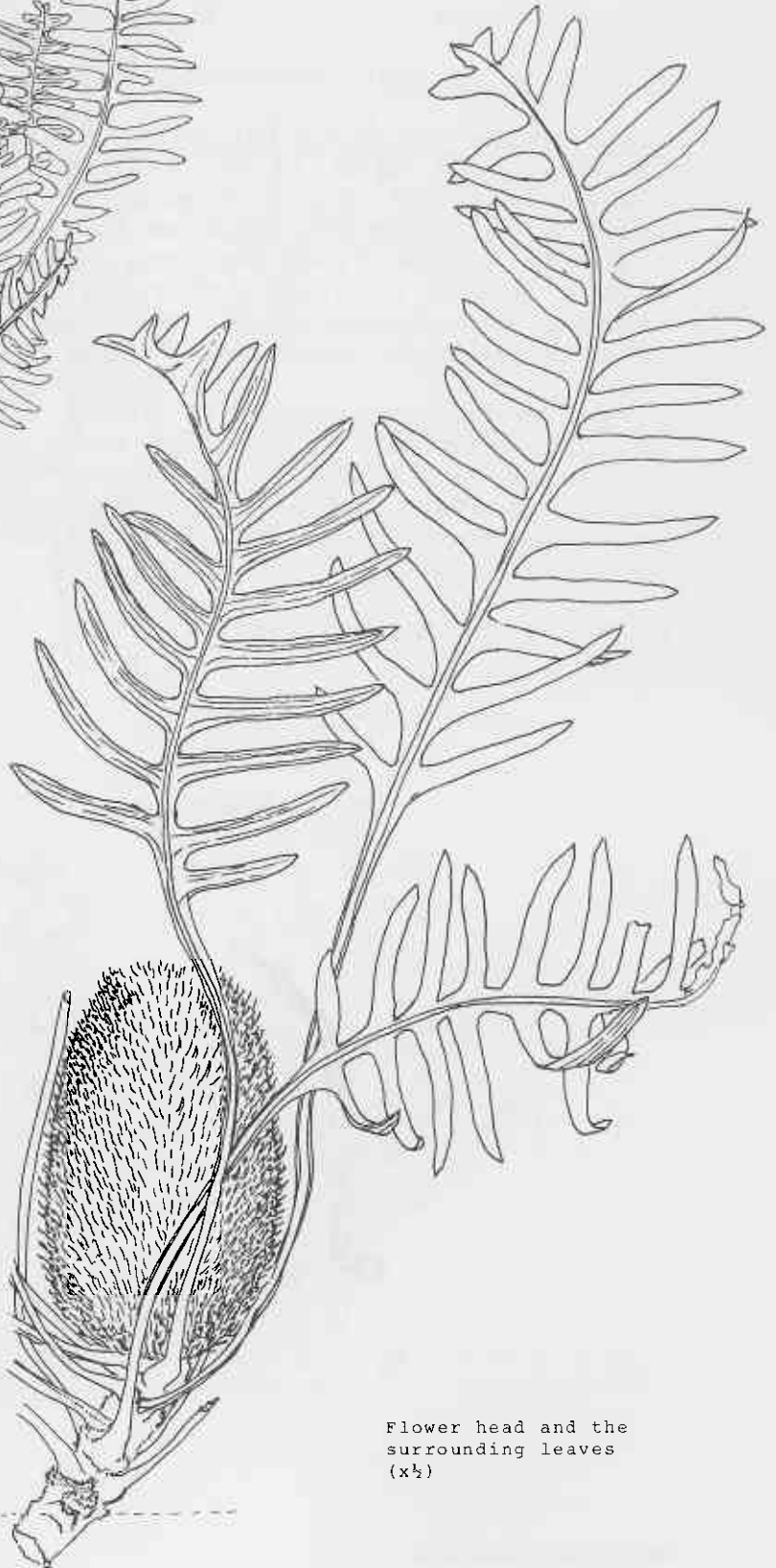
Single perianth segment
(x2)



Banksia chamaephyton

Banksia chamaephyton

Habit of the shrub
approx. .5 metres
in height



Flower head and the
surrounding leaves
(x $\frac{1}{2}$)

Fruiting cone with persistent
perianths and styles

BANKSIA CUNEATA A.S. George

Quairading Banksia

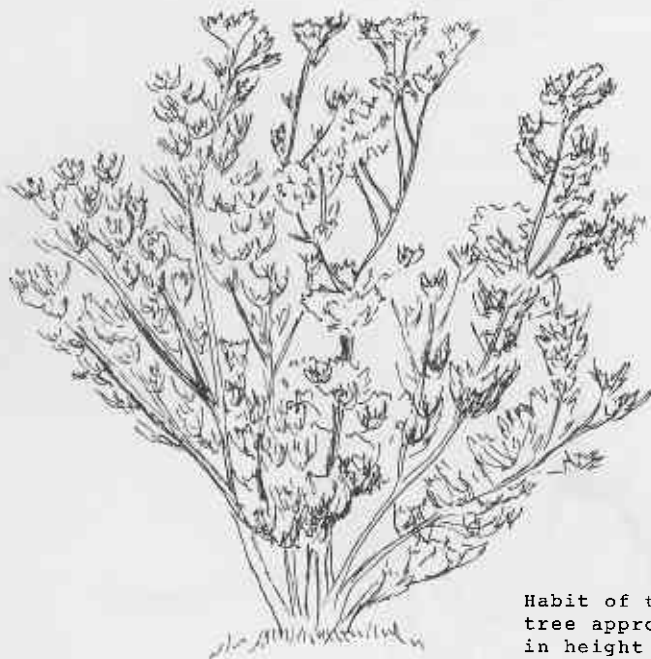
Distribution and Habitat: Restricted to a few populations in the central Wheatbelt between Brookton and Bruce Rock. Grows in deep yellow or yellow brown sand amongst tall shrubland or open-woodland.

Flowering Period: September - December.

Distinctive Characteristics: Similar to *B. ilicifolia* but is distinguished from it by its smooth bark and smaller leaves, 1-4 cm long and .5 - 1.5 cm wide. The flowers are also smaller (with a perianth of 24-25 mm in length) as are the fruits, with a follicle from 17-21 mm long, 10-13 mm high and 9-12 mm wide. Flower colour is also different, being at first cream with pink towards the flower base, becoming a pink throughout and then finally reddish, sometimes with a green limb.

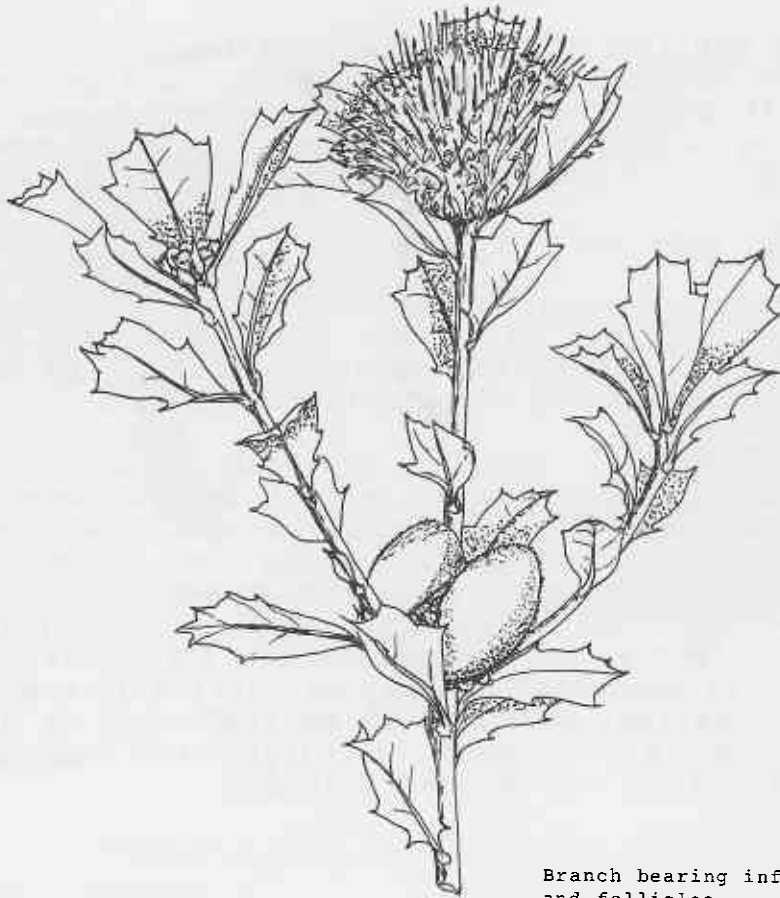
Other Characteristics: A shrub or small tree up to 5 m in height, with one or several much branched woody stems, and an irregular and bushy crown. The leaves are more or less flat, acutely dentate and prickly, and wedge shaped. The inflorescence is headlike. There are usually between 1 and 5 follicles in each fruiting cone.

References: George 1981.



Habit of the small tree approx. 5 metres in height

Banksia cuneata



Branch bearing inflorescence and follicles



Front view of follicle



Side view of follicle



Wedge shaped leaf



BANKSIA MEISNERI Lehm. var. ASCENDENS A.S. George

Meisner's Scott River Banksia

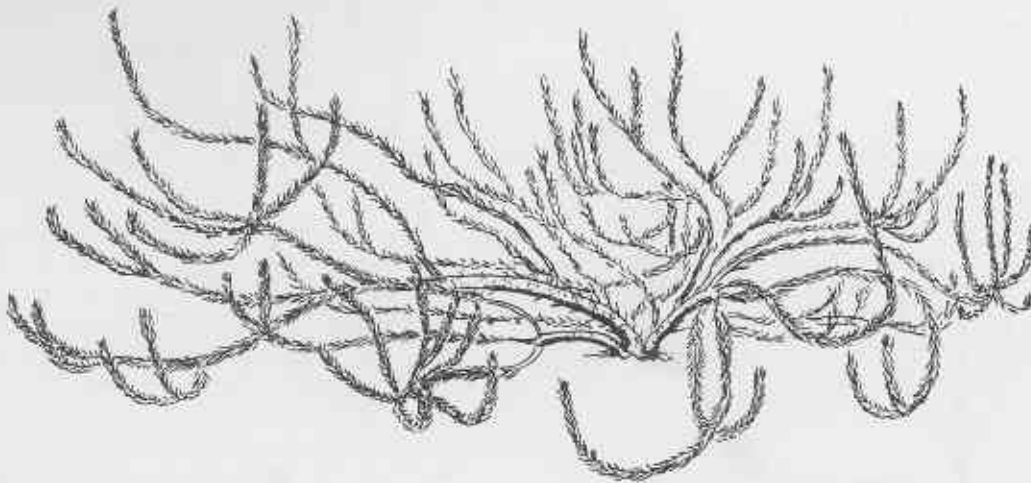
Distribution and Habitat: This variety is found only in a few localities in the extreme S.W. near Busselton and on the Scott River plains. It occurs on areas cleared for agriculture, in deep white or grey sand, on or near swamp flats, in open heath and low shrubland, or in low open woodland.

Flowering Period: Late April - August.

Distinctive Characteristics: The leaves are erect or spreading, and not reflexed as in var. meisneri. They are also longer than those of the latter variety, being 8-15 mm long, with revolute margins and the tip shortly mucronate.

Other Characteristics: This is a shrub of up to 2 m in height with a single basal stem, much branched above. The entire, linear leaves are scattered around the tomentose branchlets. Inflorescences are spherical and erect, flowers opening from the apex down and are golden brown in colour. The styles are hooked just below the apex, with a turbinate pollen presenter, and the perianths are persistent for several years. The fruiting cone is spherical and may be vertically compressed. The follicles are narrow, being 12-22 mm long, 1-7 mm high and 3-4 mm wide. They are covered at first with curled brown hairs, which wear off on the exposed surfaces.

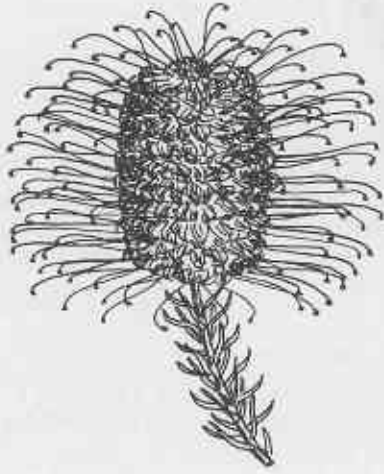
References: George 1981.



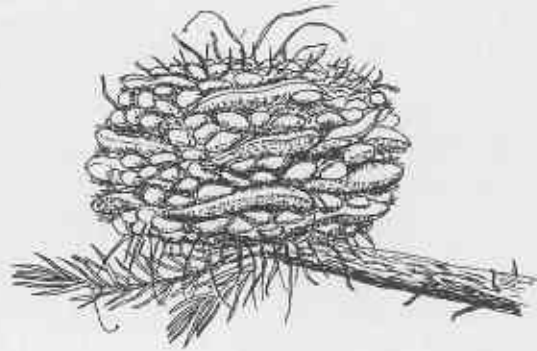
Habit of shrub 30cm
in height

Banksia meisneri
var. *ascendens*

Banksia meisneri
var. *ascendens*



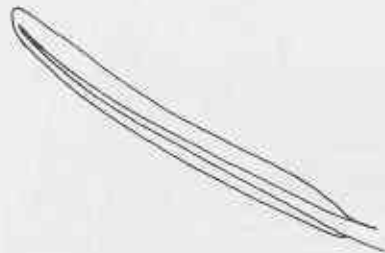
Flowering cone



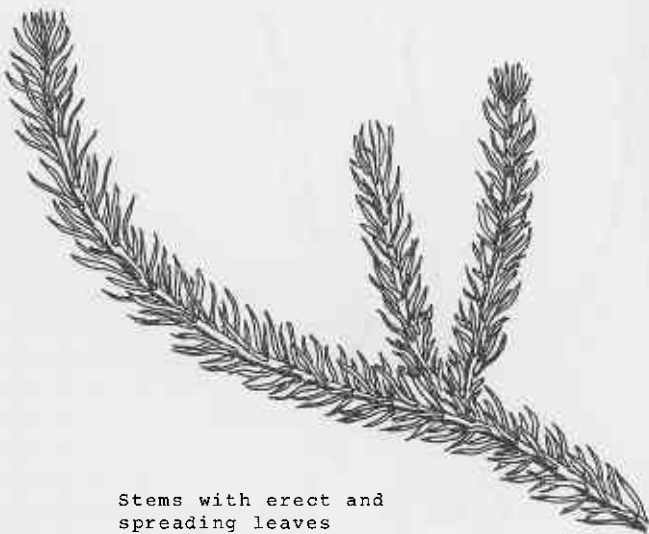
Fruiting cone with narrow
follicles



Hooked style with
turbinate pollen
presenter (x20)



Underside of leaf
showing unrolled
margin



Stems with erect and
spreading leaves



BANKSIA SPHAEROCARPA R.Br. var. DOLICHOSTYLA A.S. George

Ironcap Banksia

Distribution and Habitat: Grows in lateritic gravel, in low open woodland and low shrubland, in a small area from Mount Holland to South Ironcap (E of Hyden).

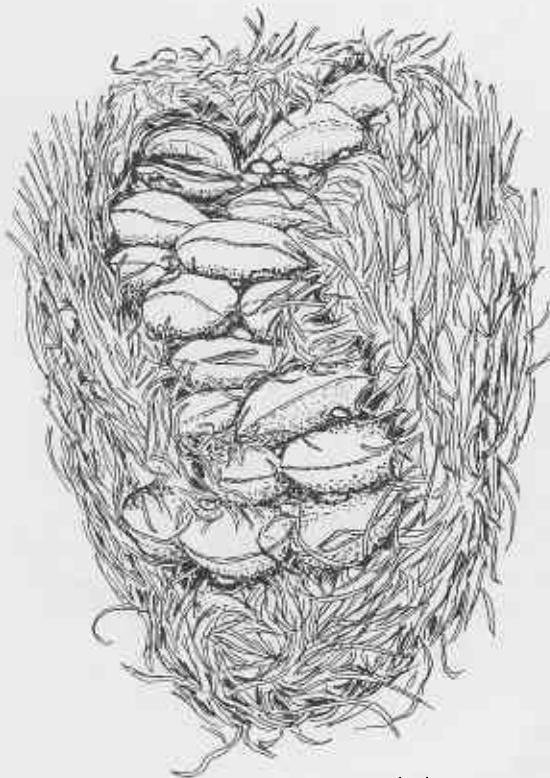
Flowering Period: March - May.

Distinctive Characteristics: Var. *dolichostyla* is very similar to var. *caesia* but has a much longer perianth and style and somewhat larger follicles. The perianth is 49-55 mm in length and the style is 50-65 mm in length. The follicles are 15-22 mm long, 5-8 mm high and 10-15 mm wide.

Other Characteristics: A shrub 2-3 metres in height, with bluish-green, entire linear leaves, and golden flowers. The inflorescences are erect and spherical, opening from the apex down. The styles are hooked just below the apex.

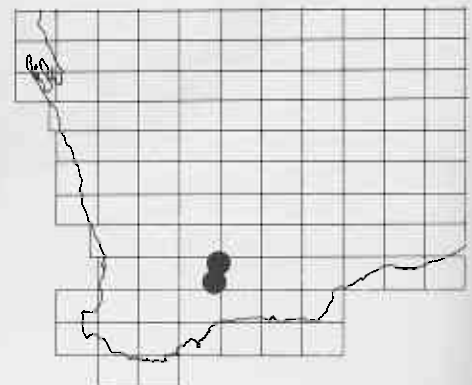
The fruiting cone is spherical with up to 60 follicles; often crowded and at first with spreading hairs which wear off on exposed surfaces.

References: George 1981.



Fruiting cone with one opened follicle

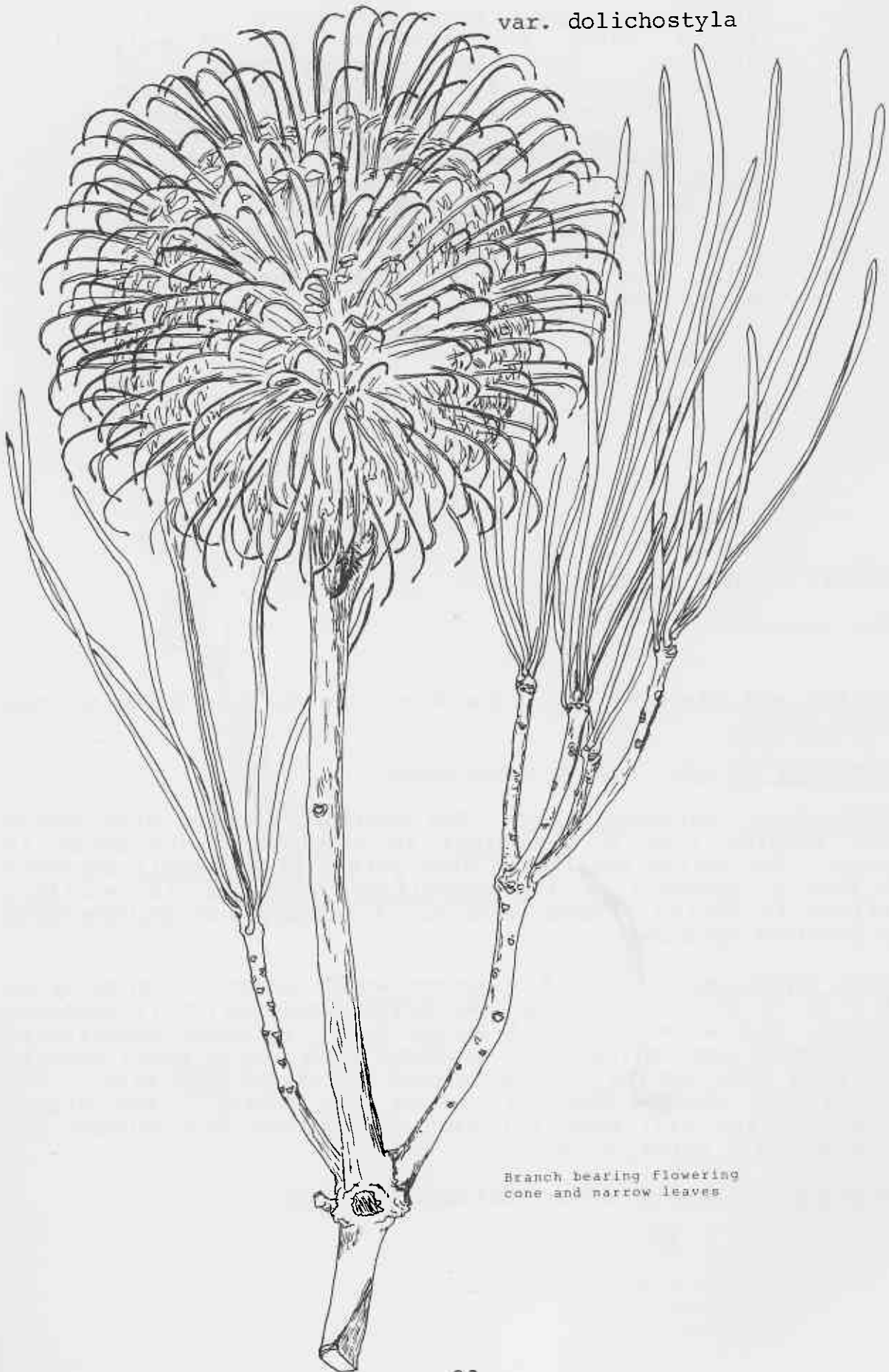
Hooked style



Banksia sphaerocarpa
var. *dolichostyla*

Banksia sphaerocarpa

var. *dolichostyla*



Branch bearing flowering
cone and narrow leaves.

BORONIA (RUTACEAE)

Shrubs or woody perennials with opposite leaves which when crushed are strongly aromatic. The flowers are solitary or in cymes. There are four sepals and four petals in each flower and the petals are spreading or cup-shaped. The eight stamens sometimes have enlarged filaments. After fertilisation the sepals and petals sometimes close around the ripening fruit, which consists of four free carpels, united at the apex by the solitary style. When ripe the carpels split along the margins to release one brown or black seed from each.

BORONIA TENUIS (Lindl.) Benth.

Blue Boronia

Habitat and Distribution: Found on the Darling Range in the Perth region.

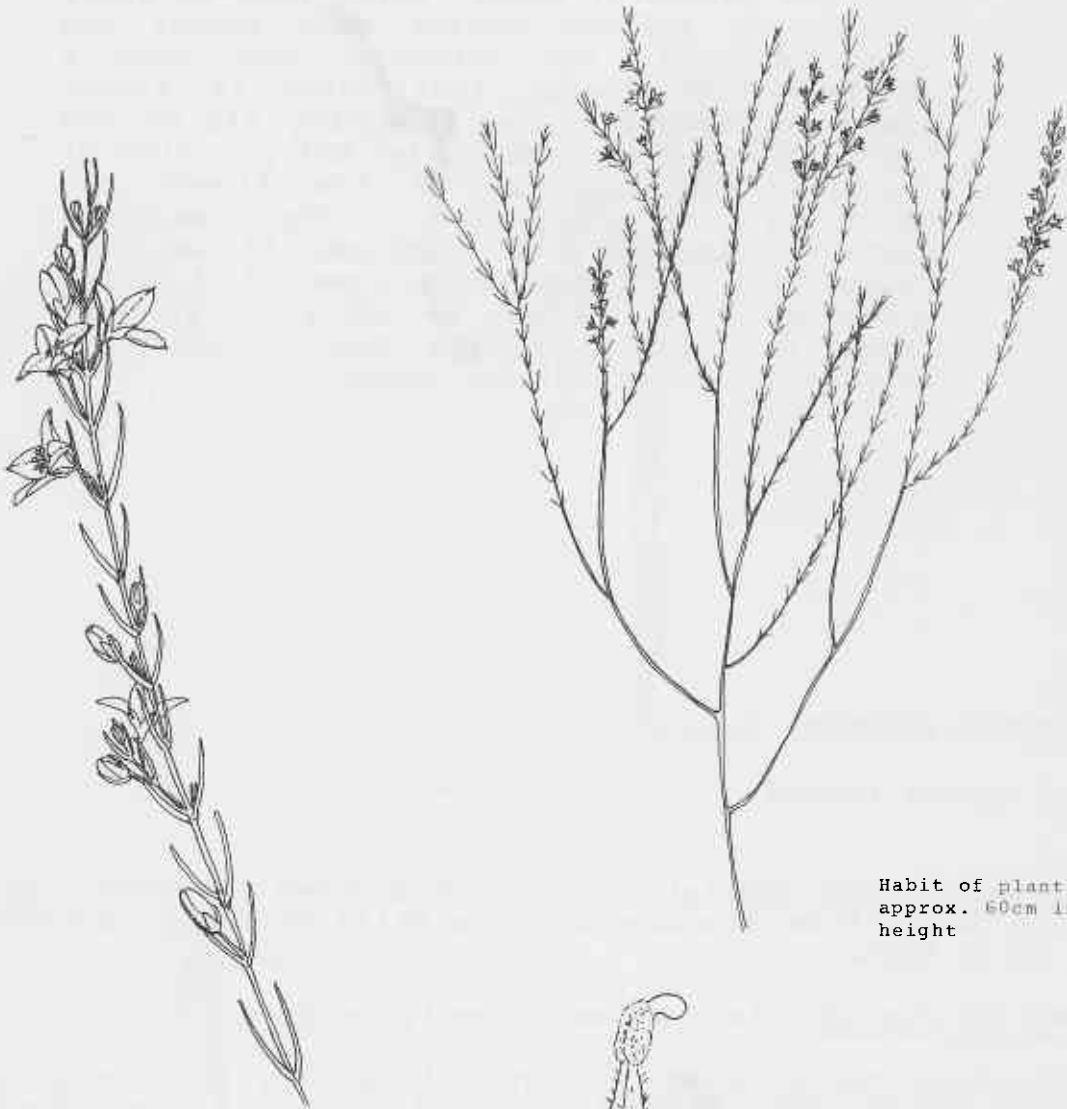
Flowering Period: August - September.

Distinctive Characteristics: The solitary flowers distinguish this species from *B. defoliata* in which they are borne in cymes. The narrow sepals and thin petals of *B. tenuis* separate it from *B. subsessilis*. *B. busseliana*, which is also similar, differs in having slender staminal filaments and anthers with no terminal appendage.

Other Characteristics: A glabrous woody perennial growing to .6 m in height. It has narrow, cylindrical, slightly tapering leaves, channelled above, 5-20 mm long, arranged oppositely. The flowers are solitary and axillary with narrow ovate sepals, and pale blue petals with prominent thickened mid ribs. The styles are slender and ca. 1 mm in length. The stamen filaments are flattened and each anther has a prominent and rounded white apical knob.

References: Bentham 1863. Wilson n.d.

Boronia tenuis



Stem with leaves,
flowers and buds

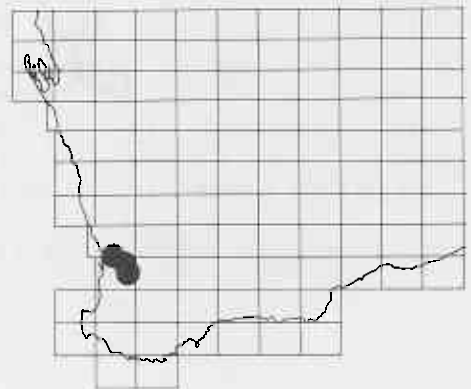
Habit of plant
approx. 60cm in
height



Stamen with flattened
filament and apical
knob on anther
(x15 approx.)



Flower showing thickened
petal midribs and stamens
(x2)



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 BRYCEANA Rogers

Dwarf Spider Orchid

Distribution and Habitat: This orchid grows in sandy clay soil and is known from Gnowangerup, the Stirling Range, Northampton and up to Kalbarri.

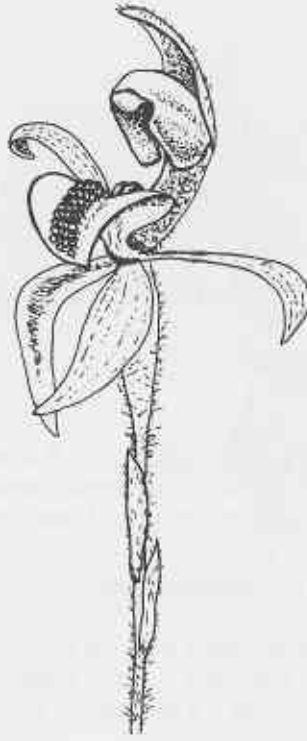
Flowering Period: Late August - early October.

Distinctive Characteristics: This is a very small plant under 5 cm high and with a flower about 14 mm across. The flower is greenish and the tip of the labellum curves under, forward, then up. It has four rows of dark brown shining calli extending down to the tip.

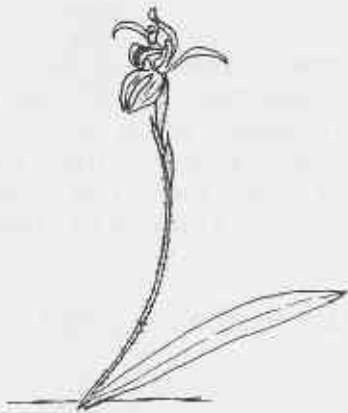
General Characteristics: Stem and leaf hairy. The solitary leaf is about 3.2 cm long and 5 mm wide. The flower is usually solitary and has free sepals and petals curved at the tips and with the upper sepal hairy. The labellum is entire and on a long claw which is hinged so that it is mobile. At the base of the labellum near the claw is a large bilobed, clubbed projection formed by a fusion of the basal calli. This is purplish green in colour.

References: Erickson 1965.

Caladenia bryceana



Flower (x4)



Plant with solitary
flower and leaf



CALADENIA GEMMATA Lindl. forma LUTEA Clemesha.

Yellow China Orchid

Distribution and Habitat: Known from Kojonup, Katanning and the Perth to Northam areas and is usually found growing in sandy clays and gravels in low open woodland.

Flowering Period: September.

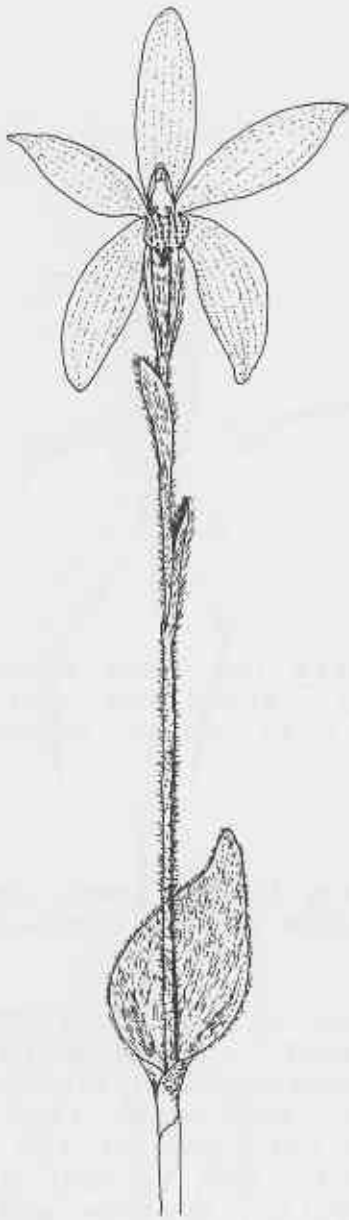
Distinctive Characteristics: This form differs from forma gemmata in the colour of the flowers which are yellow, not blue. The labellum is not so broad, and the calli are more prominent.

Other Characteristics: The plant is quite short, up to about 20 cm in height, but usually less than this. It has an unusual oval leaf, about 2 cm long, dark brown beneath and with short bristles on the upper surface.

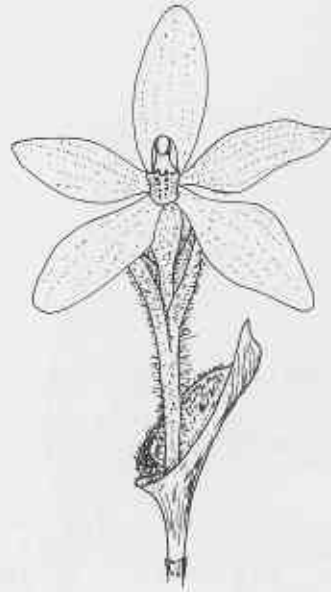
There is one stem bract, and one or two flowers, more usually one. These are large, up to 6 cm in diameter, and the labellum is not on a claw. It is oval, and studded with short clubbed callii. The two basal callii are much larger than the rest. The callii are variable in colour and can be blue, yellow or white. This plant only flowers after an area has been burnt during the previous summer.

References: Erickson 1965, George 1971, Nicholls 1969.

Caladenia gemmata
forma lutea

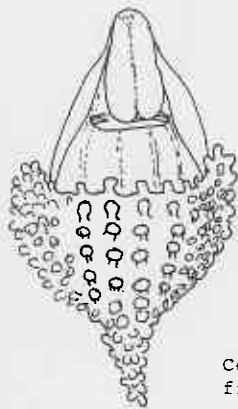
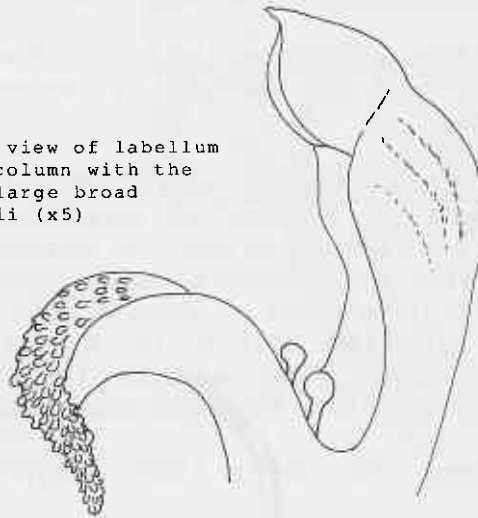


Tall form of plant

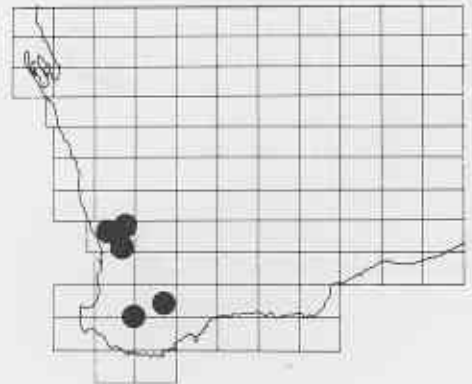


Short form of plant

Side view of labellum
and column with the
two large broad
callii (x5)



Column and labellum
front view (x4)



CALADENIA TRIANGULARIS Rogers

Shy Spider Orchid

Distribution and Habitat: *C. triangularis* has been found at Clackline, Wickepin, Highbury, Pingelly, Frankland and the Stirling Range, generally growing on clay soils often in association with Wandoo.

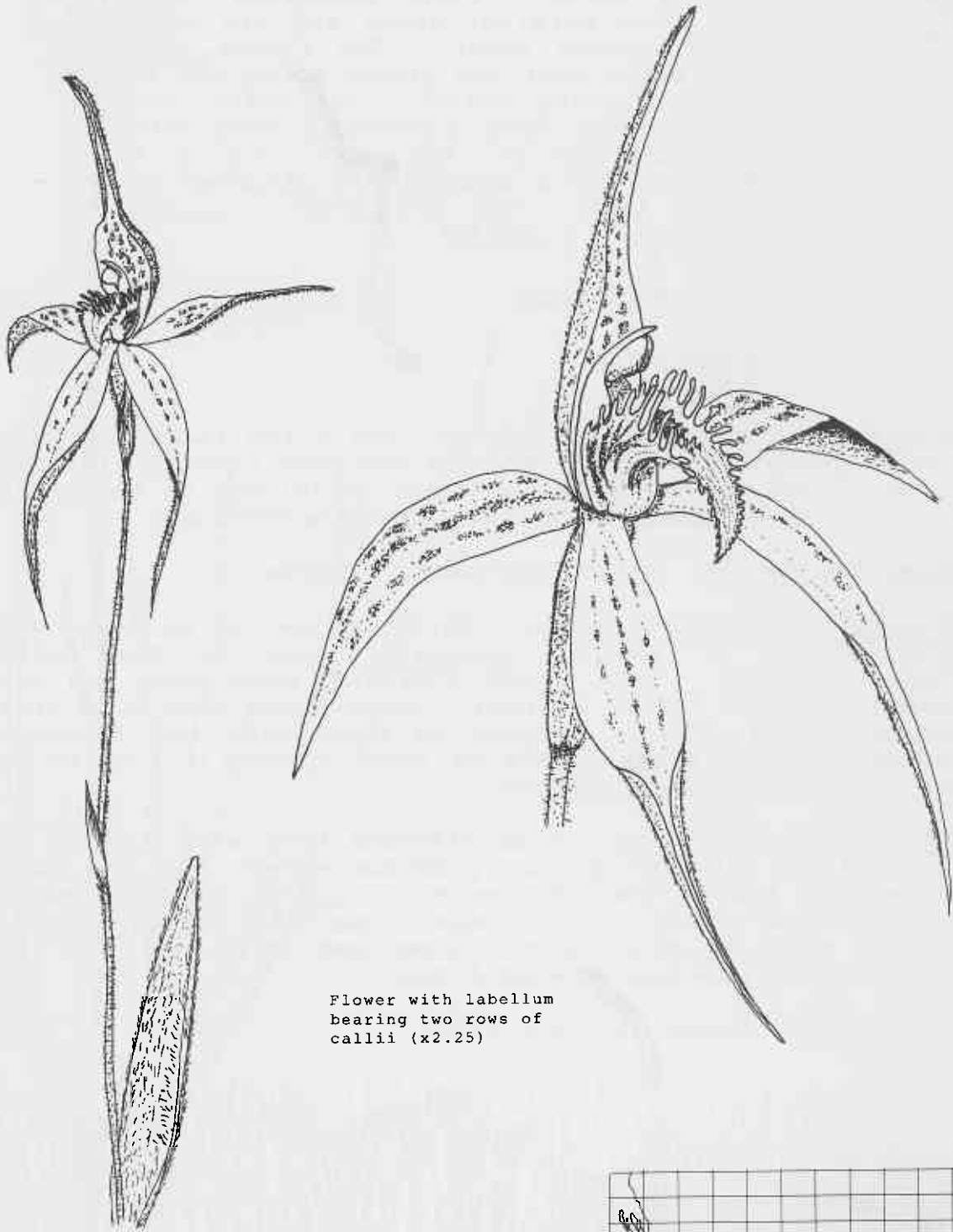
Flowering Period: August - early October.

Distinctive Characteristics: The calli are in two rows, orange in colour and not extending beyond the middle of the three-lobed labellum.

General Characteristics: The plants are up to about 20 cm high, with an elongated solitary hairy leaf. The flowers are usually solitary, cream in colour with reddish brown lines, and the petals and sepals are dusky tipped. The sepal tips are glandular pubescent. There are radiating red lines at the base of the labellum which is three lobed with the lateral lobes deeply combed. The middle lobe is triangular in shape and the edges are shortly fringed or toothed.

References: Erickson 1965, Rogers 1927.

Caladenia triangularis



Flower with labellum
bearing two rows of
calli (x2.25)

Flower stem and leaf



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 PAUCIFLORA Hopper.

Dawesville Conostylis

Distribution and Habitat: Known from a few localities only in the Yalgorup - Dawesville area of the Swan Coastal Plain within 10 km of the coast. Grows on sandy hillslopes of the Spearwood Dune system in mixed jarrah-marri-banksia woodland.

Flowering Period: August/September - October.

Distinctive Characteristics: This species can be distinguished from others of the *C. aculeata* group by the following characteristics. Leaf spines flexible, membranous and densely tomentose, less than 2 mm long. Leaves less than 2 mm wide and up to 25 cm long. Usually no more than ten flowers per inflorescence. Flowers 8-15 mm long, anthers 2-3 mm in length and longer than the filaments.

Other Characteristics: A proliferous herb with stolons up to 15 cm long. Leaves green, glabrous except for the marginal setae, and flat. The inflorescence is a capitulate cyme, on a simple scape equal to or longer than the leaves, which are usually about 15 cm in height, sometimes to 25 cm. The flowers are creamy yellow inside when fresh.

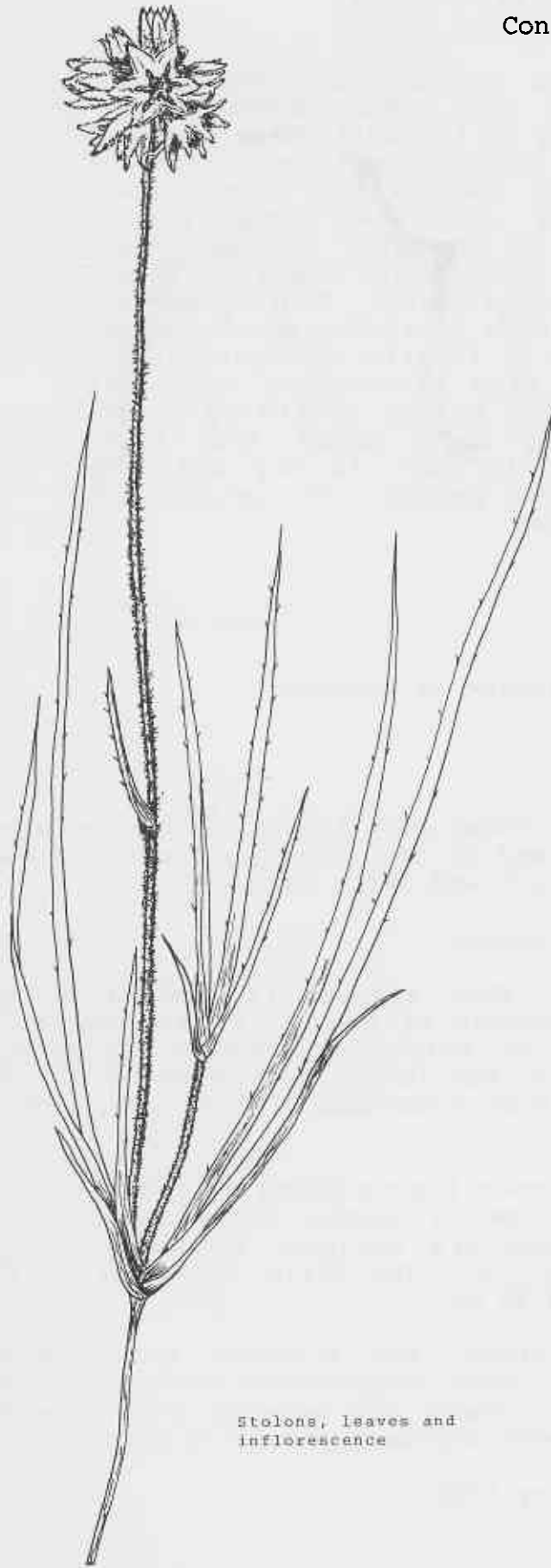
References: Hopper 1977 and 1978.



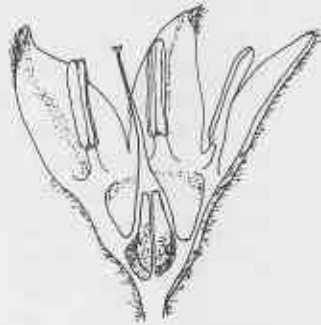
Conostylis pauciflora

Habit of plant
approx. 20cm in
height

Conostylis pauciflora



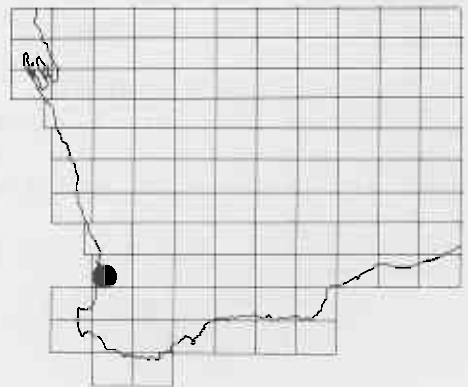
Stolons, leaves and
inflorescence



Half flower showing
anthers longer than
filaments (x4 approx.)



Flexible tomentose
leaf spine (x20)



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 OXYLEPIS (Turcz.) Marchant et Keighery

Gillham's Bell

Distribution and Habitat: Recorded only from a restricted area near Mondurup in the western end of the Stirling Range. Grows on peaty sands and clays in heath and shrub associations.

Flowering Period: August - November.

Distinctive Characteristics: This species is similar to D. lejostyla but differs in a number of ways. It is generally taller, growing up to 1.5 m in height, whereas D. lejostyla rarely exceeds 45 cm. It also has longer leaves up to 9.5 mm with a mean of 7.9 mm rather than a maximum of 9 mm with a mean of 6.5 mm.

Its flowers are larger, the inner bracts being scarlet or red, never pink and they are 27-39 mm in length, rather than 19-21 mm as in D. lejostyla. These are elliptic in shape in D. oxylepis, obovate in D. lejostyla. The style is longer in D. oxylepis, being between 16 and 25 mm.

Other Characteristics: An erect, few branched shrub, with scattered linear leaves and large campanulate inflorescences which are scarlet in colour. There are between 4-10 flowers per inflorescence and the flowers are dark purple in colour.

References: Marchant & Keighery 1980.

Darwinia oxylepis



Stem with leaves
and flower head



Habit of shrub 1.5
metres in height



Single flower



Elliptic inner bract



DARWINIA WITTWERORUM Marchant et Keighery

Wittwer's Mountain Bell

Distribution and Habitat: This species is found on low altitude sites in the Stirling Range National Park and grows on sands and clays amongst heaths and mallees.

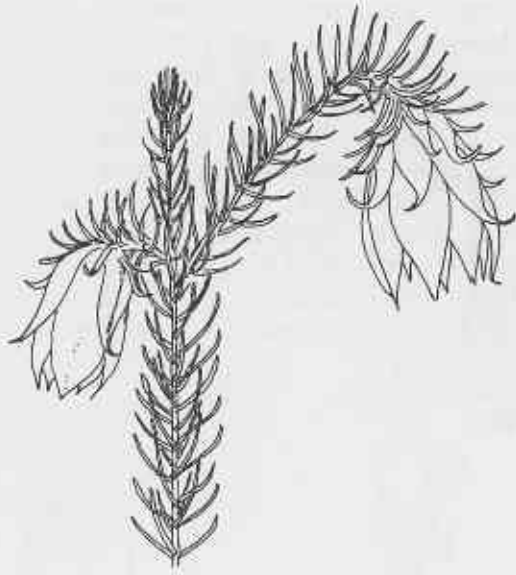
Flowering Period: September - November.

Distinctive Characteristics: *D. wittwerorum* is similar to *D. lejostyla* but differs in several respects. The inflorescence is ovoid in shape rather than bell-shaped, the inner bracts are cream and pale pink in colour rather than pink or red, the style length does not exceed 10 mm and there are fewer flowers in each inflorescence, usually between five and nine, whereas in *D. lejostyla* there are seven to twelve. *D. wittwerorum* can be distinguished from the other *Darwinia* species by the shape of its leaves, which are linear and acutely triangular in section, also by its inflorescence shape, which is ovoid, and by the small inner bracts and short styles.

Other Characteristics: This is an erect single stemmed shrub, 30-80 cm in height. The leaves are scattered, 5-10 mm long, less than .5 mm wide with an acute apex. The inflorescence is ovoid and pendulous. The outer bracts are cream and linear in the upper half. The inner bracts are elliptic-obovate, and cream with pink in the upper part. The petals are cream, and the styles bend in towards the centre of the inflorescence, and have a band of hairs below the stigma, forming a cone-shaped brush.

References: Marchant and Keighery 1980.

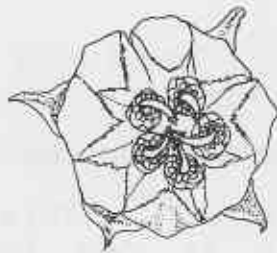
Darwinia wittwerorum



Branch with leaves
and two ovoid flower
heads



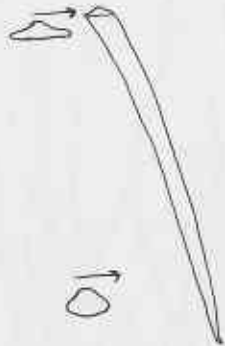
Single flower (x2)



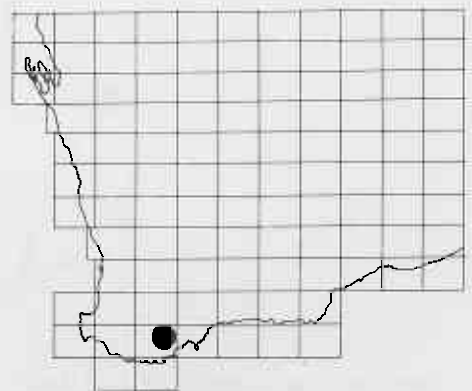
Flower head from below
with styles curving
inwards (x2)



Habit of shrub up
to 80cm in height



Leaf showing triangular
upper section (x5)



DAVIESIA (FABACEAE)

Small to large shrubs with leathery leaves often reduced to sharp spines or small scales. The small flowers are borne in axillary racemes or clusters, and are orange and yellow, red or reddish purple. The calyx is short, often with the 2 upper lobes united and the lower 2 free. The keel and wings are of the same length as the standard, which is rounded, making the flower look compact. The fruit is a tough triangular pod with a sharp apex. It opens when ripe, releasing 1 or 2 seeds each with a strophiole (a small hard appendage).

DAVIESIA EUPHORBIOIDES Benth.

Wongan Cactus

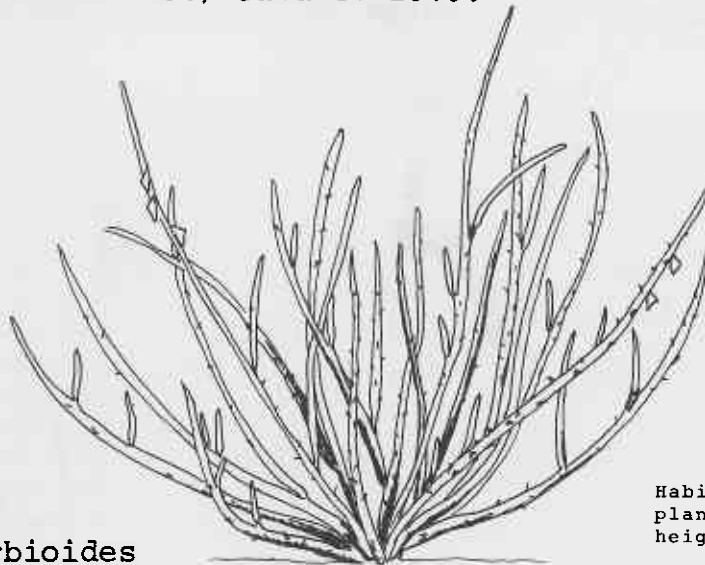
Distribution and Habitat: Found only on the sand plains of the Wongan Hills area.

Flowering Period: September - October.

Distinctive Characteristics: This leafless shrub has a cactus-like appearance, as the branches are very thick, cylindrical and slightly tapering. The leaves are replaced by small prickly conical scales. In the axils of these scales the flowers are borne in clusters. The standards are orange yellow and the keels are deep red or purplish in colour.

Other Characteristics: The plant is usually no more than 45 cm high, and is erect, glabrous and glaucous, with the small branchlets erect. The branches are of a pithy texture inside.

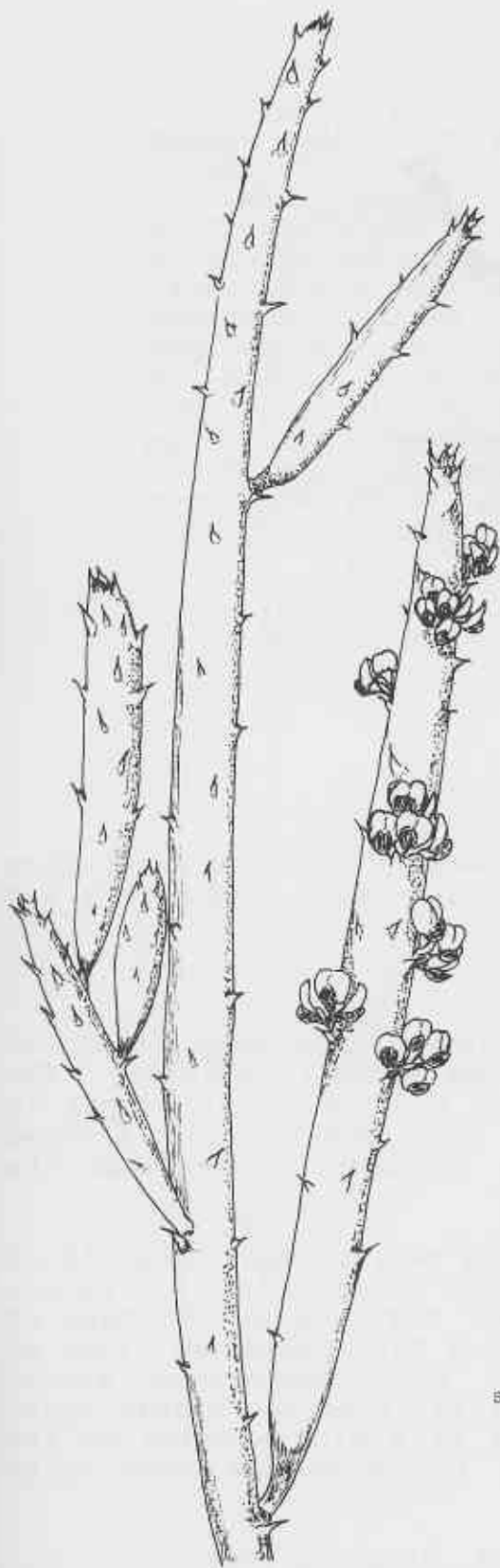
References: Bentham 1864, Gardner 1979.



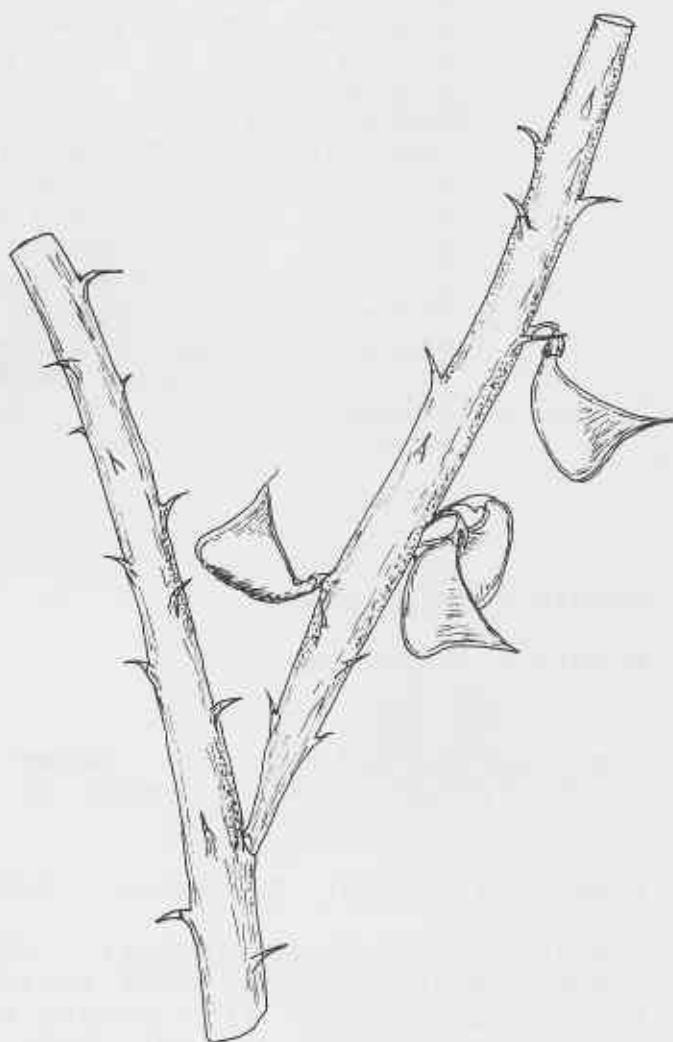
Habit of medium aged
plant up to 45cm in
height

Daviesia euphorbioides

Daviesia euphorbioides



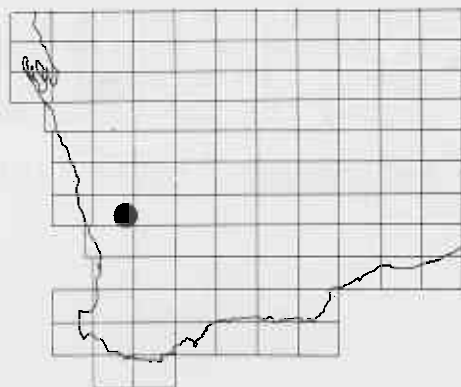
Stems with flowers
and conical scales



Stem with pods



Side view of pod



DIURIS (ORCHIDACEAE)

This group includes the Donkey, Catsface, Nannygoat and Bee Orchids. They are glabrous plants, with many narrow grasslike leaves sometimes spirally twisted. There are one or more flowers on each plant, usually yellow, purple or white, and having the distinctive donkey-like form, with two ear-like petals on long claws. These flank the dorsal sepal which is coloured like the petals and stands erect. The lateral sepals are narrow and greenish and partly hidden behind a conspicuous three-lobed labellum. The flowers are slightly perfumed and large enough to support large insects. The fruit is an urn-shaped capsule, which is three celled and splits when ripe to release numerous fine seeds.

DIURIS PURDIEI Diels

Purdie's Donkey Orchid

Distribution and Habitat: Grows in swampy areas on sandy clay in the coastal region south of Perth between Cannington and Pinjarra.

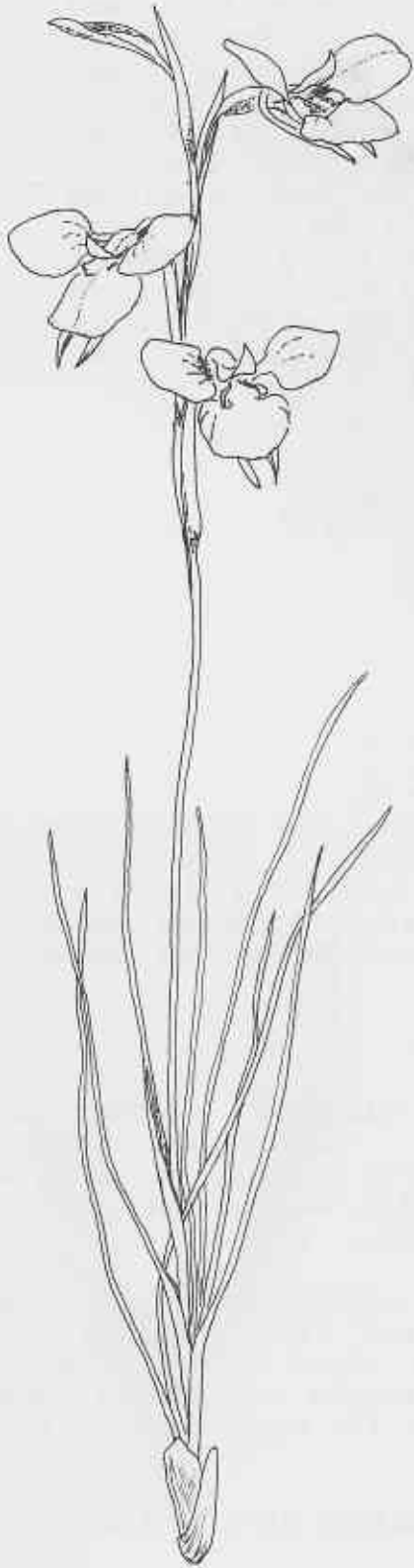
Flowering Period: September - October.

Distinctive Characteristics: The leaves are many, 5-10 in number, 8-10 cm long, very narrow and spirally twisted. The flowers are yellow with purple veins and the dorsal sepal is shorter than the lateral ones. The labellum has fringed lateral lobes and the middle lobe is much longer than the laterals.

General Characteristics: These plants vary between about 12-45 cm in height. There are one to eight flowers in each spike, pale yellow with red brown wallflower markings at the base of the labellum. The lateral petals often have red brown lines on the reverse. The middle lobe of the labellum is almost rhomboid and there are two short raised lines set widely apart at the base of the lamina extending as a single ridge to the apex. This species flowers after the area has been burnt during the previous summer.

References: Diels 1903, Erickson 1965, Nicholls 1969.

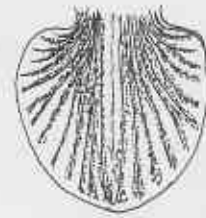
Diuris purdiei



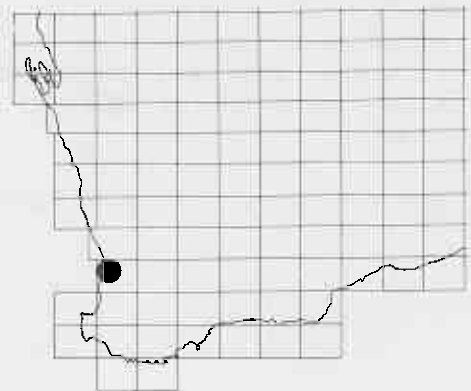
Whole plant with leaves
and flowers



Labellum from above (x2½)



Underside of labellum
showing wallflower
markings (x2½)



DRUMMONDITA (RUTACEAE)

Undershrubs with small, scattered, simple leaves. The flowers are usually solitary and terminal. There are five free, smooth sepals. The five petals are also free, narrowly ovate oblong in shape and they are dry and glumaceous. The stamens are longer than the petals, and the lower 3 or 4 of the ten filaments are united to form a narrow tube. Only the antipetalous five bear anthers. Both ovary and fruit are rounded at the apex, without a terminal beak. There are five free carpels which split when ripe to release the reniform seeds, each about 3 mm long.

DRUMMONDITA ERICOIDES Harv.

Morseby Range Drummondita

Distribution and Habitat: This species has so far been found only in a very restricted area north of Geraldton in the Morseby Range. It grows in brown loam over granite and in cracks amongst granite, and also in grey/brown sandy loam amongst sandstone and laterite rocks. It occurs amongst low heath.

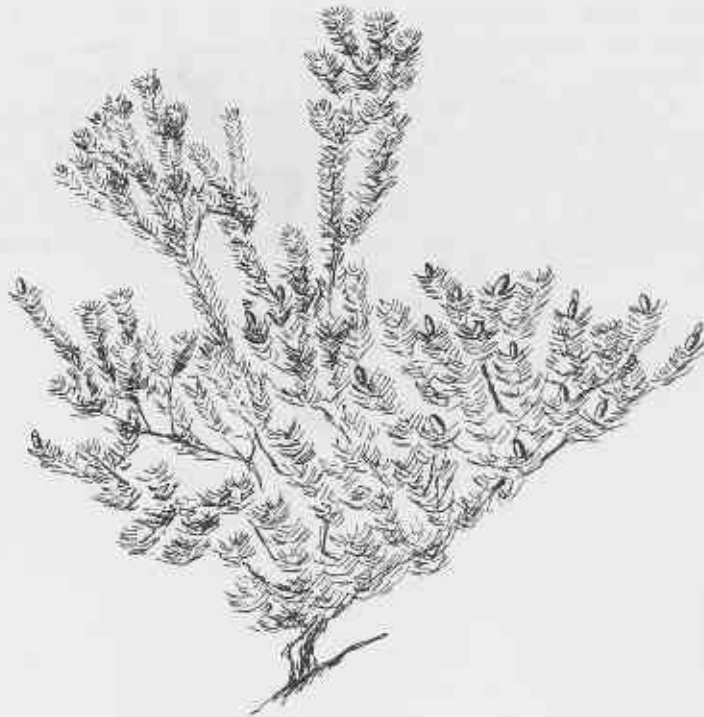
Flowering Period: September - October.

Distinctive Characteristics: It has glabrous, slender, terete leaves and glabrous equal sepals. The flower colour is yellowish white, or white suffused with violet, often with the petals yellow and the stamen tube white and violet. The base of the stamens is glabrous on the inside.

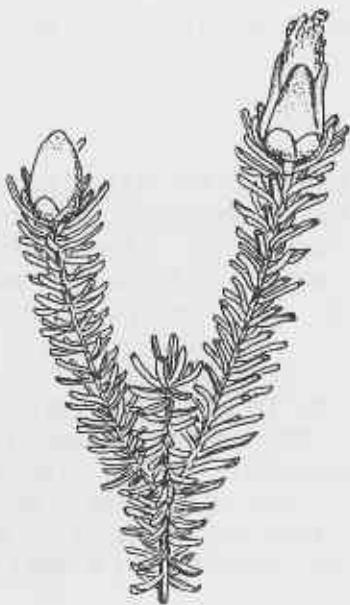
Other Characteristics: A low shrub, varying in height from .05 m to .2 m when growing on ridges and from .5 m to 1 m in sheltered gullies. The leaves are about 8 mm long. The flowers are solitary each with five sepals and petals, and the ten stamens are united to form a tube for more than half their length.

References: Harvey 1855, Mell 1981, Wilson 1971 & n.d.

Drummondita ericoides



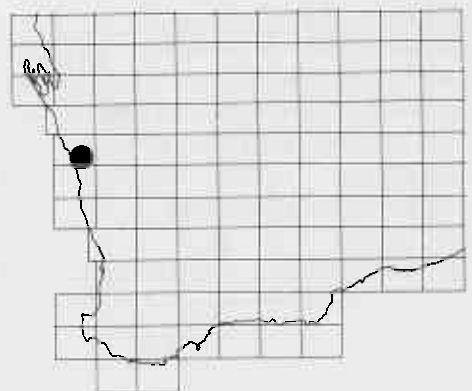
Habit of shrub between
0.5 metres and 1 metre
in height



Branch with leaves,
flower and bud



Leaf (x5)



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 INFLATA C.A. Gardn.

Swollen Flowered Eremophila

Distribution and Habitat: Known only from an area of woodland east of Hyden.

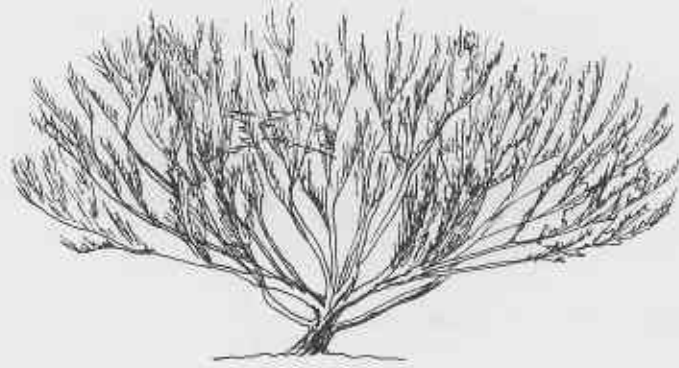
Flowering Period: November - December.

Distinctive Characteristics: This species can be distinguished from other *Eremophila* species by the calyx segments, which are reflexed (particularly after fertilisation), by the shape of the base of the corolla, which is very much inflated, and by the shape of the corolla lobes, which are very short and obtuse.

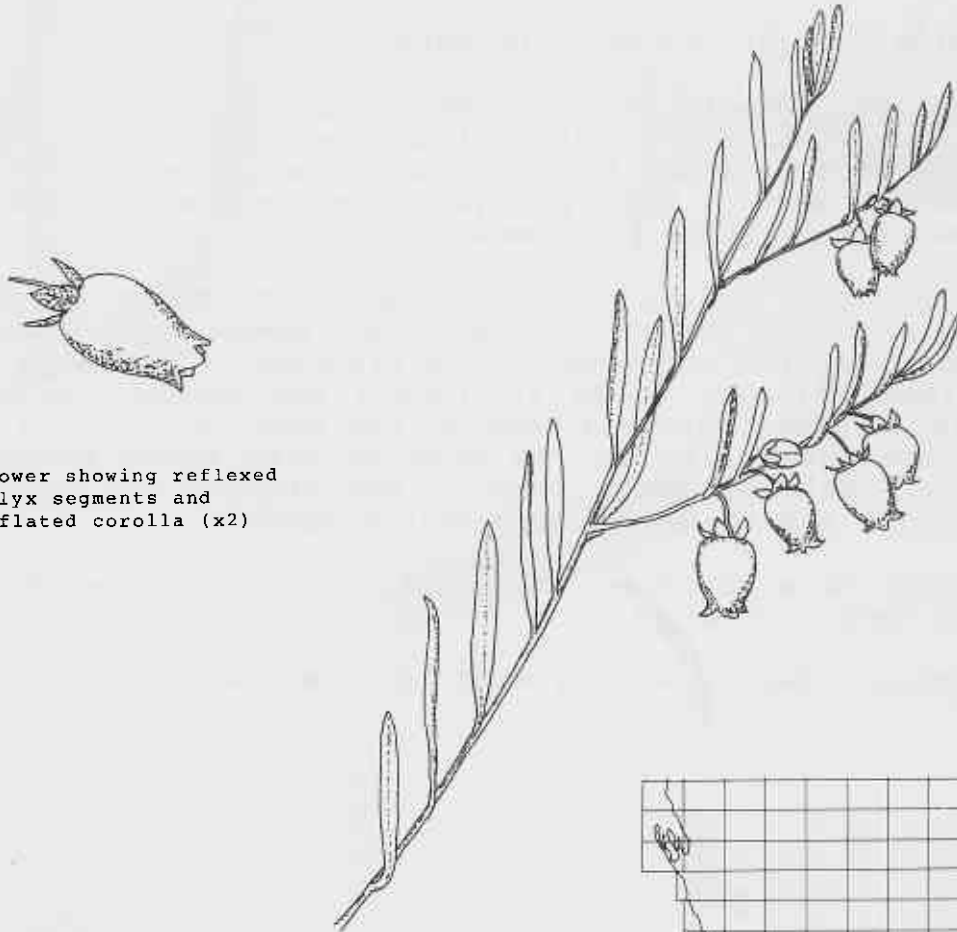
Other Characteristics: A shrub up to 2 m in height, with the branches somewhat resinous and warted. The stems and leaves are glabrous, the leaves being oblanceolate, 3 cm long and about 3.5 mm wide. The flowers are solitary or sometimes two in each axil, violet or pink in colour, the corolla 7.5 mm in length. The stamens are enclosed and the corolla is hairy on the outside.

References: Gardner 1942.

Eremophila inflata

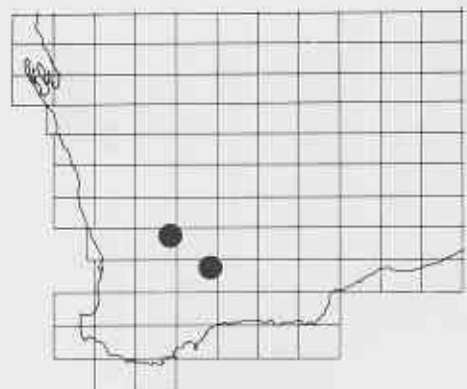


Habit of shrub up to
2 metres in height



Flower showing reflexed
calyx segments and
inflated corolla (x2)

Branch with leaves
and flowers



EREMOPHILA MERRALLII F.v.M.

Bruce Rock Eremophila

Distribution and Habitat: This taxon is found in the Bruce Rock area, growing in red loamy soil.

Flowering Period: August - December.

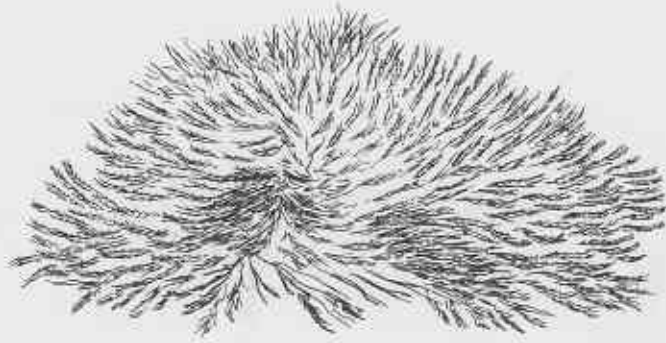
Distinctive Characteristics: This plant is closely related to E. caerulea (S. Moore) Diels from the Coolgardie area but is distinguished from it by its leaves, which are terete, thick and warty with a nobby appearance, and which are densely covered with stellate trichomes.

Other Characteristics: A shrub up to 80 cm in height. The leaves are 6-10 mm in length, the flowers are sessile, and axillary, towards the ends of the branches. The calyx segments are almost linear, 5 mm in length and densely hairy. The corolla is blue, narrowed towards the base, and ca. 10 mm long. It is sparsely hairy on the outside with acute lateral lobes and small deltoid upper lobes. The stamens are shorter than the corolla and the style is nearly glabrous.

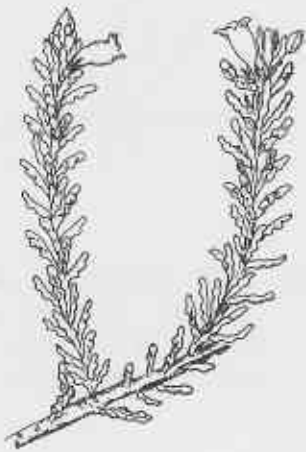
The fruit is a bi-, tri- or quadrilocular drupe, with a single seed in each loculus.

References: Ewart, White & Wood 1911, Moore 1900.

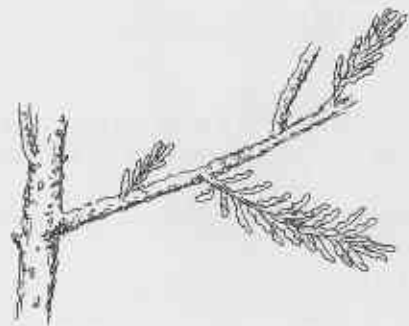
Eremophila merrallii



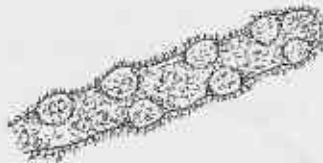
Habit of shrub up to 80cm in height



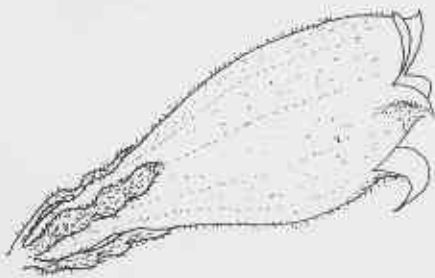
Branches with leaves and flowers



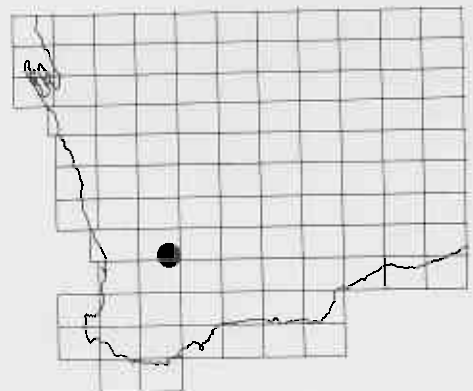
Woody stem with leaves



Underside of leaf (x5)



Flower (x6)



EREMOPHILA MICROTHECA (F. Muell. ex. Benth.) F. Muell.

Heath-like Eremophila

Distribution and Habitat: Port Gregory, Murchison River, Lake Logue. Sandy silty soil.

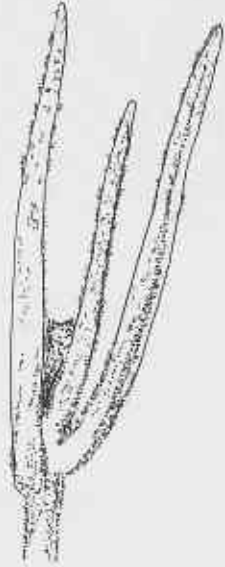
Flowering Period: August - September.

Distinctive Characteristics: Young leaves and branches with a short pubescence, making them look hoary. Older leaves become glabrous. The calyx is covered with short dense stellate hairs whilst the corolla is glabrous but with minute scales. The ovary also glabrous.

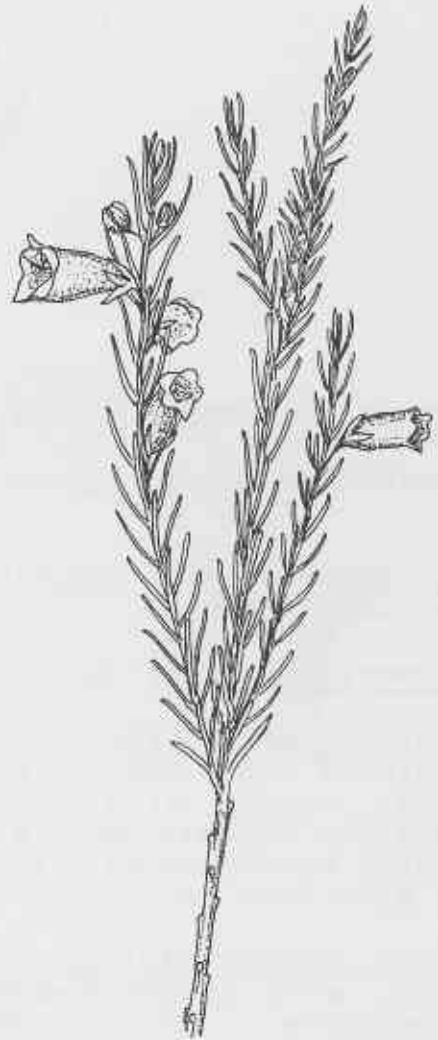
Other Characteristics: This is an erect heath-like shrub growing up to one metre in height, with crowded narrow linear leaves up to about 1 cm in length. The flowers are lilac in colour, on very short axillary pedicels.

References: Bentham 1870.

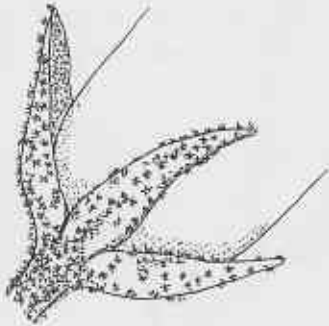
Eremophila microtheca



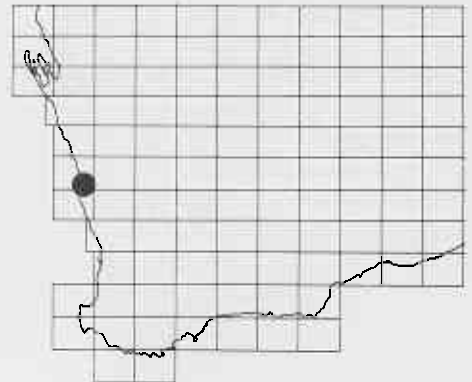
Young stem and leaves
covered with dense
pubescence (x12)



Stem with leaves,
flowers and buds



calyx with stellate
hairs (x10)



EREMOPHILA RESINOSA (Endl.) F. Muell.

Resinous Eremophila

Distribution and Habitat: Sandplains, in the Yellowdine and Westonia areas.

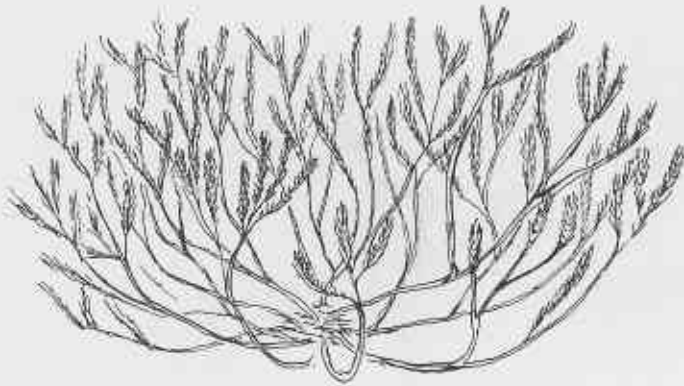
Flowering Period: Late September - early December.

Distinctive Characteristics: The branches are hairy with resinous tubercles. It has wedge-shaped leaves up to 1 cm long, covered with dense white stellate hairs. The solitary axillary flowers have a funnel-shaped corolla, with the lobes nearly equal and with stellate hairs on the outside. The ovary is also very hairy.

Other Characteristics: This is a low shrub up to one metre high, with rather thick alternate leaves which have a hoary appearance. The flowers have very short pedicels and are violet in colour and about 1 cm in length.

References: Bentham 1870.

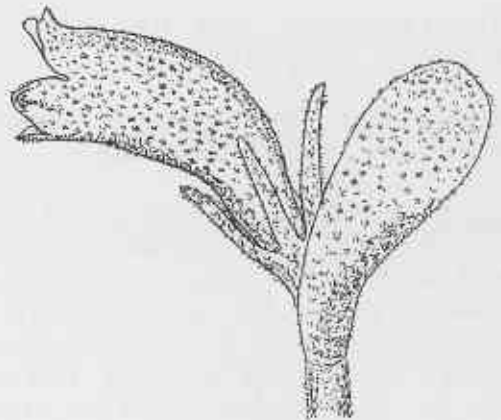
Eremophila resinosa



Habit of shrub approx.
1 metre in height



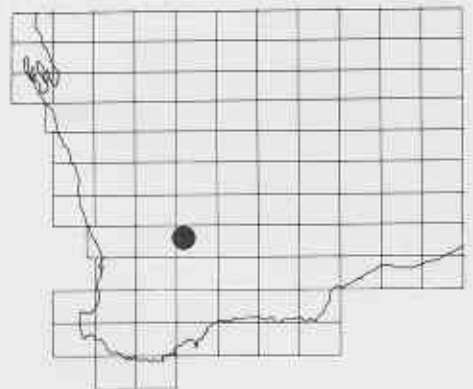
leaves



Corolla, calyx and
leaf with stellate
hairs (x5)



Branch with resinous
tubercles, leaves and
flowers



EREMOPHILA SERPENS Chinnock

Snake Eremophila

Distribution and Habitat: Known only from the Hyden to Lake King to Newdegate area.

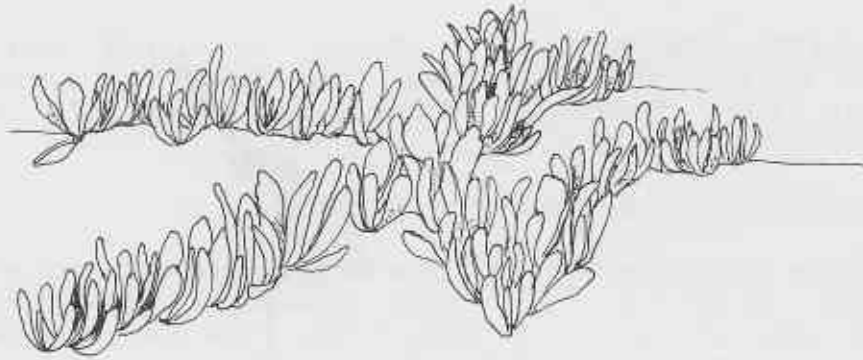
Flowering Period: September - ? throughout the year - February, May, November.

Distinctive Characteristics: The plant is glabrous. The corolla of the flower is 2 - 2.6 cm long, markedly tuberculate, and with the lobes unequal. The upper four are acute, and the lower lobe is deeply cut into the tube and recurved. When straightened it reaches the apex of the lower upper lobes. The fruit is globular and 7-9 mm in diameter. The plant is similar to *E. biserrata* in its creeping habit but differs in the shape of leaves, flowers and fruits.

Other Characteristics: Stems and branches are prostrate and creeping, forming large patches and becoming woody in the older parts. They root freely at the nodes except in the youngest parts. Leaves are alternate, 3 - 4.5 cm long, indistinctly petiolate and erect or slightly spreading. They are wedge-shaped and when fresh the surfaces are covered with slightly raised glands and look punctate when dried. The flowers are erect, and axillary along the main stems or on short laterals, and are often obscured by the leaves so that only the upper parts of the purple stamens and styles are showing. The corolla is lime green with a band of dark brownish purple extending from the two upper lobes down the tube. The seeds are pale brown and oblong ovate in shape.

References: Chinnock 1979.

Eremophila serpens



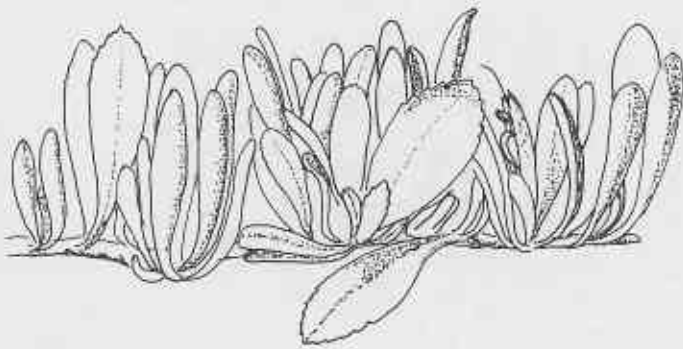
Habit of plant



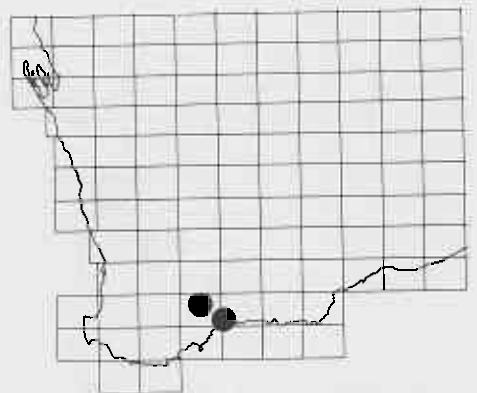
Fruit (x2)



Flower with deeply cut lower corolla lobe (x2)



Prostrate stem and leaves with one flower



EREMOPHILA VISCIDA Endl.

Varnish Bush

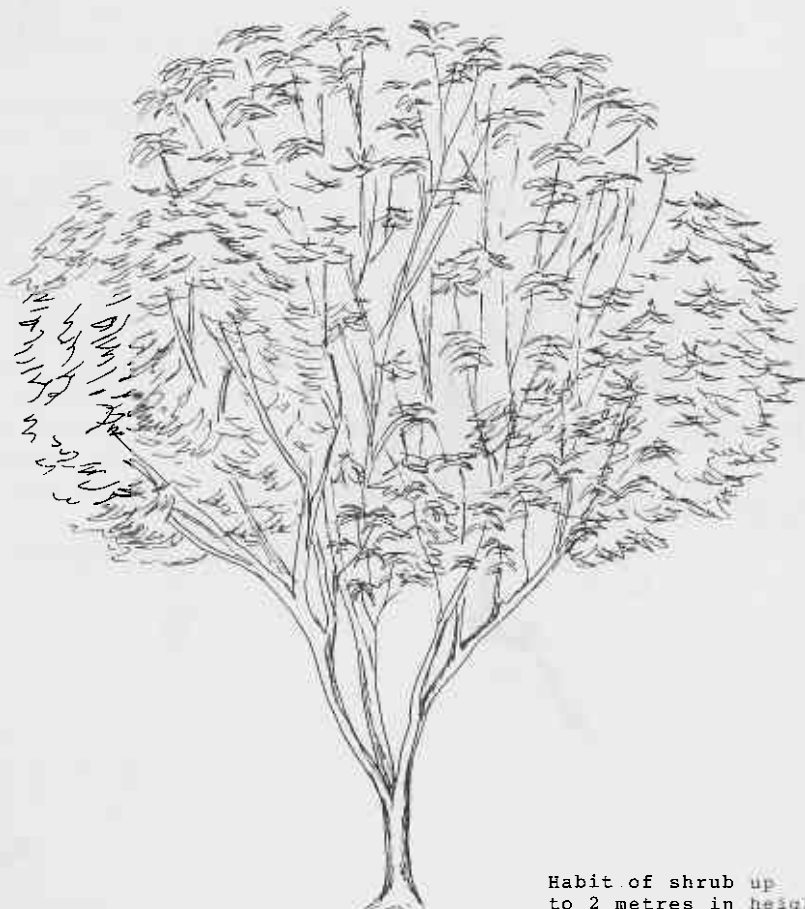
Distribution and Habitat: Grows in sandy soil, loam or granitic soils, and is known from Ballidu, Koorda, Pinder, Nungarin, near Westonia, Kunnunoppin and 125 km west of Norseman.

Flowering Period: September - October.

Distinctive Characteristics: The leaves are elliptical-lanceolate in shape, glabrous to finely glandular pubescent, and are distinctively shiny and sticky. The five calyx lobes are blunt and obovate in shape, membranous and strongly veined. They enlarge after flowering to become just over a centimetre in length. The flowers are white, or pale yellow, purple spotted inside the corolla, and with glandular hairs.

Other Characteristics: This is a large erect shrub from 2-6 metres in height. The leaves are alternate 5-10 centimetres long and the flowers axillary and solitary or sometimes two. The corolla is just over 1 cm in length and the stamens project outside the tube. The peduncles are 1 cm in length and are enlarged beneath the flowers. The ovary is hairy.

References: Bentham 1870.

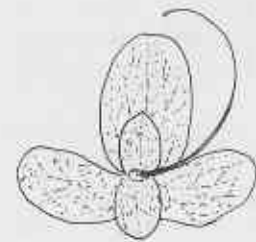


Habit of shrub up
to 2 metres in height

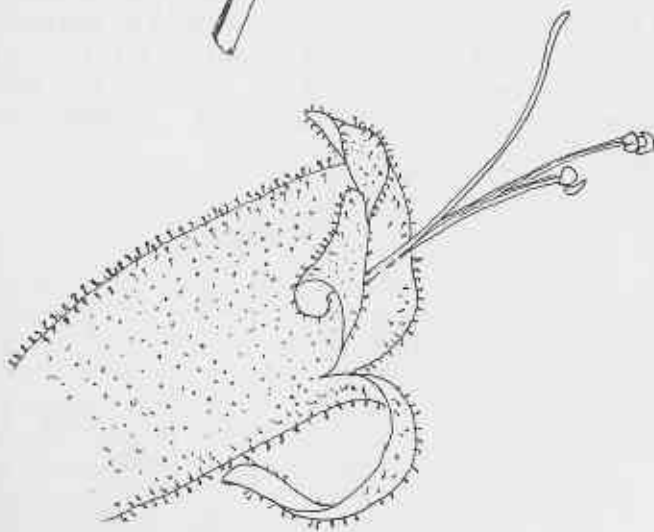
Eremophila viscida

Eremophila viscida

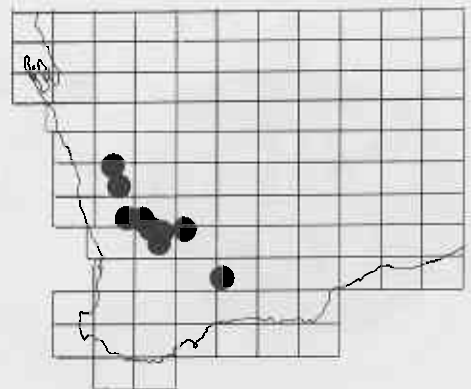
Branches, leaves and
flowers



Calyx enlarged after
fertilisation



Corolla with glandular
hairs (x3 approx.)



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 BENNETTIAE D.J. et. S.G.M. Carr

Bennett's Mallee

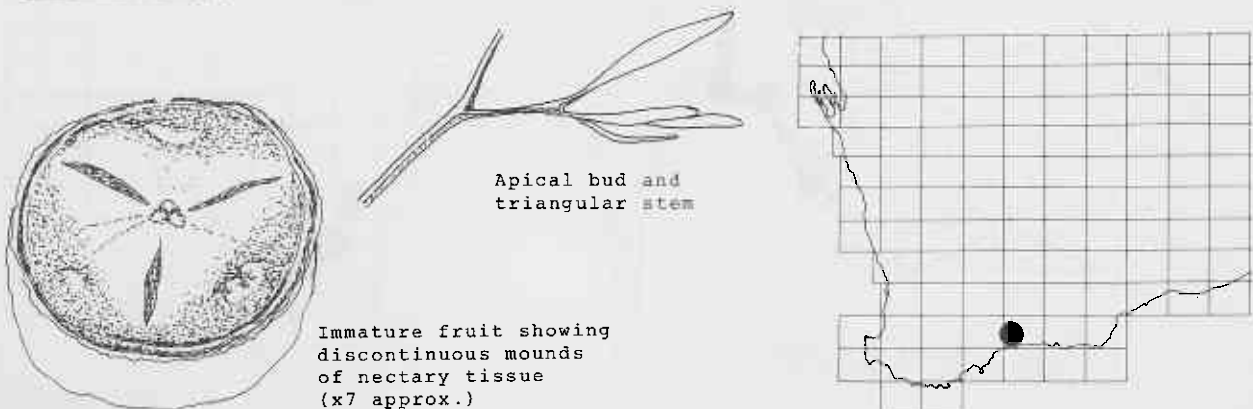
Distribution and Habitat: - Grows only on the rocky upper slopes of the Ravensthorpe Range at Mount Desmond. It is known only from three plants and is found with other mallees.

Flowering Period: Not known.

Distinctive Characteristics: Although similar to *E. lehmanii*, it differs in having free flowers and fruits, and in its inconspicuous discontinuous nectary, which consists of several small separate mounds of tissue, the same in number as the loculi. Its leaf buds, triangular in section, and the triangular primary stems lacking pith glands, separate it from *E. aff. occidentalis*.

Other Characteristics: A small, many-stemmed mallee shrub up to 2 m in height. The bark is smooth, deciduous in flakes. The adult leaves are spirally arranged, deep green in colour, elliptic 8-10 cm in length. The flowers and fruits are aggregated into a solid mass at the end of the peduncle, with 7-11 flowers per inflorescence. The fruiting heads are normally up to 8 cm in diameter.

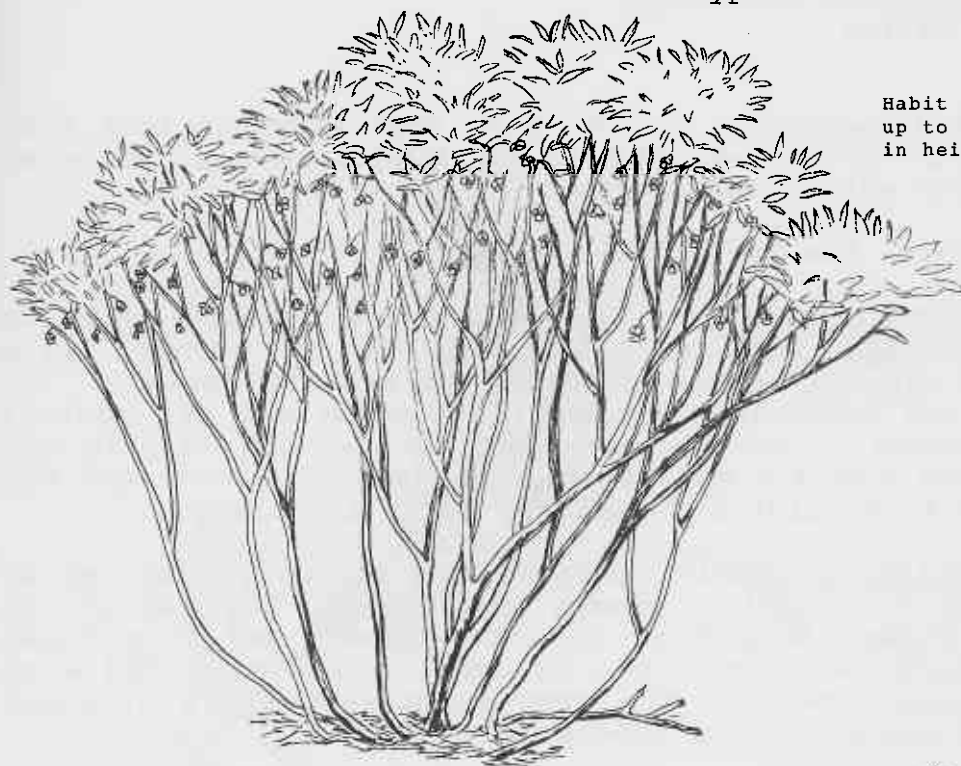
References: Carr & Carr 1980.



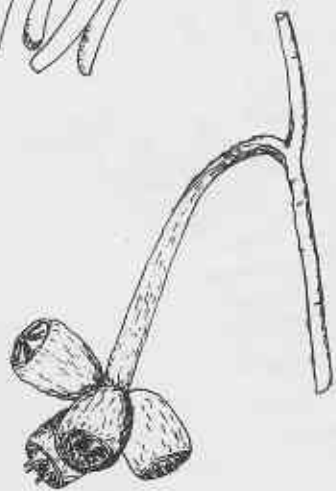
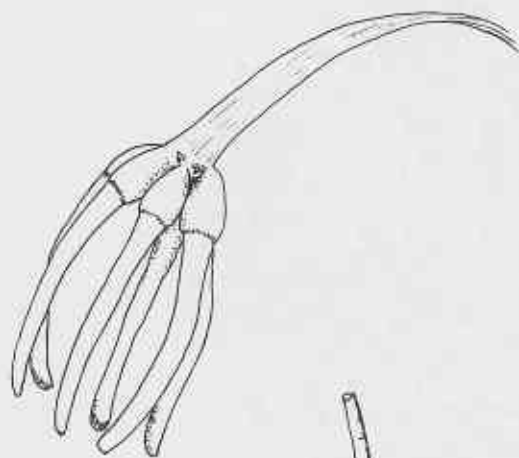
Eucalyptus bennettiae

Eucalyptus bennettiae

Habit of shrub
up to 2 metres
in height



Flower buds at full size



Fruits



Leaves and flower buds

EUCALYPTUS BRACHYPHYLLA C.A. Gardn.

Binyarinyinna Mallee

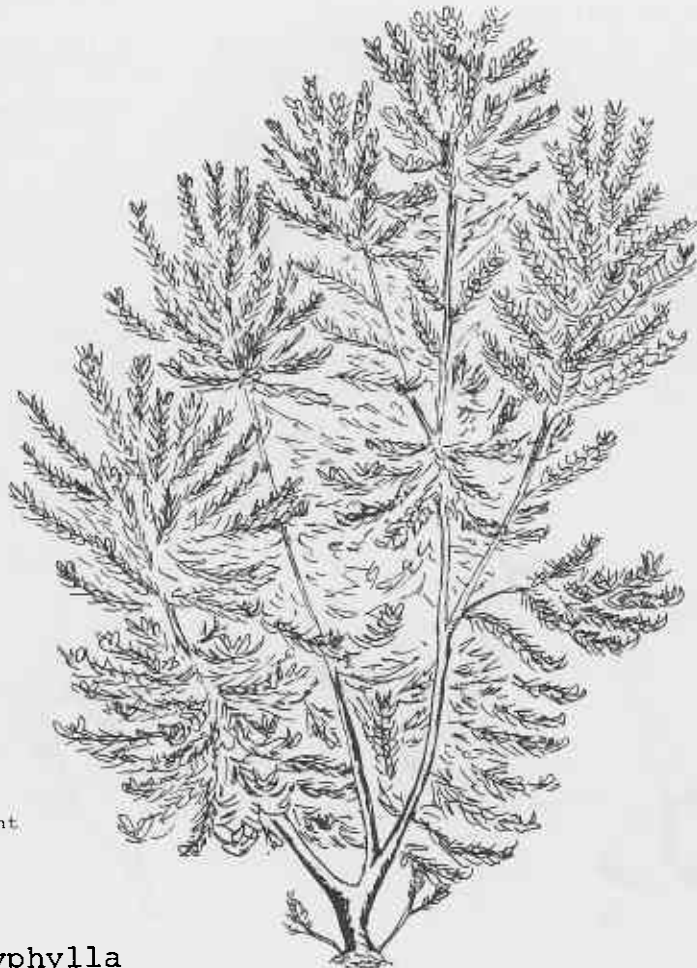
Distribution and Habitat: In the area from Binyarinyinna Rock on the northern tip of Lake Cowan, north east to near Karonie. Grows in granite soils, usually near rocky outcrops.

Flowering Period: Feb, May, June, August.

Distinctive Characteristics: The leaves are broadly ovate to broadly elliptical, 3-4 cm long and 2-3 cm across, with noticeable oil glands on the surface and a short petiole. Up to 7 flowers are borne in each umbel, the operculi are conical and often glaucous. The fruit is cylindrical or elliptic and up to 6 mm long and 4-6 mm across. The rim is narrow and the valves broadly triangular and enclosed below the orifice.

Other Characteristics: This species is a straggling mallee up to 3.5 metres tall, with smooth grey brown bark which is deciduous in flakes or plates in late summer, exposing fresh yellow-brown bark beneath. The branchlets are dark red with some surface grey powder. The grey-green leaves are arranged alternately or oppositely or sub-oppositely.

References: Gardner 1942, 1979.



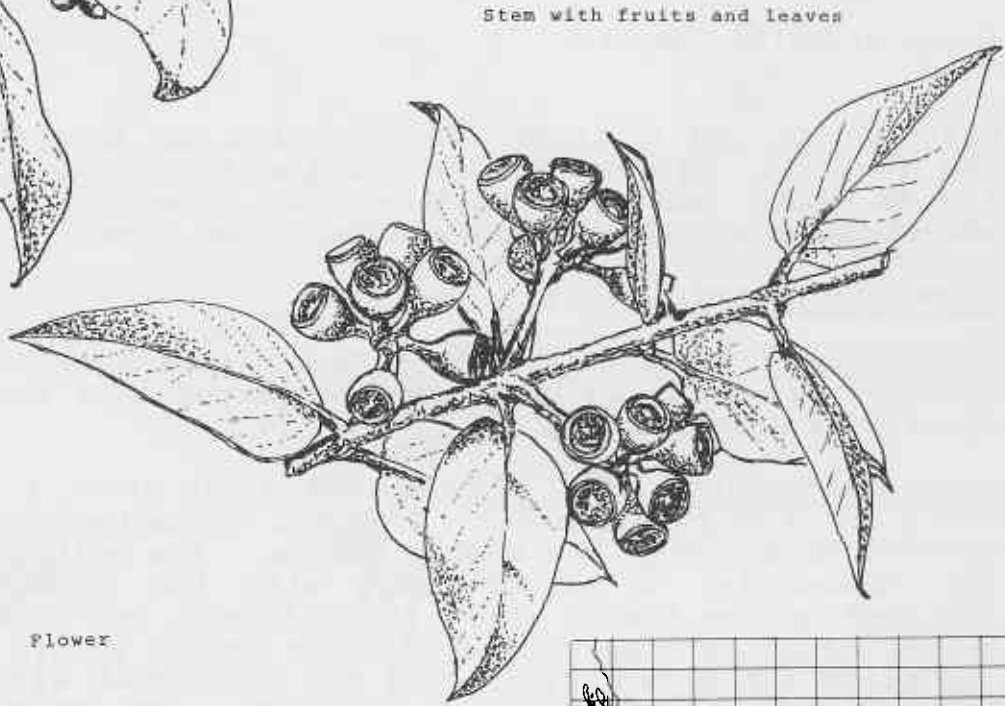
Habit of shrub in cultivation, up to 3.5 metres in height

Eucalyptus brachyphylla

Eucalyptus brachyphylla



End of branch with
flower buds



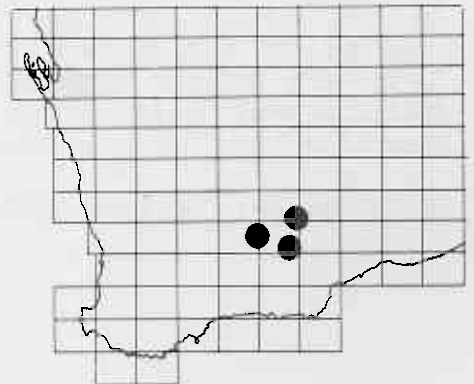
Stem with fruits and leaves



Flower



Full sized flower
bud



HALOSARCIA (CHENOPODIACEAE)

These are generally dwarf glabrous shrubs. The branchlets are made up of succulent internodes, with the opposite leaves reduced to an insignificant bilobed fleshy rim at the apex of each internode. Opposite bracts are succulent and usually united, rarely free. The inflorescences are spike-like terminal cymes. Each consists of several three-flowered cymules each in the axil of a bract. The flowers are sessile and hermaphrodite or sometimes female, each having a 3 lobed perianth, a single stamen and a slender two or three lobed style. The fruits, like the inflorescences and flowers are very variable and the perianth and pericarp varies from being in texture, membranous to pithy, crustaceous or horny.

HALOSARCIA BULBOSA P.G. Wilson

Large-articled Samphire

Distribution and Habitat: This species has been found only at one locality, between Morawa and the Koolanooka Hills, about 150 km south east of Geraldton. It grows in open Melaleuca shrubland on slightly saline reddish brown loam.

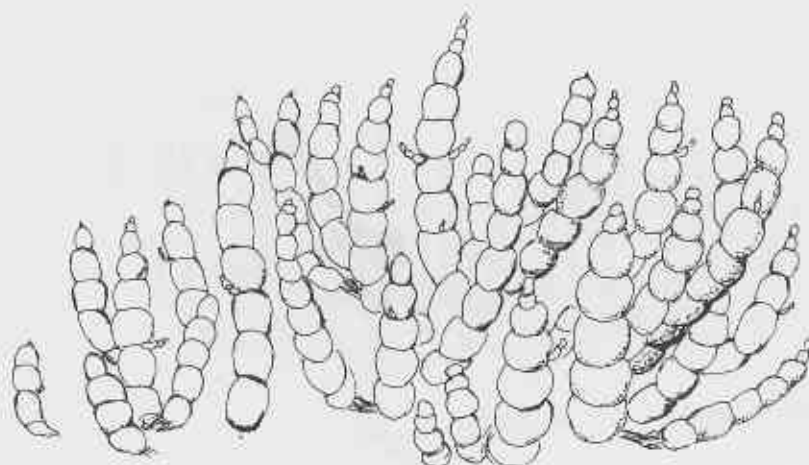
Flowering Period: April

Distinctive Characteristics: The distinctive barrel-shaped articles are about 15 by 12 mm and larger than those of other species of Halosarcia.

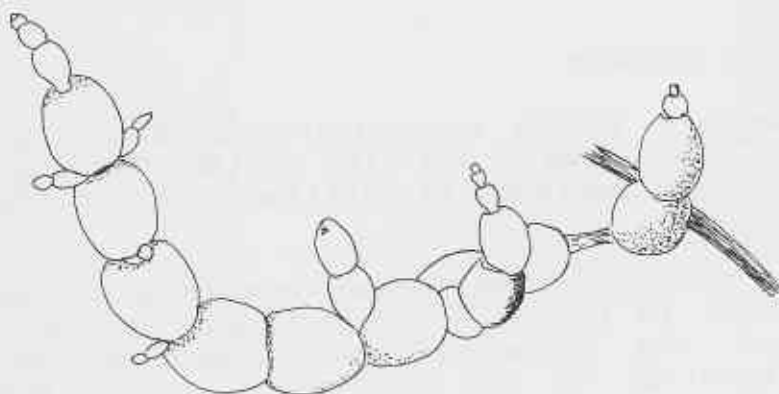
Other Characteristics: A sprawling shrub about 1 m in height and 2 to 3 m in diameter. Branches spreading, bluish green, margins of articles and bracts entire. The spikes are lateral and subsessile, 15-20 mm long, with the triads completely enclosed by the bracts which are undulate, and have shrivelled by the fruiting stage. The fruiting spikes remain attached to the plant for several years and are dark brown with cup-shaped leathery bracts enclosing the fruitlets. The seeds are ovate, smooth and pale brown and appear to be released only after decay of the crustaceous black perianth and the bracts.

References: Wilson 1980.

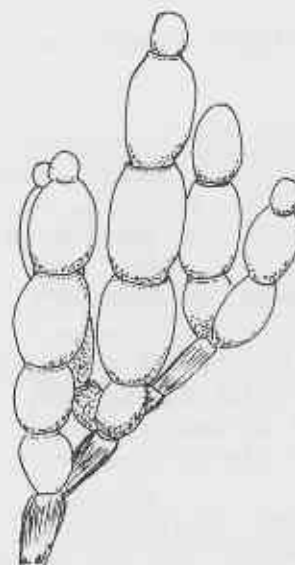
Halosarcia bulbosa



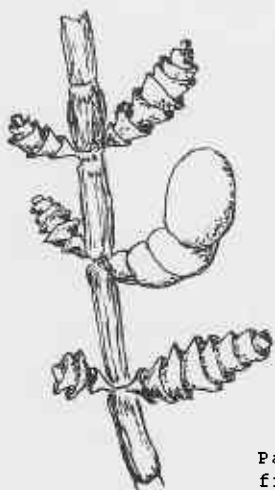
Habit of shrub up to 1 metre in height



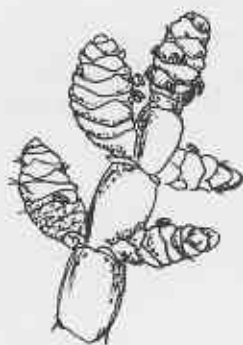
Vegetative branch



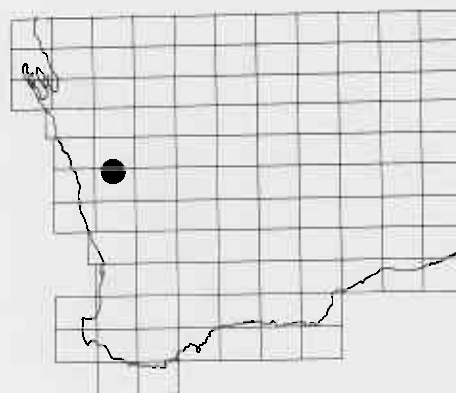
Vegetative branch



Part of branch with fruiting spikes



Branch with flowering spikes



HALOSARCIA ENTRICHOMA P.G. Wilson

Eyelash Samphire

Distribution and Habitat: Known only from the Frank Hann National Park, east of Lake King township. Grows on clay soil at the margin of a lake which is slightly brackish, becoming fresh during the winter.

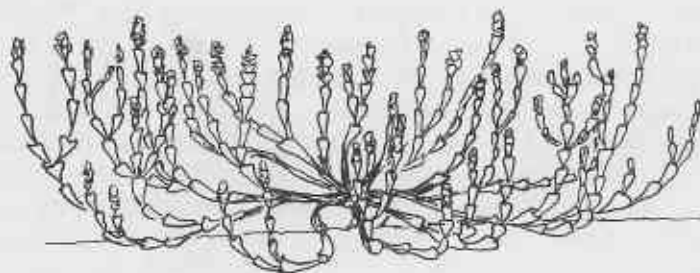
Flowering Period: August, October.

Distinctive Characteristics: Easily recognisable by the large obovoid articles, 10 mm long, 5 mm broad with ciliate margins, and broad rounded lobes. The perianth is cartilaginous and the fruitlets fall entire.

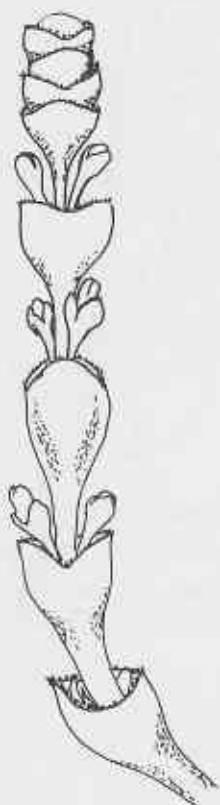
Other Characteristics: These are dwarf semi-decumbent shrubs growing up to about 20 cm in height. The articles are dull green to glaucous and the opposite bracts are united. Flowering spikes are terminal to the branchlets, ovoid and about 20 mm long and 8 mm broad. The flowers are hermaphrodite and obscured by their bracts. The perianth is cartilaginous and dorsiventrally flattened at the apex. The fruitlets are free from each other, and fall entire, not tearing at the base to expose the seeds. These are laterally flattened, ellipsoid, smooth and pale fawn in colour.

References: Wilson 1980.

Halosarcia entrichoma



Habit of shrub up to 20cm tall



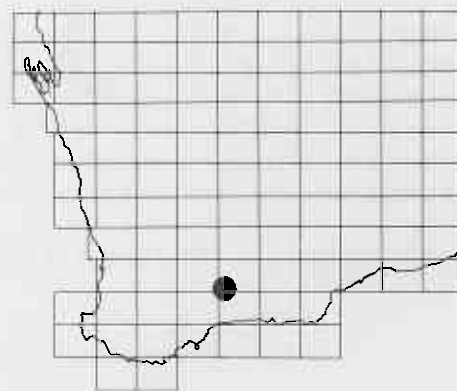
Branch showing the large obovoid articles (x2)



Terminal flowering spike (x3)



Ciliated margin of article lobe (x20)



MYOPORUM (MYOPORACEAE)

Small trees or shrubs, sometimes prostrate. Their leaves are smooth, often shiny and fleshy, and arranged alternately without stipules. The flowers are small and bell-shaped, white or cream in colour. There are five sepals, usually joined at the base, and the corolla is a short tube with four or five spreading lobes. These are nearly equal, with the lowest sometimes larger. The stamens, four or rarely five, usually extend beyond the corolla. The fruit is a small fleshy berry with the persistent calyx attached. When ripe it falls from the plant.

MYOPORUM SALSALOIDES Turczan.

Jerramungup Myoporum

Distribution and Habitat: It has been found growing in red loam in the Jerramungup area and also near Marra Bridge.

Flowering Period: August - September.

Distinctive Characteristics: This is an erect, much branched shrub 1 m or more in height. It has minute leaves, crowded and cordate in shape, 2 mm or less in length. The fruit is a small, blunt drupe, somewhat flattened, and about 2 mm long.

General Characteristics: The plant is glabrous but often glandular-tuberculate. The leaves are sessile, often broader than long, very thick and spreading. Flowers are solitary and axillary, with a calyx of less than .5 mm in length, deeply divided into five lanceolate lobes. The corolla is white with purple spots and with the lobes longer than the tube, and nearly equal and spreading. It is 5-6 mm in length. The stamens are four in number and project beyond the petals.

References: Bentham 1870.

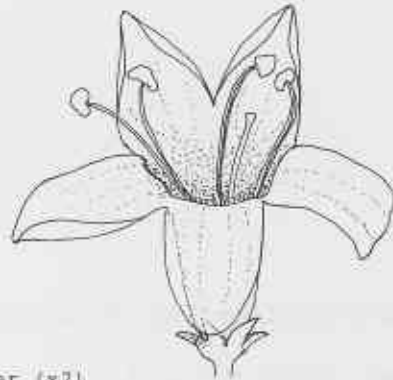
Myoporum salsaloides



Habit of a single branch of the shrub taken from a pressed specimen 56cm in height. The shrub would be 1 metre in height



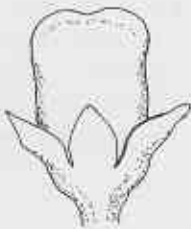
Branch with leaves, resinous tubercles and flowers



Flower (x7)



Upper side of leaf (x7) and actual size

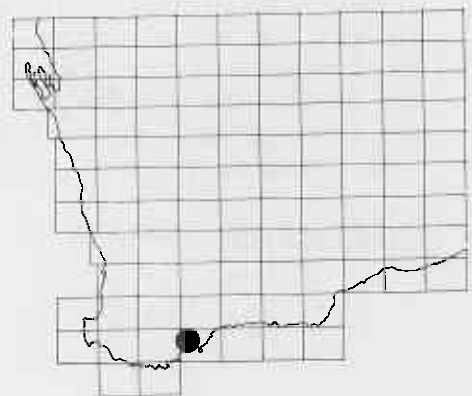


Front view (x7)



Side view (x7)

Drupe (x7) and actual size



PRASOPHYLLUM (ORCHIDACEAE)

The Leek Orchids are herbs with a solitary, rolled in, onion-like leaf, which sheaths the flowering stem in bud, and dies down each year. There is usually one underground globular tuber which is replaced each year. The stems are glabrous and the flowers are small, numerous and grow reversed on the stem in long spikes. The reversed position makes the undivided labellum form a hood, whilst the dorsal sepal is usually concave and the laterals are narrow. The flowers are sometimes scented.

PRASOPHYLLUM LANCEOLATUM Rogers

Brown Leek Orchid

Distribution and Habitat: This species has been found in the coastal regions and a little inland from Perth and Albany.

Flowering Period: September-October.

Distinctive Characteristics: The flowers are a dark reddish brown, and the perianth segments are narrow and lanceolate giving the flower a slender appearance. The dorsal sepal is longer than the laterals and the labellum is on a claw. The labellum has a large lanceolate inner plate about 5 mm long and 2 mm wide at its greatest width. It extends almost to the tip of the labellum. The lateral lobes of the column are short.

Other Characteristics: A fairly slender plant 40-77 cm in height, with a narrow leaf with inrolled edges, the blade 12-15 cm long, and not reaching as high as the flowering spike. This is 12-21 cm in length. The flowers grow in a reversed manner on the spike, the upper sepals being about 1 cm in length, and the lateral petals are shorter.

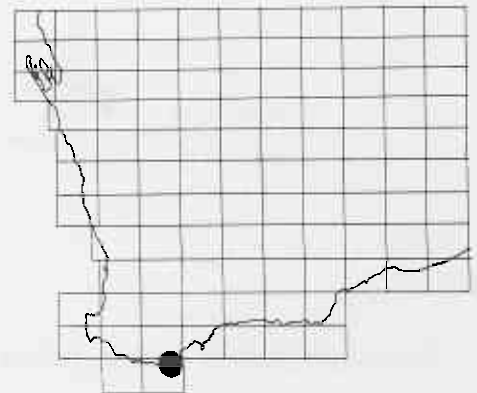
References: Erickson 1965, Rogers 1920.

Prasophyllum lanceolatum

Leaf, stem and flower
spike



Labellum showing shape
of central plate (x6)



PRASOPHYLLUM TRIANGULARE Fitz.

Dark Leek Orchid

Distribution and Habitat: These usually grow on sand and laterite and are found near Perth, Albany and Margaret River.

Flowering Period: September - early November.

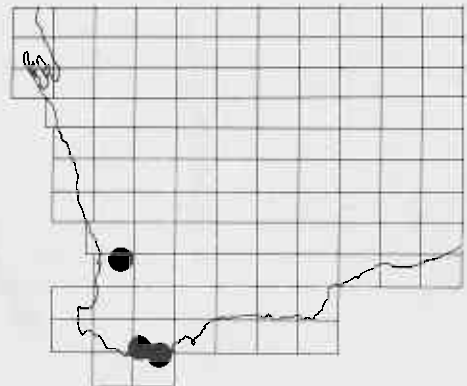
Distinctive Characteristics: The flowers are a dark reddish brown in colour. The labellum is on a longish claw and has a large triangular inner plate which is swollen at the tip and is covered irregularly with small calli. The lateral sepals are not hooded and are glandular at the base and along the joined edges. The labellum has an abrupt right angle curve.

General Characteristics: The plants are quite robust, being from 20-40 cm in height. The whole plant is darkly coloured. There is a slender terete leaf 20-26 cm long. There are usually about 30 flowers in a long spike, with a strong fragrance. Flowers only after a summer burn.

References: Erickson 1965, Nicholls 1969.



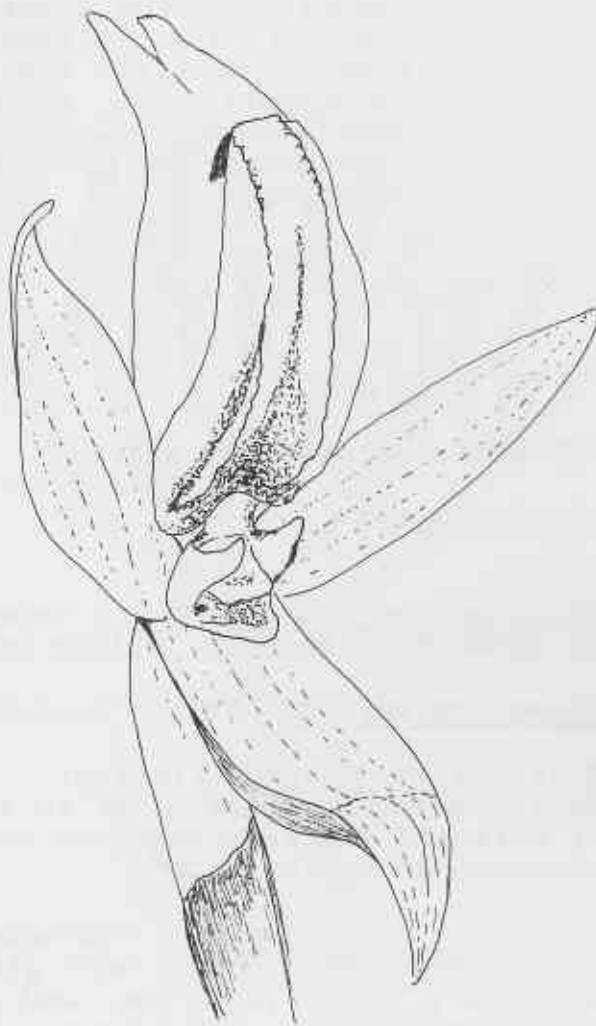
Side view of flower
showing bent labellum
(x5)



Prasophyllum triangulare

Prasophyllum triangulare

Leaf, stem and flower
spike



Enlarged flower (x8)

PULTENAEA (FABACEAE)

Small or large shrubs, usually with alternate leaves. There are two small brown membranous stipules at the base of each leaf. The flowers are sessile with two membranous bracteoles at the base of each, and are either solitary and axillary, or crowded into heads at the branch ends with many brown bracts between the flowers. The upper calyx lobes are joined, and often much larger than the lower ones. The standard is rounded and longer than the lower petals, and the flowers are yellow to orange, red, purple or rarely pink. There are ten free stamens. The fruit is a small pod, either flat, or inflated to some extent, which splits when ripe to release 2 small brown seeds each with a strophiole.

PULTENAEA SKINNERI F. Muell.

Skinner's Pea

Distribution and Habitat: Grows in damp sands and gravels and is known from Bunbury, Collie and Boyanup.

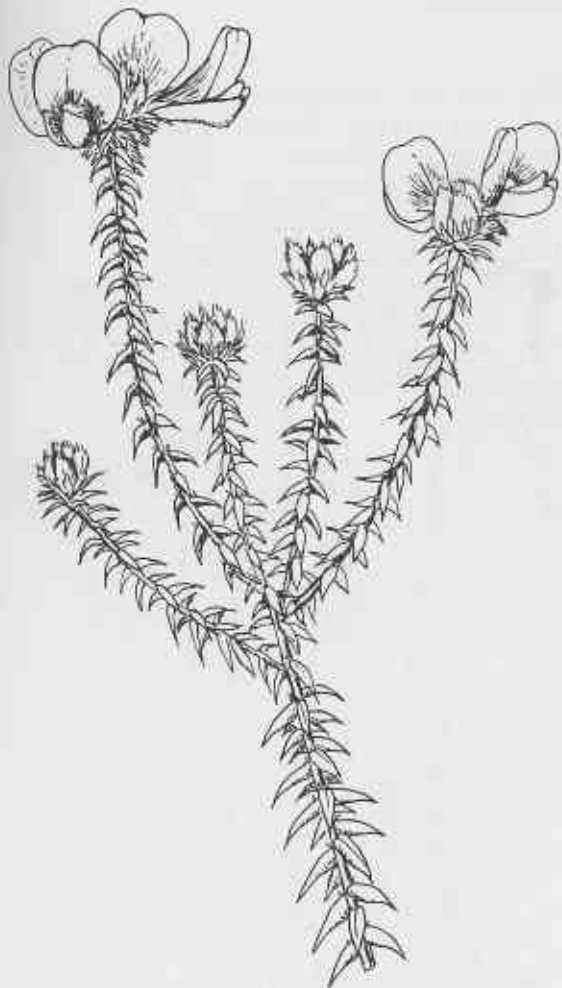
Flowering Period: July - September.

Distinctive Characteristics: The leaves are alternate, and small, 6 mm to about 1 cm in length. They are very spreading or reflexed and have recurved margins. Each has two conspicuous stipules at its base.

Other Characteristics: Pubescent shrubs growing to about 2 m in height. The leaves are glabrous above and hairy beneath, with very short petioles, and are cordate at the base. They are subulate to lanceolate in shape, and decrease in size upwards on the plant. The red and yellow flowers are clustered in terminal heads each surrounded by an involucre with ovate bracts 3-5 mm long. The outer bracteoles are almost 6 mm long. The calyx is almost 8 mm in length with the upper two teeth twice as long as the other calyx teeth. The standard is slightly longer than the other four petals and is ca. 12 mm in length.

References: Mueller 1874.

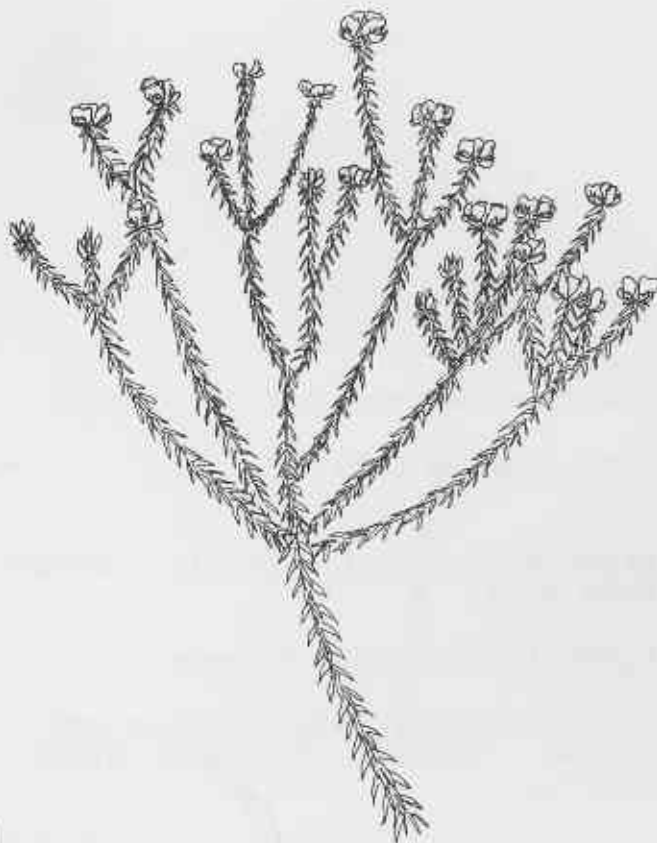
Pultenaea skinneri



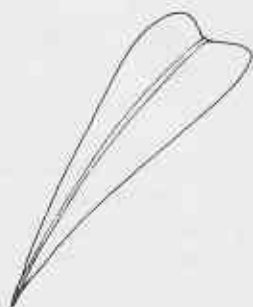
Stem, leaves, flowers
and buds



Fruits



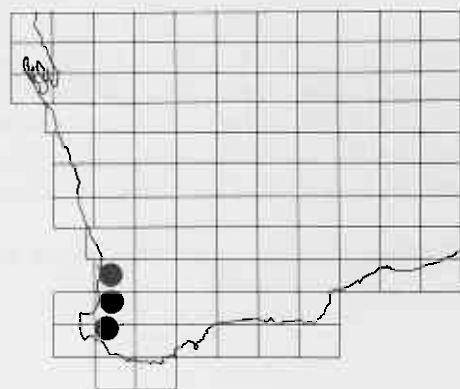
Habit of shrub approx.
2 metres in height



Upper side of leaf (x5)



Lower side of leaf (x5)



SOWERBAEA (LILIACEAE)

Small tufted plants, 15-35 cm in height, with numerous grass-like leaves growing from the base of the stem, and fibrous roots. The flowers are produced on leafless stalks, in dense globular clusters. Each flower has 6 perianth segments, of pink or mauve colour, and there are 3 stamens. The fruit is a three celled capsule, enclosed in the persistent papery perianth, which splits down the three cells when ripe to release several black seeds.

SOWERBAEA MULTICAULIS E. Pritzl

Many stemmed Lily

Distribution and Habitat: Occurs in the Bremer Range - Lake Hope area.

Flowering Period: November.

Distinguishing Characteristics: The flowering stems are tufted, several to each plant, and not single as in S. laxiflora.

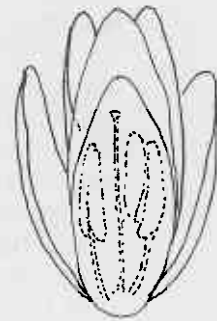
Other Characteristics: Small tufted plants, with unbranched flowering stems 10-20 cm in height, the many leaves arising from the base, 5-10 cm in length, with broadly membranous margins; particularly towards the base. The umbels are rounded and compact, 1-2 cm wide, with ovate to lanceolate outer bracts with a green keel. The inner bracts are divided into silky white hairs, as long as the pedicels, ca. 5 mm, often shorter than the perianth, which is purple or violet (pinkish), divided into six free ovate segments 4-5 mm in length. The anthers are slightly longer than half the length of the perianth and the style is just longer than the anthers.

References: Diels and Pritzl 1904.

Sowerbaea multicaulis



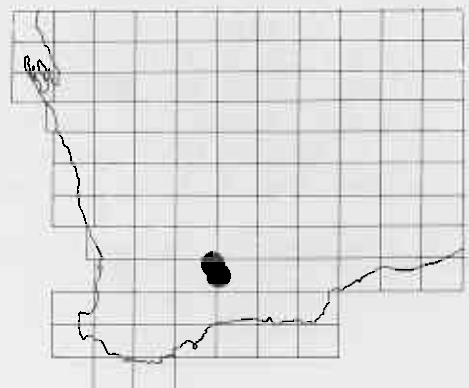
Whole plant with leaves,
flowers and remains of a
flower showing silky
pappus of inner bracts



Single flower (x8)



Leaf with membranous
lower margin (x2)



THELYMITRA (ORCHIDACEAE)

These are the Sun Orchids, so named because the flowers open only in strong sunlight. They are usually glabrous plants with a single long and narrow leaf and with two bracts on the flowering stem. The flowers are conspicuous and usually colourful, starlike in shape as the petals and sepals are similar in shape and colour, without a modified labellum. The column is short, with wings on either side that unite in front near the base, and are produced on each side of the anther into lateral lobes that can be entire, or with a tuft of hairs, or fringed. The fruit is a 3-celled urn shaped capsule that splits when ripe to release the fine seeds.

THELYMITRA FUSCOLUTEA R.Br. var. STELLATA (Lindl.) George
Star Orchid

Distribution and Habitat: Occurs on the Swan Coastal Plain and the Darling Range, the Jurien Bay to Three Springs area and west of Lake Grace, often growing in sandy or gravelly soil over laterite.

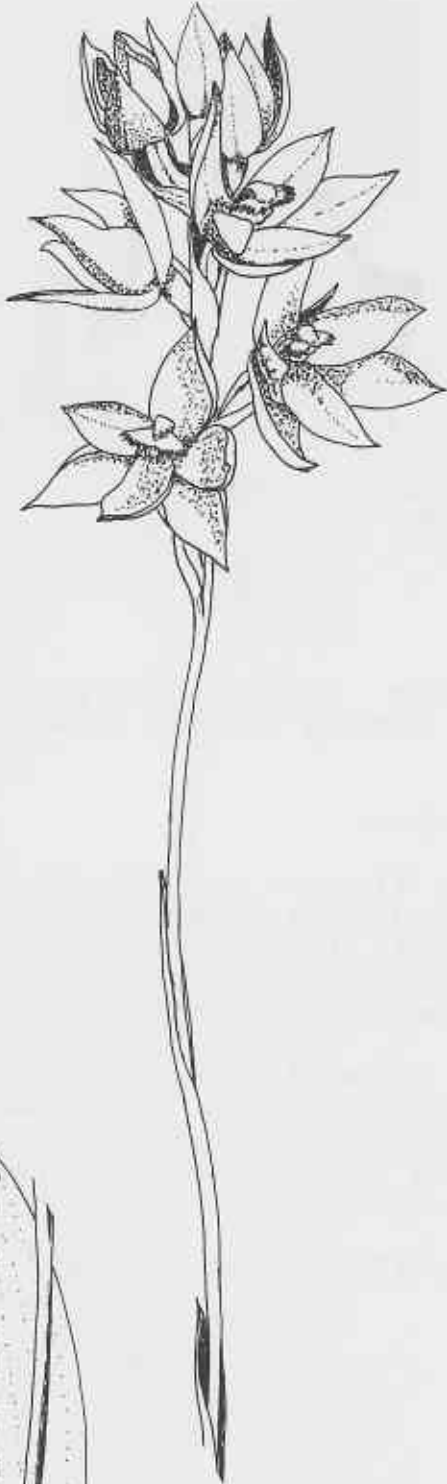
Flowering Period: October - November.

Distinctive Characteristics: This species is very similar to the Leopard Orchid. Its petals although very variable are generally less blotched or spotted, and more uniformly golden brown, rather than being yellow with brown blotches, and sometimes they are yellow with orange stripes on the sepals and petals. The conspicuous fringe on the column's hood in var. stellata is usually bright orange in colour.

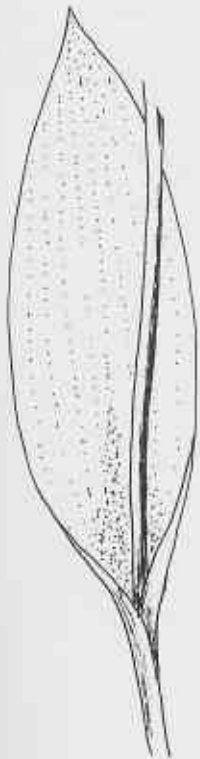
Other Characteristics: A robust plant up to 45 cm in height or more, with a broad lily-like leaf ca. 9 cm long and 4 cm wide, which clasps the stem at the base. There are two stem bracts and up to six flowers, which are 2.5 to 3 cm in diameter. The column hood is deeply fringed on either side and between these lateral lobes it is woolly with dense papillate glands. There is a knob-like appendage at the back of the column and the anther has a long finger-like process at the top.

References: Bentham 1873, Erickson 1965, George 1971.

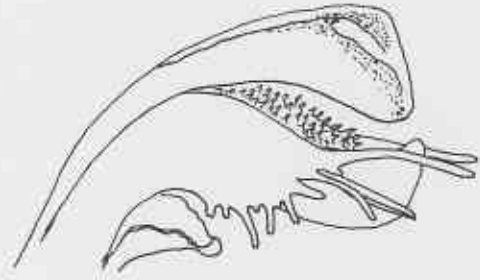
Thelymitra fuscolutea
var. *stellata*



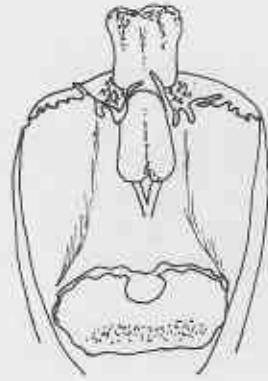
stem and flower



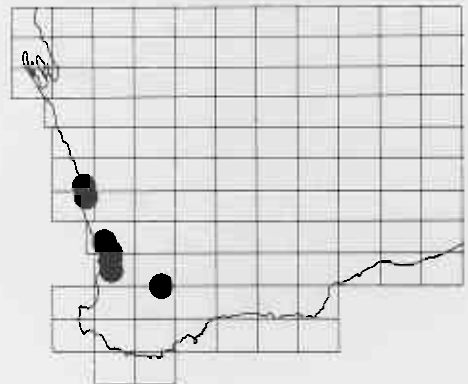
Leaf.



Side view of column
showing club shaped
appendage above
papillate glands (x6)



Front view of column
(x6)



THELYMITRA MACMILLANII F. Muell.

Salmon Sun Orchid

Distribution and Habitat: Known from Highbury, Tunney, Esperance, Coolgardie and Cleary, growing usually in wet clayey areas.

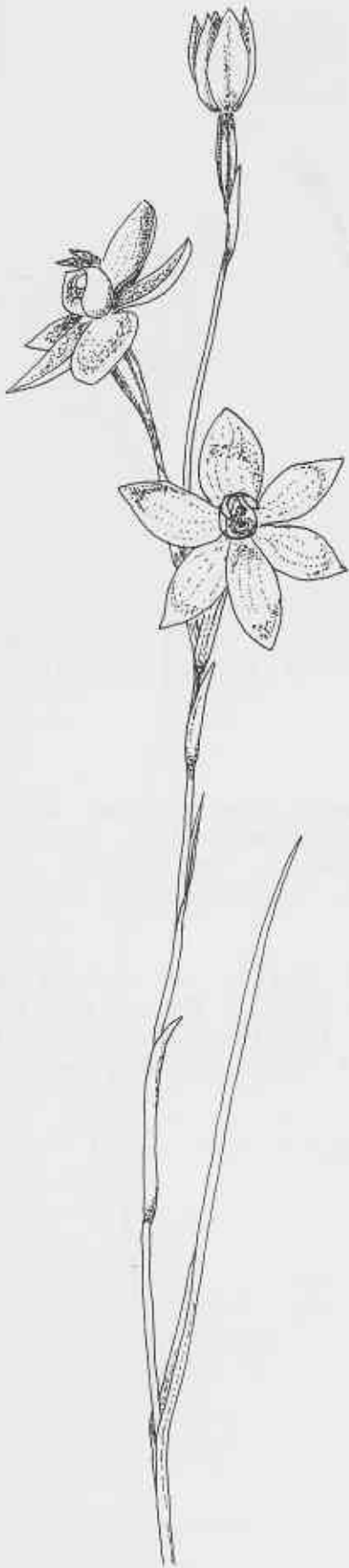
Flowering Period: September - October.

Distinctive Characteristics: The flowers are salmon pink to red and pink and are large, from 2-4.5 cm in diameter. Column red to crimson, sometimes yellow, without hair tufts or combings, and the lateral lobes erect and ear-like, yellow with serrate margins. The anther is prominent and downy.

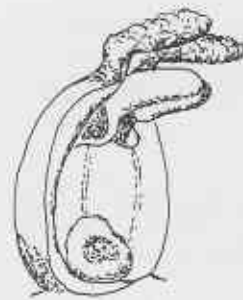
Other Characteristics: This is a small plant, 10-20 cm in height with a narrow bract-like leaf. One to six flowers are borne on the wiry flexuose stem, and the flowers vary considerably in size and colour in different localities according to the soil and climatic conditions.

References: Erickson 1965, Mueller 1865, Nicholls 1969.

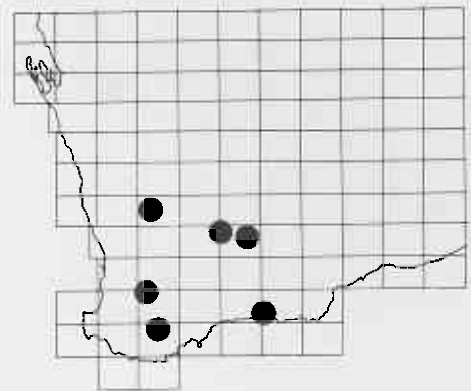
Thelymitra macmillanii



Leaf and flowers



Column with ear-like lateral lobes (x6)



THELYMITRA PSAMMOPHILA Andrews

Sandplain Sun Orchid

Distribution and Habitat: Sandplains in the south of the State, (Stirling Range, Upper Kalgan River and Fitzgerald River National Park).

Flowering Period: September - October.

Distinctive Characteristics: The flowers are yellow, and with a yellow column without hair tufts or combings. The column lateral lobes are triangular and brown. The backs of the perianth segments are tinged with red, particularly whilst in bud.

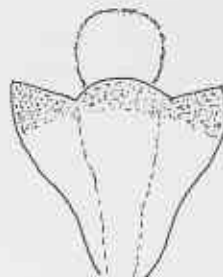
Other Characteristics: The plant is small, up to 20 cm in height with a narrow leaf about 8 cm long. There are two to four flowers on each plant, about 2 cm in diameter. The middle lobe of the column is shorter than the anther, which is prominent and downy.

References: Andrews 1905, Erickson 1965.

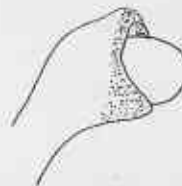
Thelymitra psammophila



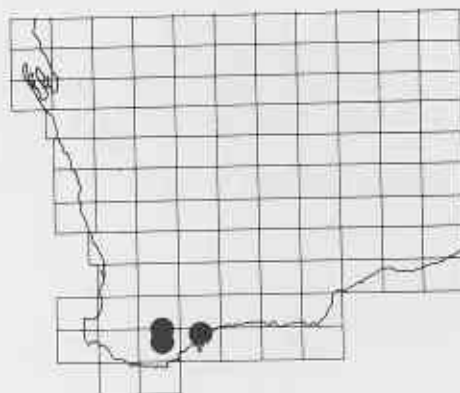
Flowers, stem and leaves



Column from rear,
opened out to show
shape of lateral
lobes (x3)



Side view of column
with triangular lateral
lobes (x3)



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 NIVEUS P.G. Wilson

Bindoon Starbush

Distribution and Habitat: Grows in marri woodland on clay soil with lateritic gravel, near Bindoon north of Perth.

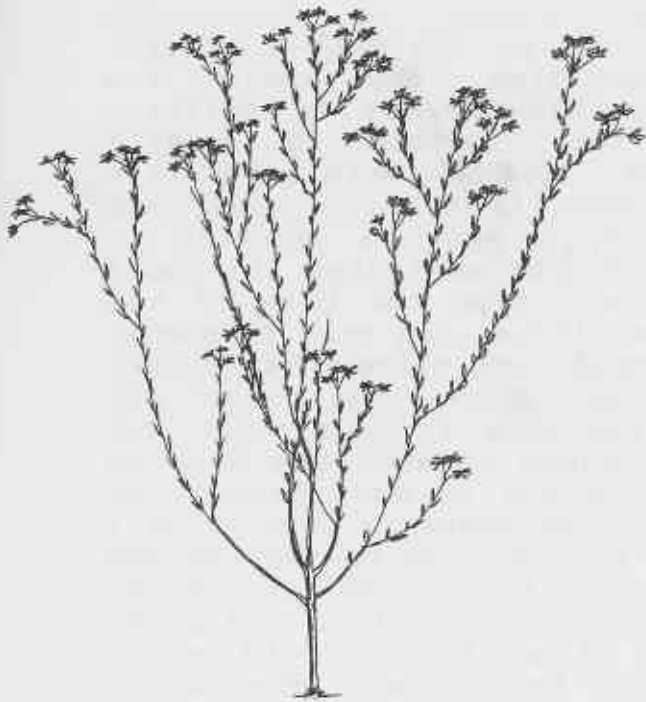
Flowering Period: August - September.

Distinctive Characteristics: The leaves are narrowly oblong 6-12 mm in length and 1.5 - 4 mm wide. The white flowers are small, about 15 mm across or usually less. The hairs on the outer side of the petals are solid and globular, not stellate. The fruit consists of 3 or 4 carpels.

Other Characteristics: This species is a weak, densely branched sub-shrub growing to .5 m in height. The leaves are shortly petiolate and flat or with recurved margins. The plant is sparsely pubescent with stellate hairs. The umbels are 3-6 flowered and the petals 8-10 mm long. Stamens are 16-20 in number and deciduous before the petals.

References: Wilson 1980.

Urocarpus niveus



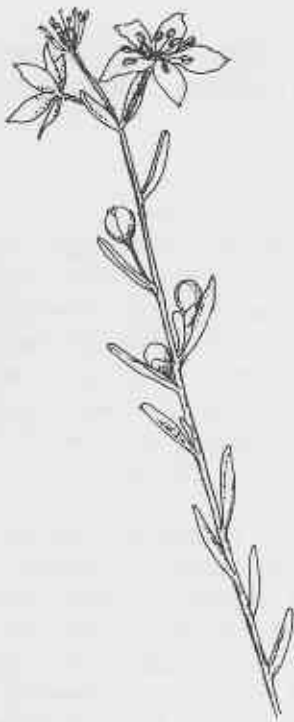
Habit of plant
approx. 0.5 metres
in height



Fruits (x10)



Back of petal with
globular hairs (x3)



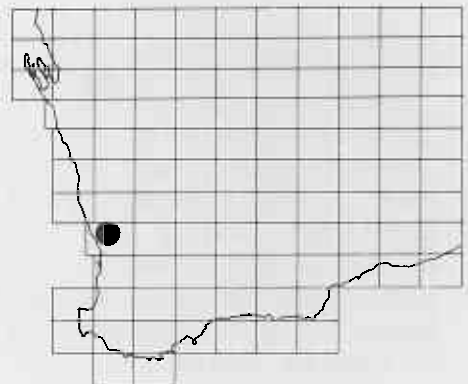
Stem with leaves,
flowers and buds



Upper side of leaf
(x3)



Lower side of leaf
showing inrolled
margin (x3)



WURMBEA (LILIACEAE)

There are small glabrous herbs, from 1-30 cm tall, which grow from an annually replaced corm, varying in shape from spherical to ellipsoidal. There are a few spirally arranged filiform, linear or lanceolate leaves, the upper one or two with a tubular sheath enclosing the stem. Some species are dioecious, and the flowers may be solitary and terminal, or from 2 to about 10, sessile on a spike or cyme. The perianth is usually made up of 6 segments, 8 in one species, and can be pink, white, or with a greenish or yellowish tinge. Floral nectaries are found in varying positions, from the base of the tepal to above the middle, and vary in shape, being a spot, band or ridge, or double thickened structures which may clasp the filaments. The perianth is persistent and the segments are joined towards the base to form a tube. There are as many stamens as perianth segments. The ovary is usually of 3 carpels, fused at the base or to the top and there are the same number of styles as carpels. The seeds are spherical and brown and are released from the capsule which splits for half its length, with the valves recurving.

WURMBEA HUMILIS Macfarlane

Wongan Dwarf Nancy

Distribution and Habitat: This species is known only from the type collection made near Wongan Hills, growing amongst low woodland in red clay-loam.

Flowering Period: ? August.

Distinctive Characteristics: *W. humilis* is most similar to *W. dioica* and *W. latifolia*. However, it differs from the former in its cup-shaped, not spreading, flowers, and its nectaries which are curved and sometimes ridged, not flat and straight. Its flowers are never uniformly pink in colour, but are white or mauve tinged on the margins. Similarly, the flower colour separates it from *W. latifolia* and its leaves are narrower than those of this species, being never broader than 1.5 mm.

Other Characteristics: These are very small plants, from 2.5 cm to 3.5 cm tall. There are three well spaced leaves, the lowest is filiform without a dilated lamina base. The middle leaf is slightly shorter than the lowest, and is dilated at the lamina base, whilst the upper leaf is shorter than the lower two. The species is dioecious, but male and female flowers are similar, being cup shaped, and there are one or two borne on each plant, well exerted from the uppermost leaf. The perianth is 3.5 to 4 mm long, the six segments joined at the base only. The nectaries are in the middle of the perianth or slightly below.

References: Macfarlane 1980.

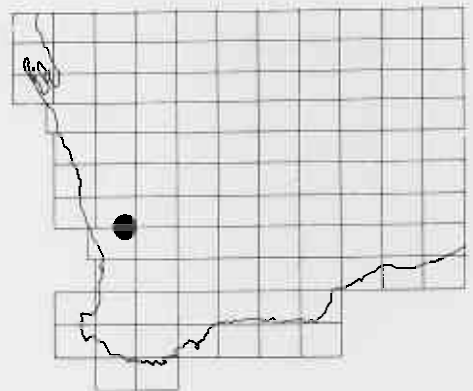
Wurmbea humilis



Developing fruit with
persistent perianths and
withered styles (x4)



Female plant with
leaves and flowers



WURMBEA TUBULOSA Bentham

Long-flowered Nancy

Distribution and Habitat: Known from the Geraldton area to Mingenew, growing in heavy soil near rivers. It may now be extinct in one of the localities from which it was formerly known because of agricultural activities.

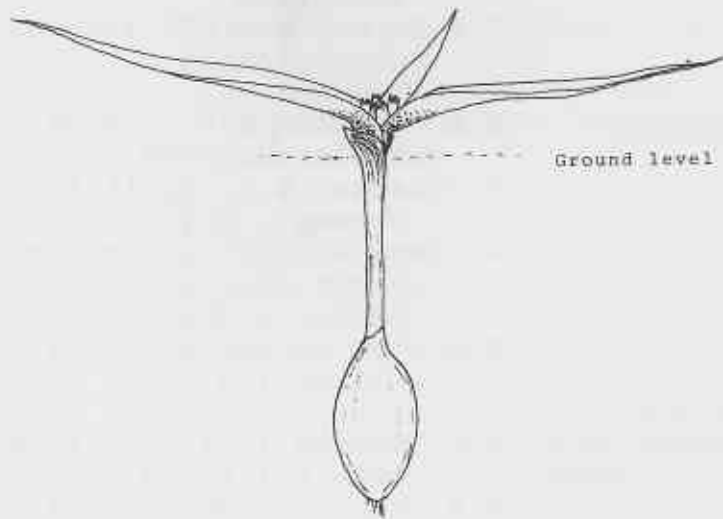
Flowering Period: Winter, June - July?

Distinguishing Characteristics: This species has the longest perianth of any of the Australian species. This is from 10-12 mm long with a long tube of about 6 mm. It resembles *W. drummondii* most closely but can be distinguished by the contracted female flowers partially concealed by the lower two leaf bases growing at ground level, also by its leaf length. This is usually more than 5 cm long rather than 4.5 cm or less. Its flowers are also larger.

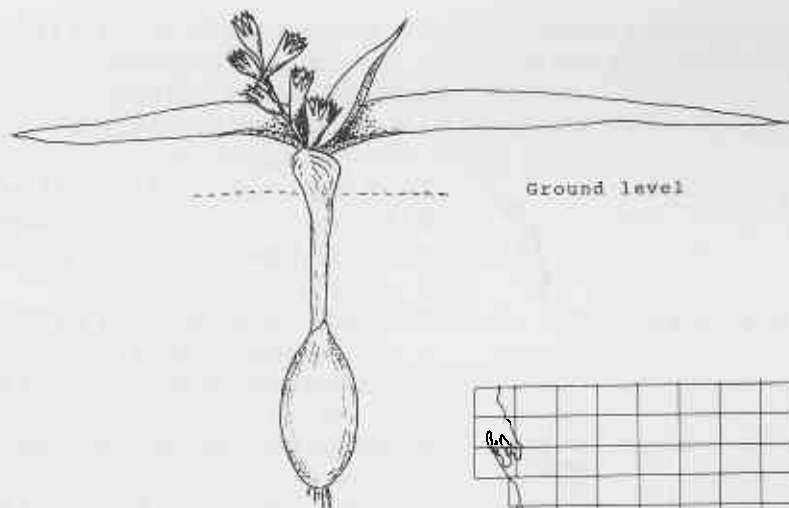
Other Characteristics: A small plant, 1.5-3 cm tall with an ellipsoidal corm 2-2.5 cm in length. There are three leaves, the lower two similar, very broad, being 4-10 mm wide at the middle, ovate to lanceolate and spreading. The upper leaf is erect and is attached just above the lower two. The plants are dioecious or androhermophrodite, and there are ten or more flowers. The male inflorescence is above the uppermost leaf, and clearly seen, whereas the female inflorescence is not very noticeable as it is concealed between the lower leaf bases at ground level. The perianth colour is not known, but there are six segments, joined for about half the perianth length to form a long cylindrical tube. The three styles are long, over 10 mm. The capsule splits into separate carpels when ripe, releasing the brown spherical seeds.

References: Bentham 1878, Macfarlane 1980.

Wurmbea tubulosa



Female plant with
flowers almost hidden
between leaf bases
at ground level



Male plant with
flowers



APPENDIX II

SPECIMEN NUMBERS AND OTHER SOURCES CONSULTED FOR THE
DRAWINGS OF RARE FLORA

Species	Sources for Drawings
<u>Baeckea arbuscula</u>	C.A. Gardner 1276 - leaves, stems, flowers C.R.P. Andrews NSW 139505 - whole plant, habit
<u>Banksia chamaephyton</u>	E.A. Griffin 975 - stem leaves, inflorescences C. Chapman s.n. 22.11.1970 - perianth segment, style Western Australian Herbarium garden - whole plants A.S. George 11204 - fruiting cones Specimen in carpological collection - fruiting cone
<u>B. cuneata</u>	W.E. Blackall 3271 - flowering shoot with follicles A.S. George 11207 - follicle A.S. George 1981 p. 458 Fig. 110A - whole shrub
<u>B. meisneri</u> var. <u>ascendens</u>	H. Dempster s.n. 20.4.1976 - inflorescence R.D. Royce 2973 - fruiting cone Western Australian Herbarium Garden - remainder
<u>B. sphaerocarpa</u> var. <u>dolichostyla</u>	H. Steedman s.n. 1934 - inflorescence, stem, leaves, style A.S. George 15106 ISOTYPE - in carpological collection - fruiting cone
<u>Boronia tenuis</u>	J. Seabrook 262 - flowers, leaves A.S. George 9184 - sepal, stamen R.D. Royce 4300 - plant habit
<u>Caladenia bryceana</u>	C. Woolcock s.n. (1199/A spirit collection) - whole plant R. Heberle s.n. 6.10.1963 - whole plant Photograph by A. Brown - flower
<u>Caladenia gemmata</u> forma <u>lutea</u>	L. Douth s.n. Sept. 1919 - tall form A.S. George 9626 (215A Spirit Coll.) - short form and enlarged labellum Photographs by A. Brown - short form

- Caladenia triangularis R. Oliver 1959 - flower, stem & leaf
A. S. George 10382 (156B Spirit Coll.).
- enlargement of flower
- Conostylis pauciflora S.D. Hopper 1131 - stems, leaves, inflorescence
Photograph by S.D. Hopper 1978
Nuytsia 2. p. 252 - half flower
- Darwinia oxylepis N.G. Marchant 77/302 - inflorescence, leaves
Photograph by A. Weston - whole plant
Spirit collection of N.G. Marchant
- bract, flowers
- D. wittwerorum N.G. Marchant 77/306 - inflorescence, leaves
G.J. Keighery 1821 - enlargement of leaf
Photograph by A. Weston - habit of whole plant
Spirit collection of N.G. Marchant
- inflorescence drawn from beneath, flowers
- Daviesia euphorbioides C.A. Gardner 845 - stems, flowers
C.A. Gardner. Western Australian Wildflowers. 1979 Axiom Books
Vol.A.P.60 Photograph - flowers
Photograph by S.D. Hopper - whole plant
B.L. Rye, s.n. 10.1980 (Herb - spec. W.A.W.R.C.) fruits
- Diuris purdiei A. S. George 9647 - stem, leaves, flowers, underside of labellum
Photograph by A. Brown - flowers
A.S. George 9647 (109A Spirit Coll.)
labellum from above
- Drummondita ericoides C.A. Gardner 2054 - flower, leaves
Photograph p. 6 D.J. Mell 1981 - flower, bud
Photograph p.7 D.J. Mell 1981- whole plant
Photograph by S.D. Hopper - flower
- Eremophila inflata C.A. Gardner 15039 - flowers, stem, leaves
Photograph by S.D. Hopper - flower, stem, leaves
Photograph by S.D. Hopper - whole plant

- E. merrallii S.D. Hopper 1799 - flowering shoot,
woody stems, leaf, flowers
Photograph by S.D. Hopper - flower
Photograph by S.D. Hopper - whole
plant
- E. microtheca C.A. Gardner 9109 - all parts
- E. resinosa C.A. Gardner 1104 - flowering shoot,
enlarged flower
Photograph by S.D. Hopper - flowering
shoot, enlarged flower
Photograph by S.D. Hopper - whole
plant
- E. serpens Gardner & Blackall s.n. 9.1925 -
leaves, stem
Chinnock 1979 (fruit only) - fruit
Photographs by S.D. Hopper - flower,
habit of plant (Kings Park)
- E. viscida E.M. Scrymgeour 682 - leaves,
flowers, stems
Photograph by S.D. Hopper - leaves,
flowers, stems
P.J.R. Jefferies s.n. 10.1975 -
enlarged calyx
Photograph by S.D. Hopper - whole
plant
G. Dawson 16.10.1974 (2516/B Spirit
coll.) enlarged corolla
- Eucalyptus bennettiae D.J. & S.G.M. Carr s.n. 15.8.1979.
HOLOTYPE - flower buds, apical
bud, stem
S.D. Hopper 2012 (herb. spec.
W.A.W.R.C.) leaves, flower
buds, fruits
Photograph by S.D. Hopper - whole
plant
Photograph no. 4.p.3 E.M. Bennett 1982
whole plant
D.J. & S.G.M. Carr 1980 fig. 1 -
immature fruit
- E. brachyphylla C.A. Gardner s.n. 6.1965 - flower,
bud
West Australian Herbarium Garden -
remainder
- Halosarcia bulbosa R.J. Hnatiuk s.n. 24.7.1980 -
vegetative branch (a), fruiting
spikes
Photograph by R.J. Hnatiuk -
vegetative branch (b)
Photograph by R.J. Hnatiuk - whole
plant
P.G. Wilson 1980 Fig. 30.B. -
inflorescence

- H. entrichoma D. Butcher & R. Cranfield 804 - stem, whole plant
D. Butcher 336 - inflorescence, margin of article
- Myoporum salsaloides S.P. Pfeiffer 22 - flowering branch, enlarged flower, fruit, sketch of whole branch
K. Newbey 1341 - enlarged leaf
- Prasophyllum lanceolatum C. & D. Woolcock 14.10.75 (Prasophyllum sp.) - whole plant
C. & D. Woolcock 14.9.1975 (3259B Spirit Coll.) - labellum
- P. triangulare A.S. George 11107 - whole plant
Photograph by A. Brown - whole plant
M.P. Pockock 108(51A Spirit Coll.) - enlarged flower
- Pultenaea skinneri R.D. Royce 3786 - leaves, flowering branch, habit of plant
Photograph by A. Weston - as above
Photograph by A. Weston - fruits
- Sowerbaea multicaulis C.A. Gardner s.n. 25.11.1964 - whole plant
Photograph by G. Keighery - whole plant
W.E. Blackall 1241 - leaf, flower
- Thelymitra fuscolutea
var. stellata F. Humphreys s.n. 27.10.1963 - leaf, stem, flowers
Photograph by A. Brown - as above
W.P. Stoutamire 6.11.77 (3148/B Spirit Coll.) - column
- T. macmillanii N.C. Verco 20.9.1977 - stem, leaves
Photograph by A. Brown - flowers
E.A. Hoffman 25.8.1975 (3611 Spirit Coll.) - column
N. Hoffman 27.9.1974 (3613 Spirit Coll.) - column
- T. psammophila J. Taylor, M.D. Crisp & R. Jackson 22.9.1979 - stem, leaf
Photograph by A. Brown - flowers, column
Erickson 1965 Pl.6. no 16. - column
- Urocarpus niveus C.A. Gardner 8.1966 - flowers, habit of whole plant, stems, leaves
R.J. Cranfield 1313a - fruits
- Wurmbea humilis A.S. George 1976 HOLOTYPE
T.D. Mcfarlane 1980. Fig. 12.
- W. tubulosa O. Jones s.n. 1879
T.D. Mcfarlane 1980 Fig. 15.

APPENDIX III

BOTANICAL AND VERNACULAR NAMES OF GAZETTED RARE FLORA

Species	Vernacular Name
Baeckea arbuscula	*Albany Baeckea
Banksia chamaephyton cuneata meisneri var. ascendens sphaerocarpa var. dolichostyla	*Fishbone Banksia *Quairading Banksia *Meisner's Scott River Banksia *Ironcap Banksia
Boronia tenuis	*Blue Boronia
Caladenia bryceana gemma forma lutea triangularis	Dwarf Spider Orchid *Yellow China Orchid Shy Spider Orchid
Conostylis pauciflora	*Dawesville Conostylis
Darwinia oxylepis wittwerorum	*Gillham's Bell *Wittwer's Mountain Bell
Daviesia euphorbioides	*Wongan Cactus
Diuris purdiei	Purdie's Donkey Orchid
Drummondita ericoides	*Morseby Range Drummondita
Eremophila inflata merrallii microtheca resinosa serpens viscida	Swollen-flowered Eremophila *Bruce Rock Eremophila *Heath-like Eremophila Resinous Eremophila *Snake Eremophila Varnish Bush
Eucalyptus bennettiae brachyphylla	*Bennett's Mallee *Binyarinrinna Mallee
Halosarcia bulbosa entrichoma	*Large-articled Samphire *Eyelash Samphire
Myoporum salsoloides	*Jerramungup Myoporum
Prasophyllum lanceolatum triangulare	Brown Leek Orchid Dark Leek Orchid
Pultenaea skinneri	*Skinner's Pea

Species	Vernacular Name
Sowerbaea multicaulis	Many-stemmed Lily
Thelymitra fuscolutea var. stellata macmillanii psammophila	Star Orchid Salmon Sun Orchid Sandplain Sun Orchid
Urocarpus niveus	*Bindoon Starbush
Wurmbea humilis tubulosa	*Wongan Dwarf Nancy *Long-flowered Nancy
*Vernacular names not previous published.	

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