

**Western  
Australian  
Herbarium  
Annual  
Report  
1980**



Western Australian Department of Agriculture

# WESTERN AUSTRALIAN HERBARIUM

## ANNUAL REPORT 1980

### INTRODUCTION

The work of the Herbarium deals principally with the native and naturalised flora of the State, comprising taxonomic and ecological research, vegetation surveys, acquisition and curation of Herbarium specimens and advisory services to agriculture, other scientists and the general public.

This report summarises active work carried out in the period July 1979 to June 1980 and also lists new publications, staff and visitors. Publications appearing during the year are listed on page 7-8, and referred to in the report by figures in parenthesis.

#### 1. Research

Original taxonomic studies were carried out in taxa requiring revision or review, while ecological research concentrated on studies of the shrublands in the south-west. As well, compilatory work proceeded in the form of check lists of the naturalised flora, floristic lists of certain locations, distribution maps and a census of the State's flora.

Results were reported at the Annual Research Seminars, held this year on 4 July 1980 and attended by Dr. M.D. Carroll, Chief Research Liaison Officer, and Dr. S.D. Hopper of the Department of Fisheries and Wildlife.

#### 1.1 Taxonomy

Original studies, including revisions and descriptions of new taxa, were carried out as follows:

Proteaceae	<u>Banksia</u>	Revision, A.S. George
Chenopodiaceae	Salicornieae	Revision, P.G. Wilson
Leguminosae	<u>Acacia</u>	Revision of series Pulchellae, B.R. Maslin (10,18)
Rutaceae	<u>Urocarpus</u>	Description of a new species, P.G. Wilson
Malvaceae	<u>Lawrencia</u> and <u>Selenothamnus</u>	Review, N.S. Lander
Myrtaceae	<u>Corynanthera</u>	Description of new genus, J.W. Green (7)
"	<u>Chamelaucium</u>	Revision, N.G. Marchant
"	<u>Darwinia</u>	Description of a new species and a new combination, N.G. Marchant

Myrtaceae	<u>Eremaea</u>	Revision, R.J. Hnatiuk
"	<u>Melaleuca</u>	Revision, R.J. Hnatiuk
"	<u>Micromyrtus</u> & <u>Thryptomene</u>	Revisions, descriptions of arid and semi-arid species, J.W. Green
Loganiaceae	<u>Logania</u>	Revision of section Logania, G. Perry
Asteraceae	<u>Minuria</u>	Review, N.S. Lander
"	<u>Kippistia</u>	Reinstatement of genus, N.S. Lander
"	<u>Quinqueremula</u>	Description of new genus, P.G. Wilson

## 1.2 Floristics

Work was carried out on the preparation of check lists, contributions to flora manuals and other compilations of information.

Projects included the compilation and editing of C.A. Gardner's previously published leaflets on Eucalyptus by T.E.H. Aplin (3), the preparation of a systematic census of vascular plants of the State by J.W. Green, the compilation of a check list of the native flora of the Perth Region by N.G. Marchant, and the naturalised flora by G. Perry, as a preliminary to work on a regional flora manual, a check list of the Kimberley region by K.F. Kenneally for a similar purpose.

Several members of staff contributed to flora projects outside the Department, including the Flora of Central Australia and Flowering Plants in Australia, while A.S. George wrote the text for a major fine art work The Banksias.

## 1.3 Ecology and Phytogeography

A number of basic studies of phytosociology and phytogeography were carried out, major projects including the phytosociology of species of the Mitchell Plateau and species-rich shrublands by R.J. Hnatiuk and co-workers, and the phytogeography of Acacia in both Central and Western Australia by B.R. Maslin and co-workers.

In addition, A.S. George, N.G. Marchant and co-worker concluded a review of the heathlands on Western Australia (6). The flora of Garden Island was studied by N.G. Marchant and co-worker.

Species mapping programmes were carried out on Acacia and shrublands, in connection with the above studies, and on Eucalyptus by N.G. Marchant and co-worker.

#### 1.4 General Botany

Studies were made of: tuberous roots in Calothamnus by R.J. Hnatiuk (11), anther terminology (9) and voucher specimens (8) by J.W. Green, Morphometrics of Darwinia by N.G. Marchant and phyllodes of Acacia by B.R. Maslin (19).

#### 1.5 Editorial

Nuytsia 2(6) containing five papers, and Western Australian Herbarium Research Notes 3, containing four papers, were published.

#### 1.6 Honorary Research Associates

Professor B.J. Grieve received an Honorary Research Associate in recognition of his long-standing and continuing contributions to Western Australian taxonomy. Dr. D.H.S. Richardson was made a Visiting Honorary Research Associate for the period of his sabbatical visit to the Herbarium from February to June 1980, in recognition of his contribution to the acquisitions and curation of the Lichen Herbarium.

### 2. Field Survey

Included here are excursions and field trips aimed at increasing botanical knowledge of unexplored areas as well as mission-oriented surveys related to proposed reserves and the environmental impact of land-use proposals.

#### 2.1 Botanical Surveys

The following expeditions and collecting trips were carried out during the year.

Kalgoorlie-Esperance-Albany-Manjimup. Eucalyptus for International Botanical Congress Tour, 1981. T.E.H. Aplin, August 1979.

Ravensthorpe. Rhizanthella, Banksia, A.S. George. September 1979; June 1980.

Albany. Banksia. A.S. George. January, 1980.

Eneabba. Thermo-climate in Kwongan. R.J. Hnatiuk. July, August, September 1979, January 1980.

Ravensthorpe. Heath-mallee study sites. R.J. Hnatiuk. July 1979.

Avondale. Flora and Fauna Reserve. R.J. Hnatiuk. October 1979.

Wongan Hills. Flora survey. K.F. Kenneally. December 1979, January, May, June 1980.

Hopkins, S.D. Hopper, G.J. Keighery, A.A. Mitchell,  
 B.G. Muir, K. Newbey, B.L. Rye, M.E. Trudgen, A.S. Weston,  
 L. Braganca, T. Milewski, J. Scott, T. Hawkeswood, C. Robinson,  
 G. Lewis, P. Bridgewater, S. James, B. Glossop,  
 T. Fetherstonhaugh, B. Bayliss, J.N. Newton, D. Halford.

## 7. Equipment

New items of equipment included an Olympus CHB microscope, Willd M74 microscope, magnetic hot plate stirrer, accessories for Willd microscope, Codan 100W transceiver, portable winch, aluminium dinghy and items of camping equipment.

## PUBLICATIONS

1. Erickson, R.E., George, A.S., Marchant, N.G. and Morcombe, M.K. (1979). *Flowers and Plants of Western Australia*. 2nd edition, 231 pp. Reed, Sydney.
2. Fox, J.E.D., Downes, S. and Maslin, B.R. (1980). The vascular plants of Yalgorup National Park. *West. Austral. Herb. Res. Notes* 3: 1-18.
3. Gardner, C.A. (1979). *Eucalypts of Western Australia* (Compiled, edited and revised by T.E.H. Aplin). *W. Austral. Dept. Agric. Bull. No. 4013*. 260 pp., 104 figs.
4. George, A.S. (1979). *Hakea aculeata* (Proteaceae), a rare and endangered new species from Western Australia. *Nuytsia* 2(6): 375-377.
5. George, A.S. (1979). Rediscovery of the Underground Orchid, *Rhizanthella gardneri* R.S. Rogers. *Orchadian* 6(5): 112.
6. George, A.S., Hopkins, A.J.M. and Marchant, N.G. (1979). The Heathlands of Western Australia in *Heathlands and related Shrublands of the World*, A. Descriptive Studies (Ed. R.L. Specht), Chapter 7, pp. 211-230. Elsevier Scientific Publication Company, Amsterdam.
7. Green, J.W. (1979). *Corynanthera*, a new genus of Myrtaceae (Subfamily Leptospermoideae, Tribe Chamelaucieae). *Nuytsia* 2(6): 368-374.
8. Green, J.W. (1979). Voucher specimens for published plant names. *Search* 10: 421-422.
9. Green, J.W. (1980). A revised terminology for the spore-containing parts of anthers. *New Phytol.* 84: 401-406.
10. Guinet, Ph., Vassal, J., Evans, C.S. and Maslin, B.R. (1980). *Acacia* (Mimosoideae) : Composition and affinities of the Series Pulchellae Benth. *J. Linn. Soc. Bot.* 80: 53-68.
11. Hnatiuk, R.J. (1979). Tuberous roots in *Calothamus* (Myrtaceae), Western Australia. *Search* 10: 281-282.

12. Hnatiuk, R.J. (1979). Temporal and spatial variations in precipitation on Aldabra. Phil. Trans. Roy. Soc. Lond. B. 286: 25-34.
13. Hnatiuk, R.J. (1980). C<sub>4</sub> photosynthesis in the vegetation of Aldabra Atoll. Oecologia (Berl.) 44: 327-334.
14. Hnatiuk, R.J. and Merton, L.F.H. (1979). Vegetation of Aldabra, a reassessment. Atoll Research Bulletin 239, 22 pp.
15. Hnatiuk, R.J. and Merton, L.F.H. (1979). A perspective of the vegetation of Aldabra. Phil. Trans. Roy. Soc. Lond. B. 286: 79-84.
16. La Roi, G.H. and Hnatiuk, R.J. (1980). The *Pinus contorta* forests of Banff and Jasper National Park in a study in comparative synecology and syntaxonomy. Ecol. monogr. 50(1): 1-29.
17. Marchant, N.G. and Keighery, G.J. (1979). Poorly collected and presumably rare vascular plants in Western Australia. Kings Park Research Notes No. 5, 103 pp.
18. Maslin, B.R. (1979). Studies in the genus Acacia (Mimosoideae) - 9. Additional notes on the Series Pulchellae Benth. Nuytsia 2(6): 354-367.
19. Vassal, J. and Maslin, B.R. (1979). Phyllodes et phyllodisation dans le genre Acacia. Bull. Soc. Hist. Nat. Toulouse 115(3-4): 1-9.