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Australian Plants articles

Australian Plants is published quarterly to promote knowledge of Australian plants.

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Editorial and Tributes

Merle Thompson OAM

Sixty years!

For an organisation or its publications to survive for 60 years must be regarded as a major achievement. This issue of *Australian Plants* marks the 60th anniversary of the publication of Volume 1, Number 1 in December 1959.

The past

The first issue did not have any introduction about how or why the publication was being initiated. There was no fanfare. It was 16 pages with only two colour photos; for the front and back covers. The first article was simply placed on the first inside page. On the third last page there was a section indicating that the journal was published on behalf of the six regional groups of New South Wales, Queensland, South Australia, Victoria and Western Australia. It named an editorial committee and Region contacts with the Managing Editor being Mr W. H. Payne. The cost was three shillings for subscribers or the journal was included in membership fees.

That first, one page, article and one other from that first issue are reproduced as the first two articles within this retrospective issue. At the time of the 50th anniversary the full first issue was reproduced on the Australian Native Plants Society Australia (ANPSA) website in 2009 where it can still be viewed.

Under a continuing agreement within ANPSA – formerly the Association of Societies for Growing Australian Plants (ASGAP) – the journal has always been produced by the Australian Plants Society New South Wales (formerly Society for Growing Australian Plants NSW) on behalf of the national organisation and the other Regions.

The other remarkable story of survival is that of W. H. (Bill) Payne who was editor for over 40 years. We paid tribute to Bill in the 50th





anniversary issue and, as we said then, “the more those of us who have attempted to fulfil this role in recent years undertake this task, the more our admiration for his perseverance and resourcefulness grows”.

Throughout those years the company printing the journal was Surrey Beatty & Sons of Chipping Norton in Sydney under the very helpful stewardship of Mr Surrey Beatty and his son, Ivor.



The layout in the early issues was not always conducive to easy reading. The pages were crowded and text heavy. There were often headings at the bottom of pages and articles were split, with the pages widely separated, but the photos were placed within the articles. In later issues the photos were all placed together because of different colour processes and sometimes crowded and even sideways.

Following Bill's retirement, the production of the journal was in the hands of a small committee, principally comprising Joanne Caldwell, Manfred Wagner and Cas Liber. The printing was transferred to Blue Star Print, Silverwater, and newer techniques enabled improvements in layout, particularly in the placement of photographs within the articles.

In the period from around 2000 to 2010 there were a number of challenges including delays resulting in frustration for subscribers and Regions but the condition was not terminal.

The Present

Since 2008 the co-editors have been John Aitken and Merle Thompson. We would like to pay tribute and express our thanks to the many people who have contributed whole issues, especially Hazel Dempster and Jim Barrow, individual articles and photographs, especially those who readily respond when they get an email “do you have....?”. We won't attempt to name them all but must, in particular, mention Brian Walters, web manager of the ANPSA website whose photographic catalogue and helpfulness are outstanding.

We also thank our wonderful layout person, Lachlan MacLaine, and Darren Muir of Elect Printing of Fyshwick, ACT. Elect Printing have been our printers since 2009 and the care and assistance provided by Darren, the owner, has been invaluable.

Content and readership

The original name of the Society was the Society for Growing Australian Plants and the interests of many members related to propagation and gardens. Yet there has always been considerable attention to the natural landscapes of Australia, the natural occurrence of plant species and plant identification. And it is particularly interesting to note that, commencing with Issue No. 3, above the list of Societies the heading was 'AUSTRALIA'S NATIONAL PRESERVATION JOURNAL' followed by the statement 'A non-profit making venture dedicated to preservation by cultivation'. That expression was coined and probably technically owned by Floraland's nursery.

A feature of many earlier issues was the excellent scaled line drawings. Whilst this was prior to developments in photographic and printing techniques, it also reflects both the skills of the authors and their interest in conveying the scientific depiction of plant morphology.

With any publication, the editors have to be aware of their readership. The readership for *Australian Plants* this is wide ranging and includes:

- Libraries in major universities, scientific institutions and botanic gardens both in Australia and overseas which enables the journal to be available for reference and research.
- professional people such as botanists, horticulturalists and landscapers
- avid amateurs
- members with a more general interest.

With such diversity the level of writing needs to be professional and authoritative but within the reach of the educated amateur. Whilst some members consider articles are too scientific, some of the more technical issues have received the highest praise.

This issue

In this issue we endeavoured to include a representative selection of articles from across the years. The authors chosen are predominantly people who have made a major contribution both to our knowledge of Australian plants and to their regional Society as well. An outline of the authors' contributions in furthering understanding of our flora and within the Society has been included, together with a photograph.

Articles were scanned with all the inadequacies such techniques can involve, especially the need for additional proofing resulting from the inaccuracies of optical character recognition.





Although plant names and terminology have changed over the years it was decided to be true to the original text. Plant names have, however, been written in italics in accordance with modern practice. We have tried to include some line drawings and as far as possible keep to the actual size which was integral to the original.

As we did not have the original photographs we have included modern photos appropriate to the article.

When browsing to select articles we were fascinated to find that a significant proportion of the articles we considered were on genera within the family Proteaceae. While *Banksia* featured most, other genera were also included – but surprisingly few articles related to *Grevillea* which is now perhaps the dominant genus.

The future

The journal has retained the small size, A5 or similar. To some this is a sign of inability to change. Others are horrified that a change could be made and keenly buy the binders to maintain their collection. Should we have changed to a more standard A4; should we have sold more publicly? Is our layout old-fashioned and of little appeal to younger people?

What of the future? What should be the balance between plant identification and knowledge; propagation and horticulture, landscaping, habitat and ecosystems, conservation issues? Is it time to be more political on matters such as climate change and habitat loss? At the time of writing Australia is being devastated by fire with widescale habitat destruction and possible species loss. There is, and will continue to be, debate and scrutiny on the management of natural areas and of fire.

Who might be prepared to take over from us as editors? Apart from the layout and printing this is a totally voluntary endeavour.

And the curliest question of all – should we go totally digital?

We welcome any suggestions on these matters.

The back cover of Issue No. 1



1959

Vol 1 No. 1 December 1959 P 2

How to Grow Waratahs

By P J Parry

Perc and Ollie Parry

Percent (b 1901) spent his lifetime working with native plants and flowers initially with his father William and elder brother Henry. He purchased the Kariong NSW property from Henry and also married Ollie in mid 1920's and together progressed the property that became well known as "Floralands", commercially producing native plants and flowers and educating others on their use. They were responsible for bringing about licensing legislation in NSW in the early 1950's to allow sale of native plants and flowers and were given Licence No 1. Preceding this, Legislation had been initiated to ban the sale of native plants and flowers and at one period in the 1940's it was illegal to carry them on government public transport. Ollie in particular was involved in SGAP from its early establishment and spent a period as State President and was awarded one of the earlier life memberships. Perc and Ollie were both awarded O.A.M.'s in 1981 for "Conservation and Community Contribution", the first husband and wife to receive this award. They retired in 1972.



Telopea speciosissima, commonly known as the N.S.W Waratah, is the national flower of that State, is the best known, and is the most popular of the *Telopeas*. They may be readily germinated from seed, as described later in this journal, or small plants may be obtained nursery grown.

The plants are planted out into their permanent positions at least three feet apart. The position chosen should be well drained to a depth of eighteen inches with reasonable sunshine available. The type of soil into which the waratah is planted does not appear critical. They have been known to thrive in all soil conditions from a light bush sand to a heavy clay, a good loam being preferred. The important factor appears to be a good depth of soil well drained to the whole depth. At this stage watering twice a week should be sufficient. When they commence to grow and become established, watering can be restricted to windy or dry weather. Waratahs are capable of flowering in three or four years from the time of seed sowing. They respond well to occasional dressings of "blood and bone."





When plants come into bloom the flowers can be cut for indoor decorations or left on the plant until they die. If left on the plant the stems should be pruned back to about half the length of each stalk, and shoots will soon appear from above leaf nodes. It is a mistake not to prune, as plants will become scraggy and often fail to bloom during the following season. The setting of seeds will also interfere with future flowering. One waratah bloom is capable of producing as many as two hundred and fifty seeds. Plants grown under cultivation, given proper care and feeding, should bloom each year.

On average, waratahs growing in the natural bushland flower in quantity once in every five years. This is quite understandable when one takes into consideration droughts, bushfires, floods and the struggle for survival with other natural shrubs and trees. It is true that the second year after a bushfire the waratahs will bloom in profusion. This is because of the new growth to carry the bloom, but pruning promotes this new growth when carried out in the proper manner. My cultivated area is never fired and produces over 5,000 blooms every year.

Be wary about growing the waratahs with rotted wood, as was recently published, as they are susceptible to armillaria and phytophthora, root rots which thrive where rotted wood is in the ground.

Many years ago the late Mr. Harry Hazlewood and I both realised that there was a friendly fungus which associated itself with the waratah, but we were unable to decide whether this fungus was necessary for the plant's ultimate survival.

Waratahs can be propagated from seeds or cuttings, but the usual and most reliable method is from seeds. They should be gathered from the parent plants when ripe, usually April or May, and sown in springtime.



For sowing seeds a bed or box should be prepared with loamy soil and leaf mould. The seeds should be lightly covered and watered daily to keep the surface soil moist. The seed bed is kept covered with glass until germination takes place. Then gradually harden off the plants by lifting cover each day.

The Christmas Bush patch is reputed to be the first commercial cultivation of Australian wildflowers. Photos supplied by their son Brian who continues Parry's Wildflower Nursery in NSW Midcoast area.

1959

Vol 1 No. 1 December 1959 P 7

The Genus *Telopea*

By J. L. Willis, MSc, Director, Museum of Applied Arts and Sciences, Sydney

Jack Lehane Willis was an organic chemist in industry before his appointment as Botanical Research Officer at the Museum of Applied Arts and Sciences in 1948, then Deputy Director 1956–1959 and Director 1960–1979.



The family Proteaceae is a very ancient widespread family occurring in Australia, New Zealand, South Africa, South America and Eastern Asia. It contains about 60 genera of which 37 are indigenous to Australia.

Included in the plant family *Proteaceae* is *Telopea*, a small endemic genus which contains four species only all of which are confined to the south-eastern regions of the continent and the island of Tasmania. The name *Telopea* is derived from the Greek "telopos" meaning "seen from afar" and refers to the conspicuous nature of the crimson heads of flowers which stand out from the dark green foliage in a striking fashion. The aborigines called these beautiful shrubs "Waratah" and this is now the generally accepted vernacular name.

Of the four species, *Telopea speciosissima* R.Br. (meaning "very hand-some" is perhaps the most familiar. This species occurs in New South Wales from Gosford, Putty and the Blue Mountains, south to Conjola, and is found only on sandstone. There is also an isolated occurrence in the ranges north-east of Glen Elgin. The comparatively rare *T. mongaensis* Cheel (referring to the district of origin, Monga) is also a New South Wales species occurring east of Braidwood at Monga, Currockbilly, Clyde Mountain and Sugarloaf Mountain. The third New South Wales species *T. oreades* F. Muell. (meaning "belonging to the mountains") occurs in the Bombala district and far South Coast of New South Wales, extending into East Gippsland in Victoria. The fourth species, *T. truncata* R.Br. (meaning "truncate" – referring to the flattened flower heads) is endemic to Tasmania, where it is widespread in the wet, mountainous regions.

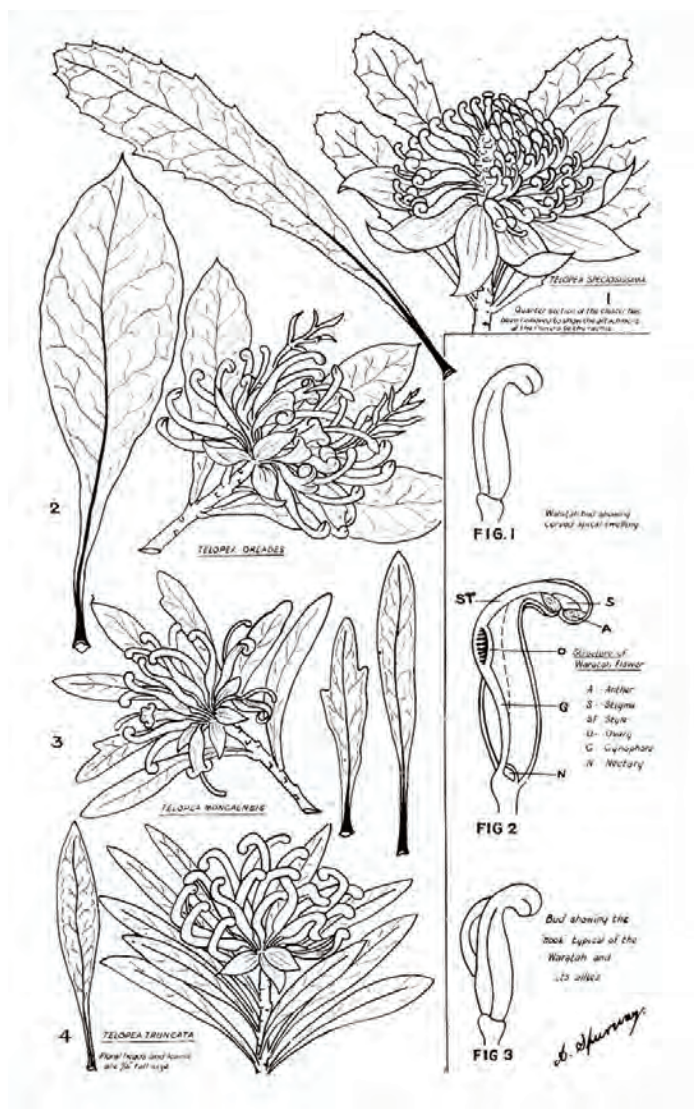
INFLORESCENCE

The flowers of all *Telopea* species are arranged in dense, terminal, racemose clusters. As in all racemes, the flowers are borne on separate stalks, but they arise in pairs so close together on the rachis that they





touch one another and give the inflorescence the appearance of a head. The size and shape of the inflorescence varies with the species. The oldest flowers are at the base of the flower head, and the youngest ones are at the apex, and as a consequence the upper flowers are often still in bud when the lowest ones are fully opened. In all species the inflorescence is surrounded at the base by an involucre of large, red bracts which vary in size according to the species.



FLORAL STRUCTURE

The individual flowers of Waratahs are small and are built up in parts of four. There is no separate calyx and corolla, instead, the flower parts consist of four perianth segments which, in the bud, appear to be fused together. This fusion, however, is not a true one, as the four segments can be separated by gently twisting the bud. This apparent union of the perianth segments is related to the pollination mechanism. Each perianth segment is somewhat strap-like in appearance with a hollowed out lobe at the apex, the four lobes forming an apical swelling which is curved towards one side (see Figure 1). The flowers are consequently bilaterally symmetrical. Inside the swelling are four sessile anthers, that is, anthers without filaments, one to each perianth segment. Each of these sessile anthers, in the bud, is in close contact with the rather conical-shaped stigma which is placed laterally towards the end of the style. (see Figure 2). As the flower matures, the style grows faster than the perianth segments, and in order to make room for its increase in length, forces its way between the perianth segments, splitting them, and emerging in the shape of a hook, so typical of the Waratah flower and its allies (see Figure 3).

The ovary, which is produced on the end of an elongated stalk known as the gynophore, is superior, and consists of one carpel containing a large number of ovules, whilst the nectary, which is located at the extreme base of the gynophore, is in the shape of an incomplete ring (see Figure 2). The fruit formed from the ovary after fertilisation, is a follicle of leathery texture up to five inches-long, containing many seeds which are quite flat and winged.

DESCRIPTION OF SPECIES

The following is a brief description of the four species which can readily be separated by the leaf and inflorescence characters:

Telopea speciosissima ("Waratah") (Pronounced spec-cio-siss-ima)

Stout, erect shrubs up to about 8ft in height, with alternate leaves 5–10 inches in length, sharply toothed in the upper part, from oblanceolate to obovate or almost cuneate, with prominent venation. Flowers in dense, ovoid or globular heads, 3–4 inches in diameter, involucrel bracts crimson, ovate-lanceolate, the inner ones being 2–3 inches long. Fruit, a leathery follicle 3–4 inches in length.





2. *T. oreades* ("Gippsland Waratah") (Pronounced or-e-a-des)

Gully and mountain shrubs, sometimes attaining tree height (up to 30–40ft.) with a stem diameter of 1–2 ft. Leaves alternate, 4–8 inches in length, usually entire from obovate to lanceolate, often glaucous on the under-surface, with the midrib alone conspicuous. Flowers in ovoid or globular heads about 3 inches in diameter, with surrounding involucral bracts under 1 inch in length. Fruit, a leathery follicle 3–5 inches in length.

3. *T. mungaensis* ("monga Waratah") (Pronounced monga-en-sis)

Slender, branched shrubs from 4–8ft in height with alternate leaves 3–4 inches in length, narrowly lanceolate to oblanceolate, entire or with 2–3 sinuate lobes at the apex, slightly paler on the under-surface, inconspicuously veined. Flowers in short, broad, rather flat heads about 3 inches in diameter; involucral bracts crimson, mucronate, sparsely fringed on the margins with rust-coloured hairs, about 1/2 inch to 1 1/2 inches long. Follicles 2–3 inches in length. There are no grounds for the assumption made by some writers that this species is a hybrid between *T. speciosissima* and *T. oreades*.

4. *T. truncata* ("Tasmanian Waratah") (Pronounced trun-ca-ta)

Erect or spreading shrubs from 5–10 ft in height, with alternate leaves 2–4 inches in length, from oblanceolate to obovate, entire, the margins often recurved, venation inconspicuous. Flowers in short, dense, flat heads about 2 inches in diameter; involucral bracts ovate, covered with appressed hairs, the inner (and longer) bracts being 3/4 inch long. Follicles 2–3 inches in length.



POLLINATION

Waratahs are pollinated by insects and birds, and as the flowers are markedly protandrous they are almost invariably cross-pollinated. Whilst the flower is still in the bud stage, the anthers, which for a long period are held in close contact with the stigma, dehisce, and shed their pollen directly on to the stigma. The continued growth of the style finally splits open the perianth segments and frees the stigma with its load of pollen. Insects or birds, searching for nectar, brush against the stigma and eventually remove all the pollen grains. In the meantime the flower is becoming over-mature and the perianth segments are losing their attractiveness, and it is during this period that the stigma, now free of its own pollen, becomes receptive. Insects or birds in search of nectar

now rub their pollen loads, acquired from other flowers, against the stigma, the pollen sticks to the stigma and germinates, thus ensuring fertilisation.

ECONOMIC VALUE

Although the Waratah has been used widely in applied art, particularly as a motif in woodcarving, ceramic and glassware design, etc, it has little commercial use apart from its proven horticultural value. *T. speciosissima* is the most widely grown of the four species, although *T. truncata*, *T. oreades*, and a striking yellow form of *T. truncata* have all been grown in the eastern states for ornamental purposes. Although attempts have been made to cultivate *T. mungaensis* in the Sydney district, no success has attended these efforts. The timber of *T. oreades* is regarded as being one of the most beautiful Australian ornamental timbers. It is a close-grained, medium weight, light-coloured timber which planes and polishes well, and in figure, character, and texture is very similar to the American Sycamore. The quantities of timber obtainable from this source, however, are not great, which is perhaps fortunate, as past experience has shown that the exploitation of plants of economic value but restricted distribution, has led, in some cases, to the virtual extinction of the species.



Telopea oreades
Photo: Brian Walters



Telopea mungaensis
Photo: Merle Thompson
This plant survived for a few years in a bush garden in the Blue Mountains NSW





1968

Vol 5 No 37 December 1968 P 3, 37-38

GROWING WILDFLOWERS

IN QUEENSLAND by David Hockings

F. David Hockings was born in 1928 on Thursday Is., the son of a master pearler. In 1946 they moved to Springbrook, Queensland where David developed an intense interest in Australian native plants. From the earliest days of SGAP until his death in 2017 He was an active member. His knowledge of native plants, their uses, pests and diseases was phenomenal and freely shared.



Queensland broadly speaking, has 3 wet Coastal belts (1) The Border to Noosa; (2) Mackay, Proserpine and (3) Innisfail, Cairns. There are also two dry Coastal sections, (1) around Rockhampton and (2) around Townsville. There are the Coastal Ranges and the Great Dividing Range and then there is the inland, west of the Divide, which can of course be further divided into several sections.

On the coast the soils vary from deep sands through gravels and gravelly clays to shallow soil overlying heavy clay and to low-lying poorly aerated soils subject to waterlogging. There are areas of red soil on the ranges and Coastal hills and where these drain freely they are ideal for a large range of native plants. The inland soils range from heavy clays such as the black soil plains to deep sands and here and there the old eroded remnants of hills or ranges that are mostly sandstone or ironstone gravel.

The Coastal soils are mainly acid in reaction. The limiting factors to cultivating native plants seem to be mainly physical, in other words drainage or aeration. The high humidity however limits some of the species from low rainfall areas, particularly the low rainfall parts of West Australia. Possibly the reason some of these plants are so susceptible to foliage diseases here in our hot wet summer is due to the fact that they are normally dry in summer. These plants, the flowering gums, Verticordias, some of the Melaleucas and so on, also suffer on the ranges and Coastal hills for the same reason high rainfall and humidity.

West of the Divide you find the heavy soils are mainly alkaline, the sands along the waterways may also be alkaline because of the high lime content of the water. The cypress sand ridges and gravel ridges are mainly acid to strongly acid. These gravel ridges carry a wealth of top quality flowering shrubs as do some of the sandy areas.

Unfortunately though understandably the human population dwells mostly on the heavy soils because of their greater fertility and

productivity both agriculturally and pastorally. From a gardening point of view these soils pose several problems. Firstly they are alkaline and the majority of our shrubs prefer acid soil conditions. There appears to be more scope or more tolerance to alkalinity amongst trees such as some of the flowering eucalypts.

Secondly, the physical conditions of these heavy clays are very hard on plant life. They are extremely wet in the wet season, extremely dry in the dry with periodic droughts and dryness may be accompanied by deep and extensive cracking. A third factor is the temperature range, high summer temperatures and very low humidity and yet heavy frosts in winter. Many Coastal plants are quite useless west of the Divide even though some of them survive Coastal frosts reasonably well.

If you look at a temperature graph you will see that coastal frosts here are of short duration – the temperature drops down to freezing and quickly back up again. Inland the temperature may drop below freezing at 9 or 10 at night and stay below freezing until daybreak. It is the duration of the frost that does the damage. In spite of this where soil conditions west of the Divide suit the plants there has been a greater measure of success with a wider range of West Australian plants than has been possible on the humid Coastal areas.

Brisbane is certainly tropical in comparison with the climate in the south where the large active groups of our Society are operating. However if we have problems because of this then the really tropical northern half of our State is a completely closed book. Climatically most of the plants that native plant enthusiasts are playing about with are ruled out in the north. I fear that we here in Brisbane also waste too much time on temperate species instead of trying a broader range of plants initially and also breaking new ground. So much of the work and writings on the cultivation of Australian plants has been done in the southern states and mainly with plants from the southern half of the continent.

Taking into account this much generalised and over simplified version of growing conditions here in Queensland do you think we've made much progress in determining plants for different districts? There has been quite a lot of work done on the lighter soils on the Darling Downs and an extensive range of genera and species has been trialed west of there at Glen Morgan but as I mentioned earlier, so many of the inhabitants out there live on the heavier soils. Bowenville, Dalby and Brookstead are black soil areas where many native trees are planted and some of the West Australian Eucalypts do very well. Get away from these areas further west and in the tropical north and our knowledge fades out. We need members in these areas with the





enthusiasm to collect their local plants and to make trial plantings of a whole range of plants.

The value of decorative plants around the home can't be reckoned up in dollars and cents. They mean more than just the physical comfort that may be gained by their equalising effect on climatic extremes, cool shade in summer and shelter from cold winds in winter. A home attractively set among flourishing plants encourages a sense of pride – a pride of ownership – pride of citizenship and a sense of well-being.

The range of ornamental plants for Coastal conditions either here or in the tropics is quite extensive just with the exotics without considering the possibilities of the many native plants. These exotics are mostly quite unsuitable away from the coast because of the climatic extremes. Plants like Crotons, Ixoras etc would quickly die of cold or dry heat if not from unsuitable soil conditions. The temperate plants grown here are mostly nearing their climatic limits. Roses for instance do not reach full dormancy and the quantity and quality of blooms suffer. These temperate plants are more successful away from the coast with colder winters but further north it is just too hot.

Our greatest need is for suitable ornamental plants for inland, both north and south, to decorate the homesteads and country towns, to soften living conditions and help make life easier and more attractive. West Australia has a special Government Department – The Dept. of the North West – experimenting in ways to do just this, with the idea that it will help keep some population in the empty spaces.

The special virtues of native plants are their resistance to unfavourable weather conditions and their low maintenance requirements. These qualities are scarcely understood and barely appreciated here as yet. However, recently there have been a couple of short news items on how much better some native plants are surviving the drought in Victoria and Canberra than are exotic plants. Anyone who has grown a number of natives will have noticed how little time is spent holding a hose on them in comparison with the regular waterings of exotic shrubs and how unnecessary it is to dig around them. In fact it can be quite harmful. The ornamental value of native plants in general has not yet been appreciated by much of our population. They are still tied to conventional ideas of symmetry, of flowers that are mainly petals, and to temperate flowering plants and dwarf conifers. They think of gardening more as if they were emigrants here from Europe instead of Australians.

The beauty of our plants is in the character of the individual blooms and in the graceful form of the plants, not in symmetry. It's their sweeping

lines or unusual form, an intangible something that characterises the Australian bush. As we experiment with various native plants we must constantly measure them up to see they reach the requirements that make them worth cultivating. Some improve florally with cultivation, others run more to foliage. So many need trying we can't waste time and space with the doubtful ones. Showiness is of course one of the main basic reasons why we should cultivate a plant. Flower for flower or more accurately plant in bloom for plant in bloom, a large number of our plants can easily hold their own with the exotics. Sometimes our plants only do this where they grow naturally or in certain aspects. Do these same plants reach this standard in your garden?

We can so easily get carried away with a couple of flowers of something that is a favourite in another state. Look critically at it – is it just a couple of tiny flowers on a spindly or sickly plant? Does it fill a place here? We are trying to gain a place for our natives among the accepted garden plants. They have to appeal to everyone by standing on their own virtues as ordinary plants. Plants have no special virtue merely because they are native. They have to compare as shrubs. The general public doesn't always see them as a native plant enthusiast does.

Adaptability is the second of these basic qualities we must look for in natives. It may be beautiful where it grows naturally in the bush or in cultivation in a different climate, but how does it look in your garden. It must grow satisfactorily and flower well when it is cultivated. Until a plant has been tried in a district it is difficult to know how it will behave. We need enthusiasts in all parts of the state and on different soils.

Suitability for mixed plantings. The most useful natives for Brisbane in particular are going to be those species that are suitable for mixed plantings with exotic shrubs. There are definite hazards associated with this because many of the natives resent the amount of water normally applied to the exotics. Largely this problem is a matter of selection which is why initially we must try as many species as possible. It certainly limits the useful plants from the present range of cultivated natives. Our knowledge of natives that thrive in mixed plantings is very limited at present and must eventually include a large number of our own rainforest plants.

Plan the use of Natives. A garden needs to be planned carefully to show off natives in a way that will advertise them. You can have a landscape planting which involves a certain amount of duplication for the sake of continuity or unity or you can have, as is too often the case with native gardens, a collection planting with every plant different.



1969

Vol 5 No 41 December 1969 P 206

Dracophyllum Labill.

by Betsy R. Jackes

(A series of articles on a genus in the plant family Epacridaceae – the heaths)

Betsy became interested in native plants as an undergraduate student at the (now) University of New England. In fourth year she undertook a revision of the genus *Melichrus* and then *Acrotriche*, the start of interest in Epacridaceae.

Moving to North Queensland meant a whole new flora with few epacrids and becoming familiar with the tropical rainforest flora as well as that of drier areas, particularly while employed as a lecturer at James Cook University. With few epacrids around and as she liked to see her 'beasties' in their natural habitat she switched to studying the Vitaceae, the native grapes, and Myrsinaceae/Myrsinoideae with field trips chiefly north to Cape York and west to the Kimberley. Her involvement with SGAP continues to result in the publication of local guides and articles. "Looking at plants has become an occupational hazard, no matter whether in Australia or overseas".



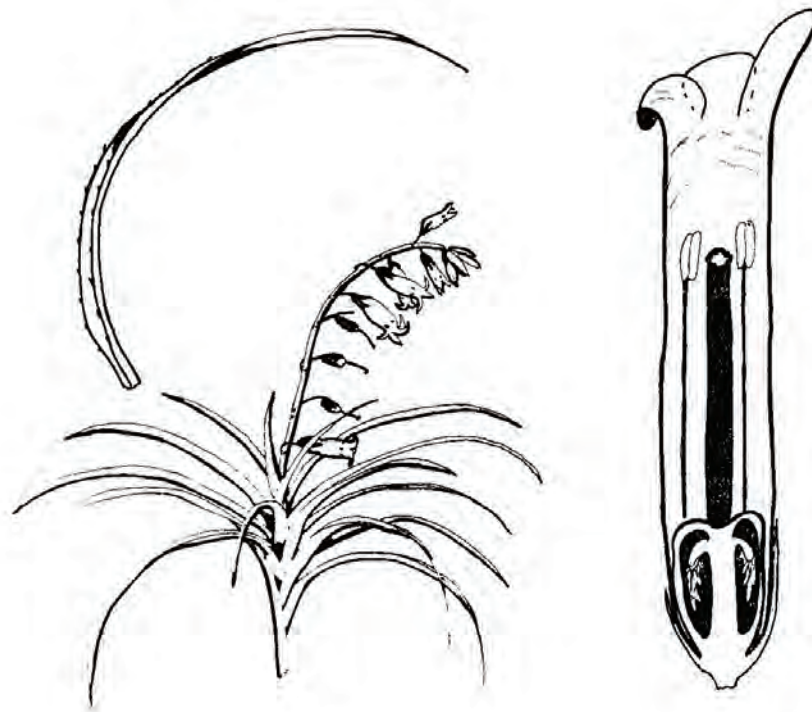
This genus is found in the eastern states of Australia, as well as in New Zealand and New Caledonia. The West Australian genus *Sphenotoma* is sometimes regarded as a subgenus, however, it does form a very natural group, differing from the eastern species in quite a few respects.

The patterns of stomatal distribution are distinctive; in addition, the inflorescence of *Dracophyllum* is a compound raceme or panicle with very deciduous bracts, longitudinal folds are not present at the base of the corolla-lobes; in contrast the *Sphenotoma* inflorescence is a simple spike or head with persistent bracts, and the longitudinal folds almost enclose the mouth of the corolla-tube.

The generic name "Dragon Leaf" refers to the likeness of the leaves to those of the dragon plant *Dracaena*. The long, narrow leaves which are crowded towards the ends of branches give this genus the appearance of a monocotyledon.

Shrubs or small trees, the leaves and leaf-sheaths fall off leaving prominent annular scars. The corolla-tube which does not circumsciss, may be cylindrical or almost campanulate with five spreading imbricate lobes.

In New Zealand, hybrids have been recorded between a number of species, it is possible that this has also occurred in Australia.



Key to the Species

- | | |
|--|-----------------------|
| A. Small closely appressed shrub; inflorescence solitary | 1 <i>D. minimum</i> |
| Erect plants; inflorescence a panicle | go to B |
| B. Panicle secund | 2 <i>D. secundum</i> |
| Panicle not secund | go to C |
| C. Leaves 15–90 cm; corolla-tube almost equal in length to the calyx | 3 <i>D. milligani</i> |
| Leaves 30–45 cm; corolla-tube 3–4 times length of calyx | 4 <i>D. sayeri</i> |

NOTES ON THE SPECIES

1 *Dracophyllum minimum* F. Muell.

A small Tasmanian cushion plant growing above altitudes of 4,000 ft. in alpine areas where snow lies for several months of the year. The solitary white flowers terminate the branches, surrounded by leaves which are as long as the calyx.





2. *Dracophyllum secundum* R.Br.

An erect or procumbent shrub up to 1 m high, growing in N.S.W.

The white or pink flowers are arranged in a one-sided terminal panicle or raceme.

3. *Dracophyllum milliganii* Hook. f.

A tall moderately branched shrub up to 4 m. high, with large leaves (15–90 cm. long) crowded at the top. Panicles up to 40 cm long bearing numerous white or pinkish flowers in which the staminal filaments are free. Endemic to Tasmania where it favours wet places in mountain gullies and exposed slopes up to altitudes of about 4,000 feet.



Photo: Dick Burns
Dick said that he was standing to take the photo and the flower head was probably 1 m tall – it was in the SW, Tasmania towards South West Cape. It may be hundreds of years old.

4. *Dracophyllum sayeri* F. Muell.

Similar in habit to *D. milliganii*, this species occurs on the summits of the Bellenden-Ker Range in North Queensland. Two varieties exist: var. *normale* Bail, which is a more or less erect plant with a white corolla-tube and rose-coloured corolla-lobes; var. *reflexum* Bail., which has all white flowers, the corolla-lobes of which are much reflexed.

1971

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PLANNING AN AUSTRALIAN GARDEN

by Marion I Blackwell

Marion is a Landscape Architect and Environmental Scientist who has spent her life utilising and promoting to our advantage and joy, the amazing diversity, splendour and joys of our adapted native flora. She has been a stalwart member of the Wildflower Society of Western Australia since its beginning in 1958 serving on the



Management Committee and as President from 1985–1988. Until very recently she has been the Society's Publications Officer promoting the publication of scientific and enthusiasts' literature on WA flora. Marion held the role of federal president 2005–2007. Her honours include the Australian Plants Professional Award in 1993, Honorary Life Membership of WSWA in 2001 and member of the Order of Australia (AM) in 2011. Above: Marion in 1972; Left: In 2017.

Have you ever thought seriously about why you want a garden and what you want of that garden? When choosing a house, most of us spend a great deal of time, thought and energy determining what our needs are, and how they can best be satisfied by the allocation of available space; whether in the planning of a new house or the buying of an established one. How many of us really think this way about the planning of the garden? When we consider that the whole customary $\frac{1}{4}$ acre is really "our home" and that the weather in this sunny land is ideally suited to outdoor activities; a much broader concept of "living space" evolves, and the designing of the garden for maximum and optimal use at a very early stage is important.

Perhaps you are one of the lucky ones with a virgin block of bush upon which you propose to build. Do not let an enthusiastic bulldozer driver flatten your scrub and denude your property. During the time it takes to draw up your plans and get the building under way, get to know your block. Ideally, watch the plants over a whole year. See what is already growing there, mark the plants and keep notes upon identity, time of flowering, foliage features and general appearance. As the season progresses you will find a lot of treasures worth saving for the future joy they will bring. Also look at the bush nearby. You may find other plants indigenous to the area which you'd like to grow, knowing full





well that they would fit in with what you already have, that they'd "like the place", be in their right habitat, and be fully adapted to soil and climate, so that they would take very little looking after when once established.

Get the co-operation of your builder to save as much as possible of the existing vegetation. Even as a ground cover this will prevent erosion and give your house an established look as soon as it is erected. Rope or fence areas off if necessary, and particularly guard any particular shrubs or trees which you wish to feature in the garden plan. It is easy to remove the few unwanted plants at a later stage when you are ready to replace them with others. In the meantime, they will hold the soil and give a continuity to the cover. Remember that it takes from 5 to 7 years to achieve that established look if you once allow the denudation of an area, and one never really achieves the ecological entity which was previously established by nature. Good contemporary architecture lends itself ideally to a bushland setting, and the two combined spell Australian individuality and an Australian way of life.

More and more thinking Australians are demanding low maintenance gardens. With the modern motor age, much of their free recreational time is spent away from home, travelling, surfing, playing or attending organised sports. Entertaining, still chiefly done at home, is becoming more informal. For example, outdoor barbecues in hot weather have gained favour over the formal dinner party. Slowly, as we loosen the bonds with colder climate origins, and lose our preconceived ideas, a concept of an Australian way of life is emerging; more suited to our climatic conditions, our temperament and our set of values. Just as this is reflected in the more advanced contemporary architecture, so too it should be illuminated in our garden planning. Good design and forward thinking are the keys to an integrated and extended living space with multiple uses, adaptable to family needs.

Plan your garden so that it looks after itself with only occasional attention. Native plants in their own or similar habitats, once established, require little or no supplementary watering. Their growth is improved by the application of a fertiliser such as blood and bone at the commencement of their growing season (usually August in Perth), and perhaps any that need shaping may need a light pruning once a year, this is all.

Use your garden as an extension of your various family activity areas. A play area for young children with sand and water, and shade in summer, overlooked from the kitchen window saves hours of walking time "to check up" and sets a mother's mind at rest. This area could possibly be converted later into a pool to give a new vista of interest from the kitchen window. Perhaps a secluded court off the bathroom

would be appreciated, if you have a sunbathing teenager. Plan a shady nook for summer respite, where, with an outside sitting area you can relax and enjoy the breeze on a hot afternoon or early evening. A sunny protected corner for winter warmth is ideal for family breakfasts, for stringing the beans or taking up that hem. Just as the right angling of the house and the correct overhang of the eave achieves both these aims, so the use of deciduous and evergreen trees in the appropriate location may bring the solution in the garden.

Should you be less fortunate than to have bush to begin with, it is still possible – admittedly with comparatively greater expenditure of time, effort and money – to achieve a low maintenance native garden. This added initial expense would be almost equivalent to that needed to establish a traditional exotic type garden, the chief difference being firstly that once established the former would require little maintenance whereas the latter would claim much more of your time and need regular attention for watering, weeding and feeding; and secondly that the former helps our housing to fit into its landscape whereas the latter at its best creates diversity rather than harmony and copies from exotic landscapes.

To get back to the original questions – the why and the what of a garden: a few criteria might help you to determine this for your particular needs.

Firstly and foremost, perhaps the greatest need which a garden fulfils for many people whether they be active gardeners or passive garden users, is that of relaxation. In this age of increasingly populated and industrialised communities, work pressures build up in the individual, and man needs a means of "unwinding", of "letting off steam" and relaxing. Those who garden achieve this in the "doing"; sort themselves out and recharge their sense of equilibrium during the actions of planting, digging and weeding. Others can achieve this peace within themselves by merely being in a place of restful composition and beauty, away from the daily pressures, whether alone in contemplation, or in the relaxed company of friends.

A garden sets off a house and may add considerable beauty to it, by integrating it into the landscape and highlighting its particular features. It should provide shade where necessary, protection from strong winds, privacy from neighbours and any eye-sores, recreational areas for various members of the family, unobtrusive utilities such as a clothes drying area, an incinerator and perhaps wood and tool storage; and finally and of greatest import, pleasure, in the natural beauty of design in plants, of form, colour and shape. It should be a rest for the mind and the eye, a place of peaceful contemplation for those in need of it.

HAKEA

AS GROWN IN MELBOURNE GARDENS by F. J. C. Rogers

Fred became a member of the Society for Growing Australian Plants" (SGAP) – South East Region in 1959. He became President in April 1963 and held this role until May 1968, a period of significant growth. He was the convenor of the flower shows from 1964 to 1971 and also conducted adult education courses on native plants. He wrote a number of books including a "Field Guide to Victorian Wattles", "Growing Australian Plants" and "Growing More Australian Plants". In 1995 he was involved in planning a large seminar on Hakeas but passed away before the event. It was dedicated to him and a biennial seminar still bears his name.



Hakeas belong to the plant family Proteaceae. There are about 130 species throughout Australia, with the majority being found in Western Australia. They vary in size from small shrubs to small trees, while the leaf shape varies from terete to broad with some species having very sharp prickles. Many species are grown because of their attractive foliage, particularly when the foliage is young.

Hakea species are generally hardy but better results are usually obtained by ensuring good drainage. The species described are well suited to Melbourne gardens but could be equally successful in areas near the coast, or other areas north of the Divide.

Hakea baxteri is a shrub of 6 to 15 feet in height with only a small spread. The fan-shaped serrated leaves have attractive bronze tips on the new foliage but the small cream to brown flowers during spring are often unseen as they hide among the leaves.

Hakea bucculenta is only suited to a hot, well-drained position in Melbourne gardens. It is a shrub from the sandy areas near Geraldton, W.A. It has a height of 6 to 10 feet with a spread of 4 to 8 feet. Spikes of orange to red flowers 3 to 6 inches long appear during spring.

Hakea corymbosa is a dense upright shrub with very stiff, pungent foliage. Lime green flowers appear in terminal clusters during spring. It grows from 4 to 8 feet high and 2 to 4 feet wide.

Hakea dactyloides is usually a small shrub of 10 feet or so in height. It has broad flat leaves which have three prominent nerves. It has attractive axillary flowers in late winter to early spring. Two forms are available.

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***Hakea gibbosa* (syn. *H. pubescens*).** This is one of the best shrubs to use for a detour sign as the fine grey needle-like foliage which is soft while young, soon matures and becomes very rigid with a fine pungent point. It is dense to about 12 feet and bears white flowers.

Hakea laurina is the well-known "Pin Cushion Hakea". It is grown throughout most areas of Victoria where it makes a single trunked shrub from 6 to 12 feet in height with much the same spread. The young foliage is bronze-tipped while the red and cream pin-cushion like flowers appear during May to June.

Hakea francisciana is a shrub which has recently been re-separated from *H. multineata*. It is very similar in habit and requirements, the main points of which are good drainage and a warm position. It will reach 8 to 15 feet in height and has long narrow many veined leaves and long red to orange flower spikes.

Hakea myrtoides is a spreading diffuse shrub of 1 to 2 feet with small broad, sharply pointed leaves. Pink flowers appear along the branches.

Hakea nitida is a large spreading shrub to 10 feet high and almost as wide. It bears flat leaves and white-flowers and is very hardy.

Hakea obtusa is a shrub to 6 feet high. Leaves are flat and short, rather like those of *H. laurina*. It bears pink to cream pin-cushion flowers during early spring.

Hakea orthorrhyncha (Bird Hakea) is a spreading shrub about 6 feet high and wide. It has almost terete foliage which is often divided into several segments. A plant will respond with better flowers if planted in a hot dry position. Brilliant red flowers appear scattered along the old wood.

Hakea pycnoneura is a shrub up to 6 feet high with long, stiff, twisted, deeply furrowed leaves. The cream and purple pin-cushion flowers appear during winter.

Hakea platysperma has long terete foliage on a shrub from 3 to 8 feet. It grows well in a hot dry area. The large sparse white to yellow flowers appear in spring but it is the very large, almost globular fruits which attract attention.

Hakea purpurea (Qld. Crimson Hakea). This species grows better in gardens north of the divide or where it receives warmth and dry conditions. It is a shrub from 4 to 6 feet high with dark green short, fine much divided foliage and masses of crimson flowers.



***Hakea prostrata* (syn. *H. glabella*)** is a variable shrub, often prostrate or erect to about 10 feet. Leaves are broad and flat with edges prickly. Flowers vary from greenish yellow to almost red and these are the most attractive.

Hakea petiolaris is a large shrub to 15 feet in height and to about 10 feet across. It has broad leaves and purple pin-cushion flowers during early winter. It is a hardy species and well suited to most areas.

***Hakea salicifolia* (syn. *H. saligna*)** is a bushy small tree of 10 to 20 feet or more high. It bears flat leaves which in the young stage may be bronze-coloured. Masses of white flowers appear during spring.

***Hakea sericea* (syn. *H. tenuifolia*)** Silky Hakea is one of our hardiest species. It will grow in almost any position even to that which is wet in winter and very dry in summer. Foliage is short needle-like, with a sharp point. Flowers vary, often being white, but pink or red flowered forms are also available. The coloured forms usually flower a little later than the white, which is about May. Height is about 6 to 12 feet.

Hakea sulcata* and *H. subsulcata are two similar species with long narrow furrowed leaves and masses of purple to pink to white pin-cushion flowers during early winter. Height varies from 3 to 5 feet.

Hakea suaveolens (Sweet Scented Hakea) is a useful hedge plant, particularly in coastal areas. It makes a bushy shrub of 5 to 10 feet in height and width. Foliage is dark green, fine and much divided. White scented flowers appear scattered throughout the bush at most times of the year.

Hakea teretifolia is a hardy shrub of 4 to 8 feet. Leaves are thin and rounded. White flowers appear along the stems during summer.

Hakea trifurcata is a large spreading shrub 8 to 12 feet high. It has much divided terete foliage plus some broader leaves. Grey woolly flowers with a reddish style appear during late winter to early spring.

Hakea verrucosa has needle-like pungent foliage, a spreading habit and a height of 4 to 6 feet. Loose, red flowers appear during spring scattered along the old wood.

Hakea victoriae (Royal Hakea) is a large shrub 6 to 10 feet high and 4 to 6 feet across. It has very large, hard serrated, cup-shaped leaves which at times become very beautifully coloured. It is a foliage plant well suited to a hot dry position. The white flowers are deeply hidden in the leaves.

1976

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Wattles of the Flinders Ranges

By I G Holliday

Ivan Holliday has been described as by far the most active member Australian Plants Society South Australia (APSSA) has ever had. The Ivan Holliday medal is awarded to those in SA who have made a significant contribution to Australian flora perpetuates his memory. He was author or co-author of around 12 books such as "Growing Australian Plants" with Noel Lothian which was first published in 1964. His extensive photographic collection has been digitised by APSSA. The photos included in this article are the same species included in the original article and sourced from that collection. They show a closer depiction of the flowers and foliage than those in the original article.



Recognised as one of South Australia's finest tourist attractions, the scenic grandeur of the ruggedly beautiful Flinders Ranges has long since captivated photographer and artist alike.

The Ranges begin near Crystal Brook in South Australia's upper north wheatlands and extend some 360 kilometres in a slight arc northwards to Moolawatana. They dominate a flat and sparse landscape and it is this feature which adds to their scenic appeal and uniqueness. The annual rainfall is generally under 300 mm, although on the higher peaks of the southern Flinders it can be as high as 760 mm.

Although the Ranges have been extensively grazed for over 100 years and vegetation appears quite sparse over much of the terrain, they are botanically rich in species. Any plant enthusiast who is prepared to climb the peaks and hillsides, or explore the many creek-beds, which occur through-out the Ranges, will be well rewarded.

Approximately 40 species of acacia alone have been recorded within the Flinders Ranges, of which several species are endemic only to that area.

Many of the acacias found in the Flinders are common small trees or shrubs of other parts of south and eastern Australia, particularly the drier regions. These include such tree species as *Acacia aneura* (Mulga), *A. brachystachya* (Umbrella Mulga), *A. carnei*, *A. pycnantha* (Golden Wattle), *A. rhetinodes* (Wirilda) and *A. salicina* (Native Willow). Even the higher-rainfall species, *A. melanoxylon* (Blackwood), occurs near Wirrabara in the south.

Shrub species include the common *Acacia paradoxa* (syn. *A. armata*), *A. brachybotrya* (Grey Mulga,) *A. burkittii*, *A. continua*, *A. calamifolia*





(Wailowa), *A. hakeoides* (Hakea-leaved wattle), *A. havilandii*, *A. notabilis* (Notable Wattle), *A. rigens* (Nealie), *A. rotundifolia* (Round-leaved Wattle), *A. victoriae*, and many others. Two are described below and illustrated in colour plate.



Above: *A. havilandii* Malden – One of the needle acacias which is very similar to the more commonly known *A. rigens*. The phyllodes are generally much shorter, however, usually 3–4 cm long, terete and pungent-pointed. Profuse, fluffy, yellow flower balls appear in August on axillary twin peduncles. It is found in the Mount Lyndhurst area of the upper Flinders and is also native to north-west Victoria and NSW.

Left: *A. burkitii* FvM ex Benth – Usually a tall, bushy shrub, up to 4m high but much smaller where it grows on rocky, infertile soils. The phyllodes are long and narrow, linear, with fine soft hairs along the margins, particularly the upper half, the summit curved. Flowers appear in dense, twin cylindrical spikes, deep yellow, about 1 cm long, flowering profusely, usually in late winter. The shrub is also native to inland W.A., western N.S.W. and other parts of S.A.

WATTLES EXCLUSIVE TO THE FLINDERS RANGES

The following species are endemic only to the Flinders Ranges, with the exception of *Acacia iteaphylla* (Flinders Ranges Wattle) which has also been found on Eyre Peninsula.

***Acacia gracilifolia* Maiden et Blakely**

A shrub found only in the wetter southern Flinders between Mambray Creek and Wilmington. It is fairly common in Alligator Gorge.

In cultivation, it is better suited to acid or neutral well-drained soils of assured rainfall, but adapts well to soils not excessively limey.

An erect, ornamental and graceful, medium to large-sized shrub, 2–3 m high. The rich green phyllodes are long, soft and wispy, 5–10 cm by under 1 mm thick, somewhat sticky, usually curved, with a small mucro. It flowers in September when the, deep yellow profuse flower balls on short peduncles make a bold display. Worth cultivating for its foliage alone.

***Acacia iteaphylla* FvM. ex Benth. (Flinders Ranges Wattle)**

Despite its common name, this wattle also occurs in the Gawler Ranges on Eyre Pen. However, it is commonly associated with the Flinders Ranges.

The species is now a popular shrub in cultivation due to its general hardiness under almost all temperate conditions, rapidity of growth and ornamental, weeping foliage (in good forms). An added attraction is that the flowers appear in autumn, unusual in an acacia.

A dense, bulky shrub, 2–4 m high, with soft, handsome greyish drooping foliage. The new growth tips are pinkish which enhances the shrub's overall appearance.

Phyllodes are long and narrow, 5–10 cm long by about 2–3 mm broad (broader forms occur), glabrous, with an acute, curved mucro and grey-blue in colour. The pale yellow flowers occur in autumn in racemes of 8–12 flower-balls on short peduncles, each flower head first enclosed in a light brown bract.

***Acacia papyrocarpa* Benth.**

A small tree confined to the Mount Lyndhurst area of the northern Flinders.

I am not familiar with this tree either in cultivation or in the wild. It is described by J. M. Black as a small tree up to 7 m high with rigid, linear, subulate and pungent-pointed phyllodes. The flowers occur in globular heads.

***Acacia pravifolia* FvM.**

A dwarf shrubby species often found in rocky situations in areas around Quorn in the southern Flinders.

Easily cultivated in an open, sunny location in most soils in moderately dry temperate situations (300–600 mm rainfall).

This small, rigid shrub, usually under 1m high by about the same breadth, has very prickly foliage and silky hairy (pubescent) branchlets. Its ornamental value lies in its profuse flowering habit.

The stiff phyllodes are small and flat, 5–15 mm long by 4–7 mm





broad, triangular, and they taper to a pungent point. In early spring the shrub is covered in bright yellow, fluffy, globular flower-heads which appear profusely from every axil.

***Acacia quornensis* J. M. Black**

An upright shrubby species from the Quorn area. It bears some resemblance to *A. rhetinodes* but differs in its fewer flowers in each head, glabrous calyx and generally smaller phyllodes.

Easily cultivated under most South Australian conditions.

A bushy erect shrub, 2 m or more high, with smooth slender branches. The phyllodes are lanceolate, tapering to a short petiole, one-veined, 2–3 cm long by 4–5 mm broad, the apex acuminate. The pale lemon flower-heads appear in axillary racemes in summer, each flower set in a glabrous, cup-shaped, lobed calyx.

***Acacia rivalis* J. M. Black**

This small tree commonly occurs as the dominant species on hillsides between Hawker and Mount Lyndhurst where its characteristic erect, umbrageous form is an unmistakeable feature of parts of the landscape.

I have no knowledge of it in cultivation, but it should be adaptable to most soils in a moderately dry temperate climate.

A small tree up to 5 m high with numerous erect branches and an umbrella-like canopy of drooping foliage. Phyllodes are linear-lanceolate, 4–8 cm long by about 3 mm broad, smooth and shining, curved, with a small curved mucro.

The small yellow globular flower-heads occur in September–October, singly on hoary peduncles arising from the axil of each phyllode.

***Acacia wattiana* FvM. ex Benth.**

This large shrub occurs within a restricted habitat in the lower southern Flinders to the foothills near Gladstone in South Australia's upper northern wheat-belt.

It is easily cultivated in temperate climates and thrives on clay or loamy soils.

A large, dense and upright shrub up to 3 m or more in height. The phyllodes are fairly thick, glabrous, 3–8 cm long by 4.8 mm broad, oblanceolate in shape. The bright yellow globular flower-heads appear in racemes in late spring.

1982

Vol 12 No. 96 P 151

Proteaceae Endemic to Tasmania

Jeanette Closs, Hobart, Tasmania

In 1974 Jeanette was Convenor of the SGAP Tasmania flower show then in 1976 she was elected President. Jeanette returned to the role of President in both 1982 and 1991. In 1978 Jeanette was a delegate to the national conference and continued in this role for many years, becoming ASGAP President in 1990–1991. In 1983 Jeanette was awarded Life Membership of SGAP Tasmania. Jeanette died in March 2016.



Soon after coming to live in Tasmania, from the mainland I became interested in the native flora, and the family which attracted me most in those days was the Proteaceae.

Tasmania has some interesting and not generally well known members of this family. Some are quite rare and found only in remote areas, whereas others are quite widespread. I determined to seek out and try to grow all the Tasmanian Proteaceae, especially the endemics.

Probably the most well-known member of the family is the Tasmanian waratah, *Telopea truncata*. This is a shrub or small tree from 1–8 m, high with stout spreading branches. The red flowers are beautiful but less spectacular than *Telopea speciosissima* and appear to be cut off as the name implies. Not so well known is the yellow form of *Telopea truncata*, which was collected in the bush by Mr. Huxley and which has been growing and flowering ever since in the garden of his daughter, Essie Huxley at Longley. It is a delight to all visitors to this unique garden.

A mythical white Waratah has been recorded as being seen in the Maydena (central south-west of Tasmania) forests, but this was allegedly burnt in bushfires some years ago. However a member of SGAP who works in forestry, believed that he had found this plant and volunteered to lead an excursion to the area. His accurate sense of direction led us to the 'white' waratah, but we found that it was very similar in colour to the one in Miss Huxley's garden – a beautiful pure yellow. Plants growing nearby were intermediate in colour, being a pale rather washed-out red, then further away were the typical red flowered forms.

Agastachys

A most beautiful and unusual plant found in areas of high rainfall mostly on the margins of buttongrass plains, is commonly called 'white



Waratah' but the flower is quite different to *Telopea*. *Agastachys odorata* has an inflorescence which resembles white or creamy-white feathers grouped together. As the name implies, this is a perfumed flower and keeps well indoors, when picked.

However, it is a very slow-growing plant in my experience. Seedlings after three years are 5–7 cm high and cuttings not much larger, although strong roots develop quickly. I don't know of any mature plants growing in cultivation.

Bellendena

Bellendena montana or Mountain Rocket as it is commonly known is the smallest member of the Proteaceae family growing in Tasmania, although there have recently been reports of a prostrate *Persoonia gunnii* being found in south west Tasmania. It is only 10–60 cm high. However, it makes up for its size, in producing not only a very attractive white-palish pink conical inflorescence but also a spectacular head of red seed capsules. This also appears to be slow growing in the home garden. It has rarely been grown from seed, but strikes readily from cuttings.

Persoonia

Tasmania has two persoonias, but *Persoonia gunnii* is the only one which is endemic to the state. This can be found in sub-alpine shrubberies and also down to sea level in the high rainfall areas of the south and south-west, where it attains the height of 4 m. It has small fragrant creamy-yellow flowers and oval shaped fruit, which are purplish-black.

Cenarrhenes

Closely allied to this is *Cenarrhenes nitida* or the Native Plum, which grows in rain forests of the central plateau, south-west and west coastal areas. The fruit of this species is larger than *Persoonia gunnii*, but is also purplish-black. Clusters of cream or white flowers are formed in the axils of the leaves near the ends of the branches.

Orites

Tasmania can boast four *Orites* species, all of which are endemic. *Orites diversifolia*, *Orites revoluta*. *Orites acicularis* and *Orites milliganii*. The first three species are common on mountain plateaux. *Orites diversifolia* is also common at lower altitudes in rain forests. It is an erect shrub growing to 2 m high and bears axillary spikes of creamy-white flowers. *Orites acicularis* is known as Yellow Bush – the palish yellow-green colour of its terete leaves giving an outstanding yellow

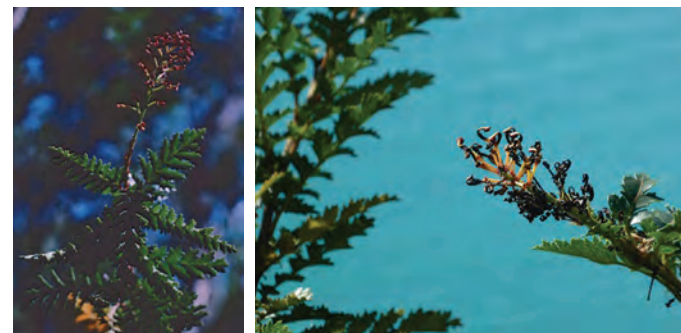
appearance against the dark green of the surrounding bush. *Orites revoluta* has smaller revolute leaves and terminal spikes of creamy-white flowers. *Orites milliganii* is rare and found only above 4,000' (1,200 m) on mountains near the west coast. The thick tough leaves have coarse toothed margins and the flowers are white in terminal spikes. I haven't as yet seen this plant in its natural state, but I was given a plant and it seems to be doing well but is slow growing, like other species of this genus.

Hakea

Of the 9 Hakeas growing in Tasmania, only one is endemic. This is *Hakea epiglottis* which grows to 4 m high. The pale yellow flowers make a spectacular show and the fruits are small S shaped with a short beak. This plant is widespread ranging from sea level to about 1,000 m.

Lomatia

All three *Lomatia* are endemic and *Lomatia tasmanica* is found only in a very small area in the remote Bathurst Range in south-west Tasmania. It is a small spindly tree growing to about 5 m, branching at the top. The beautiful glossy dark-green leaves are pinnate and each pinna is irregularly toothed. The inflorescence is a dull red resembling a small *telopea* flower. It is thought that this plant has lost the ability to reproduce itself sexually, but it appears to layer itself by fallen branches.



Lomatia tasmanica
Far left: in the wild
at Cox Bight
Dick Burns;
Left: Growing in
pot, Tasmanian
Botanic Gardens
Merle Thompson

Lomatia tinctoria, known as the Guitar Plant for its guitar-like fruit, is wide-spread from sea-level to 1,000 m. The leaves are variable, some being almost entire and others bipinnate and fern-like. The loose terminal racemes are creamy-white and perfumed. This makes a small delightful garden shrub.

Lomatia polymorpha, as its name implies, also has variable foliage, mostly entire but sometimes irregularly toothed or lobed. The creamy-white flowers are formed in dense terminal racemes. This plant is widespread on mountains to 1,000 m but found at sea-level on the west coast.





1988

Vol 14 No. 114 P 266

BANKSIA

No 7 in a series, East coastal by

Brian Walters

Brian Walters is a retired civil engineer who has been a member of the Australian Plants Society NSW since the mid 1970s. During that time he has served as seed bank manager, program organiser and editor of the "Native Plants for NSW" journal. He established the ANPSA website for the Society in 1995 and has managed the site ever since.



Those who are obsessed with Australian plants may often have difficulty choosing their favourite genus. It changes throughout the year, doesn't it, as different groups come in and go out of flower.

I don't have that trouble.

I like Banksia!

Tall ones, short ones, broad ones, thin ones. It doesn't matter I like them all!

There's always something interesting about a Banksia. When they aren't flowering there's the magnificent gnarled old fruiting cones to appreciate, or the intricately shaped leaves. Honestly, I can't imagine a garden, any garden, without a Banksia or two or three or more.

Of course, there are problems in growing some of them. The western species, with some exceptions, are beautiful but heartbreaking in humid coastal areas.

So . . . at the risk of being accused of indulging myself, here are a few of my favourites, none of which cause major cultivation problems.;

Banksia conferta var. *penicillata*

This is one of the recently named species and is, I believe, destined for widespread cultivation once we select the best colour forms. It is mainly restricted to the Newnes Plateau west of Sydney, although a single old specimen has been found at Leura. The yellow flower spikes occur in autumn and winter on a large, dense, non-lignotuberous shrub which reaches about 3 m high and wide. But the most attractive features of this species are the beautiful colours developed by the flowers at the bud stage. I have seen colours ranging from deep chocolate brown through to mauve. Truly, a magnificent Banksia.



Banksia conferta
var. *penicillata*
(now known as
B. penicillata)

Banksia spinulosa

This species needs little introduction. Generally, a small to medium shrub, the variety *cunninghamii* is a much larger plant. It, too, occurs on the Newnes Plateau but it ranges north to the Queensland border and south to near Melbourne.

Many forms of *Banksia spinulosa* produce orange flowers with black, hooked styles (hence the name "Hairpin banksia"). In my experience, the variety *cunninghamii* (at least in the Blue Mountains forms) produces the most intensely black styles of all. It is a beautiful small tree which unfortunately is a little hard to obtain as most nurseries don't distinguish this variety from the others, so you can't be sure that you are getting the tree form.

The smaller forms of *B. spinulosa* are just as attractive. These have a lignotuber, which means they can be cut back severely to ground level with no problems if they become a little too large. There are three varieties of the smaller form of *B. spinulosa*, differing mainly in the shape of the leaves. The newest (named late in 1987); is the variety *neoangelica* from the New England area of New South Wales. It has reasonably broad leaves with few, or no, serrations.

There is unlimited scope for selecting a range of forms and colours of *Banksia spinulosa* particularly some of the semi-prostrate forms from coastal areas. There are excellent low-growing forms of var. *collina* from the New South Wales Central Coast and of the type variety *spinulosa* on the South Coast near Ulladulla.

If this plant is to achieve its full potential it needs SGAP propagators to select good forms, name them and distribute themno one else will do it!





Banksia ericifolia

"Everyone knows this! Why is he writing about it," I hear you cry!

True, but again, there are forms and forms some of which can reach 5 m high and wide with flowers held inside the bush – great for the birds but I like to see the flowers too! There are two forms that deserve special mention. There is a form that is a compact plant that holds many of its flowers above the foliage. The orange spikes are not as large as with some other forms but they are more visible. The plant is also of modest proportions and won't kick the car out of the driveway. A second form is, perhaps, more interesting than spectacular. It has cream flowers with red styles. Sound interesting? It is probably a form of the variety *macrantha* which occurs along the north coast of New South Wales.

Banksia serrata

OK. Everyone knows the 'Old Man Banksia' but how many of you are growing the prostrate form? It's not widely available but it IS available and appears to be an excellent groundcover, although it doesn't seem to be particularly quick growing. I have yet to see it flower in my garden but I have seen prostrate forms flowering at Greenscape in southern New South Wales and they look magnificent.



Banksia integrifolia

Again, I am talking prostrate plants here. Unlike the prostrate form of *Banksia serrata*, this is a reasonably vigorous plant which apparently arose as a chance seedling at Austraflorea Nursery in Melbourne. I have it trailing down a steep slope and it looks great. I like it (although, again, I have yet to see it flower) but perhaps I am in the minority. They were certainly difficult to move at the last couple of Wildflower Exhibitions in Sydney.



Finally, I'm quite serious about the need to develop the good forms of various Banksia species. If you know of a good form, but you are not a propagator, you can let me know through the Editor and I'll arrange for someone to take up the project.

1989

Vol 15 No. 121 December 1989 P.191

Garden Cultivars of Australian Plants

by W. H. Payne,
The Australian Cultivar Registration Authority

Refer to editorial for information on Bill Payne

In accord with the International Code for Nomenclature of Cultivated Plants, the Australian Cultivar Registration Authority has registered many cultivars submitted. [Ed. The following pages within the journal contained their descriptions.]

A cultivar is a plant developed from the stock of wildflowers, the Australian flora. It may be a true species selected because of desirable horticultural features such as being a particularly floriferous plant, or especially large flowers, or flowers of a more desirable colour, or the bush may be of a pleasing shape, the leaves an attractive colour such as a silvery-grey or variegated. In the case of the first cultivar listed *Acacia amblygona* 'Austraflorea Winter Gold', this cultivar was a selection from seedlings resulting from a batch of seed germinated at the Austraflorea Nursery. Hence the name of the cultivar is the full scientific name followed by a cultivar name appendage requested by the applicant.

It is to the credit of Bill Molyneux, the proprietor, that he is so aware of the need to select good horticultural forms of true species and make them available to the public to grace their gardens. There has been some comment concerning the desire of Bill Molyneux to include the 'Austraflorea' in the cultivar name. You can just call the plant 'Winter Gold' if you wish, Bill will not mind. His objective, and a very creditable one, is to make available only the best plants to the horticultural industry and the best way is to register only the best selections as cultivars with 'Austraflorea' as a stamp of quality and reliability.

It is an unfortunate fact that not all cultivars marketed have been carefully selected and trialled. To do this would take many years for each plant over a wide range of conditions. The attitude of the Australian Cultivar Registration Authority is that plants submitted will be registered if it can be shown that the plant exhibits the special characteristics that set it apart from other plants. The market place will, in time, select the most desirable plants, plants that have given satisfaction over many years. You will note from the many plants listed below, that some are no longer available. This is no doubt due to a lack of demand for some plants, not always because they did not stand the test of time and provide market satisfaction, but because they were never properly marketed. This is unfortunate as many good plants have been lost. Against this there are those that have won market favour and given pleasure to many people.





One such plant is *Grevillea* 'Robyn Gordon', possibly the most widely grown cultivar from the Australian flora. This arose as a seedling as a result of a cross between *Grevillea banksii* and *Grevillea bipinnatifida* growing on the property of Dave Gordon at Myall Park considerably west of Brisbane, Queensland. Dave was astute enough to recognize the potential of this plant and make it available to us all. You can reliably purchase this plant because it has a distinctive registered cultivar name *Grevillea* 'Robyn Gordon'. You will note that it includes only the first half of the scientific name known as the generic name *Grevillea*. This is because it is a cross pollinated plant, a progeny of two species.



Grevillea 'Robyn Gordon'

Creating a Cultivar

The exotic plants we grow in gardens worldwide, the Poppy, the Rose, etc., were developed from wild flowers of other lands by horticulturists, over many years of careful selection. One way is to select an outstanding plant of a natural species and breed it by selection over many generations, to achieve an even better display. Another way is to cross pollinate two plants and strive to get progeny with the desirable features of both its parents. By both methods the resulting plant is a cultivar. It follows from these methods of breeding that cultivars may be propagated only by division of plant tissue, i.e., by cuttings, bud culture, etc., never from seed. Most cultivars will not set seed, but if they do, never market the seedlings, or never buy a cultivar that originated as a seedling. The mature plant will probably not have the characteristics desired. If you are purchasing a plant, buy a registered cultivar by preference. These plants have been developed to give satisfaction and by their very selection and breeding have become "tamed" and will probably be much more reliable in the garden.

Cultivar Plant Names



If a cultivar is a selected form of a species the cultivar appendage appears after the full botanical name of the plant, hence, *Acacia cultriformis* 'Austraflora Cascade'. If it was a hybrid between species it would be simply *Acacia* 'Austraflora

Cascade', hence, *Astartea* 'Winter Pink'. It is not really important if you just use the generic name, the first one, *Acacia*, with the cultivar appendage. You will get used to these names.

Plant Variety Rights or Registered Cultivars

The Plant Variety Rights legislation was introduced to protect the work and rewards of horticulturists who have gone to the effort of selective breeding and the cost of purchasing a "Plant Variety Right". This sounds good and there is much debate over the use and abuse of the scheme. It has been introduced on the basis that the cost of purchasing plant rights will meet the cost of government administration of the scheme. The result is that, unless you are on a real winner that will make a reasonable return, it is just too expensive to purchase a "Plant Variety Right" in the majority of cases. The desired alternative is to register the plant as a garden cultivar. Other growers can "steal" the plant by propagation for an authentic plant but they must market it under the registered cultivar name. Of course there are no sanctions and they can market it under any name they wish claiming they originated the plant but it will not carry the reputation earned by the original cultivar. When you purchase a cultivar, we recommend that you purchase only the cultivars described in this issue. You will assist the orderly marketing of reliable plants.

There are always exceptions and one is newly released cultivars. It takes time to register a plant and have it published in *Australian Plants*. Support new plant releases. If it has been on the market for three years and is not recently described in *Australian Plants*, then we suggest that you do not purchase the plant again. This presents an obligation. As from the publication of this issue of *Australian Plants*, all plants registered as cultivars will be described promptly in the following issue of *Australian Plants*. Happy Gardening.



Grevillea 'Superb'



Callistemon 'Violaceus'

All photos provided by Brian Walters





2000

Vol 20 No. 164 September 2000 P.331

In the early 1990s Society members considered the Sydney Olympics as an opportunity to showcase Australian flora. As then national secretary I wrote to the Australian Olympic Committee only to be told they could not use native flowers as they would have to be wild-picked. Council members were astounded and my reply to the AOC referred to the murmur around the nation as the letter was read to a teleconference. Fortunately we were not alone and others with practical options took up the cause. The September 2000 issue contained the following two articles and photographs and information on each species in the Olympic bouquet. Ed

The Olympics Bouquet

Presented by Jamie Creer — The Australian Flower Company

This report is taken from the press kit prepared for the international media by Helen Moody with additions from the editor.

The stunning Olympic medallists' bouquets at the Sydney 2000 Games consist entirely of native Australian flowers. They will not only enchant the athletes that receive them, they will show the beauty and uniqueness of Australian flora to a world-wide audience of billions.

Over 2000 identical bouquets will be presented to medallists during the Games, representing a massive logistics exercise in terms of both the supply of the flowers and production of the bouquets. The 12 varieties of flowers and foliage used in the bouquets have been carefully chosen to include some of the country's most spectacular flora, some of our best known cut-flower exports, and some very superior flowers that have been scientifically bred to meet the demands of the international market.

Aspects of Australian life are represented. The gumnuts in the skirting of the bouquet represent the corks that outback drovers tie on their hats to keep flies at bay. Classic gum leaves "Skippy Whistle" and "Joey Whistle" are included, for what Australian can't recall trying to blow on a gum leaf when they were a kid?



The bouquet has been carefully designed so that the colours and textures of each flower and foliage is complementary and that the shape and form of each is displayed. They show the vibrant yet earthy colours and textures of the Australian bush and send a message to the world about the nature and beauty of our flora. The design is deliberately irregular and a little rough, for that is the texture of the Australian landscape.

Australia has one of the greatest floral gene pools in the world, but it is only in the last decade that the true potential of our native flowers for the international cut-flower market has received recognition. Ten years ago most of the flowers that were exported were picked from the wild. Today the fresh flower export market is based on superior varieties that are grown on commercial plantations and nothing in these bouquets is bush picked.

The bouquets represent Australia, not just Sydney or NSW. Almost 50 growers from around Australia have supplied the flowers. Around 15 florists and assistants are involved in making the bouquets and most of these have come from far afield to ensure that rural Australia has a role in producing the bouquets.

The huge number of flowers required to produce the bouquets represents a sizeable logistics exercise and required careful and long term planning.

The Australian Flower company, which won a competitive tender to supply the bouquets is one of Australia's largest flower exporters and together with its corporate design division, Myriade de Fleurs, has spent two years designing the bouquet and planning the exercise,

Organizations that have supported this media kit include the Australian Plant Societies (four regional bodies and some district groups), plus grower groups in several states who see these bouquets as a way of exposing to the world the beauty of our flora and the flower export industry.



Ed: I have been unable to source original photographs so have resorted to scans from the journal. Above: rear view of the bouquet.



The Paralympic Bouquet Vol 20 No. 164 September 2000 P. 347

Supplied by the Australian Native Flower Growers and Promoters Inc. (ANFGP)

The Paralympics do not have the resources of the world Olympic games series and are produced on a very small budget based largely on fund raising activities by handicapped people and their dedicated supporters.

Focal blooms in the bouquet will be *Banksia coccinea*, surrounded by kangaroo paws, paper daisies and Geraldton wax, with foliage support by *Eremophila* and *Grevillea baileyana*.

Each of these is represented on a card that will be attached to the bouquet.



Forty members of Australian Native Flower Growers and Promoters will spend 820 hours over 10 days in the preparation of the bouquets. A very dedicated group of commercial cut-flower growers earning millions of dollars in export income for flowers sent all over the world.

Australian Native Flower Growers and Promoters Inc. (ANFGP)

An association of commercial cut flower growers specializing in plants developed from Australian wildflowers. It has become the largest Australian plant growers' body, the members earning millions of dollars in export income. Its formation was supported by the Australian Plants Society (NSW) to:

- (a) promote plantations of wildflowers to counter destructive bush picking. The ANFGP have been very successful, many plantations

having been started or expanded since they first started. Australia's wildflowers have become the majority of cut flowers exported.

- (b) promote the use of Australian flowers and foliage in commercial horticulture.
- (c) campaign to rectify the position where South African wildflowers, particularly Protea, were widely regarded as Australian flora'

Cut flower producers no longer present *Protea* as Australian wildflowers and are careful to word all promotion as Australian natives and proteas. The same clarity does not exist at the florists level, a vast majority of them still including protea in bunches where wildflowers were specifically ordered. The ANFGP has made considerable advances in florist education, which is one of their major activities. They are on a national marketing committee and have made representations on this aspect.

Ed: The Australian Native Flower Growers and Promoters Inc is no longer a functioning organisation.



Bouquets ready for dispatch.
Photo provided by Nola Parry.



In memory of Diana Snape

As members of our societies were gathering in Albany, WA, for our biennial federal conference news was received of the death of Diana Snape. At the previous conference in Hobart in January 2018 Diana was honoured with the Australian Plants Award in recognition of her contribution in furthering our aims of advancing knowledge of Australian plants. Her citation and a photo of Diana receiving the award were published in the Autumn 2018 issue of *Australian Plants*.



Diana was the founder and first leader of the Garden Design Study Group. The current leader, Lawrie Smith, wrote in the Groups newsletter:

On your behalf I expressed to her husband Brian our sincere expression of respect and appreciation for her deep understanding of garden design with native plants that she so freely shared with us all.It is wonderful to know that her legacy will live on in every part of Australia enshrined in the design for our gardens. We decided in Albany to follow in her footsteps, by investigating how best to prepare another source of native garden design principles and ideas, following on from her first book, but perhaps using technology to ensure optimum distribution and usefulness.

His message to Brian included the following: *What a wonderful legacy Diana has left for native plants and garden design! No one else has done as much as she has done and by her efforts influenced so many of us through the Garden Design Study Group and the Society generally.We will really miss her friendship and her insight into the world of Australian native plants and their use in design, a subject that we all love so much. Because of her experience and devotion Diana will never be forgotten.*

To quote from her book cover: *Diana Snape taught science at the University of Sydney and in secondary schools. A keen member of the Australian Plant Society, she and her colleagues formed the Garden Design Study Group which ultimately led to the publication of this book. In recent years, gardening with native plants has been her primary focus and her Melbourne garden has been featured in various books and articles. In 1992 she wrote the pioneering Australian Native Gardens; putting Visions into Practice. Most of the superb photographs in this book are Diana's so that this book represents a flowering of many interests and talents – native plants, natural beauty, design and photography.*

Australian Plants Awards 2019

Every two years two medals are given in association with the ANPSA Biennial Conference, one in the professional and one in the amateur category. "Amateur" is not intended to signify less valued or amateurish. On the contrary, the recipients invariably are people who have unstintingly given their time and made significant contribution in the area of their interest and expertise.

At the 2019 ANPSA Conference in Albany, Western Australia, Australian Plants Awards were conferred upon Professor Kingsley Dixon (Professional award) and Glenn Leiper (Amateur award). The citations accompanying the awards are reproduced below.

Professor Kingsley Dixon

A botanical professor at Curtin University's School of Molecular and Life Sciences, Professor Dixon has been the Foundation Director of Science at Kings Park Botanic Garden for 32 years. His support of students and practical teaching methods have encouraged many to pursue higher-degree research in his laboratory, while his innovative programs have received \$24 million of research funding from 44 industry partners in the past decade. His work has established WA as an international hub in mining environmental science. "It's hugely complex – some sites involve 800 species – but nothing is more exhilarating," he said.



Professor Dixon's discovery of the chemical in smoke that stimulates germination in many Australian plants has had widespread application, valued at \$100 million per annum in terms of potential benefits to agriculture, restoration and horticulture. His team named the smoke molecules karrikinolides, from the word 'karrik' meaning smoke in the local Noongar language.

Professor Dixon also helped devise a method of seed treatment called flame ablation, which exposes seeds to a micro-second bursts of thermally controlled flame to clean the seed surfaces, making it easier to coat the seed with a mix of karrikinolides, soil microbiome and other compounds to improve germination when mass planting. "I got the idea watching the advert for burgers being flame-grilled," he said. "It took a few years to find the right gifted engineering student to make it happen."





His collaborative work in orchid biology and ecology includes research on the hormones employed by orchids that mimic female wasps to attract males in order to pollinate the plant. But he said the bulk of his work had been exploring the complex ecological links between orchids and micorrhizal fungi in the soil. “By reintroducing fungi to the soil [lost due to human disturbance] it has allowed seed to germinate in the wild. We are now seeing plants go through to their second year, which is a world first.”

As well as receiving the Linnean Medal for Botany (2013) and being admitted as a Fellow of the Linnean Society, he was named WA Scientist of the Year at the 2016 Premier’s Science Awards, and in 2017 received the title of John Curtin Distinguished Professor – the highest honour bequeathed by the university for its academic staff. Other awards include: three Golden Gecko awards for Environmental Excellence, the Chancellor’s Medal at UWA, and Award of Honour of the Australian Orchid Foundation.

Glenn Leiper

Glenn Leiper is a retired educator who now devotes his time to recording and preserving the indigenous plants of south-east Queensland.

“I retired to try to achieve some of my botanical goals; my love is getting out into wild areas, especially around Queensland, and trying to see plants in their natural habitat,” he says.

This involves a lot of voluntary work, often with the Queensland Herbarium: “I go out with botanists as a volunteer and photograph plants to get them on file at the herbarium. We’re trying to increase our knowledge of plant distribution in the region, and at the same time often trying to find long-disappeared plants from the field.” His shared successes include rediscovering the rainforest myrtle tree *Gossia gonoclada*, which was thought to have become extinct in the 1880s; finding a new population of native violet (*Viola hederacea*), and spotting a 15 cm-high *Androcalva leiperi* – named in his honour – from a car window while driving past.

“It’s always in partnership with other people,” he says. “I get taken along because I’ve got good eyes!”

He follows up his ‘spotting’ with action, advocating for Murrays Reserve to be bought by Logan City Council in the 1990s after *Gossia gonoclada* was discovered there, and acting as conservation officer for Native Plants Queensland (NPQ). He dedicates much time and effort to collecting seed of local plants for the Logan City Council revegetation



programs, and propagating plants for sale by the Logan River Branch of NPQ, of which he is a member.

Glenn’s own interest in native plants started as a primary-school teacher, when trying to green up the bare land around Eagleby South State School, where he was teaching at in the 1970s and ‘80s. “We started a bush tucker garden and published our own book of bush tucker and it just took off.”

He later ran the Jacobs Well Environmental Education Centre for the Queensland Education Department for nearly 25 years, first as teacher-in-charge and then for about 10 years as the teaching-principal. “There was never a dull moment there, with visiting students from all ages and all areas of south-eastern Queensland, with canoes, boats and a 12 metre catamaran. We had the islands of southern Moreton Bay and all the forests and mangroves of the area at our disposal for exploration and study by the students.”

While learning the names of the new plants he was being introduced to, he started taking photos, then, with three others from the Logan River Branch of NPQ, set about compiling a basic field guide. Many reprints and two editions later of *Mangroves to Mountains*, the team has more than doubled the number of plants described to about 2,500, and are still selling about 15 copies a week. Their book is described by many as the ‘plant bible’ for south-eastern Queensland.



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SOME CULTIVATED BANKSIA—A single specimen from 2001, given to the Sydney 2000 Olympic Games by the winning athletes' bouquet.