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Editorial

Manfred Wagner, Publishing Committee

It appears that henceforth some form of permanent water restrictions will be in place in several capital cities across Australia. While many lament the alleged previous lack of planning, the building of dams does come with environmental penalties - refer to the issues surrounding the damming of the Franklin River in Tasmania. It should be noted that largest proportion of Australia's water is used for agriculture and industry. The question of why we grow cotton and rice is another topic, but does have bearing on the general availability. So how will we cope with less?

Growing drought resistant plants that require less water is clearly the smart thing to do and is vigorously promoted by government and various water boards. Capturing roof run-off using tanks is a great concept and every little bit helps. Bear in mind the true 'usefulness' experienced by any given tank system owner is highly variable. It is determined by the rate of consumption, roof area, tank size, how frequently it rains and average rainfall. It's not much use if it doesn't rain at all and of that captured, little will be used for the garden if rain is frequent.

Reuse is also an option, but the obvious problem of how to extract the impurities/biological hazards is not trivial to solve. The use of 'grey water' on the garden is much touted but often done in ignorance. Kevin Handreck looks at this issue in his article and gives practical tips to avoid the pitfalls.

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Front cover: *Eucalyptus preissiana* (Bell fruited mallee)

Back cover: *Eucalyptus tetraptera* (Square fruited mallee)

Both photographs: Margaret Moir

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Some New Attractive Tasmanians

Dick Burns*, Australian Plants Society Tasmania

INTRODUCTION

Six recently named Tasmanian plants, and one not yet described, are most attractive and could have potential as garden plants. Propagation and cultivation of them have not been widely reported so the observations that follow are mostly based on wild specimens. All are endemic to Tasmania and some have limited distribution. Three are known only from within a national park, so obtaining propagation material of these is problematic.

1. *Xerochrysum collierianum*, quartzite everlasting¹ (Photo page 5)

The Tasmanian highlands do not produce the spectacular mass displays of herbaceous daisies that characterise mainland alpine fields. But people strolling across the island's alpine plateaus will be regularly stopped by small delights. *Astelia* sp. and *Senecio* sp., with their soft white or yellow ray florets, are widespread. Also encountered are *Helichrysum* sp., *Rhodanthe* sp. and *Xerochrysum* sp. with their inflorescences highlighted by stiff papery bracts.

Xerochrysum species (syn. *Bracteantha*) are distinguished as "everlastings with relatively large, conspicuous capitula having several series of relatively rigid, entire bracts, smooth glabrous achenes and barbellate pappus bristles" - (Buchanan in reference 1, p49).

The species being discussed here, although only recently described as *Xerochrysum collierianum*, has been noticed as distinctive for many years. This perennial (sometimes annual) is found at altitudes of 700 m and above, growing in low-nutrient soils formed normally over quartzite or silica-rich conglomerate. Its success in crevices and gravel beds in full sun would indicate great value in rockeries. Flowering occurs in summer.

Before flowering, the growth of *Xerochrysum collierianum* is similar to the yellow-flowered *X. subundulatum*. This latter species prefers richer soils in valleys; it makes spectacular summer displays along the approach roads to Cradle Mountain.

The new daisy would be most noticeable when flowering. Then its flower head resembles *Helichrysum milliganii*, which also prefers low-nutrient soils. Here are some features that may help distinguish these two species.

	<i>X. collierianum</i>	<i>H. milliganii</i>
Height	varies in both plants	
Basal leaves	loose rosette	tight, dense rosette
Stem	few glandular hairs	densely woolly
Stem leaves	lax growth	semi-erect or stem clasping
Outer bracts	occasionally with pink flush	frequently with pink flush

* As Nomenclature Officer for APS Tasmania, Dick keeps members up-to-date with name changes affecting the Tasmanian flora and newly described species within that flora.



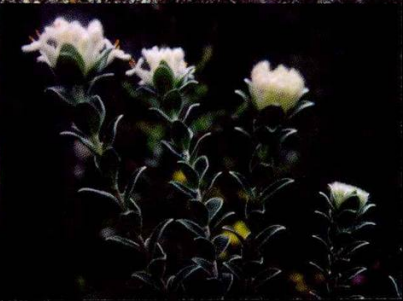
Above & Centre:

Hibbertia basaltica (p. 6)

Bottom Left & Right:

Pimelea sp. nov. (p. 11)

All Photos: Dick Burns





Above & Centre Left:
Aristotelia peduncularis

Below & Bottom:
Xerochrysum collierianum (p. 3)

All Photos: Dick Burns



Neither of these everlastings produces the wide-spreading patches notable of the mainland's *Leucochrysum albicans* subsp. *alpina*.

The specific epithet of *Xerochrysum collierianum* recognises the valuable contribution made to Tasmanian field botany by Phil Collier and his late wife Sue. Between 1984 and 1992 they spent their weekends roaming the state for the Tasmanian Herbarium, making extensive and carefully detailed field collections.

2. *Hibbertia basaltica*, basalt guinea flower² (Photo page 4)

In spring or summer, bushwalkers often have their eyes distracted from the dreary dusty or muddy track by the golden glow of flowers of *Hibbertia* species. Tasmanian texts will list fourteen species, all small shrubs, with growth varying from erect to procumbent or prostrate. For the convenience of identification, the genus in Tasmania has been divided into two groups, dependent on the presentation of the stamens in relation to the carpels. Some species have all their stamens on one side of the group of carpels, while the second group has the stamens distributed around the carpels, either evenly or in small groups.

In 1999, a botanist noticed a small population of *Hibbertia* with a distinctively different arrangement of stamens, growing on a basalt outcrop near Hobart. One stamen was isolated on one side of the carpels with all others clustered on the opposite side. In 2005, this was described as a new species, *Hibbertia basaltica*, the specific name recognising the rock on which it occurs.

Specimens have so far only been found in a narrow strip of land 7 km long. This is in close proximity to the spreading suburbs of Hobart, in native grassland dominated by *Themeda triandra* and *Austrostipa* sp. with the occasional tall shrub of *Bursaria spinosa*. The altitude is low, only 15 to 45 m above sea level. Hobart has a relatively low rainfall, not far above 600 mm annually.

Hibbertia basaltica superficially resembles the widespread *H. procumbens*, but with darker-coloured foliage. (See photo). Leaf size and shape are similar with the only clear field distinction being the leaf tip: *H. procumbens* has leaves with acute tips while those of *H. basaltica* are blunt with a tuft of hairs. *H. procumbens* flowers are sessile with approximately 20 stamens distributed in four groups around the carpels. The flowers of *H. basaltica* are on peduncles about 20 mm long that hold the flowers away from the foliage. There are fewer stamens, between 3 and 7 on one side of the carpels and one isolated on the other. *H. procumbens* occurs on a variety of soils, growing well in nutrient-poor quartzite habitats and ranges in altitude from coastal to subalpine.

Flowering of *Hibbertia basaltica* has been observed between September and November, peaking in mid-October.

Within the population I saw, there was a scattering of low basalt rock outcrops across the hilltop. Plants of the new species were growing in crevices and trailing gracefully over and down the rocks.

3. *Philotheca freyciana*, Freycinet waxflower³ (Photo page 8)

Until recently this plant, found on the granite of Freycinet peninsula, was considered to be a large-leaf form of *Philotheca verrucosa*.

At the time of its formal description, only three plants were known, growing in Freycinet National Park on The Hazards above Coles Bay. Freycinet National Park occupies most of the Freycinet Peninsula on the east coast of Tasmania and one of the driest parts of the State with an annual rainfall of around 700 mm. The plants grow on granite, mostly in The Hazards above the village of Coles Bay.

A propagation project was established by the Royal Tasmanian Botanical Gardens, in cooperation with the Tasmanian Parks and Wildlife Service (PWS), to increase the number of plants. Seeds have been difficult to find, so propagation from cuttings has been used. More wild plants have now been found, but the range of distribution has not been increased greatly. *Philotheca freyciana* grows as an erect shrub less than 40 cm tall in association with the trees *Eucalyptus amygdalina* and *E. tenuiramis* and the medium shrubs *Leptospermum grandiflorum* and *Hakea megadenia*.

	<i>H. freyciana</i>	<i>H. verrucosa</i>	<i>H. virgata</i>
Growth	erect, compact and dense in pots	erect (sometimes spreading)	erect (sometimes with long arching branches),
Height	to 40 cm	to 1 m	to 2 m (occasionally taller)
Stems	prominently warty-glandular	scarcely to prominently warty-glandular	prominently warty-glandular
Leaves	large, broadly obcordate to obovate; thick, conduplicate (folded in along midvein like a grass leaf), tip usually obcordate; margins tinged red.	narrow obcordate to obovate thick, conduplicate, tip usually obcordate	narrow, oval to obovate; thin and flat with mucronate tip; variable length
Glands on leaves			
- surface facing leaf axis (generally upper)	smooth	smooth	glandular
- surface facing away from leaf axis (generally lower)	prominently glandular	prominently glandular	smooth
Flowers	pedicel 3–4 mm long; with 5 petals;	pedicel 1–2 mm long; with 5 petals	no pedicel; usually 4 petals, occasionally 5



Above: *Boronia rozefeldsii* (p. 9)

Left & Below: *Philotheca freyciana* (p. 7)

Bottom Left: *Epacris moscalianus* (p. 10)

All Photos: Dick Burns



Philotheca verrucosa and *P. virgata* are the other species occurring naturally in Tasmania and both also are listed by the Tasmanian Parks and Wildlife Service as occurring in Freycinet National Park. There are no herbarium specimens for *H. verrucosa* from Freycinet Peninsula so its listing may be due to its confusion with *P. freyciana*.

4. *Boronia rozefeldsii*, Schouten Island boronia⁴ (Photo page 8)

Schouten Island, south of Freycinet Peninsula, is part of the Freycinet National Park. A few years ago I was sitting at the summit of Mt Story, the island's highest point, enjoying the view and my lunch. Nearby, I noticed a small cluster of bright pink boronia flowers, terminal on a single stem. The leaves and flowers looked wrong for *Boronia pilosa*, the species I would have expected. And it lacked the pong of *B. anemonifolia*. I found another plant lower down on Bear Hill, but the standard *Boronia* key would not work for either plant. I contacted the Tasmanian Herbarium in a somewhat excited mood.

They already had specimens, collected the previous season by Andrew Rozefelds at that stage a botanist at the herbarium.

15 taxa of *Boronia* are now recognised as occurring in Tasmania within 11 species⁵. All of the newly described species are closely related to *B. pilosa*, *B. citriodora* and *B. gunnii*. A comparative summary of several of these new taxa is in *Eucryphia*, the Tasmanian newsletter, 15(8), Jan 2004, pp 5-7. *Boronia rozefeldsii* is most closely related to *B. pilosa*. *B. pilosa* subsp. *pilosa* is more widespread on Freycinet Peninsula than *B. rozefeldsii* and in some places, there seem to be intermediate forms.

The new species can be distinguished from *B. pilosa* in the field by the following characters:

	<i>Boronia rozefeldsii</i>	<i>Boronia pilosa</i>
Petal length	8–10 mm	3–6.5 mm (occasionally to 8 mm)
Hairs on sepals	glabrous or ciliate	pilose to glabrous
Leaflet width	2–4 mm	0.5–2 mm (occasionally to 4 mm)

One would expect that the smell from squeezed leaves would be different, but I have not made that observation.

Boronia rozefeldsii has only been found on Schouten Island, the southern part of the Freycinet National Park. The western side of the island is granite and to the east the bedrock is either dolerite or a sedimentary sequence. The *Boronia* grows only on the granite-based soils. It is named for the botanist who first collected it.

5. *Acacia derwentiana*, Derwent wattle⁶

This is the only plant in this paper that I have not seen. However it has been available from a specialist Hobart nursery for some time, being sold as *Acacia* Derwent Cascade.

It is closely related to two other species endemic to the east and south of Tasmania, *Acacia riceana* and *A. axillaris*. *Acacia derwentiana* has so far been found along the banks of the Derwent River and a few tributaries

upstream from Hobart, with a few outlier populations near Orford and Buckland. It grows in riparian shrubberies, mostly within 5 m from the river bank, occasionally further out.

Acacia derwentiana is a small to medium shrub, generally growing 1-3 m high. Branches form from the base or a short trunk, semi-spreading to sub-erect becoming slender. The extremities arch to become pendulous with new growth often bronze to reddish in colour. The foliage is dark green, dense in lower parts, open towards the crown. This is due in part to the narrow phyllodes being crowded on lower stems, more widely dispersed on upper stems. The inflorescence is a loose cylindrical spike, 5-10 mm long, pale to lemon yellow. Inflorescences may be single or paired in leaf axils. Flowering has been recorded between October and December.

The following clues will be useful for field distinction:

	<i>A. derwentiana</i>	<i>A. riceana</i>	<i>A. axillaris</i>
Phyllode length: width ratio*	12-20:1	10:1	15-25:1
Phyllode grouping	single in axils	bundled in fascicles of 3-6 phyllodes	single in axils
Inflorescence	cylindrical spike	cylindrical spike	spherical head 3-5 mm long
Peduncle			1-3 mm long

*Occasionally greater in all three

The specific name is derived from its major location.

6. *Epacris moscallianus*⁷ (Photo page 8)

Dr R K Crowden and Y Menadue prepared a series of articles on Tasmanian Epacridaceae which were published in *Australian Plants* volume 21, issues 166-68. (Some taxonomists now regard Epacridaceae as a sub-family, Epacridoidae, within the family Ericaceae.) All described species of the genus *Epacris* were discussed in issue 167, pp 118-125. The authors spoke of the taxonomic difficulties within the genus due to overlapping of characters and "considerable morphological variation". Some within the "Group 3" outlined in the *Australian Plants* article, otherwise referred to as the "*Epacris tasmanica* Complex", have now been examined.

The results of this examination are presented in Crowden (reference 7). Two species within the *Epacris tasmanica* complex that have been problematical because of their overlapping morphologies: these were *E. tasmanica* itself and *E. virgata*. To surmount these difficulties, some new species have been described, and I refer you to the 2007 paper for the full list and reasons. In this article I want to draw your attention to one species, a plant of which has been an attractive feature of my garden for many years.

Epacris moscallianus has been found growing in four separate populations in northern Tasmania, on generally wet soils or among rock outcrops with some seepage. It is distinguished from others within the complex by its clustering of its flowers at the branch tips, and its thick small leaves (mostly

less than 3 mm long) with micro serrulate margins and a short mucronate tip. The leaf midrib is thickened to almost become a keel.

Members who came on the 'To the Cradle and the Wild West' tour as part of the 2004 Launceston Conference would have seen it at the Mt Claude Lookout, where I wrongly called it *Epacris exserta*. Dr Crowden identified this plant as *E. moscallianus* after the paper was submitted for publication. This plant, like the one in my garden, is a much-branched rounded shrub about 30 cm high; in sheltered sites it can reach 1.5 m. My specimen was cutting-struck some 20 years ago. Flowering is prolific and prolonged, predominantly in spring.

The species name recognises the work of Tony Moscal, who during the 1980s collected throughout Tasmania, going to remote places alone, often for prolonged periods.

***Pimelea* sp. nov.** (Photo page 4)

On the same trip to Schouten Island that I saw the *Boronia*, on a shoulder of Mt Story below the granite summit, I encountered two bushes of a *Pimelea*. I recall shrubs with erect growth and dense branching and foliage. The leaves are greyish due to a velveting of fine white hairs.

I have been told that it has been seen elsewhere in the Freycinet National Park. The location within a national park, and the well-known difficulties in propagating *Pimelea* sp. probably make the idea of this plant making its way into our gardens a 'pie in the sky' dream. But it is a spectacular plant.

This *Pimelea* is yet to be described.

ACKNOWLEDGEMENTS

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Callistemon Magic

Byron Williams - Kew, Victoria

Callistemons or bottlebrushes as they are commonly called, are members of the plant family Myrtaceae. They are among the finest examples of unique Australian native plants, grown widely in Australia, admired overseas but largely taken for granted in Australia. Callistemons don't get a lot of publicity in gardening magazines or gardening programs on radio and television. It's really a bit of a catch 22 situation in that callistemons are everywhere yet everyone seems to overlook them when promoting Australian native plants.

One likely reason for this is that callistemons have a relatively short flowering period, are not really suitable as a cut flower and not everyone knows how to grow them to get the best out of them. Overseas, callistemons are very popular, particularly in England and the USA. Australians who travel abroad are often surprised to discover that callistemons are grown widely and thrive in many countries where the winters are not severely cold. It has been said that so many callistemons are grown in California that many Americans think they are native to USA.

Callistemons are magnificent examples of Australian native flora. Who could forget the spectacle of a large *Callistemon* 'Harkness' in full flower in Adelaide, its masses of crimson brushes taking one's breath away, or the sight of a mature *C. citrinus* 'Splendens' in Melbourne, its green leaves completely obscured by a sea of bright red brushes or the wild splendour of a *C. glauca* from WA, its mysterious dark red brushes being invaded by honey-eaters. In Brisbane and the Gold Coast along the freeways there are the many outstanding callistemons including the beautiful *Callistemon* 'Polandii' with its red brushes dusted in gold.

Luckily for the callistemon, Australian landscape gardeners were quick to see the potential for and extensively used these lovely Australian native shrubs and trees to landscape large shopping complexes, schools, parks, freeways and main arterial roads through out Australia.

In the southern states of Australia callistemons flower predominantly during October to November whilst in the north a month or two earlier and also spasmodically during the year. Sometimes they flower again in autumn but usually not as vigorously. There are also callistemons that bloom during the summer months but these are the exception rather than the rule. During the spring flowering period, Australians are reminded of the mystical qualities of these uniquely Australian plants - when lots of predominantly red bottlebrush blooms suddenly appear from nowhere in cities, towns, along freeways and main arterial roads, and here and there in private gardens, commanding attention. Then as suddenly as they appeared, after 6 weeks or so they disappear, to be forgotten for another 12 months - out of sight out of mind! Yet for visitors from overseas who happen to be in Australia when the callistemons are in full bloom, it is a never forgotten memory of Australia.

Growing Callistemons in the Garden

Most species of callistemon come from the eastern side of Australia, so unlike some of the more difficult Australian plants from Western Australia, callistemons

are relatively easy to grow and they are not bothered by a large number of pests. They will grow in most types of soil, although limestone based soils can restrict the growers' choice of callistemon. Whilst they are not at their best in very dry conditions, surprisingly they have weathered the current severe drought conditions in Australia better than many other Australian native plants. Most Callistemons don't like it when they are exposed to strong salt laden winds. In windy and coastal areas, callistemons are at there best as second line shrubs in a sunny spot in the garden. They don't like growing under trees or in full shade and will let you know by refusing to flower or flowering poorly. Young callistemons need to be watered regularly until established, whilst mature callistemons will do much better if sufficient water is available. However older established callistemons, of several years, are remarkably drought-tolerant. Mulching is a must with our current drought problems in much of Australia if particularly your young callistemons are to survive but keep the mulch away from the stem. It is also essential to keep weeds from competing with callistemons.

To get the best out of callistemons they should be pruned immediately after flowering finishes. Just cut back behind the spent brushes to shape the bush and to encourage next year's brushes. If a callistemon is not pruned it will grow lanky and leggy and most varieties will develop lots of woody seedpods. Whilst the woody seedpods fascinate American gardeners, most Australians are not so keen on this feature. Whilst people religiously prune their roses, fruit trees and other exotics, they usually don't prune their callistemons, or if they do, then quite often at the wrong time of the year and sometimes just before flowering time! Whilst callistemons will usually stand very hard pruning they don't like it and may refuse to flower for a year or two there after in protest. If you are thinking of moving a semi-advanced callistemon growing in your garden then don't; such Callistemons seldom survive being moved.

Callistemons like exotics should be fertilised; at least once a year usually in early autumn after the hot weather is over with a product such as blood and bone but in small amounts. It is also important to realise that many callistemons take a few years to mature and produce good quality brushes.

Quite often brushes produced by young callistemons are not always a good guide to what is to come when the bush gets a bit of age on to it. Sadly many a really nice callistemon is dug out of the garden by an impatient gardener before it has time to reward its owner by producing an outstanding display of brushes.

Whilst the flowering period may not be more than 3–6 weeks, if you grow a few different varieties of callistemon in the garden that bloom at different times during the spring and summer it is possible to have bottlebrush blooms for quite a lengthy period. Some of the Queensland varieties also have displays of lovely maroon to pinky purplish leaves in addition to their bottlebrush blooms. The southern varieties new leaf growth after flowering and pruning is also very attractive with their soft velvety leaves in softer tones of pink to yellowish green and grey. The mature leaves of many of the varieties can be a little prickly on the tips and provide a protective haven for native birds. Besides the birds, callistemons provide a home for lots of native insects and little spiders, lady birds and praying mantis. Get out at night with a torch and a magnifying glass and you will find a complete little ecosystem in your callistemons.

Propagation

Callistemons can be propagated from semi hardwood cuttings preferably in autumn although they will strike in most months of the year. Normally callistemons strike quite readily although there are a few that can be difficult. From seed it is best to sow in October/November in the southern states so the seedlings will be a little advanced before the coming of winter temperatures and cold winds. Callistemon seed is fairly fine and does not have to be covered with soil if the bog method of germination is used.

Brush Colours

The large majority of callistemons available come with red brushes although there are many subtle variations of red. Whilst the reds predominate and indeed many people think of callistemons as only having red brushes, they also come in various shades of white, pink, purple/mauve, yellow and even green brushes; plus a few bi-colours. The yellow and white brushes are not as long lasting as the other colours and tend to brown off quickly after being exposed to rain.

In keeping with the magic of the callistemon, the colour of their brushes as seen by the naked eye from a distance can vary from day to day depending on the amount and intensity of the daylight, whether it is morning or afternoon, sunny and bright or overcast and dull. For example two callistemons that have identical coloured stamens close up, when seen from a distance will magically exhibit differing subtle variations of that colour. This is because whilst the stamen colour of these two callistemons may well be the same there may be differences in stamen density, growth inclination of stamens and differences in anther colour on the tips of those stamens. Thus these combinations all reflect light as viewed by our eyes in various intensities. Thus a callistemon brush which has bright red stamens heavily dusted with yellow anthers, viewed from a distance can appear as orange in some instances; whilst another callistemon's brush with identical red coloured stamens but with black anthers as with *Callistemon citrinus* will appear richly red.

Callistemon Bush Size and Growth

Nurseries market callistemons in a range of sizes from so called 'dwarf growing varieties' through medium to large shrubs and trees. Most of the small growing varieties as marketed by the trade do tend to grow a little bigger if grown in ideal conditions. The Callistemon cultivar 'Little John' is marketed in Australia and USA as growing to 1 metre tall, yet there are numerous examples in Melbourne and also in New Zealand of older mature specimens exceeding 2 m when growing in a warm sunny spot.

The ultimate size a callistemon grows to over a period of years, irrespective of whether it is marketed as a small growing variety or a large growing one, depends very much on local conditions. Sometimes the same cultivar grown in the same garden but in different aspect and conditions will grow quite differently and flower differently. Southern Australian originating cool climate callistemons often do not always grow well when grown in northern parts of Australia, yet some of the callistemons from the warmer northern parts of Australia will grow strongly as far south as Melbourne. For example, *Callistemon* 'Hinchinbrook Island', from coastal North Queensland, thrives in inner Melbourne.

Differing soil type and quality, the amount of water available, position in the garden i.e. full sun or shade, temperature, humidity and whether the rain comes in summer or winter and relative humidity can influence the growth of callistemons. This also means that the same callistemon grown in different parts of Australia may vary in size and health. The size of the larger growing callistemons can of course be controlled by regular pruning - to keep them to a reasonable size. And of course regular pruning makes your callistemon bush a much more desirable garden subject.

Growing Callistemons in Pots

The smaller growing callistemons can be grown quite successfully in pots.

Even the larger growing specimens will grow in large pots but need a little more attention. Of course in pots they will not always bloom as freely as in the ground but if given a little 'Tender Loving Care', i.e. fertilised and pruned regularly, good results can be obtained. The major danger for pot growing callistemons is if you allow the soil in the pot to dry out. Care should be taken to make sure the soil isn't allowed to shrink away from the side of the pots so that when the plant is watered it runs down the insides of the pot and out the bottom leaving the soil dry. It's easy to think you have watered your plant when in fact you haven't! The next thing you know your callistemon in a pot has turned its toes up. The best bet is to stand your pots in large saucers in summer so that there is always a little water available for your callistemon to uptake in very hot weather. Once a callistemon in a pot collapses from lack of water, and they can quite suddenly, then they are very hard to save. The advantage in growing callistemons in pots is you can move them around out of very hot or cold weather and strong hot or cold wind. This is not only an advantage in Australia but particularly overseas in countries that experience snow.

Callistemon Confusion

Because of the tendency for callistemons to hybridise, there are now lots of hybrids and cultivars circulating. Many people have over the years tried to sort out the breeding lines of the various cultivars and hybrids. Some callistemons in reality are identical callistemons being marketed under different names, others are callistemons that are very similar but with a slightly differing breeding pedigree, i.e. the seed parent might be the same but the pollen parent is different or vice versa; whilst others are just seed grown callistemons of unknown origins. There are a number of outstanding callistemons available in the trade of which the breeding lineage is not really known such as *C. 'Harkness'*, *C. 'Kings Park Special'* and various versions of *C. 'Violaceus'* and *C. 'Burgundy'* and other purple and mauve cultivars.

Whilst confusion and ignorance of the true pedigree lineage of many callistemons is still a problem in 2007, the situation is improving. The Australian Cultivar Registration Authority initially assisted to bring some semblance of order to the confusion and since 1994 the Plant Breeder's Rights Act has required more demanding documentation and responsibility by those breeders requiring PBR protection for their plants.

Callistemons in the Wild

There are still callistemons to be found growing and hiding in the wild in many parts of Australia where the conditions are suitable. From Tasmania up through

the eastern states to far north Queensland, in South Australia, Western Australia and even central Australia, you will come across callistemons growing in their natural environment. In Victoria and elsewhere in Australia, callistemons are often to be found in rocky river gorges in the foothills of mountain ranges, in the high country and in low lying boggy areas and sometimes hiding close to or beside main highways but never far from water and sometimes quite close to our big cities. There are still wild examples of *Callistemon sieberi* growing along the Yarra River in Kew some 6 km from the Melbourne CBD. In East Gippsland in Victoria there are several examples of wild callistemon species and natural hybrids growing in the national parks and reserves in small numbers.

New species of callistemon are still being discovered. In the far-west of Victoria, near Horsham in the Wimmera, a new species of callistemon was recently discovered. Another unknown callistemon similar to the rare *Callistemon acuminatus* (tapering leafed bottlebrush of north coast of NSW) was recently discovered in the Oxley Wild Rivers National Park east of Walcha in NSW. The June 2006 issue of Australian Plants published a photograph of an endemically common unnamed callistemon from the Woodsreef area north of Tamworth in NSW.

You won't always find wild callistemons growing in large stands of the species but they do pop up in small numbers here and there in typical 'callistemon country' and in the most unexpected places.

Callistemons Cultivars and Hybrids

Whilst there are 30 species or more callistemons in the wild, there are hundreds of different varieties and cultivars in existence. This is because callistemons hybridise very readily when grown with other varieties of callistemon in the garden. If you see an outstanding callistemon in full bloom and you want to replicate it then you must propagate from cutting material. Many callistemons used for public plantings are seed grown which means quite often every seedling from a batch of seed may differ to some degree, in terms of brush colour, form and size as well as bush habit and size and leaf shape, size and colour because of hybridisation. That is why there are so many forms and variations in callistemons used in landscaping plantings. Unless you can obtain pure species seed from wild populations not contaminated with the pollen from other varieties of callistemon, seedlings will seldom be identical to the parent from which the seed was collected.

Many hybrid callistemons have over the years come into existence in gardens or public places as a result of natural hybridisation where the parent callistemon has been growing close to other types of callistemons. In the wild, hybrids occasionally occur where different species grow close together, but not always as freely as in the garden, because in some instances the different species bloom at differing times of the year thus reducing the opportunity for hybrid plants to be produced naturally. Other callistemon hybrids have more recently been the product of hand or manipulated fertilisation for the retail trade. The callistemon species most commonly involved in the hybridisation process over the years have been mainly *C. citrinus* (NSW/Vic), *C. subulatus* (NSW/Vic), *C. viminalis* (Qld), *C. salignus* (NSW) and from Qld *C. polandii*, *C. formosus* and *C. recurvus*. Some lovely hybrids have arisen from various combinations of these callistemons.



Above: *Callistemon* 'Violaceus'

Top Left: *C.* 'Western Glory'

Left: *C.* 'Evelyn Rice'

Below: *C.* 'Hamiltons Hybrid'

Bottom Left: *C.* 'Blush Pink'

Bottom Right: *C.* 'Kotara Rose' NSW

All photos:
B Williams



Growing Callistemons from Seed

If you have the time and patience to wait for two or three years for a seed grown callistemon to flower, then growing callistemons from seed can be a rewarding and very interesting. Whether you hand pollinate your callistemons or let the bees, birds and other native insects and animals do the job for you, raising callistemons from seed is a fascinating activity. Seed from a pink hybrid callistemon will often yield white, red or purple/mauve seedlings. Many a dark red hybrid with a touch of mauve or purple will also give you red, pink or purples whilst many red hybrids only yield red seedlings. And there is always the chance of a bicolour. If you do grow callistemons from seed then it is most important to keep a record of the actual or probable parentage so as not to add to the callistemon confusion.

Callistemons Overseas

Clare Fogget in an article appearing on the Royal Horticultural Society U.K web site in January 2005 said: 'For exuberant, colourful flowers callistemon are the epitome of Australian flora'. The article indicated that UK gardeners are finding that callistemons can be grown successfully in many areas, even in Scotland, provided they are grown in a sheltered sunny southerly position and given some protection in winter. It was interesting that the article indicated more callistemons in UK are lost from lack of water rather than the cold weather. In the UK, *Callistemon subulatus* and *Callistemon pallidus* have proven very hardy but they are also growing some of our hybrids with varying degrees of success.

In California callistemons, as in Australia, are used widely for landscaping purposes. They are however grown in other parts of the USA such as Texas, Louisiana, Florida, Nevada, South Carolina and the Pacific North coast to name a few. The most recent American callistemon to surface on the Internet is *Callistemon sieberi* 'Texas Pink'. In the cooler parts of USA *Callistemon subulatus* has demonstrated an ability to withstand quite severe cold weather.

In both the UK and USA a selection of hybrids and cultivated varieties of callistemon are emerging and unfortunately like in Australia there is confusion regarding breeding lineage. This has probably come about because much of their stock has come from seed obtained from Australia and elsewhere, some of which was probably hybrid.

Callistemons are grown in countries and places as far afield as New Zealand to Hong Kong, India, Italy, South America and other far off places.

Conclusion

Whilst there is an enormous range of many exciting and interesting Australian native plants, callistemons are right up there with the gum tree, the wattle and banksia as iconic examples of native Australian plants. Apart from being relatively easy to grow, what makes callistemons so interesting and magical is their propensity to hybridise so easily when grown with other varieties of callistemon, to produce an enormous range of quite different callistemon hybrids and cultivars. There is a callistemon available in a range of sizes, with brushes in various colours and all kinds of leaf shape and colour to suit hot temperate and cool climate areas in Australia.

The Magic of growing Callistemons

Use of Grey Water in the Garden

Kevin Handreck *

This article is a summary of a presentation that Kevin gave to the SA Begonia Society in February 2007.

1. Bathroom effluent will not cause any problems. The minor amounts of soap and shampoo will not adversely affect plants or soils.
2. Laundry effluent is a totally different matter, because of the damage that some of the components of laundry detergents can do to both plants and soils. The damaging components of laundry detergents are sodium, phosphorus, high alkalinity and for a few, boron.
3. If you want to minimise or eliminate damage to your plants and soils you must use liquid detergents. Many powders, while they may be good detergents, contain so much sodium that they will eventually wreck the structure of your soil.
4. Lanfax Laboratories of Armidale, NSW has analysed the sodium and phosphorus concentrations in grey waters produced when a wide range of laundry detergents are used.
5. With powders, the range of sodium concentrations in grey waters ranged from about 40 to about 710 mg/L. These concentrations are to be compared with the concentration in Adelaide tap water of about 100 mg/L and Melbourne tap water or about 4 mg/L. So you can see that already, with Adelaide tap water we are already applying a lot of sodium to our soils.
6. By contrast, liquid laundry detergents give sodium concentrations in grey waters in the range 1 to about 130 mg/L.
7. The main concern with repeated application of sodium to soils is that the sodium will displace calcium and magnesium from the soil. This will cause the soil to become what is called SODIC. A sodic soil is one in which there is a high proportion of sodium on the clay particles compared with the concentrations of calcium and magnesium. A sodic soil tends to set into hard clods on drying. Hard crusts form on its surface when it dries. More importantly, the rate of infiltration of rainwater into it is much reduced compared with when it was not sodic. You will not notice these problems while you are applying the grey water to your garden. In fact, you may well see excellent plant growth because of the extra phosphorus you will be applying in the grey water. The high concentration of salts in the grey water will prevent the sodium-rich clay from dispersing and blocking pores and producing crusts.
8. The problems start to show up on clay soils such as the red-brown earths of the Adelaide Plains with the first rains. Then, the low-salinity of the rainwater allows the sodium-rich clay to disperse. If you have added a lot of high-

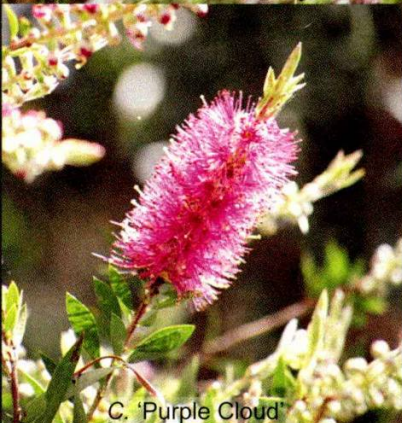
* Kevin Handreck is a retired CSIRO soil scientist. He is the author of many papers and books on soils and potting mixes, the one best known to most gardeners being *Gardening Down Under*. He has maintained a keen interest in native plants. Kevin and his wife Eleanor have established a bush planting in the drier region on the eastern side of the Adelaide hills. He continues to provide a valuable service to plant-people, especially to those in garden clubs in South Australia and is a member of the Australian Plants Society SA Region. We thank Kevin for allowing us to use his article.



Callistemon 'Jenny Wren'



C. 'Formosus Carmina'



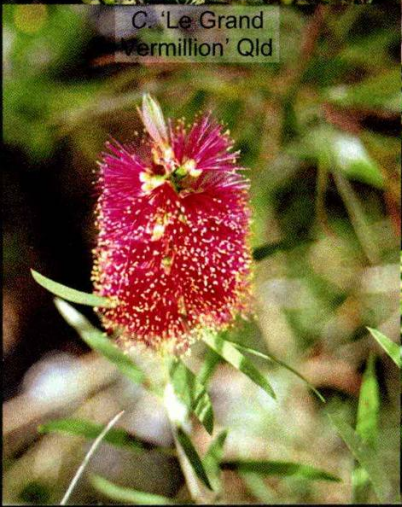
C. 'Purple Cloud'



C. 'Blush Pink'



C. 'Palidus'



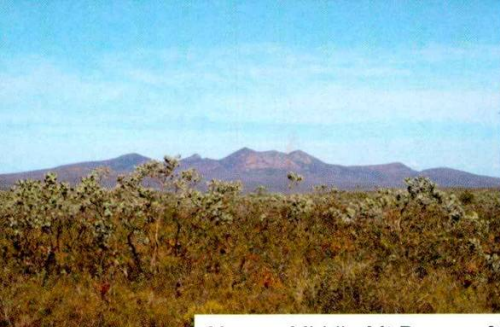
C. 'Le Grand Vermillion' Qld



C. 'Father Christmas'



C. 'Old Criminal'



Above: Middle Mt Barren **Above Right:** East Mt Barren

Below: *Calytrix leschenaultii* (p. 31)

Bottom Left: *Acacia glaucoptera* (p. 26)

Bottom Left: *Banksia lehmanniana* (p. 31)

All photos this page: M Moir



sodium grey water to the soil during the summer, you could even notice that the water just ponds on the surface of the soil. If you see this, you have wrecked the structure of your soil. The only way to fix this is to apply gypsum at a high rate (probably 1-2 kg/m²). (The science is definite on this, but I also know from personal experience. When Eleanor and I first started to apply grey water to our garden in the early 1970s, we experienced the adverse effects of using powder detergents. We had to apply much gypsum to the affected area of soil. It was then that we switched to liquid laundry detergents.)

9. So, while you may comment that your lawn, etc is showing excellent growth following four months of use of grey water containing powder detergent residues, in the longer term, you will see that your soil is of poorer quality. To save the expense of having to apply large amounts of gypsum, I strongly recommend that if you want to use grey water in your garden you use only liquid laundry detergents.
10. The Lanfax site also lists phosphorus concentrations in grey waters from the various detergents. Some powders contain so much phosphorus that repeated addition to your soil may eventually produce deficiencies of trace elements such as iron and zinc. These grey waters will be lethal to any plants that are sensitive to phosphorus. Omomatic and Dynamomatic have by far the highest phosphorus concentrations. Grey waters from them were shown to contain a staggering 80 mg/L phosphorus. The highest amongst the liquids is less than 6 mg/L. Many products do not contain phosphorus.
11. Not listed on the Lanfax site is the alkalinity of the grey waters. Powder detergents are loaded with sodium bicarbonate. This raises the pH of the grey water to as high as 10. Repeated application of this water to any acid-loving plant will give it a severe dose of iron deficiency.
12. By the way, take no notice of the claim on detergent packages that the product is biodegradable. This claim applies only to the organic detergent material in it. In powders, this may be only a few percent of the total. The rest of the stuff is definitely not biodegradable. It will remain in your soil.

Here are a few extracts from the Lanfax Labs website, as at February 2007 (www.lanfaxlabs.com.au/sodium.htm) - see the website for the full listing:

Powders of highest sodium content:

Price Saver, Savings, Bi-Lo, Home Brand, Bushland, Omo, Dynamo.

Powders of the lowest sodium content:

Planet Ark, Aware, BioZet Advanced, Amway. (Most of these are still higher than are the liquid detergents.)

Liquids of highest sodium content:

Cold Power, Omo, Dynamomatic

Liquids of lowest sodium content:

Earth Choice, Home Brand Liquid

Conclusion

For the least damage to the soil of your garden by grey water, use only liquid laundry detergents, and then only those with the lowest sodium concentrations and no phosphorus. There are still plenty to choose from. But if you must use a powder, the choice is between Planet Ark and Aware (Australian), BioZet (China) or Amway (USA). Planet Ark supports many environmental projects in Australia.

Fitzgerald River National Park

and World Biosphere Reserve _____

Margaret Moir

In the first week of September 2005 I was lucky enough to fulfil a long-cherished ambition of mine, that of visiting this remarkable part of the world.

Although a born and bred Western Australian resident in Margaret River on the west coast, the opportunity hadn't come my way before.

The region is some 6 hours drive from Perth or Margaret River, but certainly when you travel from the direction we did it offers the pleasures of some sensational countryside along the way, through southern Jarrah and Karri forest. My anticipation grew after we began to head east from Mt Barker and spotted my first *Banksia coccinea* in a roadside ditch. Then turning south on the Bremer Bay road became even more exciting, with glimpses of *Banksia baxteri* (not flowering) and other well known endemics.

Bremer Bay itself is a tiny town, (roughly 300 pop) suffering pressure from development and sea-change absentee landowners. Much of the surrounding coastal heath is being carved into rural residential smallholdings visited rarely by their owners. Phytophthora dieback will be a big issue in the future, as the heath is strongly proteaceous.

Comfortable accommodation is available in Bremer, a good caravan park and an excellent motel with a very handsome tavern. I recommend bringing your own food, the tiny general store is limited especially for fresh produce as it appears locals travel the 1.5 hrs to Albany to do their shopping.

There had been heavy rains and flooding in the area through the winter, virtually the entire annual average had fallen in two days in June, so the western part of the park, which has much low lying and swampy country, offered only limited access. CALM very sensibly closes access roads to prevent dieback spread when there is free lying water. The only road open was the access to Pt Ann, at Point Charles Bay on the east side of West Mt Barren, well known for being a resting point for whales and their calves on their migratory journeys.

Not only were we fortunate enough to see a whale and calf only metres from shore the entire 6 hours we were there -very distracting as I tried to concentrate on the plants! The whale song was wonderful, but the road and the point offered treasures beyond belief. My first sighting of a Qualup Bell (*Pimelea physodes*) had me greeting it as an old friend - how exciting it is to see these plants in their natural habitat. It is probably the same thrill of recognition that an art buff might greet the Mona Lisa.

The wetland areas along the Devils Creek Road (and it was very wet indeed, with many washaways) offered vistas of *Banksia coccinea* in full flower, my first sight of the wonderful *Hakea victoria*, masses of *Lambertia inermis*, various *Hakeas* including *pandanicaarpa* ssp *pandanicaarpa* a most handsome *Hakea* which is restricted to this part of the coast, *Banksia baxteri*, numerous *Melaleucas* and *Kunzeas*, all nestling in a wonderful matrix of the grey foliage of *Eucalyptus pleurocarpa* (Blue mallee or Tallerack).



Anigozanthos humilis (p. 31)



Hakea victoria (p. 23)

Dryandra quercifolia (p. 26)



All photos on both
pages: M Moir



Hakea pandanicaarpa (p. 23)



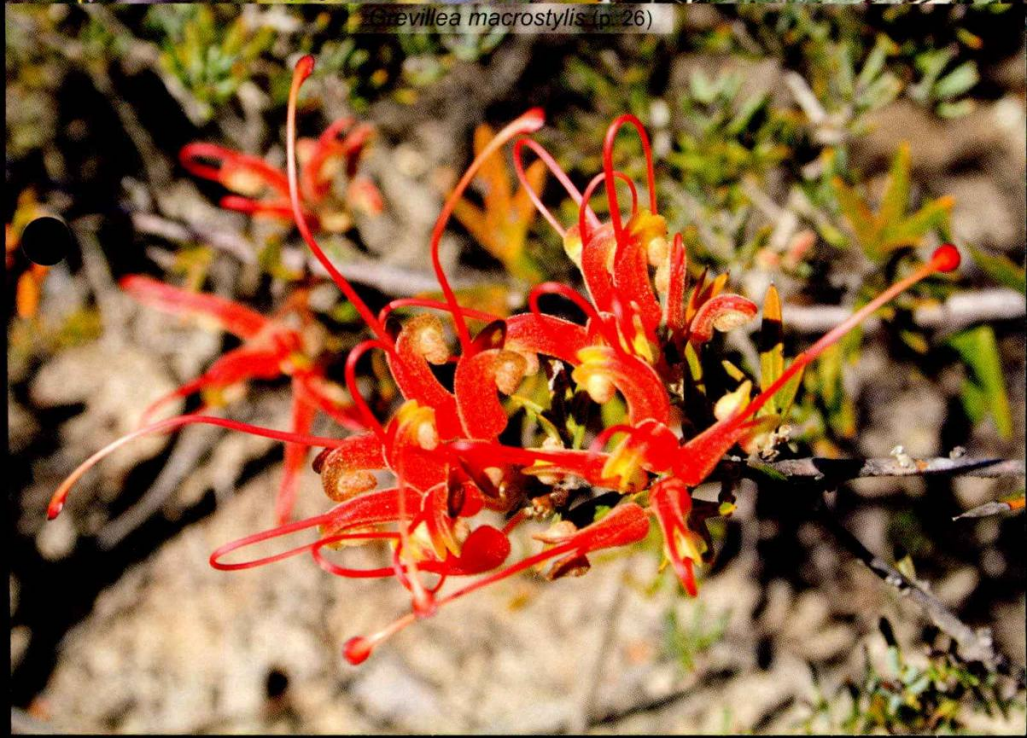
Gompholobium scabrum (p. 26)



Isopogon formosus (p. 26)



Banksia media (p. 26)



Grevillea macrostylis (p. 26)

Point Ann itself, when I could take my eyes off the whale and calf, has an excellent walkway with stairs that leads to a viewing platform, then small trails leading off to various vistas of heath and ocean. The kwongan was breathtaking, a variety of dwarf Eucalypts included *E. preissiana* (Bell fruited mallee) and *E. tetraptera* (Square fruited mallee), both flowering, and small trees in colourful bud, possibly the Hopetoun Mallee, *E. leptocalyx*. All the eucalypts were dwarfed, either by wind and spray and/ or natural inclination, as was the *Banksia media* which was plentiful.

The heath itself looked like the most beautiful natural rock garden with harmony of flower, foliage and form. It was barely knee high. The bonsai-looking small grey tiered shrubs are apparently *Verticordias*, with many *Boronias* and numerous peas interspersed. There were masses of *Grevilleas*, with *G. nudiflora* Pt Ann form conspicuous as well as the curly form, and a lovely *Lasiopetalum*. There were very relaxed birds and kangaroos in plenty, and fascinating invertebrate life, even though the weather was cool, breezy and cloudy.

We then travelled the northern outskirts of the park through to Ravensthorpe and on to Hopetoun, the eastern extremity of the park, which offered beautiful views of Middle Mt Barren with foreground of *Eucalyptus pleurocarpa* and *E. tetraptera*. The eastern side is higher and drier, and offered more access in the wet season. The park is very close to Hopetoun, only a 12 km or so drive to East Mt Barren, so more frequent access was possible. Hopetoun itself is having similar (or worse) growing pains to Bremer, with much of the lovely *Banksia speciosa* countryside being cut up and developed for housing. The dieback was pitiful. But once you climb that rise up to Mt Barren East, another world opens up, or perhaps it's heaven. I didn't see a weed or feral, true balm for the soul, and I immersed myself in thousands of acres of rare, healthy and wonderful vegetation and dramatic geology and landscape.

There is a fine trail leading up the slope of Mt Barren East, which I climbed at a pace slow enough to absorb the plants and natural wonders. The vegetation varied at every step, with many Qualup Bells, *Hakea victoria*, Mountain *Banksia* (*B. oreophila*), *Hakeas* in variety, the very rare endangered Fitzgerald *Adenanthos* (*A. ellipticus*), *Chamelaucium megalopetalum*, masses of *Dryandra quercifolia* in full flower, Barrens *Regelia* (*R. velutina*) and too many other species to mention. The view was spectacular.

Further down Hamersley Drive, the main access though the park, we came to Sepulcralis Hill, one of the few locations in the Barrens where this wonderful, rare Eucalypt grows. *Grevillea coccinea* and *G. macrostylis* was commonly associated with sepulcralis, as were many other dwarf Eucalypts.

There is an excellent access road that winds around the coast westwards towards Middle Mt Barren as far as the Hamersley Inlet, and this offers even more variety of habitat with riparian systems interspersed with dry quartzite sands. Some of the species sighted were Clay Wattle (*Acacia glaucoptera*), *Beaufortia anisandra* (the Barrens Bottlebrush, another endemic), Painted Lady (*Gompholobium scabrum*), *Isopogon formosus*, the endemic Fitzgerald *Jacksonia* (*J. compressa*),

Continued on page 31

Eremophila and Allied Genera

A Monograph of the Myoporaceae* _____ Book review by Colin Jennings

ASGAP Eremophila Study Group Leader

Dr Bob Chinnock has spent an inordinate amount of time, since arriving from New Zealand, researching the family Myoporaceae. I recall meeting him at the 'old' herbarium building in 1970, soon after arriving back from my two years teaching spell in Papua New Guinea. At that time I would not have known what an *Eremophila* was. Some twenty years later that was to change and since then it has been my pleasure and privilege to have worked with him and to have learnt so much about the family.

This volume is one of Bob's 'life-works' and it is a great credit to his rigorous, academic approach to the subject. After many years of 'promises' the work is finally published and soon to be released. I am certain that it will fill a gaping hole in the written information available to lovers of eremophilas and to those who seek to have a book to which they can turn to identify their plants, to know of their habitats and their inter-relationships via the generic key.

The photographic reproduction is of extremely high quality and the line illustrations by Gilbert Dashorst and Ludwik Dutkiewicz are, as always, precise, accurate and presented in the finest of detail.

Whilst it is an academic treatment of the family, it is also a very readable book for those who simply appreciate our native flora, and especially eremophilas. The genus *Eremophila* has become very popular and amenable to our gardens; as a result there has been a need for a complete treatment and this more than adequately satisfies that need.

Rosenberg Publishing have produced an excellent book - photo page 32. The quality of the photographs is superb and the presentation of the text is well-structured. Readers will be able to refer to the index and locate almost any item related to the family Myoporaceae.

The contents include:

- An **Introduction** to the Myoporaceae, followed by the **History of Myoporaceae**.
- **Morphology and Anatomy** are an essential to any complete study of plants and the treatment herein is excellent.
- A most valuable feature in the identification of *Eremophila* species is the **Trichomes**, seven pages are devoted, with line illustrations, to this character.
- **Floral and Fruit Morphology** are equally well presented, with photographic as well as line illustrations being used to emphasise the feature.

* ISBN 9781877058165 672 pages. 290 x 210mm

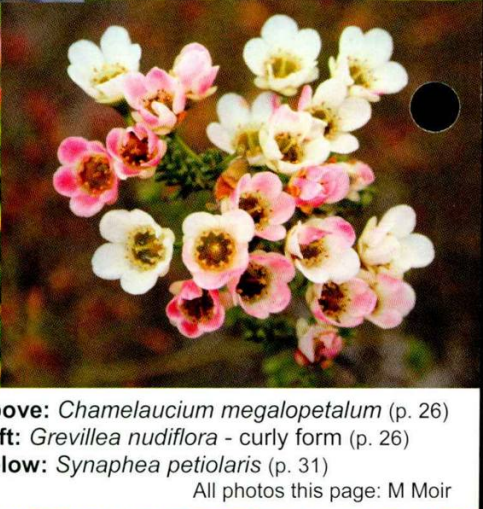
335 colour plates, 300 maps, 325 line illustrations. The book can be obtained direct from Rosenberg Publishing for RRP of \$99.95 plus \$10.00 post and packing. Box 6125 Dural Delivery Centre NSW 2158 Phone 02 9654 1502, Fax 02 9654 1338 Email: sales@rosenbergpub.com.au



Jacksonia compressa (p. 26)



Grevillea coccinea (p. 26)



Above: *Chamelaucium megalopetalum* (p. 26)

Left: *Grevillea nudiflora* - curly form (p. 26)

Below: *Synaphea petiolaris* (p. 31)

All photos this page: M Moir





Above:

Hardenbergia 'Allyn Sugar Plum' (p. 31)

Right: *Melaleuca suberosa* (p. 31) Photo: M Moir

Below:

Hardenbergia comptoniana 'Autumn Blue' (p. 39)



- Whilst not of great appeal to the average grower, **Palynology** (pollen study) is of significant academic value.
- **Cytology and Cyto geography** are briefly, but succinctly presented. Cytology, genetic study, is a very valuable tool in the determination of sections within genera and the presentation is integral to the book.
- **Reproductive Biology** is presented in eleven pages: well illustrated by photographs and line drawings which will prove of value to the hobbyist and the academic alike.
- The Family Myoporaceae has a distribution outside Australia: the section on **Distribution and Ecology** has excellent tables and illustrations to emphasise these important aspects of the study.
- Two pages are devoted to the **Phytochemistry and Toxicity**.
- A brief treatment is given to **Traditional and economic Uses**.
- The treatment of **Horticultural Uses** is brief, but deals with the well-known use of the Family in gardens generally.
- The **Phylogeny and Relationships of the Myoporaceae** deals in a very readable manner with the 'reasons' for the separation of the Family into Genera and the Genera into Sections.
- The remainder, and for most lovers of eremophilas the **Taxonomic Treatment**, is what we have all been waiting for. Keys are not for everyone, but those used in the book are concise, easy to follow and for those wishing to utilise them in the identification of a species, 'user-friendly'.

Many growers will simply turn pages to locate the picture of the flower which most closely relates to their specimen. They will not be disappointed: the photography is superbly presented, accurate in colour and more than adequate to show the flower; and in many cases the habitat.

Each species and subspecies, where applicable, is given a geographic treatment, identifying general locations where they have been found in situ. Colour photographs, some of plants others representing the ecology of the species, are used for each species described. Distribution maps also provide the reader with additional information. Added to this, identification can be further made by reference to the many excellent line illustrations.

A very valuable feature of this book is the number of previously undescribed species represented, now with published names. We in the Eremophila Study Group have had the advantage of the assistance of Bob in our work, and as a result we have had access to so many manuscript names for many years – finally we can validly use them.

For those who experience difficulty with botanical terminology there is a comprehensive glossary.

In summary, this book is a superb publication: the result of long and dedicated research by Dr Bob Chinnock. The publishers, Rosenberg Publishing Pty Ltd, have produced a most valuable work, and are to be congratulated for their foresight in taking on this project and presenting it at a cost that is both reasonable and excellent value for money. The presentation is all that one could desire.

Hardenbergia 'Allyn Sugar Plum'

Rosemary Wall, Riverdene Nurseries

Hardenbergia 'Allyn Sugar Plum' is a dense shrub type of *Hardenbergia* that produces brilliant masses of bright pink flowers in Spring with a minimum of effort. It does not climb under normal landscape conditions, however if it is planted under crowded conditions with reduced sunlight, the plant will climb to reach the sun. It is both frost and drought hardy when established growing to around 1 m x 0.5 m.

'Allyn Sugar Plum' was developed from *Hardenbergia* 'Glendonbrook Special' which is a selected form of *H. violacea* found growing in the Glendonbrook area, usually on shale or gravelly banks. When grown in full sun, 'Glendonbrook Special' does not climb either and in the wild under normal weather conditions produces a profusion of dark purplish mauve flowers without any pruning. Maximum dimensions are about 200 mm high by up to 1 metre wide. Both 'Allyn Sugar Plum' and 'Glendonbrook Special' are easily propagated by cutting and also come 99% true from seed.

Noel Jupp's Riverdene Nurseries are in NSW and can be contacted by email riverdenenursery@bigpond.com

See Photo: 100_0137.JPG

Fitzgerald River National Park

Cont'd from page 26

a very pale flowered version of the well known corky Melaleuca (*M. suberosa*), *Synaphea petiolaris*, *Calytrix leschenaultii*, Catpaws (*Anigozanthos humilis*), a very unusual *Monotaxis* spp., *Banksia lehmanniana* and many prostrate Banksias, as well as Isopogons and Dryandras in variety. The Eucalypts were bewildering in their diversity and defied my elementary ID skills.

The FRNP offers almost one million acres of sheer heaven to the nature lover, put it on your must-do list, and don't forget to tell the politicians why you're visiting WA! It is surrounded by country that was no doubt just as diverse and just as superb, but is now degraded, marginal sandy farming land, much of it being planted with bluegums. Until the 1980s it was being cleared at a rate of a million acres a year. Never take anything for granted.

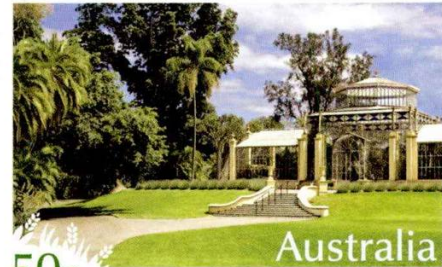
EREMOPHILA

and allied genera

A Monograph of the Myoporaceae



R.J. Chinnock



50c

Australia

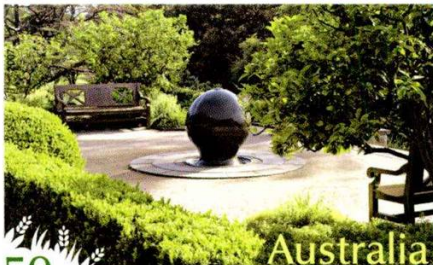
Botanic Gardens of Adelaide



50c

Australia

Brisbane Botanic Gardens, Mt Coot-tha



50c

Australia

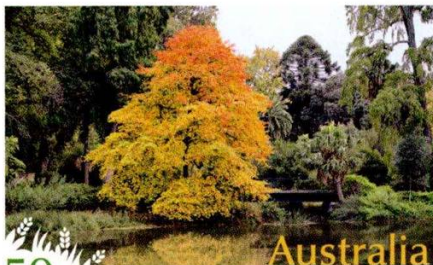
Royal Botanic Gardens and Domain, Sydney



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Australia

Kings Park and Botanic Garden, Perth



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Australia

Royal Botanic Gardens Melbourne

Australia's Botanical Gardens

Celebrated on Postage Stamps _____ Julia Balderstone

Coinciding with an increase in popularity for Australia's botanic gardens, Australia Post has issued a new stamp release featuring botanic gardens from across the country.

The Australian Botanic Gardens special issue features five of the major botanic gardens across the country - those of Adelaide, Brisbane, Melbourne, Perth and Sydney.

The stamp release comes at a time when research shows nearly 40 per cent of Australians over the age of 15 visit a botanic garden at least once a year and that botanic gardens are the second most popular cultural venue after the cinema.

Australia Post's Group Manager of Philatelic, Mr Noel Leahy, said Australia Post was keen to celebrate and promote the beauty and range of some of Australia's most popular botanic gardens.

Internationally, Australia's gardens are recognised for their iconic and individual beauty, and we were keen to celebrate this, he said.

While each design features a prominent aspect of the specific botanic garden, the set as a whole captures the different seasons and diversity of garden types, Mr Leahy said.

The Stamps

The Australian Botanic Gardens stamp issue includes five 50 cent stamps, a first day cover, a stamp pack, a prestige booklet and a set of maxicards.

The five 50 cent stamps feature:

Botanic Gardens of Adelaide, SA

Brisbane Botanic Gardens, Mt Coot-tha, QLD

Royal Botanic Gardens Melbourne, VIC

Royal Botanic Gardens and Domain, Sydney, NSW

Kings Park and Botanic Garden, WA

Botanic Gardens of Adelaide, SA

The Botanic Gardens of Adelaide were opened in 1857 and this year will be celebrating their 150th Anniversary.

Many trees were planted in the 19th century including those in the Moreton Bay Fig Avenue (1866), Araucaria Avenue (1868), and Plane Tree Ring (1883). In 1868 the Victoria House glasshouse was constructed and in 1877 the Palm House glasshouse (featured on the stamp) was opened.

In 1881 the Museum of Economic Botany which is now listed on the inventory of the National Estate was opened.

Today, the Garden specialises in scientific and educational displays of ornamental plants, both exotic and native.

Brisbane Botanic Gardens, Mt Coot-tha, QLD

Opened in 1976, Mt Coot-tha is Queensland's premier subtropical botanic gardens. These 52-hectare gardens, in the foothills of the Taylor Range, are seven kms from the city centre.

Over 20,000 plants and a number of speciality gardens including the Tropical Display Dome, the Japanese Garden and the Australian Plant Communities Garden with its Lake and totems.

This recently developed 27-hectare collection contains the largest collection of Australian native rainforest plants in the world – mostly from Queensland – including species that are rare or endangered in their natural habitats.

Royal Botanic Gardens Melbourne, VIC

The Royal Botanic Gardens Melbourne was established in 1846.

In 1857, the Gardens' first full time Director, Ferdinand von Mueller was appointed. Mueller was to become one of the most acclaimed botanists of the 19th century, and was ultimately awarded Knighthoods by over 20 countries. Mueller established the Gardens' scientific centre, The National Herbarium of Victoria, and amassed an extraordinary range of plants from every corner of the world.

Today, the Gardens are home to more than 51,000 individual plants, representing over 12,000 different species, and have become a natural sanctuary for native wild life.

In the last few years the specially-designed Children's Garden has become a unique feature of the Gardens.

Royal Botanic Gardens and Domain, Sydney, NSW

Established in 1816, the Royal Botanic Gardens Sydney is the oldest scientific institution in the country and home to an outstanding collection of plants from Australia and overseas. It is a 64 hectare oasis in the heart of the city, occupying one of Sydney's most spectacular positions on Sydney Harbour.

Feature gardens include Cadi Jam Ora, Palm Grove, The Rare and Threatened Garden, Palace Rose Garden and the Herb Garden.

Cadi Jam Ora - first Encounters section which tells the story of the Cadigal people, the traditional Aboriginal owners of the Sydney city area, and features plants that originally grew on the site.

Palm Grove, established in 1862, holds one of the world's finest collections of palms. The Rare and Threatened Garden is a provocative display of plants from around the world that are on the brink of extinction.

The Herb Garden displays culinary, medicinal and aromatic herbs and the Wollemi Pine, an ancient tree rediscovered in 1994 with less than 100 adult trees growing in the wild in the New South Wales' Blue Mountains.

Kings Park and Botanic Garden, WA

Officially opened in 1965, the garden covers 406 hectares and is located on the edge of Perth's city centre and overlooking the Swan River. It was first gazetted as a park in 1872 and was renamed Kings Park in 1901.

It is most notable for its large expanse of remnant bushland (270 hectares), its extensive parkland areas and memorials, and its spectacular wildflower displays in the Western Australian Botanic Garden (17 hectares).

Features scientific collections mainly of Western Australian flora, with the diversity and beauty of over 2,000 of the state's 12,000 species displayed. Special features include an elevated walkway through the treetops, a range of public artworks and the annual Kings Park Wildflower Festival that has run for over 40 years. Kings Park and Botanic Garden is culturally significant to the local aboriginal people and to the broader community.

The Photographer and the Designer

The photos for the stamp series have been taken by award-winning photographer Simon Griffiths and the stamps have been designed by Lynette Traynor of the Australia Post Design Studio.

Simon Griffiths is a leading photographer of gardens, food and interiors. His photography appears frequently in the major lifestyle magazines, and in books such as Stephanie Alexander's *Cooking & Travelling in South-West France*.

In the field of gardening and landscape design he has worked closely with Paul Bangay on all his books, has collaborated with Rick Eckersley and Lisa Stafford on their new book *Outside*, and with Susan Irvine on *Rose Gardens of Australia* and *The Garden at Forest Hall*.

The books he has worked on have been nominated for many awards and he has won the Galley Club Award for Excellence in 1998 for *Rose Gardens of Australia*, the Gold Medal in 2001 in the World Food Media Awards for a *Hard Cover Food Book* with *Salute! Food, Wine & Travel in Southern Italy*.

Designer Lynette Traynor's previous stamp designs include *Christmas* (1989), *AAT Aurora Australia*, *World Heritage Sites* (1993), *Australian Legends* (2004), *Coastlines* (2005) and *Wildflowers* (2006).

The product is available from Wednesday 12 September at participating Australia Post outlets or via mail order on 1800 311 794 while stocks last. Overseas customers can purchase the stamps online at www.auspost.com.au/stamps

Vale - Phillip Leak

Ross Doig

"Old soldiers never die, they just fade away. Old SGAPers never die, they simply melt into the bushland." Phillip Leak died aged 78 in Melbourne after a lengthy illness, on Good Friday 2007.

Only a few old timers remember him as a foundation member of NSW Region and with John Wrigley, co-founder of the North Shore Group in 1960. In fact the inaugural meeting was held at the Leak home in Lane Cove with four potential members present.

From 1960 to 1982 Phil remained a member of the North Shore Group as an ardent propagator and grower. He soon possessed an enviable knowledge of local plants, contributed plants to meetings for distribution to members and for projects such as schools, wildflower festivals held by Region and annually at the Kuring-gai Wildflower Festival in the Wildflower Garden.

He was a leader in Group walks, visits to gardens and a contributor to ASGAP conferences. In addition to being a sometime Secretary/Treasurer he was almost obsessively involved in the inauguration and development of the Kuring-gai Wildflower Garden. Planning tracks, supplying plants, weeding, planting and serving on the Joint Committee composed of Kuring-gai Council and North Shore Group members.

It is fitting that after his death his family received permission to scatter his ashes within the Garden in recognition of his 20 years to the project.

In 1983 Phil moved to Wentworth Falls and until 1989 was an active member of the Blue Mountains Group, resigning in 1989 upon moving to Queensland. He was to live there until 1992, when he returned to NSW. At this time he resided in Patterson, joining his third SGAP Group; Hunter Group. He was however, not heavily involved owing to the difficulty in driving for long distances.

Largely unnoticed, but Phil was an essential part of the production of the Society's Journal *Australian Plants* as assistant to Bill Payne, editor of the publication.

I well remember him, the latest journals under his arm, calling on newsagents to display and sell them and subsequently returning with the next issue; collecting unsold copies to be put back into stock. From the first edition up to 2001, Phil acted as proofreader and was punctilious to a fault in getting gender for a species right. The only problem was, the names of plants often got the gender ending wrong and that spelling was to remain as he had written it.

After a car accident caused by a stroke, Phil was hospitalised and his incapacitation led to his moving to a hostel in Melbourne to be near a daughter. He kept up his SGAP membership even at this stage, finally giving it up in 2004 completing 45 years of continuous service to the Society.

Hardenbergias for the Garden

by Ross Doig, with notes from George Lullfitz via C. Liber

Hardenbergia violacea and its variants are already available in nurseries but with the introduction of two new cultivars it is timely to list the range presently obtainable.

The common straggly groundcover and climber has been available in mauve (the usual colour) but under various names white, pink and pale mauve variants have from time to time enjoyed some favour. All need pruning to produce a good crop of flowers and keep under control. Like other variants, propagation is from seed or cuttings. For those to whom local provenance is important, locally sourced forms are often available from community nurseries.

***Hardenbergia* 'Minnie Ha Ha'**

Probably the most common form grown, it is a shrub which flowers freely and is dense and rounded to about 70 cm in height. Very reliable provided it is pruned after each flowering to encourage new growth and cut out dead branches. It propagates readily from seed and cuttings.

***Hardenbergia* 'Happy Wanderer'**

In recent years this variant, a rampant form indeed, has been used as a quick groundcover and to clamber along fences. Judicious pruning is essential to prevent it wandering among shrubs, and like 'Minnie Ha Ha', is easily grown from seed or cuttings.

'Flat White' and 'Carpet Royale'

Two new cultivars introduced by NSW Herbarium from seed collected in Northern NSW and trialled for horticultural potential.

From the brochure on the pair, the following facts indicate that they are real winners in any garden.

They will not climb, unlike other *H. violacea* variants, allowing them to be used in a variety of positions. They grow quickly, form a dense mat when established and require low water and maintenance. The leaves are large, dark green and glossy. Flowering is from late July to September and heavy enough to make a spectacular display.

They may be purchased from Tharwa Nursery at Myoora Road Terry Hills, the Botanic Gardens Shop at Mt Annan and other garden centres around the country.

I have both (the white and the mauve) and will certainly be propagating them from cuttings to keep them true to type.

Hardenbergia comptoniana

This West Australian has been cultivated spasmodically since the 1960s but has never quite made it a 'must have' plant. It is rampant - it will climb to 25 metres if given the chance and to collect flowers from my specimen is not possible. If you are willing to prune heavily it can be kept as a low scrambler. It differs from *H. violacea* in having trifoliate rather than opposite leaves and lighter bluish flowers.

Continued on page 39

Soils ain't soils

and plant selection

Jeff Howes

I have been gardening on heavy northern Sydney soil for many years and have had my fair share of plant losses. My main problem was due to the fact that I planted plants that naturally grow in light soils and hence have a weak root system that is unable to penetrate my heavier soils. When there is adequate rainfall and soil moisture this is not too much of a problem. However, when the soil dries out, these plants are the first to die as they do not have a root system extensive enough to get enough moisture.

In the past, when selecting plants, I often did not worry too much about what soil type they grew in as I was more concerned with height, attractiveness of the flowers, light requirements and leave texture etc. I now take into account the plants natural habitat and soil type that it grows in after reading a few years ago, two excellent Australian Plant Society books both written by Ken Newbey. The first was *West Australian Plants for Horticulture - 1* (published in 1968) and the second was *West Australian Plants for Horticulture - 2* (published in 1972). In Ken's second book on page 135 under the heading of 'conclusions' all become clearer as to why I was having plant losses. While the book is written about Western Australia, the comments he makes about soil types, climate and selection of species applies to all, well most I suspect, of Australia. Some, but not all of the points he made are (and I quote):

- Species which occur naturally in shallow soils should do well in deep soils of the same type but the reverse is not the case. Species occurring in shallow soil have very strong root systems necessary to penetrate the hard clay sub-soils. Species growing in deep soils do not have this strong root system and have extreme difficulty in penetrating the hard clay subsoil. Species growing in deep soils have a much more even moisture content throughout the year with only very temporary water-logging whereas the shallow soil species have a wider range of moisture content in the topsoil and more chance of water-logging.
- Using the five topsoil types as a standard – sand, sandy loam, loam, clay loam and clay – plant species are usually adaptable enough to do well in one soil type either way. There is a possibility that the species may be suitable two types either way e.g. a species which occurs on loam should do well on sandy loam and clay loam and may be successful on sand and clay. A large number of our species are selective in their soil type and this guide should be followed carefully.
- Species which occur naturally in waterlogged areas usually do well in drier situations but the reverse is not the case. This means that species which occur naturally in dry situations should be planted where they will not get excess water.
- Rocky soils are often essential for growing species in exposed places so that they form a stable root system and not suffer from root movement which is either retarding or fatal to the plant. Rocks also assist drainage.

- Within reason, the rainfall is not of a great importance. What moisture is retained in the soil is the main factor. For instance, rocky ridges in the heavy rainfall areas may have lower annual moisture content than areas surrounding massive rocks in semi arid areas where there is excessive run off.

The more I garden the more I realise that there is more to selecting plants than just using the criteria that they are 'local' or look nice. I suspect that we have a lot to learn about reduced rainfall and the effect of climate change on how we garden. We may need to be lot more clever in plant selection than we have been in the past to help minimise plant losses.

● *Pruned Doryanthes excelsa*

Noel Rosten

In September 2005, almost three years after the bushfires on December 6th 2002 completely burnt out our *Doryanthes excelsa* (Gymea Lily), it started to bloom. A mob of white cockatoos found and destroyed the flower head and half a metre of the stem. In December I noticed bulges along the stem below the damage, which then developed into single blooms - refer to the photos on page 41. The cockatoos have yet to find the new blooms!

This is another example of the wonder of nature.

● *Hardenbergias for the Garden*

Continued from page 37

Over in Western Australia George Lullfitz has sold four different forms of *H. comptoniana* for many years. In the wild he noted that coastal plants in the Perth area have a very big leaf, while those around Albany have a fine leaf.

Three plants are climbers with the usual habit and winter/spring flowering time.

- A pure white flowered form with a lime green leaf.
- A pink flowered form with a bigger leaf
- The usual blue-purple flowered climber

He is also developing an early flowering selection 'Autumn Blue' and a new miniature as yet unnamed form. Both of these are being considered for registration under PBR.

There has also been a move in Perth to look more closely at more endemic climbers to replace 'wog plant' climbers (as George calls eastern species) such as *Hibbertia scandens* and *Hardenbergia violacea*.

Conclusion

All these *Hardenbergia* will grow in light shade with 'Minnie Ha Ha' also flourishing in full sun. From among them there is certainly a *Hardenbergia* for every native garden.

A Memorial to Bill Payne

David Crawford

In mid October a plaque in memory of Bill Payne was unveiled in Sylvan Grove Native Gardens in southwest Sydney.

Bill Payne was a foundation member of the East Hills Group of the Society for Growing Australian Plants (now the Australian Plant Society). When Bill passed away late in 2005 the members of the East Hills Group wanted to do something tangible to mark Bill's extraordinary contribution, not only to our group and the society but also to the promotion of Australian flora. We decided that a small robust memorial stood a better chance of surviving the rigours of life in a public space than most alternatives. As this was to be a local project, and mindful that NSW Region and ASGAP were also considering how to acknowledge Bill's life we sought permission of the local council to install a memorial plaque in Sylvan Grove Native Garden.

This native garden is in the Sydney suburb of Picnic Point, only a couple of hundred metres from Bill's home and central to our group membership. East Hills Group are very pleased to have the memorial in Sylvan Grove as it is a special place for native plant enthusiasts. The garden is more secure than most public gardens having a permanent staff and the site being locked overnight. Initially Bankstown City Council had intended to complement our plaque with an informative sign providing background information on Bill to inform general visitors to the garden of the reasons for our memorial. Unfortunately the Council's initial enthusiasm waned before their signage materialised.

On Thursday 12 October 2007 the memorial was officially unveiled. Bill's widow Beryl, and other family members were in attendance with a group from East Hills and a few representatives from other groups. The President of NSW Region, Jonathon Steeds made the journey from the Central Coast. The plaque was unveiled by Norm Denovan, an old friend of Bill's and a nursery owner from nearby Panania, who was challenged by Bill many years ago to "get into natives - they're the future". Another long term friend and East Hills member, Hugh Stacy, gave an address setting the scene with some of Bill's achievements mixed with insights into his methods and character. The morning was rounded out with morning tea and walks through the gardens.

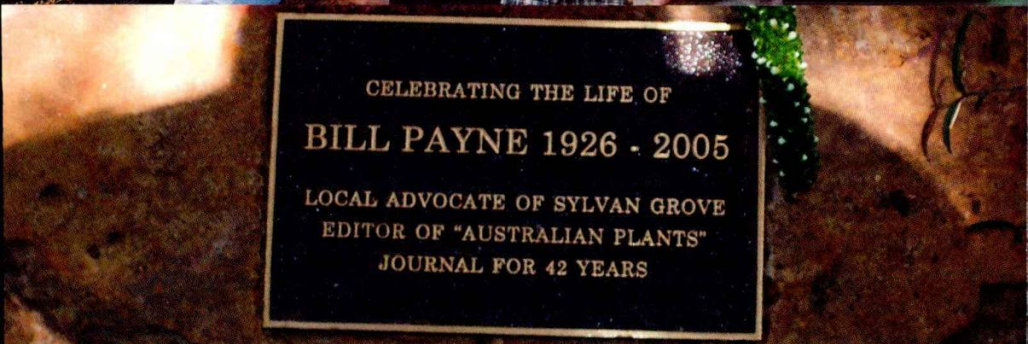
Whilst the memorial plaque is small and understated it is located in a position beside the main path close to the front gate. We are sure that many members of APS will come across it in the years to come, some deliberately seeking it out and others finding it with serendipitous good fortune. But all will be reminded of a great achiever for Australian plants.

Sylvan Grove Native Garden is not well known even by those who live in the suburbs around. One suspects that many native plant enthusiasts, especially from further a field, are also unaware of its treasures. Several of the people in attendance for the unveiling had never visited before.

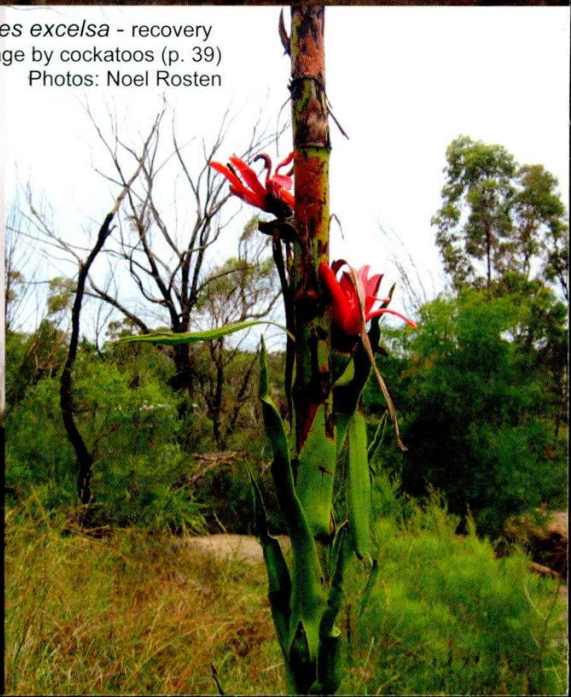
Continued on page 43



Left: Allan Wilkinson, Kyrle (f), Graham Williams, Beryl (f), and Beryl (f).
 Right: Stacy, Jack Hayward, and Beryl (f). Photos: Noel Rosten



Doryanthes excelsa - recovery
 after damage by cockatoos (p. 39)
 Photos: Noel Rosten



Drought Water Restrictions

and the Misleading Media - an Adelaide Perspective _____ Ivan Holliday

With so much emphasis on water [or the lack of it] these days I thought I should pen some of my observations. Adelaide has just experienced its driest winter/spring period on record. The rain that did fall was rarely the soaking rain which helps replenish the subsoil but either a very short heavy thunderstorm which rapidly ran to the low parts of the garden or such light showers that they hardly reached the ground. Thus we have a situation where a long, hot, very dry summer is predicted [the past two days were 41°C] and an already lowered water table - a perfect situation for many un-watered mature trees to die, especially our street trees.

In normally dry areas, such as the mallee, where annual rainfall would usually equate to Adelaide's 2006 rainfall, the understorey is quite sparse so the root competition can cope during abnormal years. In our own gardens, however, we aim to completely cover the ground surface beneath trees as a living mulch and weed suppressant which means that root competition is such that in very dry years some supplementary water is necessary. In 2006 this is essential in just the year we have water restrictions, inevitably losses will occur this summer.

How I hate the meaningless word 'hardy'. So many garden experts on the media talk about hardy plants but they do not qualify their statement by telling us where the described plant is hardy. Coconut palms are easily grown in Port Douglas, [hardy], but almost impossible in Adelaide.

I prefer to use the term 'adaptable', usually over a wide range of conditions. This has meaning. A good example is the callistemons, as most species and hybrids adapt to most conditions from Brisbane to Perth.

On television we see gardeners describing their non-irrigated gardens displaying plants which they claim survive on natural rainfall but again they don't say what that is. It could be 600 mm annually, whereas those gardens in much lower rainfall zones of 300 mm or [Adelaide in 2006] may have no hope with such plants.

I sometimes read questions sent to the daily newspaper in the 'What's Your Problem' column. The answer given is often taken from the Gardening Australia Website and is ridiculous for most South Australian gardeners, whilst it may be valid for the city from which the website article was written. All this type of media misinformation really riles me as it must do the native plant movement irreparable harm.

Our Tranmerie Garden

Our garden is only a developed allotment slightly larger than the so-called quarter acre block. Originally it was a Red Gum plain featuring an understorey of mainly grasses, small bulbous plants, perennials and a few shrubs, such as acacias. The soil is typical Adelaide red-brown earth-alkaline clay over limestone marl with shallow clay-loam topsoil. When we built it was devoid of native plants being covered with soursop and nut weed, although

some giant Red Gums remained on a few allotments and especially in the adjacent Gums Reserve where they still remain. To recreate a garden in its original form is not practical in this situation, especially as insurance is refused if any large Red Gums are remotely near the dwelling.

I grew up in a very wet area of the Mt. Lofty Ranges and originally set aside an area of the garden with an elevated bed of acidic sand about 40 cm or more deep for growing Hill's wildflowers. This turned out to be a total failure and I have since learned it is better to leave the natural soil alone and grow plants that succeed in it. I have no luck at all with most Adelaide hills or Eastern States understorey wildflowers. Over time then the garden has become a collectors garden and not one for the purist.

During the ASGAP Conference in Adelaide in 1997 Diana Snape, leader of the garden design Study Group, inspected our garden and although she was too polite to say so, I could tell she was not impressed. Diana's own garden and others often featured by the media have been developed within a natural bushland setting, which is a much easier base to create a beautiful bush garden.

Since Diana's visit we have gradually modified the garden to create areas where natives are grown which require no water other than natural rainfall once they are established.

2006, however, has already found a few species out, with our average rainfall cut by half. The garden does come up well in good years and in September 2005 it was in the Open Garden Scheme when we raised a considerable sum for cancer research. That year we had good September rains and the garden was well presented. This very dry year many shrubs have not flowered at all, others have produced much smaller flowers than normal.

In subsequent journals I hope to discuss successes and failures of a range of different genera and families tried in our garden.

A Memorial to Bill Payne

Continued from page 40

All were encouraged to walk about, enjoy the gardens and spread the word among their groups and friends. It is a wonderful place and Bankstown City Council should be encouraged to maintain a strong commitment to its future.

Newer members not familiar with Bill Payne's substantial contribution to the society should see the article in Australian Plants Vol. 21, No.173 and for an insight into Bill's personality and approach the article by Peter Olde in Vol. 23, No. 185. Here it is sufficient to say that Bill's role in editing Australian Plants for 42 years represents a contribution and commitment to the society and the flora that few, if any, can hope to match.

East Hills Group would like to express its thanks to NSW Region for financial support with this project.



Top Left: *Melaleuca nematophylla* side garden

Top Right: Front driveway

Above Left: *Melaleuca concreta* rear bed 2006

Above Right: Rear garden

Bottom Left: *Melaleuca nematophylla* & *Verticordia chrysanthella*

Bottom Right: *Chamelaucium uncinatum* 'Lady Stephanie'

OPPOSITE

(p. 42)

Top Left: *Scholtzia laxiflora*

Top Right: *Callistemon* sp. front garden

Bottom Left: *Callistemon salignus* & *Melaleuca concreta*

Bottom Right: *Acacia covenyi* rear garden

All photos on both pages: I Holliday





Wildflower Nurseries in Queensland

Fairhill Plants and Botanic Gardens — Huge range: rainforest plants, grafted grevilleas, rare plants, wildflowers, ferns, orchids, revegetation trees. Extensive display gardens. Open every day 8.30 a.m. to 5.00 p.m. Fairhill Native Plants, Fairhill Rd, Yandina, Qld 4561. Tel. (07) 5446 7088.

Nielsen's Native Nursery — Over 500 species including grafted grevilleas, eremophilas, eucalypts and brachychitons, also Foxtail Palms, cycads, rainforest, Bush Tucker plants. Display garden. Open 8.00 a.m. to 5.00 p.m. every day. 49-51 Beenleigh Redland Bay Rd, Loganholme, Qld 4219. Tel. (07) 3806 1414.

Wildflower Nurseries in New South Wales

Dealbata (cold climate) Aust. Plant Nursery — off Bloomfield St, Dalgety 2630. Tel. (02) 6456 5043. Specialising in alpine and dry Monaro plants — Sorry no overseas orders. Phone to arrange a visit.

Stocks Native Nursery — Lot 3, Simmonds Rd, Harden, 2587. Tel. (02) 6386 2682. Plants for frost and dry weather suited to Canberra, Wagga Wagga, Orange type conditions.

Sydney Wildflower Nurseries — South at Heathcote (02) 9548 2818; West at Marsden Park (02) 9628 4448; North at Terrey Hills (02) 9450 1555. Excellent range of native plants. Open 7 days.

Wariapendi Nursery — Church Ave, Colo Vale (10 km north of Mittagong off the freeway towards Colo Vale). Tel. (02) 4889 4327. Extensive range of natives from tubestock to advanced for Southern Highlands and Tablelands, South Coast and Sydney Basin. www.wariapendi.com.au

Wirrimbirra Native Nursery — Hume Hwy, between Bargo and Tahmoor E. side 2574 (3 km from Freeway entry). Wide range including unusual plants. Tel. (02) 4684 1112.

Wirreanda Nursery — End of Wirreanda Rd, Ingleside 2101. Tel. (02) 9450 1400. Growers of advanced and semi-advanced native trees and shrubs. Open 7 days.

Wildflower Nurseries in South Australia

Brenton Tucker Native Plants and Carawatha Garden — Placid Estates Rd, Wellington East via Tailem Bend. Tel. (08) 8572 7104. Wide range of tubestock and advanced plants. Extensive display gardens and picnic areas. Open weekends and public holidays March to November and by appointment, 10 a.m. to 4 p.m.

Nesbitts Orchids — Australian terrestrial orchid specialists. PO Box 72, Walkerville, SA, 5081 Email: lesnesbitt@iprimus.com.au. Tel: (08) 8261.1550 or 0400 9922 05.

Wildflower Nurseries in Tasmania

Plants of Tasmania Nursery — 65 Hall St, Ridgeway 7054. SAE catalogue. Tel. (03) 6239 1583. Open 7 days.

Wildflower Nurseries in Victoria

Kuranga Native Nursery — NEW BRANCH OPEN at 118 York Rd, Mt Evelyn 3796. Melway 52 K3 Tel. (03) 9760 8100. www.kuranga.com.au Charming setting, beautiful building, café and of course Australia's largest range of Australian flora. Delivery to all mainland states and free stock list on request.

Wildflower Nurseries in Western Australia

Orange Valley Nursery — 20 Patricia Rd Kalamunda 6076. Eremophila plant specialist. Phone (08) 9293 2569 Email: ovnjames@iprimus.com.au

Australian Wildflower Seed Suppliers

R. Horner — 1 Grundy St, Alice Springs, NT 0870. Seed of trees and shrubs of Central Australia. Please send a 45c stamp for a list.

Wildflower Society of Western Australia (Inc.) — PO Box 64, Nedlands 6909. A range of seeds available, labelled and packed, at \$1.50 (plus postage) per packet. Send for a **current** Descriptive Seed List (\$3.00 posted) to: The Seed Sales Officer, Eastern Hills Branch, PO Box 111 Glen Forrest, WA 6071. Also available a book *Hints on Growing Native Plants* (\$6.00 posted).

The Grevillea Book, volumes 1, 2 and 3 by Peter Olde and Neil Marriott, is a complete reference to all species of *Grevillea*. The Australian Plants Society NSW ensured that they were published to a very high standard with at least one large colour photograph of each of the 340+ species, an easily read description of each species and details of its occurrence and cultivation. They are available from the Australian Plants Society NSW, PO Box 744, Blacktown NSW 2148, at \$44 per volume plus postage and handling of \$9.50 for 1 volume and \$15.50 for 2 or 3 volumes within NSW.

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Membership: Contact the Secretary, listed below, of a Society.

Annual subscription: \$20.00 (A\$32.00 overseas) including postage to your address.

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Mail Order Book Service: Each Society listed below has a very wide range of books on Australian plants for sale, often at discount prices. Contact the Secretary for your requirements.

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<http://www.austplants-nsw.org.au> E-mail: office@austplants-nsw.org.au

THE AUSTRALIAN NATIVE PLANTS SOCIETY, CANBERRA REGION INC.

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Secretary: Lucinda Royston Tel: (02) 6231 6067. Email: bark@bigblue.net.au

<http://www.nativeplants-canberra.asn.au> PO Box 217, Civic Square ACT 2608.

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AUSTRALIAN PLANTS SOCIETY, S.A. REGION INC.

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E-mail: carawatha@iprimus.com.au

Secretary: Margaret Lee, PO Box 304, Unley SA 5061.

<http://www.australianplantssa.asn.au> E-mail: info@australianplantssa.asn.au

AUSTRALIAN PLANTS SOCIETY TASMANIA INC.

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<http://www.apstashobart.org.au>

AUSTRALIAN PLANTS SOCIETY (SGAP VICTORIA) INC.

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Secretary: Cherree Densley, 9 Koroit-Port Fairy Rd, Killamey VIC 3283. Tel. (03) 5568 7226.

<http://home.vicnet.net.au/~sgapvic/> E-mail: apsvic@hotmail.net.au

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President: Kerry Smith, PO Box 64, Nedlands WA 6909.

Secretary: Anne Pilgrim, PO Box 64, Nedlands WA 6909.

Office open: Tuesday & Thursday 10am till 2:30pm - Tel. (08) 9383 7979 Fax. (08) 9383 9929

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Secretary: Nina McLaren, PO Box 837 Nedlands WA 6009. E-mail echidna@tower.net.au

Online: <http://farrer.riv.csu.edu.au/ASGAP> is the national internet page for all the above

Societies, receiving thousands of 'hits' from all over the world. The wealth of information is augmented by a newsletter, Australian Plants Online, all free. Refer to it and enjoy.

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PUBLISHING COMMITTEE: M Wagner (Convenor), J Caldwell, C Liber

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