

Australian Plants

Registered by Australia Pos

Publication No. PP226253/00017

March, 2008

I. 24, No. 194

\$3.95



Editorial

Merle Thompson, NSW Region Council

Change of Name – Australian Native Plants Society (Australia)

The Biennial Meeting of the Association of Societies for Growing Australian Plants in September 2007 voted to change the name of the Association to Australian Native Plants Society (Australia), abbreviated as ANPSA.

The new name more fully reflects the aims, as stated in the Rules of the Association, and the interests of individual members. The aims include:

- To promote all aspects of the horticulture of Australian plants.
- To promote the conservation of Australian plants and their habitats.

The Association has seven members which are known as Regions. The areas from which members of these organisations are drawn, to a large extent, relate to the states and territories of Australia. Every two years a conference is held which incorporates the Biennial Meeting, a seminar with field trips and pre- and post conference tours. Responsibility for the conduct of the seminar and tours rotates between the Regions as does the responsibility to provide the President, Secretary and Treasurer for the ensuing Biennium.

The 2009 conference is to be held in Geelong, Victoria. This issue focuses on Victoria, including areas in which the natural flora and gardens will be explored during the field trips and tours.

Note: This issue is dated March 2008 to maintain sequence. It was, however, compiled in May 2009 and mentions occurrences between these dates.

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Front Cover: *Epacris impressa* – Victorian Floral Emblem Photo: Marilyn Gray
Back Cover: Tree-fern gully in Sherbrooke Forest Photo: Peter Kinchington

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Australian Plants No. 194 Issue of Volume 24 which comprises issues 190 – 197. Published quarterly
and available nationally in 6,800 copies. Opinions expressed in the publication are those of the
authors and may not represent official policy of the Australian Plants Society NSW Ltd

ANPSA Conference & Seminar, Geelong

26 September to 2nd October 2009

Paul Kennedy, Chair, Conference Organising Committee

As explained in the Editorial, the federal organisation has recently undergone a name change to the Australian Native Plants Society (Australia) [ANPSA]. However, as planning for the 2009 conference and seminar began some three years ago, to avoid confusion, the ASGAP name will still exist for registration and some merchandise.

ANPSA achieves its aims through the support of publications and newsletters that further the knowledge of Australian plants, co-ordination of Study Groups for members who wish to delve more deeply into particular floral areas and the organising of a biennial conference and seminar.

The conferences and seminars rotate around the States giving attendees opportunities to learn and appreciate the flora, natural areas and local gardens in each State under the guidance of knowledgeable local members, as well as opportunities to chat and exchange ideas with fellow native plant enthusiasts from across Australia.

In late September it will be the turn of APS Victoria to host the ANPSA conference and seminar in Geelong with its associated pre and post conference tours. These tours will highlight the flora of the Otways and Shipwreck coast, the Grampians and Little Desert, gardens and floral reserves in the Melbourne region and the beautiful tree-fern gullies of South Gippsland and the ruggedness of Wilson's Promontory. The northern tour will take in the flora of the Goldfields areas, and the Murray River region east of Echuca.

Whilst the emphasis is to show you our fabulous local flora, there will be opportunities to see some of the splendid local native gardens of members and participate in some tourist activities such as the penguin parade on Philip Island and a paddle steamer trip on the Murray River.

We urge people not to be put off by the terrible drought that has plagued much of the northern part of the state or the terrible bushfires that burnt much of the mountain ash forests to the north of Melbourne and parts of Wilson's Promontory. The regrowth at the Promontory will reveal many interesting ground plants and natural features, once hidden by dense bush, will now be visible. As I write this article it is finally raining in Northern Victoria and perhaps the drought is finally coming to an end. In southern areas there has been considerably more rain and the flora has not been stressed by drought.

The theme of the 2009 seminar is "Australian Plants in the 21st Century." This is particularly appropriate as we hear people talking about climate change, drought and the lack of water in the Murray / Darling system to meet the needs of cities and towns, for irrigation and the environment. Speakers will also address advancements resulting from research into growing and propagating of native plants. The speakers' program and topics can be viewed on the internet under www.asgap2009.apsvic.org.au.

Geelong is the largest Victorian regional city, located some 60 kms from Melbourne. It was once an important wool and wheat terminal centre but this has declined as other ports have opened up. There is an hourly train service to and from Melbourne and interstate plane services now fly into Avalon airport just to the east of Geelong.

The Dalgety's wool store has been converted to the Costa Hall where the seminar will be held. The hall has very comfortable seating and state of the art projection equipment. The hall faces the waterfront and is in the centre of Geelong close to shops, train station and local bus routes.

Geelong is also the gateway to the beautiful Otway ranges and the Great Ocean Road. To the north are the Brisbane Ranges with lower rainfall and more open forest. There is much to be seen in their diverse flora.

The Tuesday day tour is to the magnificent Royal Botanic Gardens, Cranbourne. The development of these gardens is a must for all to see, with different floral areas from around Australia being depicted. The return journey to Geelong will include a trip on the ferry from Sorrento to Queenscliff.

The Thursday day tour will be into the Otway Ranges including a visit to the Otway Fly where you can view the superb mountain ash up in the tree tops if you wish. There are also many lovely waterfalls and fern gullies.

Both during the seminar and pre and post conference tours, delegates will have the chance to see a wide range of habitats from wet sclerophyll forests, coastal and inland heathlands, superb coastal scenery, the flora of mountain ranges and deserts. Victoria is a compact state, so we have the chance to show much of it to you.

For registration forms or more information on the 2009 conference and seminar and pre and post conference tours, please contact Sue Guymer at

13 Conos Crt., Donvale, Victoria 3111 or e mail asgap2009@gmail.com.

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The "Garden State"

During this conference participants will have the opportunity to discover why Victoria prides itself on being the "Garden State" of Australia.

There are many public gardens and botanic gardens throughout the State and the nursery and horticultural industries are significant.

While many gardens and nurseries feature introduced plants, there have been important developments in relation to native plants.

- ❖ Our Society was formed in Victoria in 1957 by Mr A J Swaby.
- ❖ There are many high quality native nurseries.
- ❖ Some botanic gardens have significant history of the use of native plants and of developing specific gardens. [See pages 212, 215 and 224]
- ❖ A number of public gardens devoted exclusively to native plants. These include the Maranoa Garden, established in 1901, and the Karwarra Australian Plant Garden which features plant species that thrive in the cool temperate forest of the Dandenong Ranges.

Introduction: An Overview of Victoria

The Plants of Victoria

In the introduction to their book, *Wildflowers of Victoria*, Margaret Corrick and Bruce Fuhrer state that the 2000 census listed 4,331 native species and 1,142 naturalised introduced species in Victoria. They comment that there are fewer endemic species because the State has not been isolated and many vegetation communities cross state boundaries. There are around 200 species endemic to Victoria.

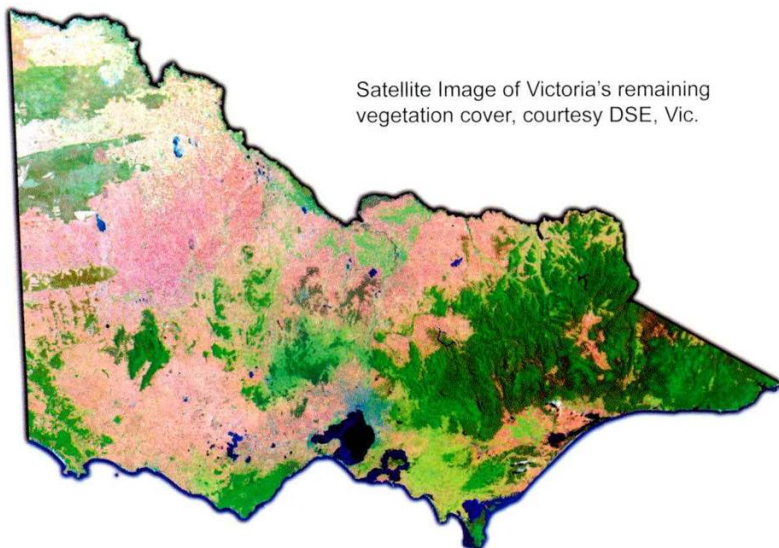
The number of species which are rare or threatened significantly exceeds the number of endemic species. The Department of Sustainability and Environment's list of threatened vascular plants has in excess of 300 species/ sub-species. The list can be accessed on the Department's website.

The description of the Australian flora as "rich and diverse" has become almost a cliché. Victoria is the smallest of the mainland states of Australia yet this statement holds true.

Corrick and Fuhrer write:

Victoria has a rich, diverse flora in habitats ranging from the arid mallee sands of the north-west to the alpine moors of the Great Dividing Range; from coastal dunes and heathlands to the tall, wet forests and jungles of East Gippsland. In fact, Victoria may be regarded as a microcosm of the Australian flora and to contain 'a bit of everything'.

In order to describe the vegetation communities, the Department of Sustainability and the Environment within the Victorian Government has classified the communities into around 300 "ecological vegetation classes" simplified into 20 classes (35 with sub-classes). The Department's website contains maps showing the current distribution of these classes and as they are thought to have been pre-1750. [www.dse.vic.gov.au]



Satellite Image of Victoria's remaining vegetation cover, courtesy DSE, Vic.

Natural vegetation areas

A number of areas are particularly well-known for their interest to native plant enthusiasts. This issue highlights some of these areas, particularly ones which will be visited as part of the ANPSA 2009 conference.

Areas of interest include:

❖ The Grampians

The Grampians region is described on the *Visit Victoria* website as "one of Australia's richest and most diverse flora areas, from sub-alpine forest, shrub woodland, heathlands and swamps to riverine. It is home to more than one third of the State's flora and was once described as the Garden of Victoria by first Victorian Government botanist Ferdinand von Mueller".

❖ Big and Little Deserts

These areas are known as deserts owing to their poor soils with little water. They have, however, a great number of plant species and a variety of habitats. More than 670 species of native plants have been recorded in the Little Desert, one fifth of Victoria's indigenous flora. There are extensive heathlands, with banksia, tea-tree, sheoak, and flowering shrubs; woodlands of eucalypts and cypress-pines, and swamps and clay flats of Bull-oak and melaleuca.

❖ Alpine areas and high plains

With increasing altitude tall forests give way initially to woodlands of dwarfed snow gums, *Eucalyptus pauciflora*, and later to grasslands, herbfields, low heaths and peaty morasses. There is a rich flora of low growing plants with daisy and sedge plants predominating.

❖ The Dandenong Ranges

An area with towering *Eucalyptus regnans*, the Mountain Ash trees, the tallest hardwood species in the world and magnificent fern gullies with spectacular tree-ferns and a rich understorey of plants. Dandenong Ranges National Park, covering 3,215 hectares, plays an important role in protecting a population of famous lyrebirds and other fauna, as well as protecting the forests and fern gullies of the Ranges.

❖ Gippsland

The vast area known as Gippsland includes many varied vegetation communities, despite many years of clearing for agriculture. These include the forests of the Strzelecki Ranges with luxuriant tree ferns, mountain ash and ancient myrtle beeches in cool temperate rainforest. In the tiny Tarra Bulga National Park thirty-nine species of ferns have been recorded and more than 200 different kinds of fungi.

In East Gippsland there are areas of warm temperate rainforest where the dominant plants are not eucalypts. Dominant trees include *Acmena smithii*, *Acacia melanoxylon* and *Tristaniopsis laurina*.

The Gippsland Lakes are a network of lakes, marshes and lagoons with 400 indigenous flora species.

❖ Wilson's Promontory

The Promontory has diverse vegetation communities, including warm temperate and cool temperate rainforest, tall open forests, woodlands, heathlands, and swamp and coastal communities including mangrove areas and coastal dunes.

❖ The Otway Ranges

In the Otways the mountains almost reach the sea. There are with five main plant communities: tall mountain forest, cool temperate rainforest, heathland, coastal areas with dwarf shrubs, grasslands or dunes and a narrow strip of red ironbark forest. Over 900 plant species have been recorded.

❖ The Brisbane Ranges

The unusual geology of Brisbane Ranges National Park has preserved plants that no longer occur elsewhere in the region. Its sandy soils support 619 plant species including the rare, endemic *Grevillea steiglitziana*.

(Pictured below right: Cathy Powers)



Above: *Prostanthera melissifolia*
Victorian endemic from tall forests

Below left: *Grevillea alpina* Steele Ck

Below right: *Hovea asperifolia*
Scattered populations in Victoria

Photos: Marilyn Gray



Victoria's Western Flora

Neil Marriot

Neil Marriott has lived in the Grampians region for a number of years and has a deep knowledge of the area. He is the co-author of *The Grevillea Book* (three volumes) and is also author of books on grassland flora.

For native plant enthusiasts a trip through western Victoria traverses an incredible diversity of vegetation communities and some of the states most beautiful wildflowers. The geology ranges from some of the most recent basalt clay soils in the country to ancient sandstone ranges and desert dunes. This article briefly describes some of the best of these areas.

Basalt Plains Grassland

Only 6 -15,000 years old, Victoria's western basalt plain is the largest basalt plain in the world. It has few trees apart from occasional beautiful spreading River Red Gums over native grassland. This grassland community supports a rich range of grasses, daisies, lilies and a host of other native plants. Sadly today less than 1% of this superb vegetation community remains, mainly confined to roadsides, cemeteries, railway reserves and rare uncultivated paddocks. The majority of Victoria's extinct plants and animals once occurred on these plains, and many of our rarest plants are found in the tiny remaining remnants. Unfortunately most roadside remnants continue to be degraded by weed invasion and deliberate destruction for firebreaks, cropping and grazing.

Despite this, a brief stop on a remnant road reserve or undeveloped cemetery is a wonderful experience in spring, with massed displays of Tall Mulla Mulla, *Ptilotus macrocephalus*; Common Everlasting, *Chrysocephalum apiculatum*; Lemon Beauty-heads, *Calocephalus citreus*; Blue Devil, *Eryngium ovinum*; and a host of other species. In several areas rare plants like Button Wrinklewort, *Rutidosis leptorhynchoides*, and White Sunray, *Leucochrysum albicans* var *tricolour*, can still be found in beautiful displays.

The Grampians Ranges

An extensive series of spectacular sandstone ranges rising abruptly from the flat plains, the Grampians support over 1000 species of plants – almost one-third of the state's flora. Over thirty of these are endemic, including spectacular species such as Grampians Bauera, *Bauera sessiliflora*; Flame Grevillea, *Grevillea dimorpha*; Grampians Thryptomene, *Thryptomene calycina*; Grampians Grevillea, *Grevillea confertifolia*; and a number of showy pea plants such as the unique pink flowered Rosy Bush-pea, *Pultenaea subalpina*; Ribbed Bush-pea, *Pultenaea costata*; Mt Byron Bush-pea, *Pultenaea patellifolia*.

Regrettably, much of the Grampians were burnt in the massive fires of 2006. However, the recovery has often been spectacular with massed displays of Grass-trees, wildflowers and rare and wonderful orchids. The first spring after the fires brought orchid lovers from all over the country to observe the massed flowering of species seldom seen.

The Grampians has an extensive network of roads and tracks suitable for both conventional and 4WD vehicles, allowing visitors to access the majority of the national park. As well, there are many walking tracks and camping areas for overnight campers or extended wilderness walkers. One wonderful walk is up to Major Mitchell Plateau, a subalpine mountain covered in open heathy woodland, Snow Gums and swamps and home to many rare and localised plants. Overnight camp sites are developed and the walk takes you across the plateau and down to the other side where you can be picked up by friends to drive you back to where you left your car.

Because they extend for over 120 kms from the basalt plains in the south to the Wimmera Plains in the north, and vary from low hills to subalpine mountains, there is an extreme range in annual rainfall from over 1,250 mm in the south to less than 450 mm in the north. The result of this is a range of plants varying from tall wet forests with tree-fern lined gullies and swamp and stream dwellers, through to species normally found only in the deserts of the north-west of the state.

The Wimmera Plains

The flat plains of the Wimmera were formed as part of the vast Murray Basin which was inundated by the sea several million years ago, laying down extensive deposits of marine sediments overlain more recently by river sediments. As a result, the soils are heavy and alkaline with saline groundwater not far below the surface. Plants that thrive here must be able to tolerate waterlogged soils in the winter that become hot, dry and cracking in the summer. One of the dominant trees is the Buloke, *Allocasuarina leuhmannii*, with patches of Grey Box, *Eucalyptus macrocarpa*, and Yellow Gum, *Eucalyptus leucoxylon*, in the south, Black Box, *Eucalyptus largiflorens*, along drainage lines and swamps, and a number of Mallee Eucalypts in the north. In between were extensive plains of native grasslands but sadly these are now all but gone to agriculture.

Again, it is on roadsides and isolated remnants that wonderful examples of this beautiful flora can still be seen. In a recent survey I carried out nearly every remnant I investigated supported at least one rare or endangered plant – many supported up to ten or more. Species which make a lovely spring display are Minnie Daisy, *Minuria leptophylla*; Mulla Mullas, *Ptilotus exaltatus* and *P. macrocephalus*; Broughton Pea, *Swainsona procumbens*; as well as numerous members of the saltbush family including Berry Saltbush, *Atriplex semibaccata*; Ruby Saltbush, *Enchylaena tomentosa*; Nodding Saltbush, *Einadia nutans*.

Mt Arapiles

This mountain is a spectacular and isolated outlier of the Grampians sandstone formation, rising abruptly from the flat Wimmera Plains very close to the southern edge of the Little Desert. Owing to its isolation and proximity to the desert, it supports a number of rare and beautiful plants as well as species normally found either further north or further south. There are massed displays of Round-leaf Mint-bush, *Prostanthera rotundifolia*, and a new species of Spiny Mint-bush, *Prostanthera* sp aff *spinosa*, in the gullies at the base and lower slopes of the mountain.

A unique plant on the mountain is a beautiful form of Golden Wattle, *Acacia pycnantha*, that has cream flowers during autumn, not gold flowers in spring! Other Wattles such as Wallowa, *Acacia euthycarpa*, create massed golden displays in spring, while on the mountain, Fairy Wax-flower, *Philotheca verrucosa*, can grow to massive proportions with some plants up to 3m high and wide, often with pink flowers.

On the western slopes, areas of mallee Eucalypts occur, while the outwash slopes support rich grassy woodland full of rare and beautiful grassland plants. On the mountain top the views are spectacular while the wildflowers abound. The mountain is world famous for rock climbing and it is also a stronghold for the rare Peregrine Falcon which can normally be observed from the lookouts on top.

The Little Desert

An area of low rainfall, high evaporation rates and poor sandy soils, the Little Desert was formed when the receding southern coastline deposited vast dunes of sand over the Murray Basin marine plains. The deeper sand areas have been colonised by extensive areas of heathy woodland dominated by Desert Stringybark, *Eucalyptus arenacea*, and Desert Yellow Gum, *Eucalyptus leucoxylon ssp stephaniae*, over a mixed scrub of Dwarf Sheoaks, Banksias, Heath Tea-tree and many more species. In shallow sands that do not support trees, open heathland occurs, dominated by Desert Banksia, *Banksia ornata*; Western Correa, *Correa reflexa var scabridula*; Dwarf Sheoak, *Allocasuarina pusilla*; and an extensive variety of other species.

Where the sand is shallower between the dunes, areas of swamp scrub, Yellow Gum woodland and even occasional salt lakes can be found, each with distinct, often unique plant species. Towards the north of the desert, areas of laterite gravels can be found, and these support many rare and beautiful species including Desert Baeckea, *Baeckea crassifolia*, Barb-wire Bush, *Davesia pectinata*; Scarlet Mint-bush, *Prostanthera aspalathoides*; Desert Rosemary Grevillea, *Grevillea rosmarinifolia ssp glabella*; as well as a number of rare orchids. This community is also home to the unique Mallee Fowl.

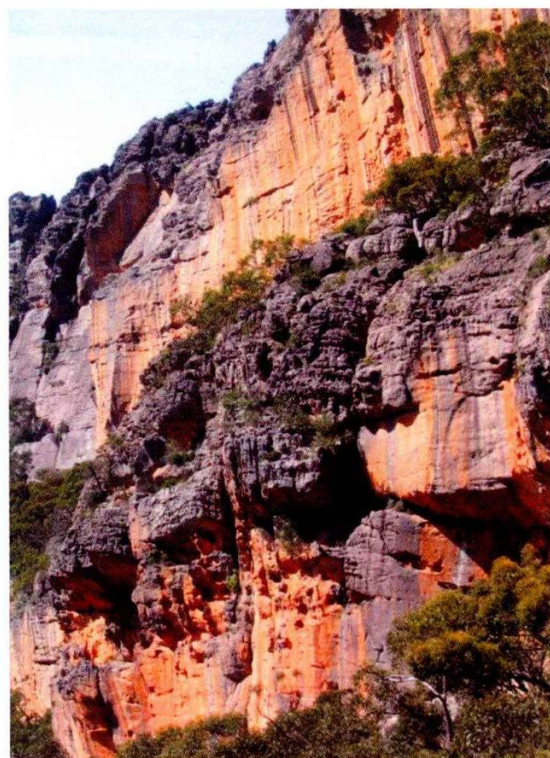


Tall Mulla Mulla, *Ptilotus macrocephalus*

Photo Neil Marriott



Above: Blue Devil, *Eryngium ovinum*



Left: Spectacular sandstone cliffs clothed with Grampians Grey-gum, *Eucalyptus alaticaulis*

Photos: Neil Marriott



Massed Grassrees, *Xanthorrea australis*, flowering after 2006 bushfire

Grampians Correa
Correa reflexa var *angustifolia*



Orange Bell-climber
Marianthus bignoniacea



Photos Neil Marriott

Wilson's Promontory

Gwen and Rodger Elliot

Gwen and Rodger Elliot are among Australia's foremost authors on native plants. Gwen has written a number of books such as "Australian Plants for the Garden" and is currently the leader of the Epacris Study Group.

Rodger Elliot is co-author, with David L. Jones, of the authoritative 9 volume Encyclopaedia of Australian Plants. In 1995 he was awarded the Australian Plants Award.

The 'Prom', as it is affectionately called, is the southernmost point of the Australian mainland and the location of one of our major National Parks. South-east of Melbourne, it can be reached by road in about two and a half hours. It is renowned for its majestic coastal scenery of inlets and magnificent beaches.

It comprises approximately 50,000 hectares and was declared a National Park in 1905. The initial area involved was just over 30,000 hectares, with subsequent additions adding several off-shore islands and the southern part of the Yanakie Isthmus.

The 'Prom' is virtually an island park, being joined to the rest of Victoria only by the very narrow Yanakie Isthmus. The area includes mountains, granite outcrops and creeks, sand dunes, cliffs and beaches. The vegetation is, therefore, extremely rich and diverse with shrublands, wetlands, heathlands, exposed coastal vegetation, plus fern gullies and cool temperate forests. There is a rich Aboriginal history with extensive middens readily visible on some of the coastal sand dunes.

There are over 700 species of native plants that occur in the Wilson's Promontory National Park. Although lacking in endemic species which occur only in this area, it nevertheless is a wonderful location for wildflowers.

Numerous tall trees are present, with groves of *Acacia melanoxylon*, Blackwood Wattles, *Nothofagus cunninghamii*, Myrtle Beeches, and over a dozen species of *Eucalyptus*.

The windswept areas are where Sheoaks often dominate, including *Allocasuarina verticillata*, the Drooping Sheoak, and *Allocasuarina littoralis*, the Black Sheoak. There are also the smaller shrubby species of *Allocasuarina pusilla*, the Dwarf Sheoak, and *Allocasuarina paludosa*, the Scrub She-oak.

Banksia serrata, the Saw Banksia, and *Banksia integrifolia*, the Coast Banksia, are really at home in the Wilson's Promontory National Park. Their presence also ensures the survival of some of the birds and animals of the Prom. Honeyeaters are regular visitors to the nectar-rich flowers as are members of the possum family.

The 'Prom' is readily subjected to strong wind which helps to enhance the beauty of the Coast Banksia when the silvery undersides of the leaves are exposed to view.

Two banksias of smaller dimensions found in this area are *Banksia marginata*, the Silver Banksia, and *Banksia cunninghamii*, Hill Banksia. They can grow as shrubs to 3m or more in height, or, in exposed coastal heathlands, their size may be restricted to just a metre or so tall. *Banksia saxicola* is also present in the north-eastern sector and its only other natural occurrence is in the Grampians in western Victoria. A remarkable dislocation!

Between these banksias, alone, there are flowers produced throughout most of the year. *Banksia serrata* begins flowering in mid to late spring and continues right through summer. *Banksia saxicola* blooms through summer and autumn, while in early autumn *Banksia integrifolia* takes over and produces its yellow flower-spikes through until the end of winter. *Banksia marginata* has deep yellow flower-spikes of about 10cm long from late summer until spring, while *Banksia cunninghamii* peaks in autumn and winter when the erect honey-coloured flower-spikes of 15 - 20 cm tall are a magnet for the native birds.

Lilly Pilly Gully derives its name from the Lilly Pilly, *Acmena smithii*, which occurs here. It is an area rich in eucalypts, fern gullies and heathlands. There is an abundance of bird life including rosellas, honeyeaters and robins. Koalas also live in the trees of Lilly Pilly Gully. This area has been challenged by a number of fires over recent years, as have other areas of the National Park.

Other medium to large shrubby plants include the white-flowered *Kunzea ambigua*, *Leptospermum juniperinum* and *Leptospermum laevigatum*.

The Sweet Bursaria, *Bursaria spinosa*, is a variable species at the Prom, in that it can be a sizeable tree, virtually without spines, or more shrubby and very spiny. It produces its fragrant white to cream flowers during summer, as does the Victorian Christmas Bush, *Prostanthera lasianthos*, which is a member of the Mintbush genus, with strongly aromatic foliage. In moist shady areas ferns can be common. One of the climbing/ scrambling ferns, *Microsorium scandens*, inhabits the moist gullies and often grows as an epiphyte on tree-fern trunks.

Spring is when the smaller wildflowers of the Wilson's Promontory National Park really come into their own and provide eye-catching displays. The bright red pea-flowers of the Running Postman, *Kennediaprostrata*, run across the ground with the Common Flat-pea, *Platylobium obtusangulum*, and Handsome Flat-pea, *Platylobium formosum*, rising slightly taller to display their broad yellow and red pea-flowers. Splashes of bright yellow are also provided by the Rough Guinea-flower, *Hibbertia aspera*, and the daisy flowers of *Chryscephalum apiculatum*, Common Everlasting.

Hibbertia aspera, Rough Guinea Flower



Often in striking combination with the yellow-flowered plants are the rich mauve-pink flowers of *Tetraloche ciliata*, and the erect flower-stalks of the Long Purple Flag, *Patersonia occidentalis*, which prefers a spot where there is some moisture available, as does its larger, mainly white-flowered, close relative, *Diplarrhena moraea*. Another small tufting plant that provides an eye-catching pink floral display in spring and early summer is a triggerplant, *Stylidium armeria*, which recently was reinstated as a separate species after being in the *Stylidium graminifolium* complex.

In coastal areas splashes of purple are commonly provided by *Swainsona lessertifolia*, the Purple Swainson-pea. *Leucophyta brownii*, Cushion Bush, displays its stunning silvery-white foliage throughout the year and survives in the most exposed and seemingly inhospitable of sites on coastal cliffs and sand dunes. It lacks spectacular flowers but is an outstanding foliage plant, suitable for cultivation in sunny garden situations or in containers.

Victoria's Floral Emblem, *Epacris impressa*, Common Heath, is also abundant at the Prom. The spikes of small tubular flowers, produced mainly in winter and spring, can be white, light pink, deep pink or reddish. Beard-heaths in the genus of *Leucopogon* also occur in the National Park and can be readily identified by the fringed or 'bearded' petals on the flowers. Another member of the heath family, *Leptecophylla juniperina* ssp. *oxycedrus*, a *Cyathodes*-like plant, shows the strong link to the flora of Tasmania.

In autumn and winter one of the highlight species is the Common Correa, *Correa reflexa*. The forms most frequently seen in the park have pendent bells of red tipped with green or greenish yellow, but other colour variations can also be found.

Finally a spectacular and significant plant of the Wilson's Promontory National Park is undoubtedly the Grass-tree, *Xanthorrhoea australis*. It is widespread throughout the park and certainly very eye-catching when the flower-stems to 3m tall are produced. Flowering does not occur every year, but an abundance of flowers is usually seen after fire and can provide memorable displays. This will certainly be the case this spring. The trunkless *Xanthorrhoea minor* ssp. *lutea* is also present and plants can bear multiple flower stems.

The park is also rich in native ground orchids, including Spider-orchids in the *Caladenia* genus; *Chiloglottis* species, Bird Orchids; species of *Pterostylis* or Greenhood orchids, as well as Sun-orchids, Mayfly-orchids, Austral Lady's Tresses and *Gastrodia sesamoides*, Cinnamon Bells, which is incapable of producing chlorophyll. The orchid species are renowned for flowering profusely after fire.

To visit areas such as Wilson's Promontory in the seasons following a bushfire can be a memorable experience. Extensive fires occurred in the northern region of the Park during the summer of 2009 and it will be extremely fascinating to visit this and other regions of Victoria which were burnt to see and record the response of our native plants to this event.

Wilson's Promontory National Park is included in the itinerary as part of one of the pre-conference tours in September. The pictures on the following are Rodger Elliot's own photographs.

Plants of Wilson's Promontory



Epacris impressa
Common Heath, pink flowered variant



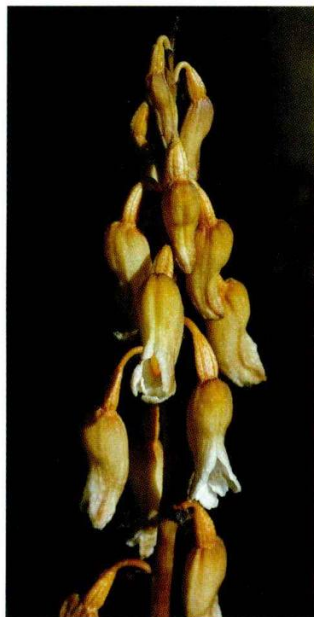
Diplarrena moraea Butterfly Flag



Leucophyta brownii Coastal Cushion-bush
flowerhead buds



Stylidium armeria
A pink flowering trigger plant



Gastrodia sesamoides Cinnamon
Bells



Microsorium scandens Fragrant
Fern

The Yarra Ranges Plant Directory

Compiled with assistance from Marilyn Gray

Marilyn is a Horticultural Consultant to the Shire of Yarra Ranges and was Curator of the ~~Karwarra~~ *Karwarra* Australian Plant Garden from 1992 until 2006. She is working on the fourth edition of the *Flora of Melbourne* which she first co-authored with John Knight in 1991. Marilyn is also a former leader of the ANPSA Boronia Study Group and an Honorary Life Member of APS Victoria.

The Dandenong Ranges are little more than an hour's drive from the centre of Melbourne. The area includes some magnificent fern gullies with spectacular tree-ferns and a rich understorey of plants. There are also numerous native birds in this region, including the lyrebird. The Dandenong Ranges are fortunate to have deep rich mountain soils, making the area an ideal location for orchards, plant nurseries and cut-flower production. The region was in the past a favourite area for holiday homes and guest houses but today many of the local people are permanent residents who work nearby or in Melbourne.

The area known as the Dandenong Ranges is part of a broader area known as the Yarra Ranges which, in turn, is part of the Great Dividing Range, the watershed range which runs the length of the continent from northern Queensland, through New South Wales to Victoria. Administratively, it is within the Yarra Ranges Shire local government area which was formed in 1994 with the amalgamation of the Shires of Healesville, Lilydale, Sherbrooke and Upper Yarra, an area of approximately 2,500 square kilometres.

The Shire's website describes its environment in the following terms: "*Yarra Ranges has long been recognised as a special place for its natural beauty and diverse habitats. The combination of national parks, state forests, private gardens and its location on the doorstep of Melbourne all combine to make the area unique in its natural, cultural and amenity values. The Shire contains some of the most environmentally important areas in Victoria, which are a significant factor in attracting residents and tourists. The mountainous landscapes and the Yarra River valley contain significant areas of remnant native vegetation, much of which is botanically and zoologically significant.*"

In 2002 the Shire undertook a project to identify the vegetation communities within the Shire. It was prepared by Rik Brown who listed 47 local plant communities. These vegetation communities are similar to many of the Ecological Vegetation Classes as described by the Department of Sustainability and Environment but are not as inclusive.

Marilyn Gray recently prepared a Local Plant Directory, listing plants in these specific communities, with a detailed description of each species.

The Yarra Ranges Plant Directory was made available on-line in late 2008 and officially launched on 4 May 2009. Prepared by Marilyn Gray, it inter-relates the Local Plant Communities Directory and the Local Plant Directory www.yarraranges.vic.gov.au/plants

Residents are able to obtain on-line maps to ascertain which community is appropriate to their own home.

Both a complete list of species and a list of plants suitable for landscaping are included for each community. The directory enables users to search for plants based on whether they form part of the upper, middle or lower storey of the native vegetation. Each of those three main categories is further subdivided based on plant type.

The project has been hailed as an excellent model that could be taken up by local councils elsewhere

Individual communities in the Local Plant Community Directory are listed in descriptive terms such as *Mountain Ash Wet Forest – Dandenongs*, *Broad-leaf Peppermint Heathy Dry Forest*, *Lemon Bottlebrush Rocky Outcrop Shrubland*. The wide range of habitats may be broadly categorised as:

Montane Forest (Damp and Wet); Other Damp and Wet Forests; Rainforest; Riparian Forests and Woodlands; Foothill Forests; Lowland Forest; Woodlands and Heaths; Wetlands.

The plant directory describes 909 plants, including ferns, clubmosses and some mosses, occurring within the Shire of Yarra Ranges. It is not a definitive list as it is expected that new plants in the Shire may be located in the future. Some plants have been omitted as they have not been definitely collected from within the Shire, or were collected from a generalised area more than 100 years ago. More than 800 plants include photographs.

There are many Victorian endemics, some of which have a large percentage of their populations within the Shire.

A sampling of endemic, endangered or locally significant plants includes:

Nematolepis wilsonii - the one plant known to be endemic to the area. Its area was burnt out by the recent fires, but it is hoped that it will re-establish from seed in the soil.

Eucalyptus crenulata – endemic to 2 sites – one in Coldstream (Shire Yarra Ranges), one in Buxton (Murrundindi).

Grevillea repens – Victorian endemic with a small range found in the Healesville/Chum Creek area (burnt), Mt. Slide (burnt), Daylesford.

Leionema bilobum ssp. *serrulatum* This form occurs mostly in the Shire and into the Shire of Baw Baw, also in the Strezlecki Ranges

Asterolasia asteriscophora ssp. *albidiflora* occurs in the Shire in The Patch, Belgrave, and just outside the Shire in Emerald and Cockatoo.

Hovea asperifolia occurs in a few small areas in Shires of Yarra Ranges and Murrundindi, possibly all burnt out but it will return from seed. [Pic p. 199]

Pomaderris vacciniifolia which is very rare but not quite endemic to the Shire as there are a few sites in the Shire of Murrundindi over the border. Sadly most sites in both shires were burnt in the February 2009 fires.

Cymbonotus preissianus: Significant in the Shire; scattered in few local sites

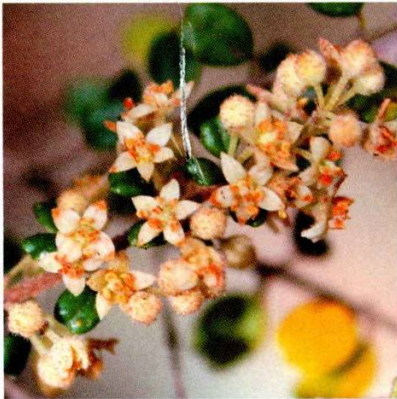
Dianella amoena: Endangered in Victoria. Occurs in a few sites in the Shire.

Astelia australiana – endemic in 2 sites in Victoria, one of which is in Yarra Ranges, where it is rare.

Geranium gardneri was separated from *Geranium solanderi*. It has a restricted distribution within the Shire.

Thelymitra carnea: Significant within the Shire with very few local sites.

First five photos Marilyn Gray



Pomaderris vacciniifolia



Geranium gardneri seed



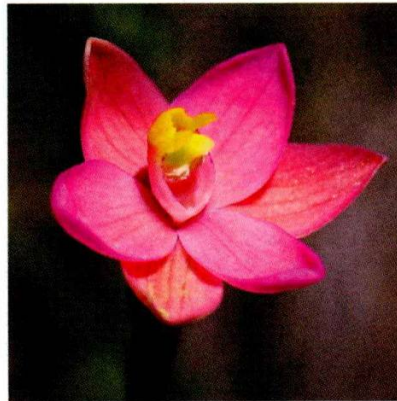
Cymbonotus preissianus



Astelia australiana foliage ex situ



Dianella amoena



Thelymitra carnea, photo by Cathy Powers

The Australian Garden

Royal Botanic Gardens, Cranbourne

Helen Kennedy

The need for an exclusively native Australian botanic garden in Victoria was first identified in the 1960s. In 1989 the RBG at Cranbourne was opened to the public. The 370 hectares includes native bushland and old sand dunes which had been used for sand mining and a military reserve.

In the first of two articles on the Gardens Helen Kennedy provides an overview of the Garden and of the five themed exhibition gardens. Helen is a trained "Volunteer Master Gardener" and Guide at the Garden.

The design brief was that it should be "a garden of the times, to reflect the essence of Australia, use the Australian flora in ways that excite, make people proud, - and perhaps challenge how people view the plants".

The expectations of Philip Moors, Director of the Royal Botanic Gardens in Melbourne, have been more than met by designers Taylor, Cullity, Lethlean, who, in association with plant designer, Paul Thompson, have interpreted our Australian landscape, plants and culture with great richness and elegance.

The Australian Garden, a 26 hectare area, is nestled within the approximately 370 hectares of significant remnant bushland that is RBG Cranbourne. Stage One, the first 11 hectares, opened to the public in May 2006. Work on Stage Two has commenced and it is expected to open in 2011-12.

As visitors walk around the Australian Garden, they follow the metaphorical journey of water in our land, starting in the desert – the stunning Red Sand Garden – with its crescent-shaped dunes, ephemeral lake sculpture and rich palette of colours. When Stage Two is finished, this journey will end, metaphorically, on the eastern seaboard.

On the way, visitors walk alongside the Escarpment Wall Sculpture, a massive and breathtaking 80-metre long rusted steel sculpture, reminiscent of Kakadu and beneath which the Rockpool Waterway bubbles. Water is recycled in an underground pump house and flows in a shallow stream, down four cascades and finally into a deep pool.

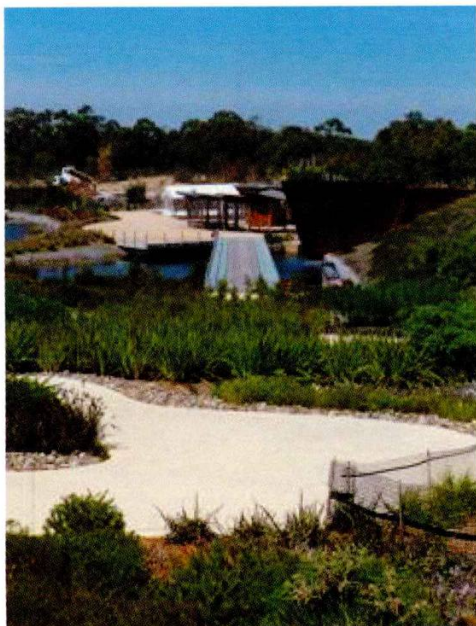
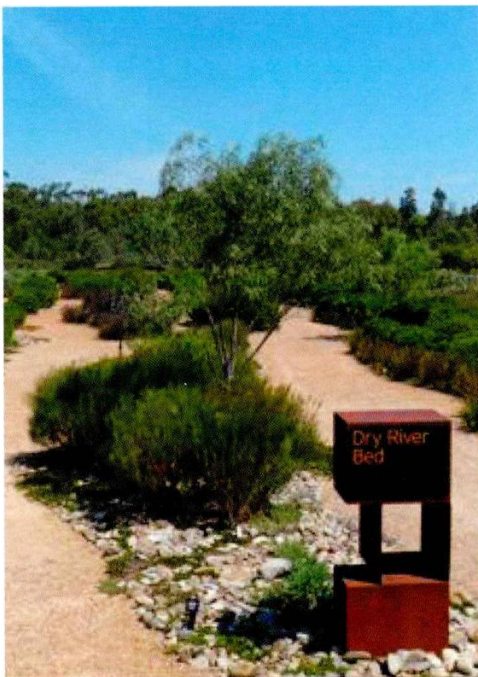
Five Display Gardens offer inspiration and ideas to home gardeners. The first illustrates the diversity of plants to be found in every bioregion in the country; the second shows what can be grown in a domestic garden to complement your house, from whatever era it springs; the third reinforces the importance of water and the way this influences plant selection and suitability.

One of the most visually striking gardens is the Future Garden, where all the plants are hybrids or grafted.

A magnificent *hortasaurus* is encountered in the Kids Backyard, a place where children can play amongst resilient Australian plants.

A stroll up through the Serpentine Walk (pictured below) leads to the Arid Garden and Dry River Bed (pictured right). These areas explore further the way water has shaped the Australian landscape and how plants have adapted to dry conditions. It is an area of great beauty, dominated by grey-foliaged plants. The Desert Discovery Camp, where children can explore and discover fossils, is also located in this area.

The Eucalypt Walk leads visitors through a series of distinctive woodland rooms separated by narrow clearings; each 'room' demonstrates the beauty and distinguishing features of five different species of eucalypts and explores our relationship with this iconic tree from a variety of perspectives.



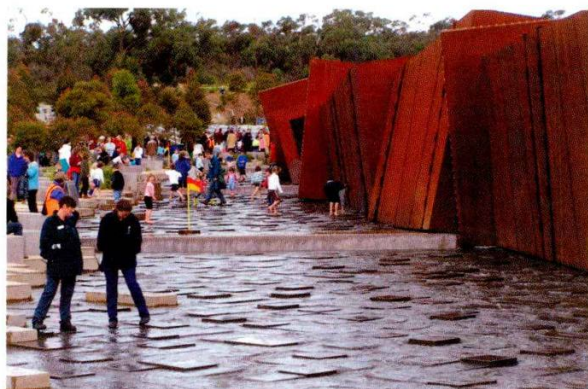
Approximately 100,000 plants have been planted in Stage One of the Australian Garden, representing 114 plant families. They were sourced from all over Australia as well as being grown on site. The whole of the Botanic Gardens is an area of state conservation significance and provides a secure, managed environment for the diverse plant, animal and vegetation communities found in the area.

There is much to discover and delight when one visits the Royal Botanic Gardens, Cranbourne and The Australian Garden. And Stage Two, which will complete the vision, is yet to come!

Photos: Helen Kennedy

The Red Sand Garden

Photo: K. Taliana



Escarpment Sculpture

On day of Official Opening
2006

Photo: Tony Cavanagh



Down the Waterway
Photo: Tony Cavanagh

The Australian Garden, Cranbourne

A Visitor's Response

Karlo Taliana

Karlo Taliana, President of the East Hills Group of the Australian Plants Society in Sydney, New South Wales, visited the Australian Gardens at the RBG Cranbourne in 2007. He describes his impressions of the Gardens.

We've all seen plenty of botanical gardens throughout various parts of the country, yet when someone dishes up one exclusive to Australian native plants, most of us tend to take greater interest. The Australian Garden section of RBG Cranbourne is Australia's newest public garden (opening in May 2006), containing 100,000 native plants over 11 hectares. It displays our native flora, in all its diversity, in a way that has not been done before, by showcasing our Australian landscape – with areas representing the desert, dry river beds, arid regions and eucalypts.

My first opportunity to visit the Australian Garden was in spring 2007. I remember how excited I was during the one hour drive south-east from Melbourne. My adrenaline was rushing with the thought of knowing that every plant I'd soon be strolling past was from this great land of ours. My brief interest in Australian natives only stems back about five years, so I knew I was bound to set my eyes on some species for the very first time. More recently, I've developed a fascination for Western Australian flora, in particular, the *Banksia* genus... hence, I was also hopeful of stumbling across the odd Western *Banksia*.

As I drove through the main entrance at RBG Cranbourne, I was greeted by a sea of colour. Large beds of *Anigozanthos* spp., namely *A. manglesii* (Red and Green Kangaroo Paw), and the prostrate *Banksia blechnifolia* flanked the main drive, making it impossible for me to remain within my vehicle. Once arriving at the Visitor's Centre, I took a few minutes to take in the view of the magnificent **Red Sand Garden** – the centrepiece of the Australian Garden. This was bisected along its northline by a seasonal flush of *Xerochrysum bracteatum* 'Dargan Hill Monarch'.

Now I was ready for action...

My journey through the Australian Garden started with five exhibition gardens, the first being the **Diversity Garden** which represents the 85 bioregions of Australia. Each bioregion is represented by a thin strip of garden composed of plant and mineral matter from that region. This garden draws attention to the incredible diversity of Australian plants and its landscapes.

The second area, the **Water Saving Garden**, made me aware of the many native species that will thrive on little or no water. All species were clearly labelled. Information plaques throughout the gardens educate visitors on the importance of water conservation and recycling.

Next, the **Future Garden** really got me thinking about the direction the nursery industry and native gardening has been heading. Plant breeders and nurserymen are manipulating plants through hybridisation, selection and grafting - resulting in flowers of more desirable shapes, size and colour. Despite the fact that much of this work may seem commercially driven, the issue of "science playing with nature" has its benefits. With some species on the edge of extinction, grafting may keep plant material available for further propagation so that future generations can also appreciate the species of today.

The **Home Garden** displayed landscaping ideas from the different eras of Australian gardening and highlighted the ways people can use Australian plants. The final exhibition garden, the **Kid's Backyard** was a huge playground constructed from salvaged forestry timber, reinforcing the organic theme - a place for children to imagine and explore.

All five exhibition gardens were flanked by an impressive ninety-metre **Escarpment Wall** - the structure inspired by the red sandstone escarpments of the outback. Running along the wall's full length was the **Rockwater Pool**. Ample seating was available along the water's edge - a place to take a break or just relax beside the sound of running water. Various sculptures and artworks were tastefully spread throughout the gardens enhancing my unique experience at the Australian Garden.

From this point, a bridge crossing over a lake at the end of the Rockwater Pool led me onto the **Serpentine Path**. The path wound gently up a rise through further plantings ending at the entrance to the **Arid Garden**. This garden contained species which displayed leaf adaptations to dryer conditions. Examples of such leaf adaptations included:- curly, hairy, waxy, scaly, small or thin leaves; grey-blue or reflective leaves; thick, fleshy water-storing leaves. Some of the species on show were *Daviesia horrida*, grafted *Eremophila nivea* and some magnificent specimens (some 3-4 metres tall) of *Xanthorrhoea preissii*.

The Eucalypt Walk and the Dry River Bed made up the home stretch back to the Visitor's Centre. Before entering the eucalypt gardens, I stumbled across group plantings of some western *Banksias* - namely, *B.burdettii* and *B.menziesii* and later, *B.petiolaris*.

Further on I noticed an information plaque which paid tribute to the late Alf Salkin, former member of the *Banksia* Study Group. With a lifelong passion for *banksias*, he devoted much of his time to eastern *Banksias*, recognising that there were variations within each species.

The **Eucalypt Walk** was divided into five sections - Stringybark, Bloodwood, Peppermint, Box and Ironbark. Various eucalypt species became feature plants as they stood aloft further display gardens set amongst some wonderful rock landscaping.

As expressed in indigenous paintings, the **Dry River Bed** tells us the story of how the power of water has shaped the land. Many genera were represented such as *Calothamnus*, *Conostylis*, *Eremaea*, *Swainsona*, *Meleauca*, *Dampiera* along with many others as it led me back to my starting point.

Below the Visitor's Centre was an orchid loft housing many terrestrial and epiphytic species as well as some pitcher plants. For the first time, I was able to appreciate the beautiful *Pterostylis baptistii*.

The Australian Garden has now entered its second and final stage of construction by expanding a further 10 hectares. From my understanding, it will incorporate wetlands, organic gardening, an events space and more educational/visitor facilities - all due for completion by 2011. As the gardens mature, the Australian Garden will only get better and I see it becoming a real standout when it comes to public gardens in this country...



Dwarf forms of *B.menziesii*; (inset) close-up. Photo: K.Taliana



The head of the Serpentine Photo: K.Taliana

The Kennedy Arboretum

Paul Kennedy, Immediate Past-President, APS Victoria

Paul and Barbara Kennedy live in northern Victoria and have developed an extensive arboretum.

Paul is leader of the Hakea Study Group and this genus is dominant in the arboretum. He does not need to maintain a stored seed bank for the Study Group as he is able to collect seed of any species on request from Group members.

Arboreturns are interesting places. Ours was set up to grow a group of genera that we were interested in. They enable research to be carried out on the adaptability of species within the genera to survive in different climates and soils, as well as being able to establish the distinguishing features between species.

Those participants on the post conference tour of the Goldfields and Murray will visit this arboretum which has about 4,000 native plants.

This arboretum of Australian native plants was commenced in 1996. The property is divided into two 18 acre paddocks. The front paddock has a natural depression running through it and after heavy rains can be inundated for many weeks.

We have attempted to establish perimeter plantings of local native plants and have been partially successful despite the long drought. Some local Eucalypts have regenerated and we hope that will continue so that the paddock reverts to a natural bushland appearance in due course.

The rear paddock of 18 acres contains the Kennedy arboretum. It is called an arboretum because it has a large collection of plants. It is probably one of the largest private collections of native plants in Australia. The main collections are:

- All the Hakea species from around Australia, comprising 166 species as per the 1999 Hakea revision.
- 90 species of Banksia of the approximately 100 in total.
- Nearly 600 species of Eucalypt. We would have more only that the cool climate and sub alpine species do not like our summer heat.
- More than 100 species each of Acacia and Melaleuca.
- Large numbers of Kunzea, Callistemons, Calothamnus, Eremophila and Correas plus many others.

The climate is supposed to be one of hot dry summers, warm autumns, and wet cool winter/spring. The average rainfall is 450 mm but we have not seen that since 1996. The average for the past twelve years has been 300 mm. These days rain is likely to come very infrequently in heavy downpours and at any time of the year.

Last year we had no spring rains, 150 mm in November/December and then nothing till now some four months later. Frosts can occur down to minus 6 degrees C but we have had very light frosts for most of the drought years.

At any time of the year the arboretum is going through a change in flowering phase. For instance, at the end of November, the Callistemons have nearly finished flowering and the Eremophilas are in flower with some of the Western Australian Banksias budding up for summer flowering.

The soil consists of two 20 m deep sand hills with a claypan in the middle. The sand hills do contain moisture at depth which many native plants have tapped into. For best results, native plants should be planted as close as possible to the soil type that they grow in naturally in the wild. Obviously we cannot replicate all soil types but we have been surprised by what we have been able to achieve.

Climate is also another important factor in whether a native plant can be grown successfully. Nearly all the twelve years that we have been here have been associated with a lack of rainfall and some supplementary watering has had to be carried out to smaller plants to get them established.

Plants from high rainfall areas and summer wet climates will always need additional moisture over our hot summer if they are to survive. A lot of native plants are quite drought tolerant and many of the plants that are growing here survive without additional moisture.

The following photographs of banksias by Paul Kennedy were taken in the Arboretum.



Banksia scepterum



Banksia leptophylla



Banksia attenuata



Banksia grandis



Banksia benthamiana

Our Garden in Ocean Grove

Tony and Liz Cavanagh

Tony and Liz live at Ocean Grove, a seaside town to the south of Geelong. They describe their experience in developing and maintaining a native plant garden in this area.

Tony is the co-author of the "Dryandras" and Newsletter Editor of the Dryandra Study Group.

We bought an acre block for our future garden in late 1977 and moved into our new house and a virtually bare block near Christmas 1978. The choice was deliberate as we wanted to be able to design our own gardens and not be constrained by having to work around large, established trees.

We did get the boundaries ripped to a depth of around 600 mm because the ground appeared dry and compacted and we wanted to establish boundary screen plantings. Ripping certainly opened up the soil and many of the plants we put in during 1977 are still looking healthy today, despite years of drought and low rainfall and the driest summer ever in southern Victoria.

In these early days of consistent and often high rainfall, the ground was often wet and even boggy so we installed slotted agricultural pipes for drainage and built many raised beds. We used the left-over soil from the building and even soil from a neighbour's swimming pool excavation but later found a cheap "soil" substitute readily available in the Geelong area, crushed scoria. This is a porous volcanic material which is light and open and seemed to be ideal for building up beds and adding to clay areas. The first type that we used was black in colour and apparently close to neutral in pH.

This was replaced by red scoria which appeared to be much more alkaline and began to cause us considerable problems with yellowing, due presumably to unavailability of iron. We stopped using scoria and tried to add as much mulch as we could and whatever local soil we could scrounge.

I should explain that, while Ocean Grove is a seaside town, we live about three km from the beach, so salt winds are not a problem. Nor do we have any sandy soil. Rather, our soil is shallow clay loam over buckshot (ironstone pebbles) over deep red clay. This of course is hardly the ideal for the growing of Western Australian Proteaceae and other W.A. plants which initially interested us, hence the raised beds.

The garden evolved over the years as we created more beds. We have always kept a lawn area but, even so, the gardens (including a large vegetable garden) occupy about half an acre.

The block faces north so initially we had near ideal growing conditions for the sun-loving type of plants we wanted to grow. We also planted a few supposedly medium size gums at points in the garden away from the house. However, the north boundary shrubs also grew well, as did the gums, and after some years we faced the problem of shaded beds and the difficulty of establishing new plants in areas overrun with tree roots.

This caused a change in our thinking about what plants to grow, and whenever we needed to replace something, we began to look more to Correas, Prostantheras, Tetrathecas, Phebaliums, Isopogons, Petrophiles and the like which seem to handle dry shade much better.

We also did a lot more pruning of older plants in an attempt to rejuvenate them and became much more selective about what we grew in our "good" beds where we still had reasonable sun.

We still grow quite a number of the smaller dryandras but now include smaller Eremophilas and a limited number of grafted plants of specials such as *Pimelia physodes*, *Pimelia spectabilis*, *Isopogon cuneatus*, *Galeznovia verrucosa*, and *Darwinia*, *Verticordia* and *Ptilianthus*.

The extended drought in much of Victoria has made gardening much more difficult and we are finding it increasingly harder to establish young plants, despite use of tank water and bucketing shower and washing water. There is no substitute for God's rain (when it falls) and we have found that perhaps 70% of our autumn plantings over the last three years have either failed to thrive or have died. Without rain, the soil remains too dry for roots to develop to any extent and plants just simply don't establish the deep root system required for drought resistance. Those that survive barely hang on.

Contrast this with material we planted in the "good" rainfall times when we received over 600 mm, much of it in autumn and winter. Most of our boundary plantings of grevilleas, banksias, dryandras, callistemons, melaleucas, eriostemons, larger correas and calothamnus still survive with the plants over 30 years old. Probably over half of the shrubs in our other gardens are more than 20 years old and we have really suffered minimal losses of established plants although they no longer flower as well as in the past.

The three days over 45 °C we had this year lead to severe scorching of leaves of some plants, requiring drastic pruning, and finally killed off some older plants that were just hanging on. However, the majority of the garden is still green and we think it is a tribute to the qualities and longevity of our Australian plants.

We hope that the pictures will tell the story.



The mess when the house was being built



The same area in 2007

Philotheca myoporoides,
Grevillea umbellulata ssp
acerosa and *Acacia triptera*
 Aug 2006



Raised bed and garden looking
 west



30 year old callistemons in
 north boundary plantings



North boundary planting Oct 2008

Daniel Bunce

Merle Thompson

Merle is researching the growing of Australian native plants in the Australian colonies from the time of the first white settlement at Sydney in 1788 to the latter years of the Nineteenth Century. Geelong, featured in this issue of "Australian Plants", has an interesting link to the early history of nurseries and horticultural writing in Australia.

The Geelong Botanic Gardens

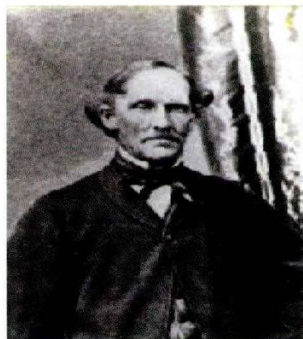
The land on which the Geelong Botanic Gardens were established was reserved in 1851, only 16 years after the founding of Melbourne and two years after the gazetting of Geelong. At the time it was the largest reserve in Victoria. The initial proposal to develop the entire area as botanic gardens proved too difficult and only the 2 hectares originally set aside for a nursery was developed. Over a century later this was extended to 3.6 hectares.

The Gardens are described on their website as "an eclectic mix of native and exotic plantings". It states that "Geelong Gardens were at the forefront of trialling both native and exotic ornamental plants for their horticultural potential to the region. This is evident from what remains today of the original plantings, in particular the tree species are a legacy of this era", including 30 significant trees which on the National Trust register of significant trees.

Trees which mark the original entrance of the gardens vary in age from 125 to 140 years planted. They are of the species *Agathis robusta*, *Corymbia maculata* and *Podocarpus elatus*. The web entry states that: "It's interesting to note that all these species are Australian native plants and are amongst the few Australian species that proved to be popular in Horticulture in SE Australia, along with Moreton Bay Figs and Bunyas both of which there are excellent examples of in the gardens." The Bunyas (*Araucaria bidwillii*), of which there are 12, are the largest concentration of Bunyas in a confined area in Victoria. Other historic trees include *Actinostrobus pyramidalis* from Western Australia and *Brachychiton* spp. such as *B. discolor* and the naturally occurring hybrid *Brachychiton x roseum*.

The Founder and First Curator of the Gardens was Daniel Bunce, appointed in 1858, who was one of Australia's first nurserymen and published a gardening book which was only the third in Australia.

Bunce exchanged plants with a wide range of institutions. The "Geelong Naturalist" of 1914 (2nd series, vol. 6, no 1 p 20-23) contains an article entitled "An old Geelong book: by T.S. Hall". Hall says of Bunce, "Daniel Bunce .. filled the "nursery" of the Botanic Gardens with such a wealth of rare Australian plants. How well I remember the blazing masses of Sturt's Desert Pea which were his pride".



The Tasmanian beginnings



Above: 1835 Portrait by HC Smith

On 31st December 1834 Theophilus Lightfoot (1802–1875) purchased 1.75 acres in the New Town Road North Hobart. In 1835 he added 3 acres on which he established a “Nursery and Fruit Garden” which he named Denmark Hill. This was one of, or perhaps the, first nursery in Tasmania. It contained a hot house filled with the “choicest exotics, pines and flowering plants”. It was “tastefully laid out in the highest cultivation and heavily stocked with the largest variety of trees plants and flowers in the colony”.

This nursery has an interesting connection to the Australian Native Plants Society (Australia). Theophilus Lightfoot is the great, great grandfather of Dr Paddy Lightfoot, life member of the NSW Society, and g-g-great grandfather of Dr David Lightfoot, leader of the Isopogon-Petrophile Study Group.

Lightfoot's business failed financially and in 1837 it was bought by Daniel Bunce. At the time he placed an advertisement in which he said that the nursery would “*be open at all times as a promenade for ladies and gentlemen on the same principles as the popular nurseries round London*”. Ladies could promenade but he was providing seeds for “*gentlemen desirous of stocking their gardens*”. Bunce also failed financially and the nursery was sold by auction on 5 April 1839.

His catalogue, possibly the first in Australia, showed that he grew a number of Australian plants. It included, to use his terminology, Acacia (several species); Baeckea (native thyme, 2 species); Banksia (native honeysuckle); Boronia; Botany Bay greens; Bursaria (native box); Button flower; Casuarina (she oak, 3 species); Correa, (several species); Dendrobium; Drosera; Eucalyptus, “all the varieties of gum tree”; Goodenia; Goodia, (native laburnum); Hakea; Leucopogon; Mountain ash and Prostanthera.

Bunce's later activities

The years from 1839 until 1850 are complex. He may have had a nursery at Launceston in 1839 before moving to Port Phillip. He undertook a number of excursions, some with Aborigines, and as the botanist on Leichhardt's 1846 attempt to cross Australia. He regarded himself as Victoria's first botanist.

In 1850 he opened a nursery in Melbourne. He advertised in “The Argus”: “*To gentlemen possessing gardens or villas or to those who are desirous of forming the same, the undersigned will be happy to give designs and superintend the laying out on the landscape principle; as also to stock them with indigenous and English forest trees*”.

Publications

In 1837- 1838 Bunce published a monthly gardening guide which was bound and published as *A Manual of Practical Gardening* in Hobart in 1838. This was the first gardening publication in Australia to include flowers as well as vegetables and provides an insight into the range of introduced plants available at that time.

His June entry was on native plants, although he suggests that they be "intermingled" with British shrubs. It is re-produced below with his original spelling and names, often incorrect and including European names no longer applied to Australian species. A revised second edition entitled *Australian Manual of Horticulture* was published in Melbourne in 1850. A facsimile of this edition is available from the Friends of the Geelong Botanic Gardens.

Some of Bunce's writings related to his travels and to his study of Aboriginal languages. He wrote on the botany of the Bendigo region for the *Melbourne Argus* and had his own monthly journal, the *Rural Magazine* from April to November 1855. *Tree Planting in Town* (1861) and *A List of Plants Capable of Resisting Long Drought* (1862) were written for the Horticultural Improvement Society of the Western Districts. It appears that his "*Guide to Linnean System of Botany*" was never published. Two publications evoked controversy with accusations of inaccuracy and plagiarism. These were *Hortus Victoriensis* (Melbourne; 1851) and "*Hortus Tasmaniensis*," which was suppressed by the printer. A single copy survives in the National Library of Australia.

Bunce also prepared a four volume set of albums of about 100 dried botanical specimens, called *Plants from Australia*. All specimens are Tasmanian.

Bunce's specimen of *Banksia australis* (marginata) used with permission: Jones, George, *Growing together Supplementary Volume 2* (1996). Photo: Tony Cavanagh.



NATIVE SHRUBS

THIS is a good time to transplant the Native Plants. These plants are mostly adapted for, and would become handsome ornaments to, the Shrubberies, provided a little taste was displayed in planting them according to their size, habits of growth, etc. A gentleman in Hobart Town may easily form a very handsome shrubbery from the following plants, (intermingled with a few Lilacs, Honeysuckle, and other British shrubs,) all of which may be found within two or three miles of town; for the back of the Shrubbery— *Banksia Australis* (native honeysuckle), *Calcitium Salicinum* (honey plant), *Prostanthera Lasianthes* (mint tree), *Acacia Melenoxylon* (light wood), Ditto *Lanceolalus*, Ditto *Decurrens*, Ditto *Verticellata* (prickly wattle), *Pomaderris Apetella*, Ditto *Elliptica*, (the first the common and the latter the yellow dogwood of this Colony,) *Aster Moschatus* (musk tree), *Exocarpus Cupressiformis* (native cherry), *Casuarina Torulosa* (she oak), *Zinnia Arborescens*; then more towards the front, relieved occasionally with here and there a plant or two of the *Cybotium Billardierii* (tree-fern), *Bursaria Spinosa* (native box), *Aster Tomentosa* (daisy tree), Ditto *Viscosum*, Ditto *Dentatus*, Ditto *Aculeatus*, *Acacia Stricta*, *Correa Backhousiana*, Ditto *Ferruginea*, Ditto *Virens*, (these are found about half-way up Mount Wellington), *Calcitium Linariaefolium* (narrow leaved honey plant), *Goodia Pubescens* (native Liburnum), *Hakea Gibbosus* (this is to be met with about the middle region of Mount Wellington, as also the *Phebalium Montana*) *Pepper*, *Wax Cluster* (*Gaultheria Hispidia*); and close to the edge of the border near the walk may plant the following low-growing plants from the top of Mount Wellington- *Pimelea Incana*, Ditto *Cerissia*, *Bellandina Montana*, *Veronica Montana*, *Dracophilla Elegans*, *Euphrazea* (Eyebright), *Ozothamnus Montana*, *Backia* (native thyme), *Veronica Formosa*, *Telopia Tasmaniana*, *Australian Wallatah*, *Craspedia*, *Aster Ilexfolia*, *Holly-leaved Aster*.

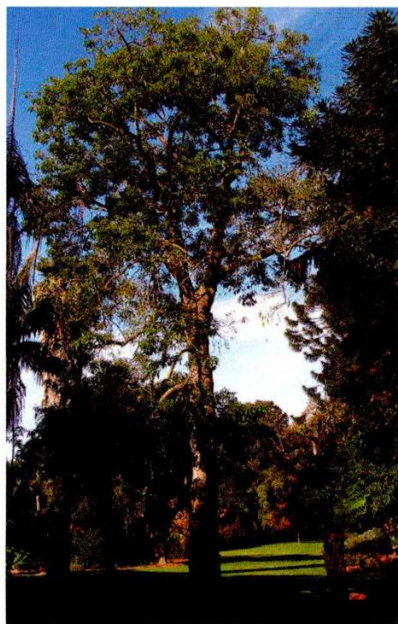
Historical plantings in Geelong Botanical Gardens

Photos by Tony Cavanagh



Araucaria bidwillii (Bunya Bunya Pine)

Part of group of 12 trees apparently planted by Bunce



Brachychiton acerifolius X *populneus*
(Kurrajong) apparently planted by Bunce



Bollard statues of Bunce and young lady

The Geelong Special Playspace

Ric McConaghy

Ric has extensive experience in disability services and as a consultant in playspace design. In 2002 he established his own business and is now regarded as a leader in this field. He has presented papers at international conferences and achieved awards, including Kidsafe Regional Playspace award 2006 for the Geelong Special Playspace.

His desire is to "raise enthusiasm and to empower communities to create exciting, diverse and secure naturalistic playspaces that do not rely solely on structures; to incorporate art and design elements that encourage interaction, engagement and wonder and to create places that better meet the social, emotional, spiritual as well as physical needs and aspirations of all children and the adults that may accompany them."

He prefers to use a significant proportion, perhaps two thirds, of locally indigenous plants in his landscapes with about 10% exotics and the rest other native plants.

Background

The Geelong Special Play Space was a new concept in playground design seeking to integrate children with a disability in a unique, attractive and naturalistic play environment. The play space is located in a natural park setting within the Geelong municipality and in close proximity to the Geelong Botanic Gardens and is designed to compliment its surrounds using natural materials and art works. The site location was an intentional endeavour to link play and plants.



Kurrajong tree transplanted from Eastern Park as a focal point

The outcome is a regional playground set in a parkland environment that is suitable for families as well as groups of children all year round. The objective was to encourage social interaction amongst children of all ages and abilities with a focus on engaging all children in the natural environment. The requirements of parents and carers who may have a disability were also considered, as well as the need to cater for teenagers.

As such the plant selection was fundamental to the success of the space. It had to allow for the creation of separate outdoor rooms, whilst allowing for easy supervision by parents and care givers. It had to provide a range of sensory experiences including colour, shape, form, texture and scent. It had the opportunity to provide habitat as well as to influence the micro-climate of the space. And there was the opportunity to engage with a theme.

Management of the project

The project gained momentum and a team of project partners was formed to oversee the development of the playground, with the assistance of the Committee for Geelong. Steering committee members included representatives of local and state government, disability agencies and the Barwon Disability Resource Council, parents of disabled children, Friends of the Botanic Gardens and service clubs.

The steering committee engaged me as landscape designer for the project.

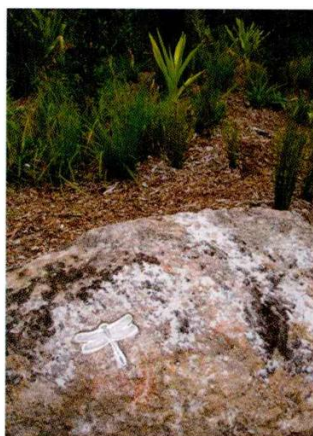


Community consultation was extensive and involved a broad cross-section of the community. This meant that at all stages of development all those associated with the project became aware fundamentally of the play opportunities and broader ramifications of engaging children with the natural environment.

Methodology

The then Director of the Geelong Botanic Gardens, Mr John Arnott, was actively engaged in the project. We collaboratively developed the plant theme. It represents an interpretation of a journey from ancient Gondwanaland plantings to the present day use of plants in a controlled urban environment, allowing wild places as well as formal settings within the space.

The delivery of successful plant material was crucial. As such, it was decided that the planting would be taken out of the main contract and handed to the Geelong Botanic



Gardens to purchase, nurture, plant and even be involved in the on-going management and maintenance of the space. This was a quite unusual strategy that has proven to be immensely successful as the entire plant regime became the responsibility of those who loved and had chosen professional careers in working with plants.

Other Victorian Playspaces

Other playspaces designed by Ric McConaghy which are in the areas covered in this issue include:

The Colac Botanic Gardens Regional Accessible Playspace



Play areas at Colac

Federation Estate Playspace for All Abilities, Ringwood, based on the theme of the four elements, Earth, Water, Fire and Wind, displayed on totem poles with a rainbow planting layout. It has musical and sensory elements.

Docklands Playspace with a replica of the Southern Cross that 'twinkles' in exactly the same way as the constellation.

Outdoor Pool and Recreation Centre, Seville, Yarra Valley with water spouts, and with natural landscaping creating a "Jurassic" adventure area.

Wombat Bend Finns Reserve

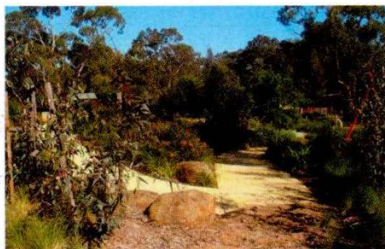
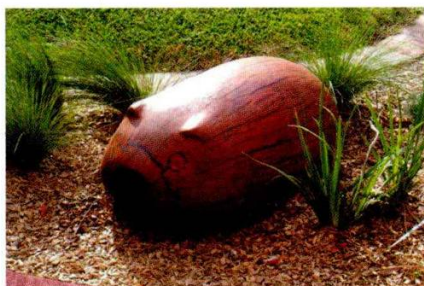
Templestowe: highlights the combination of natural-style and formal landscaping and their integration with innovative play equipment. See pictures below.

The Joey Club at Tullamarine Airport Qantas project

Meet a friendly wombat there.

Pictures of Finns Reserve, Colac,

Tullamarine and a video of Seville are on Ric's website – www.rmpl.com.au.



The Deppeler Garden

Lorraine Deppeler

Ron and Lorraine Deppeler describe their garden in the Warrnambool District

This 15 acre property fronting the Hopkins River was bare farmland seven years ago. The river banks and other areas were badly infested with weeds including thistles, teasel, boxthorn, gorse, Spanish ivy, canola, Genista and fennel to name a few. Erosion and rabbits were also creating problems.

The first priority after building the house and nursery was to fence off the river to exclude the cattle and to plant 4,000 indigenous trees and shrubs to help control erosion and establish a habitat area for wildlife. Rabbit warrens were fumigated and weeds were sprayed, slashed or removed by hand.

We then began to plan and plant out the garden around the house and nursery. Windbreaks along the southern boundary were also established a few years ago, and our latest project has been to fence off the track into the property and plant it with native trees and shrubs.

We are hoping that the *Acacia cognata* along the track will grow into large shrubs to shade out the weeds underneath, and the *Eucalyptus sideroxylon* 'Rosea' will form an attractive avenue of trees.

The garden around the house is mainly planted with natives. Closest to the fence lines are hardy, wind tolerant native trees that form a shelter from the very strong southerly and westerly winds we experience here. They include *Acacia boormannii*, *A. fimbriata*, *A. floribunda*, *A. howittii*, *A. iteaphylla*, *Allocasuarina verticillata*, *Banksia integrifolia*, *B. marginata*, *B. speciosa*, *Eucalyptus conferruminata*, *E. cordata*, *E. cosmophylla*, *E. crenulata*, *E. ficifolia*, *E. gunni*, *E. kitsoniana*, *E. leucoxylon* Rosea, *E. pulverulenta*, *Lagunaria patersonii*, *Westringia fruticosa*.

Edging the inner driveway circle near the house is *Eucalyptus albidus*, a small mallee gum that is kept trimmed to approx. 2m high. Within this enclosed circle are plantings of various ground cover Grevilleas, *Anigozanthos* (Kangaroo Paws), *Doryanthes excelsa* (Gymea Lily) and *Eucalyptus pulverulenta*. The three cement feature pots are planted with *Macrozamia communis*. Between these and the paving are four edged garden beds mass planted with *Brachyscome multifida*.

Melaleuca lanceolata (Moonah) forms a low hedge edging the pathway to the front door. On the other side of the pathway the row of *Adenanthos sericeus* (Albany Woolley Bush) has been heavily pruned due to severe wind damage. We are hoping that they will resume their original shape and size in time.

Between the house and the river are a number of rockeries planted with low growing mainly indigenous species that will not impede the view of the river from the house.

Platypus and water rats and over 40 species of birds have been observed on the property and along the river.



Indigenous garden along river



Wind break trees on property boundary



Melaleuca lanceolata hedge



Brachyscome groundcover

Trees & Shrubs along the River

Acacia mearnsii; *A. melanoxylon*; *A. myrtifolia*; *A. stricta*; *A. verticillata*; *Allocasuarina verticillata*; *Banksia marginata*; *Bursaria spinosa*; *Correa alba*; *C. reflexa*; *Eucalyptus camaldulensis*; *E. obliqua*; *E. ovata*; *E. viminalis*; *Goodenia ovata*; *Leptospermum juniperinum*; *L. lanigerum*; *Melaleuca squarrosa*; *Phragmites australis*; *Poa labillardieri*; *Solanum laciniatum*; *Themeda triandra*; *Viminaria juncea*; *Xanthorrhoea australis*

Small Plants in Rockeries

Arthropodium strictum; *Bulbine bulbosa*; *Chrysocephalum apiculatum*; *Clematis microphylla*; *Correa alba*; *C. reflexa*; *Leucophyta brownii*; *Dianella revoluta*; *Goodenia ovata*; *Juncus pallidus*; *Lomandra longifolia*; *Patersonia occidentalis*; *Poa labillardieri*; *Stylidium graminifolium*; *Tetragonia implexicoma*; *Wahlenbergia stricta*; *Xanthorrhoea australis*.

Lorraine is a member of the Fern Study Group and the Fern Society of Victoria. This interest is reflected in her Bush-House nursery which is a wholesale propagation nursery supplying the nursery trade with a wide range of quality spore grown ferns including Tree ferns, Maidenhair ferns and Birds Nest Ferns. The nursery particularly specializes in native ferns. A few lines of other interesting or unusual natives are also grown.

A Conservation Garden in Mallacoota

Ian Anderson

Adapted with permission from the journal of the Australian Native Plants Society, Canberra Region (Inc). March 2009 Vol. 15 No. 9

Mallacoota is a town on the coast in East Gippsland, not far from the border with New South Wales. It has a population of between one and two thousand permanent residents, swelling considerably in the Christmas/ New Year holiday period as holiday-makers enjoy the seaside location and the lake.

The history of the town has been recorded in publications written by descendants of settlers who moved there early in the 20th Century, clearing land for farming, largely for subsistence purposes. Keeping horses became popular. Much of the vegetation outside the cleared area has subsequently been preserved as part of the Croajingolong National Park. The town development so far has largely been confined to previously cleared areas, now largely dominated by kikuyu grass, of African origin. Substantial dwellings have in some cases been built especially in recent years, with gardens to match developed around them, often using native plants as features. The Mallacoota community could promote its garden town qualities more if it wished. A wide variety of species do well in the relatively benign climate and reasonable soils.

On a visit to Mallacoota in 2000, I noticed a subdivision estate on a cleared hill in the town, with the name of (Gabo) Island View Estate. The view of Gabo Island was certainly there from the individual blocks for sale on the estate. One had already been built on and fenced and a garden had been planted.

Closer inspection of the blocks revealed that, unlike most of the remaining open space in and around Mallacoota, the closely slashed grass on the estate was not kikuyu. Apart from a few small patches, it was mainly kangaroo grass (*Themeda*), together with scattered weed grasses such as *sporobolus* and *paspalum* species. Here and there in the grass were individual plants of other native species cut low by slashing, such as *Epacris impressa*, a small *pimelea* and *Kennedia rubicunda* which climbs through shrubs and trees if given the opportunity.

Fancy such a botanical opportunity (or responsibility), close to the centre of Mallacoota! With considerable haste I managed to marshal sufficient funds to make a deposit on the long, slender double block running down the hill through the middle of the estate - something of a corridor. Full payment followed in due course.

I began to mark some of the native plants with wooden stakes so I could find them again more easily and perhaps provide protection from further slashing.

Subsequent discussions with locals suggested that the elderly couple who owned the estate land some years before had plans for it to be made into a nature reserve, but this did not happen.

The next consideration was what to do with such a block as an absentee owner, based in Canberra, with no plans to move to Mallacoota permanently on the horizon.

To build some kind of dwelling on the land became increasingly unattractive as I realized more and more just what a treasure trove of native plant species were still growing with the kangaroo grass and would be damaged by a construction process. Fortunately, affordable, already standing vacation accommodation became available in an established part of Mallacoota.

The challenge was how to manage such a special place of vegetation to maintain its natural values. What kind of garden should be developed on such a block so it would remain a *fertile and delightful spot*?

Original plans to let nature take its course and allow all the plants to grow back into bush soon needed modification. All vacant privately owned land cleared in Mallacoota has to be slashed once each year to reduce the bushfire hazard. In any case it quickly became apparent that certain plants, especially *Kunzea ambigua*, would dominate the grasses and most other shrubs given a chance, forming an impenetrable thicket.

An annual slash in early December with the slasher height at about 10 cm seemed to work well, giving the grass and grassland flora a chance to grow, flower and set seed and keeping the kunzea and leptospermum in check. In addition, it was permissible to leave a certain percentage of the unoccupied block uncut, perhaps as much as thirty percent. This meant it was possible to leave small areas on the block marked out with boundary stakes and not slashed, although they could be selectively trimmed at leisure. A selection of large shrub and tree sized plant species growing naturally on the block could therefore be allowed to grow and reproduce in these uncut areas.

Naturally occurring orchid species such as *Thelymitra ixioides* could also survive with this treatment and set seed.

Although the garden is overwhelmingly natural, I have in addition planted a few local species here and there. A tiny banksia seedling was growing naturally on the block but was killed by the slasher.

A specimen of each of *B. integrifolia* and *B. serrata* has been planted to retain a banksia presence. On the rather steep bottom slope above the nature strip, local plants, the lillypilly (*Acmena smithii*) and the sandpaper fig (*Ficus coronata*), have been planted in this altered landscape. They have both survived for more than a year in less than optimal habitat and with little supplementary watering.

A recent management decision has been to complete the fencing all around the block except for the bottom boundary with the steep slope. A useful development associated with the fencing has been the addition of three bench seats on the block so people can sit and take in the view and ambience and enjoy the birds. The gate is not locked and visitors are welcome.

This has been the story of another kind of native garden, one which is to a significant extent already in existence through natural regeneration but which can still be strongly influenced by subsequent management decisions.



The vacant block in 2002



A small *pimelia* (left) and *Kennedia rubicunda* growing among the slashed *Kangaroo Grass*

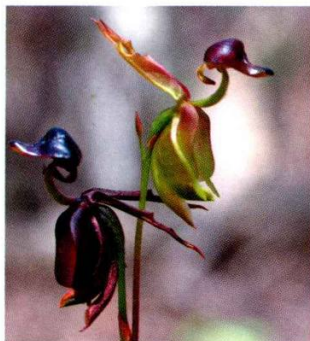


Naturally regenerating shrubs such as *Acacia floribunda* and *A. sophorae* have been allowed to grow in selected un-cut areas

Photo 3: Labellum of the flower on the right snapping shut after being bumped.

When triggered accidentally, the orchid begins to reset.

As the labellar stalk curls, it pulls the labellum upward into the necessary position to attract a pollinator. This can take up to 20 minutes or more.



The *Caleana major* is widespread and can form vegetative colonies in open forest. (See photo 4) It prefers gravel type soil and can often be found around the base of Eucalypt trees.

Photo 4: Large colony of *Caleana major*.

There are twelve Small Duck Orchids in Australia and ten of these are exclusive to Western Australia.

The Small Duck Orchid in my area (Brisbane Ranges) is the *Sullivania minor*. (Photo 5) The entire flower is 1cm X .5cm (about the same size as the 'duck's head' of the *Caleana major*). Its labellum is also shaped like a beak and is covered with shiny dark calli that look like warts. Not a very complimentary description, but it is obviously attractive to a specific species of the thynnine wasp which will attempt to mate with the labellum.

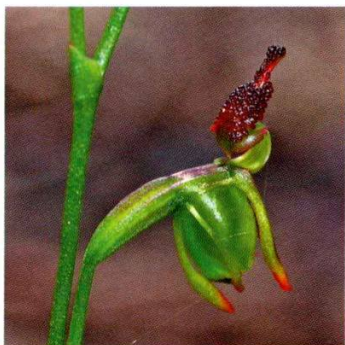


Photo 5: *Sullivania minor*



Photo 6: Colony of *Sullivania minor*.

This orchid (See photo 6) is very difficult to find in the field because of its small size and ability to blend with other vegetation but white sandy soil is a preferred habitat and can be a good indicator for searching.

Photo 3: Labellum of the flower on the right snapping shut after being bumped.

When triggered accidentally, the orchid begins to reset.

As the labellar stalk curls, it pulls the labellum upward into the necessary position to attract a pollinator. This can take up to 20 minutes or more.



The *Caleana major* is widespread and can form vegetative colonies in open forest. (See photo 4) It prefers gravel type soil and can often be found around the base of Eucalypt trees.

Photo 4: Large colony of *Caleana major*.

There are twelve Small Duck Orchids in Australia and ten of these are exclusive to Western Australia.

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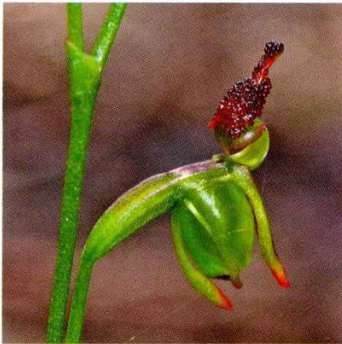


Photo 5: *Sullivania minor*



Photo 6: Colony of *Sullivania minor*.

This orchid (See photo 6) is very difficult to find in the field because of its small size and ability to blend with other vegetation but white sandy soil is a preferred habitat and can be a good indicator for searching.

The third Duck Orchid in my vicinity is very unique and rare. It is the Spectral Duck Orchid and is considered by some to be a morphological freak. This orchid has the unusual ability to produce seed without pollination or fertilization thus being apomictic. The other interesting characteristic is the fixed, vestigial (having little or no use) labellum strap.



Photo 7: Spectral Duck Orchid
(*Sullivania* sp. aff. *minor*)

There is some speculation that mutational changes in an orchid flower structure would eventually lead to a change in pollinator. I wonder if this plant is in the process of that change and will eventually evolve to be an identified species. Probably not in my lifetime but I will be watching.

All three of these orchids have a single leaf (See photo 8) that occurs months before the flower and has mostly died away by the time the flower opens.



They flower mainly in spring but this can be extended into summer depending on the weather conditions.

I get great pleasure finding and photographing these orchids. The spring of 2007 was especially dynamic in areas where the fire of 2006 had burned in the Brisbane Ranges National Park. Summer bush fires are known to enhance flowering in some orchids and wreak havoc with others and these duck orchids responded in the second season with an increased number of flowering plants.

Photo 8: Single leaf of three Duck Orchid plants

If ever you travel to Victoria in late October and November, I wish you good luck with hunting ducks. You don't even need a licence!

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PUBLISHED BY THE AUSTRALIAN PLANTS SOCIETY NSW LTD

Under the direction of its REGIONAL COUNCIL

Editorial Material: Editor, Australian Plants, PO Box 5026, Old Toongabbie NSW 2146

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All correspondence /feedback to: The Secretary, PO Box 5026, Old Toongabbie NSW 2146

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