



ANPSA 2013 Conference

Australian Plants

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Front cover: *Banksia aemula*, the Wallum Banksia, photographed in the Marcus High Dunes on the Sunshine Coast by Jan Sked.

Back cover: *Banksia oblongifolia*, photographed in Kathleen McArthur Conservation Park by Jan Sked

Photographs are by the authors of each article, unless otherwise noted.

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Australian Plants articles

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Introduction Diversity is in our Nature ANPSA 2013

Lawrie Smith AM, Convenor of ANPSA 2013 Conference

Lawrie is a leading Landscape Architect in Australia and a long-standing member of the SGAP in Queensland, where he has been President, Vice President, Secretary, and various other positions over the years, the founding Chairman and Life Member of Pine Rivers Branch, current Vice President of ANPSA and recipient of an Australian Plants Award.

“Queensland, because of its large area and diverse climatic variation, has the most diverse flora of any state, with a range of habitat from high cool very wet rainforest through to the most arid desert.” So writes David Hockings in a later article in this journal. It is this diversity which we seek to share with you. Lorna Murray sets the scene in her article “Diversity in Queensland” while other articles feature specific geographic areas or genera.

This concept is reflected in the theme for the ANPSA 2013 Conference: **‘Diversity is in our Nature’**.

Members of the Society for Growing Australian Plants (SGAP) Queensland Region are waiting enthusiastically to welcome you to the Conference to be held on the Sunshine Coast from 9 to 16 August. In late winter the weather is perfect! Night temperatures are in the high teens and by day you will bask in sunny conditions in the low twenties. There could be occasional showers to encourage the heathland and rainforests as they emerge from the cooler months to display marvellous multicolour flowers and cloaks of brilliant new foliage to celebrate the coming of spring.

Each of the three seminar sessions focus on specific sub-themes.

Diverse Plants (Botanic Diversity): Investigating the unique and useful plants from throughout Queensland, particularly those with scientific value and horticultural potential.

Diverse Places (Geographic Diversity): Revealing surprising Queensland bio-regions each with its own geology, landscape character, climatic conditions and specialised plant community.

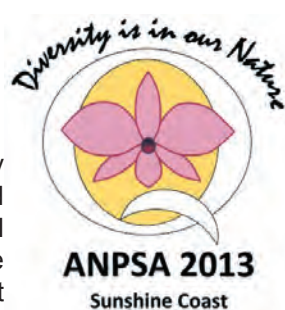
Diverse People (Research and Development): Presenting Queenslanders who make a difference! Working with our native plants to identify and enhance their aesthetic and economic characteristics.

We encourage you to attend the ANPSA 2013 Conference/Seminar and enjoy the hospitality for which Queensland is renowned. Details are published on the SGAP and ANPSA websites. Contact us on anpsa2013@sgapqld.org.au.

Diverse Tours and Trips During the ANPSA 2013 Conference

Lawrie Smith AM, Convenor of ANPSA 2013 Conference

To help members appreciate some of the diversity offered throughout Queensland, we have planned some wonderful touring experiences that will complement the presentations of the Conference and Seminar. Make sure you book early so as not to be disappointed.



PRE CONFERENCE TOURS – August 4 to 9

Bunya Mountains & Darling Downs – explores the hinterland of south-east Queensland along the Great Divide, the inland plains, Toowoomba and the Brisbane River Valley.

Mangroves to Mountains – travels from the rainforests of Springbrook, across the mangrove fringes of Moreton Bay to the colourful heathland and spectacular coastal scenery of North Stradbroke Island.

Sandstone & Brigalow – a Camping Safari to the Central Queensland highlands and grasslands, including Cania Gorge, Blackdown Tableland, Rockhampton and Gladstone.

POST CONFERENCE TOURS – August 17 to 22

Scenic Rim and Beyond – exploring the cool temperate and subtropical forests of south-east Queensland – Tamborine Mountain, Binna Burra, Cunningham's Gap, Boonah and the Brisbane Valley.

Rainforest Meets the Barrier Reef – experience the diversity of central coastal Queensland from Mackay to Eungella, Cape Hillsborough and Conway National Parks, then cruise to the Whitsunday Islands.

DAY TRIPS

During the Conference, four day trips have been planned to introduce the diversity of the flora of south-east Queensland. These will traverse the coastal lowlands and the hinterland ranges as well as selected gardens and parks within the urban areas of the Sunshine Coast. One day trip during the seminar will take you through the dry heath of the Marcus High Dunes and the wet heath of Noosa North Shore, then a climb up Mt Tinbeerwah to see the montane heath and the extensive views over the whole of the Sunshine Coast. The other seminar day trip will traverse the various coastal communities of Currumbundi Lake

and then explore the extensive bioregional collection of the Maroochy Regional Bushland Botanic Gardens.

Two optional day trips are also planned for the first Sunday of the Conference. The Hinterland day trip will introduce you to the diversity of the Blackall Ranges and Glass House Mountains which enclose the Sunshine Coast to the west, and then inspect a Macadamia Nut plantation. The second day trip option is to Brisbane to visit two significant city gardens, the Mt Coot-tha Botanic Gardens and the Roma Street Parklands as described below, and, en route, two interesting environmental areas being developed by SGAP members.

Brisbane Botanic Gardens – Mt Coot-tha

Queensland's premier Botanic Gardens actually originated in 1828 next to the river in central Brisbane. After eight major floods swept through the city centre between 1870 and 1974, new Botanic Gardens were established in 1976 on a 52 hectare site in open woodland on the eastern foothills of Mount Coot-tha. The original location on the river has been retained as the Heritage Botanical Garden.

The expanding plant collection now numbers more than 20,000 plants representing over 5,000 species, most primarily originating in the subtropical regions of the world. The specimens are established in a series of distinctly different botanic and horticultural themes and geographical displays, including a Tropical Dome, Japanese Garden, Bonsai House, Arid Zone, Rainforest, Lagoon and Bamboo Grove.



Of these the most significant is the Australian Plant Communities collection, which occupies an area of 27 hectares, the largest collection of Australian native rainforest trees in the world. In the conservation collection there are more than 40 species that are rare or threatened in their natural habitats. The site's hilly landform, waterways and central lagoon provide natural boundaries that separate the differing plant collections, including temperate wetlands, closed rainforests, heathland, open eucalypt woodlands and savannah communities.



Roma Street Parkland

Roma Street Parkland, opened in 2001, is a specialised 20 hectare inner city open space developed on disused railway yards and a rarely used Victorian era park. The Parkland was designed to reconnect the local community with the city infrastructure, whilst creating a significant public garden that would excite the imagination, encourage interaction and be an attractive and safe environment for all. The horticultural theme “the world of the subtropics” displays the most typical species of the subtropical areas of Australia and the world.



The majority of the site had previously been inaccessible to the public due to the past century of railway use and the steep varied terrain. An almost vertical rock cliff, resulting from progressive excavation of the hillside to fill the wetland below, dissects the site. The problems of access around the diverse topography were addressed by the introduction of a series of bridges, ramps and boardwalks that provide spectacular lookouts and tree canopy walks.

Planting throughout the Parkland has been carefully planned to create a series of distinct precincts, each related to modified site microclimates, which collectively establish a subtropical wonderland displaying the varied plant life typical of Queensland. The five principal precincts in

the Parkland are visually linked by several elements inspired by the original landscape before white settlement.

- The Celebration Lawns provide a large open space area for cultural performance and recreation, reflecting the meadows once used for grazing animals.
- The Subtropical Forest of local species, arranged in a transect from a coastal headland to an upland rainforest dissected by a moist fern gully, is established on an extensive hill formed from nearby urban transport tunnel excavations.
- The large central lake recalls the original swamp from which the indigenous people and colonial Brisbane drew water.
- The terraced water feature flowing through the Spectacle Garden, linking the upper and lower Parkland, is designed to represent the spring from which the adjacent suburb of Spring Hill took its name.
- The original mature shade tree avenues and groves of the upper Parkland slopes were planted in the late nineteenth century.



Fern Gully in Roma Street Parkland



Diversity in Queensland

Lorna Murray

Lorna Murray is one of the most respected senior members of the SGAP in Queensland. Her advice and experience has guided the Society through many years. She is an Honorary Life Member of SGAP Qld. Region.

Diversity in the Queensland flora is highlighted by the statement in the Census of Queensland Flora 2010 published by the Queensland Herbarium:

"The Queensland flora is the most diverse State flora in Australia, with 500 families, 2,917 genera and more than 12,817 known native species across all groups (excluding fungi other than lichens). This diversity represents approximately 50% of the known Australian flora. Two families of flowering plants (Austrobaileyaceae and Idiospermaceae) and more than 56 genera and at least 2,400 species (30% of the State's flowering plants) are endemic to Queensland."

Also: *"Of the 8,449 known native vascular species, 1,074 are currently listed as threatened under Queensland's Nature Conservation Act 1992."*

Further details of the Queensland Flora Statistics are given in the Census, Appendix 3.

In 2000-2002 the National Land and Resources Audit divided Queensland into 15 bioregions, five of which continued into neighbouring states. In the mapping being carried out by the Queensland Herbarium, 13 bioregions are recognised, covering very similar areas, and these are divided into 1,375 defined regional ecosystems. The large size of the state and the great variation in climatic conditions contribute to great diversity in the flora.

To highlight the great extremes of climate and vegetation in this large state, I would like to look briefly at the Cape York Bioregion, which is basically the Cook pastoral district, and the Channel Country, covering the pastoral districts of North and South Gregory.

Cape York Bioregion stretches from the tip of Cape York to just south of Cairns and includes all the area west to the Gulf of Carpentaria as far south as the Gilbert River. Often southerners think of Cape York as being one great rainforest area, but this is far from the case. In fact, a drive up the Peninsular Development Road to the tip of the Cape does not pass through any rainforest areas at all. Most is savannah woodland dominated by eucalypts or melaleucas.

Vegetation surveys in this district record that about 59% of the area is eucalyptus woodlands or open forest, and only 3% rainforest or vine

thickets. There are interesting pockets of tropical rainforest in areas such as Mcllwraith Range and Iron Range, and often littoral rainforest near the east coast and gallery rainforests along the rivers, all with a very high diversity of species. Other vegetation types recorded in small areas include melaleuca forest and woodlands, eucalypt and acacia woodlands, grasslands, other shrublands and mangrove areas and lakes.

A great contrast to the Cape York Bioregion is the Channel Country, covering the Gregory Districts in south-west Queensland. This includes the area from just south of Mt. Isa to the New South Wales border, and from just west of Longreach to the Northern Territory border. Although this bioregion may be thought to be lacking in diversity to the casual traveller, it has been divided into 16 vegetation groups with quite a variety of species present. More than half the area is tussock grassland, i.e. mitchell grass plains and extensive areas are hummock grasslands dominated by spinifex. Other types of vegetation identified include low open acacia and eucalypt woodland, tall open shrubland, succulent shrubland and small areas of eucalypt woodland in northern parts. Obviously the range of species found in this region is completely different from that in the north, and different from that in most other bioregions.

The plants surviving in these arid areas are adapted to great extremes of temperature and very irregular rainfall. Such difficult conditions have given rise to a range of plants with the very special adaptations to either avoid or withstand such conditions, species that are not found in most other bioregions of the state.

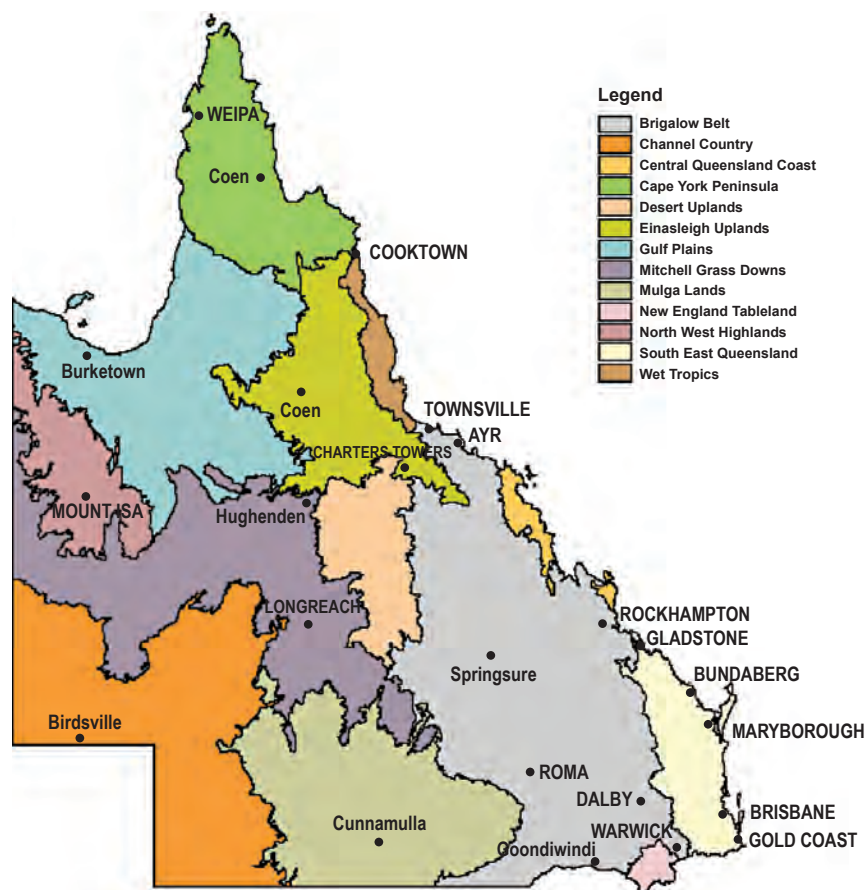
In the 2013 ANPSA Conference program we will be concentrating on the diversity in the Queensland flora arising from the large size of the state and the great range of climatic conditions. The tours being offered pre- and post-Conference will give members an opportunity to visit some other areas that are quite different from the coastal wallum of the Sunshine Coast.

The Bunya Mountains and Darling Downs tour will visit inland areas around Kingaroy, the mountain top grasslands and large areas of Bunya Pines on the Bunya Mountains, the eastern Darling Downs and the Range around Toowoomba. The Sandstone and Brigalow tour, operating from Rockhampton, situated almost on the Tropic of Capricorn, will introduce members to the Central Queensland Region, with tropical coastal areas and visits to the very different sandstone areas of Cania Gorge and Blackdown Tableland.

The tour based in Mackay will allow access to tropical coastal lowlands, beaches, dunes and coastal wetlands, and nearby tropical islands.

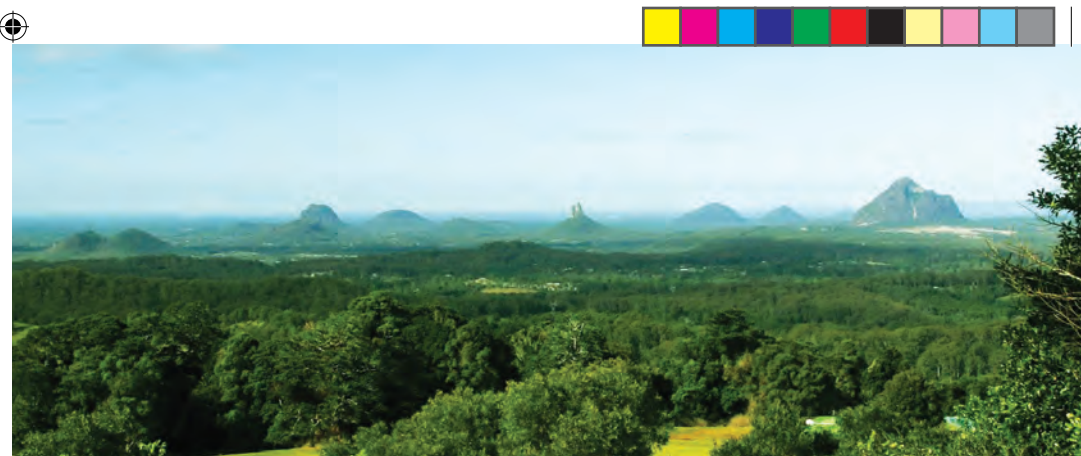
The proposed tour to the Scenic Rim and Killarney will feature the high altitude rainforest areas of southern Queensland, Mt. Tamborine and Binna Burra, and parts of the Great Divide around Killarney. Whilst the Mangroves to Mountains tour will explore the south-eastern corner of Queensland from the subtropical rainforests of the mountains to the mangroves and island heathlands.

In subsequent articles in this issue of “Australian Plants” other members will give more details about the flora of different bioregions in this great, diverse state.



Bioregions of Queensland

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The Mystical Glass House Mountains

Jan Sked

Jan is the long-time editor of the SGAP Queensland Newsletter, the “Bulletin”, and has authored a number of books on native plants, specialising in the flora of south-east Queensland. She is an Honorary Life member of SGAP Qld. Region and a recipient of an Australian Plants Award.

The Glass House Mountains have held a fascination for me the whole of my life. These intriguing peaks dominate the skyline as you travel north from Brisbane on the Bruce Highway.

Rising from the flat coastal plain in a loose cluster of spires, domes and pillars of rock, these magnificent sculptures of nature guard the coastline from Caboolture to Caloundra, towering over a scenic patchwork of pine plantations, bushland and cultivated fields. Consisting of nine principal peaks, with various lower outcrops and foot-hills, these volcanic plugs are known by their Aboriginal names of Miketeebumulgrai (200m), Tunbubudla “The Twins” (290m), Beerburum (270m), Tibberoowuccum (200m), Tibrogargan (280m), Beerwah (550m), Coonowrin “Crookneck” (370m), Ngungun (230m) and Coochin (230m). Each of these peaks is protected within the Glass House Mountains National Park.

The Glasshouse Mountains received their name from Captain James Cook who sighted them on 17th May, 1770 and wrote in his journal:

“These hills lie but a little way inland, and not far from each other, they are very remarkable on account of their singular form of elevation, which very much resembles Glass Houses, which occasioned my giving them that name.”

However, long before European interest in this country, these peaks had featured prominently in the Aboriginal ‘Dreamtime’ of the Kabi tribe, within whose territory they stand. According to their legend, Tibrogargan was a father and Beerwah a mother of many children, including Coonowrin

Top: The Glass House Mountains taken from Mary Cairncross Park by Bob Bannon

the eldest, the Tunbubudla twins, Ngungun, Tibberoowuccum, Elimbah and Miketeebumulgrai.

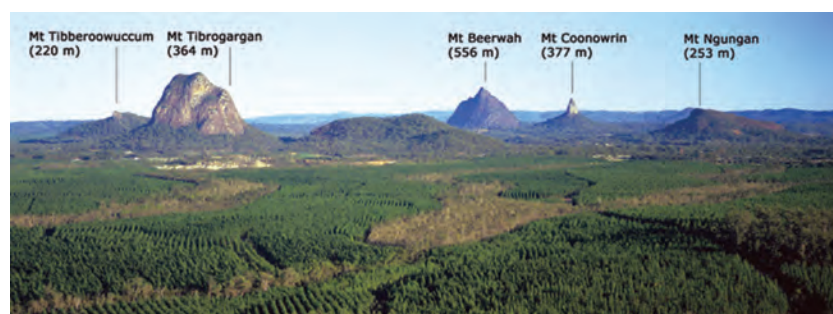
One day when Tibrogargan was gazing out to sea he saw a great rising of the waters. Hurrying off to gather his younger children, he ordered Coonowrin to help his mother who was again with child. However, Coonowrin ran off alone and when Tibrogargan saw this, he was greatly angered. He pursued his eldest son and struck him a mighty blow with his club, which dislocated Coonowrin's neck and he has never been able to straighten it since.

When the floods had subsided, Coonowrin begged his father's forgiveness, but Tibrogargan, filled with shame at his son's cowardice, could do nothing but weep copious tears which trickled along the ground forming a stream that flowed out to sea. Coonowrin's brothers and sisters also wept with shame at their brother's cowardice. These lamentations explain the presence today of the numerous small streams in the area.

Tibrogargan turned his back on Coonowrin and vowed that he would never look at him again. Even today, Tibrogargan gazes far out to sea and never looks round at Coonowrin, who hangs his head and cries, his tears running off to sea. His mother, Beerwah, is still heavy with child, as it takes a long, long time to give birth to a mountain!

This area is home to a variety of wildlife, including koalas, goannas, echidnas and grey kangaroos. Many birds such as kookaburras, cockatoos, lorikeets, rosellas and peregrine falcons can also be seen. The glossy black-cockatoo, which is considered vulnerable to extinction, is found in the Glass House Mountains area.

Spectacular and mystical as they are, perhaps the greatest gift of the Glass Houses is the remarkable and unique flora which is associated with them. These plants are relict species that were once more widely distributed, but, due to changes in climate and soil, can now successfully compete only in this specialised habitat.



Some significant plants of the Glass House Mountains:



Leptospermum luehmannii



Dodonaea rupicola



Triplarina volcanica ssp. *volcanica*



Philotheca glasshousiensis



Westringia grandifolia



Allocasuarina filidens



Micraira subulifolia
Photos by Glenn Leiper



Cold Misty Springbrook – a Native Plant Hot Spot

Glenn Leiper

Glenn is a passionate environmentalist who is highly respected by professional botanists and local Councils who seek his advice and help. He was principal and teacher at the Jacob's Well Environmental Education Centre for 23 years until his retirement in 2010. He is an excellent photographer whose work has been featured in a number of publications, including the highly regarded "Mangroves to Mountains".

Springbrook is unlike any other place in coastal south-eastern Queensland. It is only 29km from Mudgeeraba (on the Pacific Motorway) and looks down on the concrete and steel of the Gold Coast, yet it feels like you've stepped into another climatic zone, indeed another country!

The Springbrook plateau is over 900 metres in elevation, sitting up there in the misty clouds that envelope the forests, dripping moisture practically every day. The 3 metres of annual rainfall create crystal clear bubbling mountain streams, spectacular waterfalls and cascades, and contribute to the incredibly rich and varied plant life. For native plant enthusiasts, this plateau is as close to heaven as you can get in the region.

Geologically, Springbrook is part of the remnant of the massive shield volcano that was centred on Mt Warning about 23 million years ago, dominating the entire region, and forming huge flows of basalt and acidic rhyolite that formed the soils in evidence today. Massive rhyolitic cliffs edge the plateau, with waterfalls crashing down onto the basalt boulders and soils below.

Because of the steep ridges leading up to the plateau and the practically impenetrably dense forests, the area remained largely intact until the early 1900s, although timber getters referred to it longingly as the "Land of the Tall Timbers". The local indigenous Yugambah people considered the mountains up there as spiritual and sacred, and to be nurtured and respected.

Between the time of arrival of the first white selectors in 1906 and the collapse of the dairy industry on the plateau after WWII, many sections of the plateau had been stripped of the native forests. But, slowly after this period, many of these bare areas regenerated. In 1937 the first National Park on the plateau was declared, followed in 1940 by large reserves, including the spectacular Purlingbrook Falls.

Today the National Park totals over 6,000 hectares and has been added to by the State Government recently by a \$40 million project to acquire 705 hectares of high conservation land adjacent to the Park and to create critical habitat corridors for this World Heritage area.

Because of the different soils, rainfall and altitudes on the plateau, an interesting variety of ecosystems has developed which include wet eucalypt forests, montane heath, sub-tropical rainforests, warm temperate and cool temperate rainforests, each with their own diverse mix of plant species.

Botanists and plant enthusiasts have explored the Springbrook forests finding species normally associated with more southern climates, and a swag of rare species as well. But even though there has been over a century of exploration and discovery on Springbrook, a new species of rainforest tree (*Eucryphia jinksii*) was recently discovered. It is a remnant species from the massive Gondwanan land mass of 180 million years ago and is as exciting to plant enthusiasts and botanists as the discovery of the Wollemi Pine in New South Wales.

Springbrook was introduced to me about 30 years ago by the legendary SGAP member, David Hockings, who lived there for some time, and knew the plateau like his own backyard. Well indeed it was! And to me it remains an area of intrigue, with such high plant diversity in south-east Queensland, to rival other well-known plant hot spots such as Girraween and Helidon.

Most visitors to Springbrook only see the rainforests, waterfalls and scenic lookouts, but there is so much more to see. All it requires is open eyes and a love for the world around us, not a common trait of many these days so disconnected from the natural world.

So plant lovers, here is a brief window into what makes Springbrook such a stunning plant region.



Eucryphia jinksii



Acacia orites

Eucalypt Forests

The ridges and lower sections of the plateau are dominated by wet eucalypt forests, with species such as *Eucalyptus oreades*, *E. globoidea* and *Syncarpia glomulifera* forming the open canopy and taller shrubs or

small trees such as *Acacia orites* creating a lower level. Understorey species are a real treat, but to find them is sometimes a challenge, depending on fire events which cause loss of some species from an area, but trigger germination of others. The ferny-leaved *Dodonaea megazygya* with its brilliant rich pink fruits, the pea *Goodia macrocarpa* splashing vibrant yellows and reds with its flowers, the large weeping purple pea *Hovea impressinerva* and the pretty *Ricinocarpos speciosus* with its deceptively boronia-like white flowers, all come and go in various sections of the forests over the years.

At higher altitudes on the basalt soil the stunning *Pimelea ligustrina* shrubs line some roadsides and their large golf ball sized white flowers bob around in the breeze. It has proven to be a very difficult plant to grow down off the plateau in south-east Queensland, which is a shame. Occurring here also are two of the prettier *Zierias* – *Z. arborescens*, which grows to about 4 metres and has the largest *Zieria* flowers of any species in the region (but still small nevertheless!) and *Z. southwellii*, with quite large glossy dark leaves and that powerful aroma of saffrole so characteristic of the genus.

Twining through the shrubs is the pretty blue *Comesperma volubile* that puts on quite a show for a couple of months and then becomes totally unnoticeable once flowering is finished. *Leionema elatius* ssp. *elatius* also puts on quite a floral show in spring with its massed white Rutaceae flowers. It occurs in the same area as the magnificent Spear Lilies



Dodonaea megazygya



Goodia macrocarpa



Hovea impressinerva



Ricinocarpos speciosus



Pimelea ligustrina



Comesperma volubile



Leionema elatius ssp. *elatius*



Tripladenia cunninghamii

(*Doryanthes palmeri*) with their 5 metre long flower spikes of large red flowers. Call me a parochial Queenslander, but I reckon the southern Gynea Lily (*Doryanthes excelsa*) is not a patch on this beauty!

On the ground level the pretty *Tripladenia cunninghamii* always surprises people when in flower, most asking why it is rarely seen in cultivation. And the two violets on the plateau, *Viola hederacea* and *V. silicestris*, often form massed displays of mauve or purple flowers wherever a bit of sunshine breaks through to moist soil. It is interesting to note that the latter is nearly always confined to the rhyolitic soils, while the former is usually on the basalt soils.

Montane Heath

Out on the rhyolitic cliff tops and surrounding rocky areas, with skeletal soils and pockets of built up humus, are large areas of heath. Some of this montane heath is very exposed, forming low, densely massed shrubs, while in other sections the heath tends to grow as an understorey below eucalypts and acacias. Many of the species encountered here are reaching their northern limit of distribution and are often found further south in more coastal heath areas. The stunning *Epacris longiflora* is one such species, with its small populations on the rhyolitic cliff edges declining in recent decades as taller denser shrubs crowd it out and provide too much shade.

Melaleuca montana (formerly *Callistemon montanus*) is one of these dense shrubs, with small red brushes throughout the year, that forms thickets in some areas. In the wetter heathlands and along streams *Melaleuca pallida* (*Callistemon pallidus*) puts on a great display with massed lemon-yellow brushes. A number of *Leptospermums* tend to dominate their areas of preference and, in some sections, almost to the exclusion of other species. Two of the more unusual species, both with quite large white flowers, are *L. variable* and *L. trinervium*. The latter species is also found down on the coastal lowlands, but up here in the cool misty montane environment it assumes a shrub of greater proportions in all areas. It becomes a large dense shrub with larger leaves and more impressive flowers.



Epacris longiflora



Leptospermum variable



Melaleuca montana



Melaleuca pallida

Nematolepis squamea (formerly *Phebalium squameum*) can often be seen from a distance away with its silvery leaf undersides and, when in flower, the tight clusters of white star-like flowers. Being a Rutaceae species, its leaves have the characteristic aromatic oil smell when crushed. Another plant with aromatic foliage here is the “daisy” *Cassinia compacta*, occupying rocky exposed sites and splashing bright yellow daubs of colour amongst the heath with its tightly clustered flowers. Another daisy, but growing up to 4 or 5 metres, is the delicately pretty *Olearia heterocarpa* with an open growth habit and heads of the typical white *Olearia* daisy flowers.

In some rocky sections *Banksia spinulosa* becomes more common, with individuals varying in flower colour from the typical golden yellow to ones with impressive black styles. In the very rocky exposed sites where the rhyolite forms platforms, the Bell-fruited Mallee (*Eucalyptus codonocarpa*) occurs, with its spindly trunks shedding the old dark bark to reveal a pale smooth bark beneath. In the shrub level below these are often found the loosely massed pink flowers of *Comesperma esulifolium*, which occasionally produce a white sport amongst their group.

Rainforests

The Springbrook rainforests include subtropical rainforests (dominating a large area of the plateau and with huge species diversity), warm temperate rainforests dominated by Coachwood (*Ceratopetalum apetalum*) and Sassafras (*Doryphora sassafras*) and cool temperate rainforests at the highest section of the plateau dominated by the ancient Antarctic Beech trees (*Nothofagus moorei*).

Cool temperate rainforests are uncommon in south-east Queensland, with areas of it in Lamington National Park and on Mt. Ballow, but become more common travelling further south in NSW. The ancient gnarled Beech trees are the link with the other remnants of the former Gondwana continent, such as South America. Other *Nothofagus* species can also be found in Tasmania and New Zealand.

On Springbrook this cool temperate rainforest is seen at the “Best Of All Lookout” track, where mosses, lichens and ferns take advantage



Nothofagus moorei – the ancient gnarled Antarctic Beech



Fieldia australis



Pittosporum oreillyanum

of the cooler moist air, covering rocks and tree trunks. Some other interesting plants in this area are *Leucopogon* sp. Lamington, forming tall dense thickets on the sheer cliffs and ledges, the thin-stemmed climber *Fieldia australis* with its delicate and almost translucent 5 cm long tubular white flowers in summer and the prickly little spindly shrub *Pittosporum oreillyanum*.

The warm temperate rainforests are also relatively uncommon in south-east Queensland, but can be seen on Springbrook where the pale bark of Coachwood trees is very distinctive.

Subtropical rainforests form a large area on Springbrook and contain many plants reaching or near their northern limit here. The spectacular red flowering *Alloxylon pinnatum* can be spotted amongst the canopy trees below one of the lookouts in summer. *Anopterus macleayanus* has clusters of large perfumed white pendulous flowers.



Alloxylon pinnatum



Anopterus macleayanus

The shrub *Ardisia bakeri* looks quite ornamental with branches of small red fruits, whilst the rare *Ochrosia moorei* has perfumed delicate white flowers like miniature exotic frangipani flowers, followed by stunning red oblong fruit. The thin twining vine, *Pararistolochia laheyana*, is a host for the rare Richmond Birdwing Butterfly, especially in the hotter summer months.

Correa lawrenciana produces greenish tubular flowers and is actually a tree. The recently named *Mischocarpus ailae* honours conservationist,

Aila Keto, who has worked for decades to achieve improved conservation for our native forests and, in recent years, for Springbrook.

Helicia ferruginea is a small tree that is easily overlooked amongst the variety of beautifully foliated rainforest plants, but really comes alive when it produces its massed rod-shaped creamy-pink flowers followed by purplish-blue fruit.



Helicia ferruginea flowers and fruit

We have the truly beautiful Spice Bush, *Triunia youngiana*. To me this plant has to be one of the most desirable garden species with its highly fragrant, perfumed flowers resembling cinnamon, but in Queensland gardens it has proved to be almost impossible to grow in the ground away from its preferred soil and climate.

As you have probably already gathered, I love Springbrook. The plants I have mentioned in this article are only the tip of a botanical iceberg. Every time I visit the plateau, I am in awe of the diversity of plants and the scenic attractions it has to offer.



Triunia youngiana – Spice Bush

Currimundi Lake (Kathleen McArthur) Conservation Park

Barbara Henderson

Barbara is Leader of the Wallum & Coastal Heathland Study Group and an expert on the plants of this highly endangered ecosystem.

This tiny remnant of 50 hectares of Wallum or coastal heathland is just a little green square on maps of the Sunshine Coast. Bounded on the south by Currimundi Creek, with suburbia to the north and west, it has the Pacific Ocean to the east, with frontal dunes offering some protection to the treasure-trove of wildflowers it contains.

Fifty years ago, Kathleen McArthur chose it from the undeveloped land around Caloundra and succeeded in having it made an "Environmental Park" in the 1960s. This was a busy decade for her, forming the Wildlife Preservation Society of Queensland with three friends in Brisbane in 1962, then the Caloundra Branch of the W.P.S.Q. in 1963. A small wildflower show and plants sale at her home "Midyim" followed in 1967, becoming an annual Wildflower Show at Coolumb Beach with the formation of the Sunshine Coast Environment Council in 1980. In 2005 this "evolved" into the present-day Sunshine Coast Spring Wildflower Festival, organised by the local Council's Conservation section.

As a renowned wildflower artist, writer and conservationist, Kathleen McArthur (1915–2000) has left a legacy of beautiful flower paintings from which identification of Wallum and other wildflowers is possible, plus several books. Two are specially significant to the Sunshine Coast, and should be in every public and school library – "The Bush in Bloom" (in Kathleen's words "A Wildflower Artist's Year in Paintings and Words") in 1982, and in early 1989, "Living on the Coast", almost an autobiography of her work as a conservationist, and a "must-read" for anyone concerned for the coastal environment of south-east Queensland. This Park is a tangible and useable legacy, re-named after her in 2004. Ironically, her last days were spent in a Golden Beach nursing home, overlooking a development destroying the Wallum.



Small though it is, the Park has a wealth of plants, most easily seen from the two wide main tracks and other small side paths. Creek-side is a 'forest' of *Allocasuarina littoralis* with understory of *Austromyrtus*



Austromyrtus dulcis



Dodonaea triquetra

dulcis and fronds of *Schizaea bifida* emerging through a dense carpet of she-oak needles.

Inside the Park entrance are some trees of the original bushland, with *Seringia hillii* (formerly *Keraudrenia*) and *Psychotria loniceroides*, the latter with *Hibbertia scandens* twining over it. To the side, fresh growth of *Dodonaea triquetra* could be evidence of recent burn-off.

Signs of a fire a few years ago can be seen in dead trunks and stems of leptospermums and *Leucopogon pimeleoides* (White Beard). This leucopogon gets masses of sprays of tiny bee-attracting flowers. Three other species can be found in the Park – *L. leptospermoides* (small edible fruits); *L. ericoides* with pink buds before the white flowers; *L. virgatus* is the smallest with narrow pointed leaves. Leucopogons are easily identified by their "fluffy" petals. Several leptospermums grow in the Park along the tracks – *L. speciosum* is a lovely shrub with its flowers in a cluster at ends of stems.



Leucopogon leptospermoides



Leucopogon pimeleoides

Relieving the white scene are several yellow pea flowers, such as *Aotus lanigera* with clear yellow flowers and *A. ericoides* showing a touch of



Aotus lanigera



Dillwynia floribunda

red on the petals. While *Dillwynia floribunda* and *D. retorta* flower in late winter, *Gompholobium virgatum* usually provides a good show in spring.

Fine foliage, dainty yellow flowers and fleshy green drupes identify *Persoonia virgata*, often in company with *Ricinocarpos pinifolius*, the Wedding Bush. These two lovely shrubs, sadly, are not amenable to garden cultivation as yet.

Down at ground level, along the wetter track going north into open Wallum, there are yellow *Goodenia stelligera* with flowers on long upright stems from a rosette of spatulate leaves. Bobbing in the sea breezes are mauve *Sowerbaea juncea*, the delicately perfumed Vanilla Lilies, along with sweetly scented *Burchardia umbellata*, or Milkmaids, always where it is wet. *Boronia falcifolia*, the Wallum Boronia, has aromatic foliage when crushed, but its pretty cerise-pink flowers have no perfume.



Boronia falcifolia



Burchardia umbellata

The Park has four *Banksia* species, one of which is always found in company with the *Boronia* and the red Wallum Bottlebrush, *Melaleuca (Callistemon) pachyphylla*, where the peaty sand is above a high water table. *Banksia robur*, Swamp *Banksia*, starts as a blue-green bud, passing through colour changes towards the final grey, and is a beautiful *Banksia* with broad, stiff yellow-margined leaves.

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ANPSA 2013 Conference

Registration is now open

'Diversity is in our Nature', the theme of the 2013 Conference of the Australian Native Plants Society Australia, hosted by the Society for Growing Australian Plants (Qld Region Inc) is featured in this issue. If you are inspired to attend make sure you register.

When: 10–16 August 2013

Where: Alexandra Park Conference Centre, Alexandra Headland, Sunshine Coast, Queensland

A variety of accommodation is available at the Conference Centre, which is situated very close to the beach, on a hill surrounded by bushland. All seminars, workshops and main meals will be held at this venue.

The Conference will feature:

- keynote and 'A.J.Swaby Address' speakers
- seminars
- workshops
- study group presentations
- a biennial dinner with guest speaker
- two days coach travel around South East Queensland.

Fantastic tours will be available both before and after the conference. Read about them in the articles on pages 4 and 8.

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Melaleuca pachyphylla



Acacia ulicifolia

The Wallum Banksia, *Banksia aemula*, is here, of course, and *B. oblongifolia*, a low-growing shrub whose cream brushes have mauve centres. Up on the frontal dunes and below them, *Banksia integrifolia* lives up to its coastal common name.

Several Acacias of varying sizes are along the pathways, two smaller species being *A. suaveolens* and *A. ulicifolia*, Prickly Moses. The former has memorable mauve-grey seed pods, and sweetly perfumed flowers.

Along a narrow pathway parallel to the dunes, there are larger shrubs and the small trees of this plant community. Flowering *Melaleuca quinquenervia* attract Brown and White-cheeked Honeyeaters to their scented brushes.

Nearby is a large area of the root parasite, *Exocarpos cupressiformis*, and on one corner of the main track there is healthy regrowth of *Hibbertia linearis*, another Wallum plant which would be welcome in the garden.

Of special interest on the main track which leads to the beach, is the rare *Allocasuarina emuina*, now being found in locations further afield than where it was first discovered north of Coolumb Beach on Emu Mountain and in adjacent bushland.

Other little treasures along the paths include blue *Dampiera stricta*, bright pink pea flowers of *Mirbelia rubiifolia*, *Olax retusa* with white flowers, yellowish stems and dull green leaves with notched tips, and perhaps some droseras and utricularias.

The beauty of this Park's Wallum shows why it was Kathleen's choice for conservation. Nowadays the presence of the rare *Allocasuarina emuina* is why, fifty years on, such a place remains valuable – for pleasure and learning.

From "Living on the Coast" come Kathleen's words – "*When the mind opens, the flowers bloom.*" But where is the key to unlock people's minds?

Some Lesser Known Queensland Plants Worthy of Cultivation

F. David Hockings

David Hockings AM is a foundation member of the Society for Growing Australian Plants. He is known and respected Australia-wide for his tremendous knowledge and experience in growing and discovering our Australian plants. He is an Honorary Life Member of the SGAP and recipient of an Australian Plants Award.

In 1989 I was guiding a party of American botanists to O'Reillys at Lamington National Park. The party had been flown in to North Queensland prior to the O'Reillys leg of the trip, and their time was spent being shown rainforest. Queensland's obsession with rainforest was brought home to me by a big yank who stumbled down the bus aisle as we approached O'Reillys and sharply said, "Haven't you got anything but goddamned rainforest in this country – haven't you got any wildflowers?" This reminded me of a comment made some years ago by a then very prominent native plant expert (mainly inland plants) after his first (and possibly only) visit to Bunya Mountains. "I didn't see any native plants, only tree trunks".

Later I was invited to present a lecture tour on Australian native plants to botanic gardens groups in California and Arizona. My preparation for the tour revealed that any overseas enquiry about Australian native plants was always directed to Western Australia – the wildflower state. In America, it was obvious that the climate, soil and water there have a close affinity with western Queensland and New South Wales – and none what-so-ever with most of W.A. – much less with rainforest.

Queensland, because of its large area and diverse climatic variation, has the most diverse flora of any state, with a range of habitat from high cool very wet rainforest through to the most arid desert. 510 plant families are represented, 2,917 genera and over 12,800 known species – which are added to with new discoveries of about 50 a year.

Our very arid inland carries representatives of most of the genera found in Central Australia and Western Australia – but the more dependable winter rainfall there and extensive areas of sandy/gravelly soils, ensures more dependable flowering, development of larger areas of woody flowering plants and, in most genera, a greater number of species. For example, we have only two species of lechenaultia and one verticordia.

Our very diverse wet sclerophyll and rainforest floras also contain many little known horticultural gems and a few of these are illustrated in the following pages.

Crispiloba disperma



Alseuosmiaceae



Crispiloba is a monotypic genus – a single species.

Crispiloba disperma is confined to mountain rainforests of north-eastern Queensland at altitudes of 100 to 1,250 metres, where it grows as an understory plant.

Although it grows to about 4 metres in nature, in cultivation since 1978, it has reached to only 1.8 metres. It has erect growth, whorls of attractive glossy leaves and bears terminal clusters of strongly and pleasantly perfumed white tubular flowers. It flowers intermittently during the year with the main flowering in the December to January period.

Asteromyrtus symphyocarpa

Myrtaceae

Asteromyrtus is a genus of about six to eight species of shrubs and small trees that were once included in melaleuca. The species extends from Cape York in Queensland to Arnhem Land in the Northern Territory and some extend through the Torres Straits islands to Papua and New Guinea.

Asteromyrtus symphyocarpa is possibly Australia's most attractive weeping tree, growing 4 to 6 metres in height. The slender branches hang pendulously to the ground and bear spherical heads of yellow to orange flowers intermittently throughout the year. It is being grown successfully in Brisbane, Glasshouse and Maleny. Myrtle Rust has not been seen on this plant.



Thaleropia queenslandica

Myrtaceae Golden Myrtle



Thaleropia – a genus of three species separated from *Metrosideros* in 1959 by P. G. Wilson.

Thaleropia queenslandica is confined to mountains around Atherton Tableland at 800 to 1,200 metres altitude. The other two species occur in New Guinea.

Although a large tree in nature, in cultivation Golden Myrtle forms a narrow tree up to 5 to 10 metres, bearing large heads of brown buds for several months before the spectacular golden flowers open. The flowers complement the dense glossy leaves. Golden Myrtle flowers during December and January. On ripening, the small fruits release a large quantity of fine seeds. Myrtle Rust has not been detected on this plant.

Ceratopetalum virchowii

Cunoniaceae

Ceratopetalum is a genus of about nine species of trees and shrubs that occur along the east coast of Australia and up into New Guinea. The best known species are *C. apetalum*, the renowned timber, coachwood, and the NSW Christmas Bush, *C. gummiferum*, which is grown as a commercial cutflower.

Although *Ceratopetalum virchowii*



was named in 1890, it is relatively unknown in cultivation. It comes from the high wet mountain rainforests around the Atherton Tableland at about 1,500 metres altitude. Like the NSW Christmas Bush, and at almost the same time of the year, *C. virchowii* produces small white flowers, then the sepals housing the seed turn a bright colour – in this case of a vibrant purple colour. It grows satisfactorily at Maleny and would probably also be suitable in elevated high rainfall places as far south as Victoria.

Eucryphia wilkiei

Cunoniaceae

Eucryphia is a small genus of about seven species of large to medium sized trees and also shrubs. Two are recently discovered in Queensland, one occurs in NSW and Victoria, two in Tasmania and two in Chile and Argentina. It is a remnant genus of the ancient Antarctic flora.

Eucryphia wilkiei is known only from the upper slopes of Mt. Bartle Frere at 1,200 to 1,500 metres altitude and occurs amongst stunted wind-swept vegetation. The 4-petal white flowers are about 3 cm in diameter with numerous stamens and are slightly scented.



Cutting grown plants of 12 years of age are 50 cm and 80 cm tall and have been flowering for ten of those years. A 3-year-old seedling is 80 cm tall and this is the second year of flowering. The plants flower intermittently throughout the year with the main flowering during December and January. The small flattened seeds look undeveloped, but germinate readily and seedlings grow quite quickly.

Haemodorum coccineum

Haemodoraceae

Haemodorum is a genus of about 20 species almost confined to Australia, but with one species extending to New Guinea. They are known as bloodroots because the roots and stems are red. Most species



have black or brownish-black flowers. There is some overlapping of distribution with some 14 species occurring in Western Australia, five in Queensland, three in New South Wales and one in Tasmania. *H. parviflorum* from northern WA and Northern Territory has yellow to orange flowers. *H. brevicaulis* from northern WA and the NT and north Queensland has deep red to purplish black flowers.

Haemodorum coccineum is regarded as the showiest species with flower spikes to over a metre in height and red to orange/red flowers. It is quite common in places from south of Ingham, north of Townsville, various places up Cape York, the islands of Torres Strait, southern New Guinea and also in the Northern Territory. It can be easily raised from seed and is easy to grow. It flowers during December/January.

Abelmoschus moschatus* ssp. *tuberosus

Malvaceae

Abelmoschus is a genus of about 15 species that occur in tropical Africa, Asia and northern Australia. There are both annual and perennial species and they vary in stature from sprawling to 2 metres in height. They have attractive hibiscus-like flowers and capsular fruit from 5 to 20 cm in length. The fruit of one (okra) and the leaves of *A. manihot* are used as vegetables.



Abelmoschus moschatus ssp. *tuberosus* is an herbaceous perennial in that it dies back (in the dry or cool season) to a tuber. In late spring it grows several prostrate branches that may reach one or two metres in length. The dormant tubers are very prone to rot if wetted while they are cold. At Maleny I have to grow plants in pots that are brought into the shed and kept completely dry until late September.

There are both broad leafed, broad petalled (imbricate) forms and narrow leafed (three narrow lobes), narrow petalled (valvate) forms and in both, red and white colour forms.



Grevilleas of South-East Queensland

Jan Glazebrook

Jan Glazebrook has been a keen member of the Grevillea Study Group since 1984 and, together with her husband, Denis Cox, has propagated many grevilleas on their acreage property south of Brisbane. Jan is passionate about growing local native plants to encourage wildlife into the garden.

The beautiful grevilleas of Western Australia, the small colourful grevilleas of Victoria and the sandstone grevilleas of New South Wales are well known and often written about, but Queensland can boast the biggest and showiest grevilleas of them all.

Let's start with the biggest – ***G. robusta*** (Silky Oak). It can grow to 40 metres on the rich volcanic soils on the slopes of mountains in the Border Ranges and along creek lines. The common name "Silky Oak" refers to the quality of the figured grain of the timber, once very popular for furniture. Although *G. robusta* will grow in many soils all over Australia, its natural distribution is restricted to an area between Bundaberg and Coffs Harbour and west to the Bunya Mountains. *G. robusta* must be one of the world's most beautiful trees. When in full bloom, the golden canopy can be seen for some distance. The trees are semi-deciduous when in flower which makes the display more spectacular. This easily grown tree is only suitable for large gardens and parks.

Other Grevillea trees in the southeast area are ***G. hilliana*** and ***G. helmsiae***, both rainforest species to 10 metres with cream flowers. ***Grevillea hilliana*** (White Silky Oak) is a dark green leafy tree to 10 metres. The underside of the leaf is a silky silver colour. Trees grow along margins of rainforest in coastal areas between the border and Cooktown. *G. hilliana* is related to *G. baileyana*, which has a golden colour under the leaf, and only occurs naturally in the northern part of the state. Flowers of both species are in cream spikes in early summer.



Grevillea robusta
Photo by Bob Bannon

G. helmsiae also grows to 10 metres, and is found on margins of rainforest and dry scrubs. Flowers are in rounded heads.



Grevillea hilliana
Photo by Garry Sankowsky



Grevillea helmsiae
Photo by Glenn Leiper

G. banksii is normally a large shrub or small tree, although prostrate and decumbent forms are found in the wild. Flower colour varies from bright red to pink and creamy-white. The variety ***forsteri*** is one of the best shrubs for well-drained gardens in south-east Queensland. Long lived and flowering continuously, it is a favourite of nectar seeking birds and insects. *G. banksii* is one parent of many hardy hybrids used in gardens, such as *G. 'Honey Gem'*, *G. 'Misty Pink'*, *G. 'Robyn Gordon'*, *G. 'Superb'*, *G. 'Peaches and Cream'* and *G. 'Sylvia'*.

A similar shrub, restricted to the Boondooma to Biggenden area, is ***G. whiteana***. It grows to 5 metres and has large terminal brushes of cream flowers. This hardy, long-lived shrub is parent to the popular hybrids *G. 'Moonlight'*, *G. 'Majestic'* and *G. 'Pink Surprise'*.

G. hodgei, from the Glasshouse Mountains, was once included in the *G. whiteana* group, but differs in having smaller flower heads and rusty hairs on the buds. *G. hodgei* is a long-lasting cut flower and an attractive garden shrub.



Grevillea banksii Photo by Jan Sked



Grevillea hodgei Photo by Denis Cox



G. floribunda subsp. ***tenella*** is a variable shrub, widespread in inland areas of south-east Queensland. Some forms worthy of cultivation include:

The Crow's Nest form: This is a bushy shrub to 2 metres with greyish foliage. The flower colour varies from green to yellow, orange and red. Some are more attractive than others.

The Durong form is a low compact shrub to 50 cm. Flower colour is again variable, but most have more yellow than the previous form. This form has not proven easy to grow.

G. juniperina ssp. ***allojohnsonii*** is found around Stanthorpe in south-east Queensland. All forms of *G. juniperina* do well in Brisbane gardens and make a low tangly shrub to 2 metres across – a great kid and dog barrier with its prickly leaves. Flower colour is yellow.

G. quadricauda is an erect shrub to 2 metres in the Helidon Hills area. The green and red flowers are hidden amongst the foliage. You need sandy soil to grow this plant and I have found it short lived in cultivation.

G. singuliflora, also found at Helidon Hills, is a sprawling shrub to 1 metre with attractive, blue-green heart-shaped leaves. The green flowers are barely noticeable. This species has performed well on our sandy soil, regenerating from seed.

G. linsmithii is a shrub to 3 metres tall from some peaks in the Boonah area. The new growth is a pink colour. Groups of small green and red flowers are hidden by the foliage. It makes an attractive garden plant, but is not long lived.

G. viridiflava just makes it into Queensland in the Girraween area where it is relatively common in the moist heath areas. This is a small shrub to 1 metre which suckers lightly. The flowers are a greenish white colour in small clusters.

G. scortechinii is a sprawling shrub with toothed holly-shaped leaves, found in a small area near Stanthorpe. The purple-black styles and maroon flowers are attractive. We have found this species difficult to keep looking good in cultivation.

G. humilis subsp. ***lucens*** is an erect small shrub to 1 metre from the Glasshouse Mountains. It has clusters of pink flowers. It grows in well drained areas of the Wallum. In wetter areas close by grows ***G. leiophylla***, but it does not appear to intergrade with this species.

G. leiophylla is a lightly suckering, weak-stemmed plant from the Glasshouse Mountains and Sunshine Coast area in moist Wallum. It

has been grown to a limited extent in gardens. ***G. reptans*** from the Wide Bay area is very similar to *G. leiophylla* and has a limited distribution.

These are the Grevilleas of south-east Queensland and, as you can see, there is a Grevillea to suit all gardens.



Grevillea humilis ssp. *lucens* Photo by Glenn Leiper



Grevillea reptans Photo by Glenn Leiper

Some popular grevillea hybrids

Photos by Jan Sked



Grevillea 'Peaches & Cream'



Grevillea 'Superb'



Grevillea 'Majestic'



Grevillea 'Honey Gem'



The Diverse Central Queensland Coast Bioregion

Irene Champion & Grant Paterson

Irene is a Life Member of SGAP Qld Region; secretary, foundation and life member of SGAP Mackay Branch and recipient of an Australian Plants Award. Grant is Senior Ecologist, Aurecon, and Chairman of SGAP Mackay Branch.

The purpose of this article is to introduce readers to some of the diverse vegetation communities and plants of the Central Queensland Coast Bioregion that will be seen during the post ANPSA Conference Tour to the Mackay and Whitsunday areas.

The Central Queensland Coast Bioregion (CQCB) contains many 'special' plants including vulnerable, near threatened and/or endemic species, species at the southern or northern end of their distribution range, disjunct populations and yet to be described plants. Many of these are now in the living collection of the Mackay Regional Botanic Gardens (MRBG) that has the flora of the CQCB as its primary focus. The visit to the MRBG will provide a glimpse of the diversity that is to be seen in the region.

The Central Queensland Coast Bioregion extends from about St. Lawrence in the south, almost to Bowen in the north, west to the western slopes of the Clarke-Connors Ranges and includes two outlier subregions further to the south. Its major population centre is the city of Mackay.

The altitude of the CQCB rises from sea level to the highest peak of 1,259m, Mt Dalrymple, in the Clarke-Connors Ranges.

Although it has a high mean annual rainfall of 1,613mm at Mackay, it is not immune from years of drought and, as more than half the rainfall occurs during the 'wet season' summer months, the rest of the year may have consecutive months with little or no rain. The 'wet season' is also the cyclone season and cyclones, with their destructive winds and heavy rains, can cause extensive wind damage and landslides.

Mean monthly temperatures at Mackay range from a maximum of 30.1°C to minimum 23.0°C in December to maximum of 21.3°C to a minimum of 12.9°C in July. Temperatures in excess of 40°C and below -6°C are often experienced in some parts of the bioregion.

The CQCB is divided into six subregions and locations within the first three will be visited during the *Rainforest meets the Barrier Reef* tour.

1. Whitsunday – the coastal hills, ranges and drowned coastline east of Proserpine.

2. Sarina-Proserpine Lowlands – between the Clarke-Connors Ranges and the sea. It contains marine tidal clay plains; coastal sand dunes and swales and alluvial plains with riverine patterns.
3. Clarke-Connors Ranges – higher moister parts of the ranges extending from the headwaters of the Proserpine River south to just west of St Lawrence, predominantly granites.

The remaining subregions that are not included in the tour are:

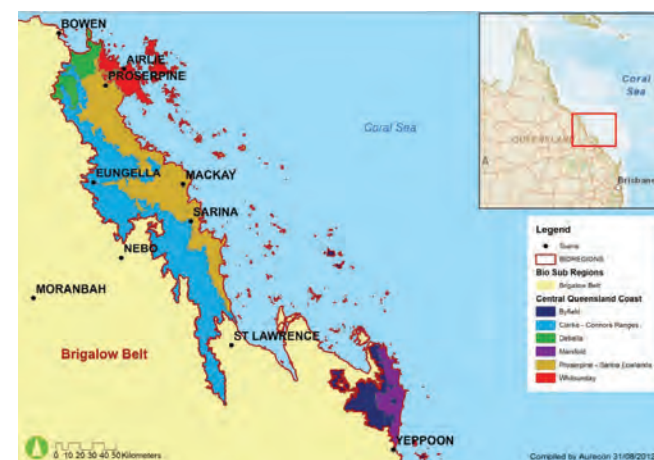
4. Byfield – one of the outlier subregions taking in the low to steep hilly areas around Byfield.
5. Manifold – the second outlier covering the sand dunes and sand plains north of Yeppoon.
6. Debella – the drier area north and west of Proserpine, characterised by granite hills and sand plains.

Marine areas

These Regional Ecosystems include mangrove forests, samphire forblands, marine grasslands and paperbark/ eucalypt open-forests. The CQCB has a rich mangrove flora represented by twenty taxa with almost half of these reaching the southern end of their distribution range.

Coastal sands

These Regional Ecosystems include coastal she-oak woodland, Moreton Bay Ash open forest with rainforest elements, beach scrub, dune grassland and paperbark swamps. Several of these, including *Melaleuca leucadendra* dominated swamps, occur in the North Mackay suburb of Slade Point.





Melaleuca swamp at Slade Point Photo by Lawrie Smith

Alluvial systems

Alluvial systems include floodplains, alluvial plains and fans, terraces, levees, swamps, channels, closed depressions and estuarine plains currently under fresh water influence. These include fringing riverine communities (both semi-deciduous notophyll/mesophyll vine forest and paperbark/river oak forests), a variety of eucalypt open forest, paperbark/ eucalypt forests, permanent freshwater wetlands, grasslands and notophyll vine forest. Many of these systems will be seen from the coach as it tours the region. Emergent *Archontophoenix alexandrae*, *Elaeocarpus grandis* and *Terminalia sericocarpa* are conspicuous components of the fringing 'rainforest'.

Hills, ranges and older lowlands

These include many different eucalypt forests, dry rainforest (semi-deciduous microphyll vine forest with emergent hoop pines), complex rainforest (notophyll to complex notophyll vine forest) and cloud forests (notophyll mossy evergreen vine forest).

The Regional Ecosystems above, particularly the 'rainforests', contain the majority of the 'special' plants that occur within the CQCB. Many are endemic.

Some 'special' plants of the CQCB

SGAP Mackay Branch has had a role in introducing many of the 'special' plants listed below to local gardens and the Mackay Regional Botanic Gardens. There will be opportunities to see most of them during the tour, either in the wild or at the MRBG.

Vulnerable species:

Actephila championiae (Koumala Range Actephila): an understorey shrub to small tree only known from Cameron Creek in the Koumala Range. (Ed. Named in honour of Irene Champion)

Eucalyptus raveretiana (Black Ironbox): a large tree restricted to watercourses and adjacent flats in both the CQCB and neighbouring Brigalow Belt Bioregion, where it is more common.

Graptophyllum ilicifolium (Mount Blackwood Holly or Holly Fuchsia), the emblem of both the Mackay Branch and the MRBG: Only known from restricted populations north of Mackay until recently when it was discovered near Miriam Vale.

Medicosma obovata (Whitsunday Medicosma): a shrub only known from the Whitsunday area.



Actephila championiae



Graptophyllum ilicifolium



Neisosperma kilneri



Omphalea celata



Neisosperma kilneri (Ornate-fruited Neisosperma): a tall canopy or emergent tree confined to discrete, widely separated populations between Cameron Creek and Dryander Creek in the Whitsundays.

Omphalea celata (Tree Omphalea): confined to populations in Hazlewood Gorge and Gloucester Island and individuals in Homevale National Park.

Plectranthus graniticola (Granite Cockspur Flower): a short-lived perennial associated with rock outcrops, primarily at Eungella.

Ristantia waterhousei (Whitsunday Ristantia): a tree only recorded from the Mt Dryander area.

Near Threatened species:

Acronychia eungellensis (Eungella Aspen): a tree only recorded from Eungella.

Actephila sessilifolia (Scrub Daphne): a shrub that occurs from near Townsville to Bundaberg.

Brachychiton compactus (Whitsunday Bottle Tree): closely related to *B. rupestris* and only known from a variety of habitats in the Whitsundays.

***Cassia* sp.** (Paluma) (Golden Shower): an undescribed tree that occurs in a variety of habitats between the Paluma Range and the Whitsundays.

Hernandia bivalvis (Grease Nut Tree): recorded from a confined, disjunct population on Dryander Creek in the Whitsundays.

Macropteranthes fitzalanii (Northern Bonewood): a shrub or tree, primarily centred in the Whitsundays, but extending further south.

Rhodamnia pauciovulata (Small-leaved Malletwood): a shrub or small tree; occurs in the Whitsundays, around Mackay and south to about Gympie.

Rourea brachyandra (Water Vine): a rainforest liana that occurs from far north Queensland to Carmila.

Sarcotoechia heterophylla (Eungella Tamarind): only known from Eungella and Blue Mountains near Sarina.



Hernandia bivalvis



Brachychiton compactus



Macropteranthes fitzalanii



Melaleuca sp. (Eungella Bottlebrush)

Undescribed species:

***Argyrodendron* sp. (Whitsunday)** (Whitsunday Tulip Oak): only known from the Whitsundays.

***Cyperus* sp. (Eungella)** (Eungella Sedge): only recorded from the Eungella area.

Gen. (AQ520454) sp. (Shute Harbour): a shrub primarily recorded from the Whitsundays, but extending south almost to Mackay.

***Homalium* sp. (South Molle Island)** (Whitsunday Homalium): a tree only known from within the CQCB; primarily in the Whitsundays.

***Lepiderema* sp. (Impulse Creek)** (Whitsunday Lepiderema): only known from a very restricted population in the Whitsundays.

***Melaleuca* sp.** (Eungella Bottlebrush): only known from a single eucalypt forest site at Eungella.

The CQCB is a very diverse green oasis on the central Queensland coast that is bounded by the larger, flatter and drier Brigalow Belt Bioregion. The selection above is just an entree to the 'special' plants of the region and doesn't even include ferns or orchids; so there is a diverse feast to be discovered.

Diversity certainly is in our nature!

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Photos: *Actephila championiae*, *Neisosperma kilneri*, *Omphalea celata*, *Brachychiton compactus*, *Macropteranthes fitzalanii* by Steve Pearson.

Graptophyllum ilicifolium by Jan Sked. *Hernandia bivalvis* by Merv Hodge.

Melaleuca sp. (Eungella Bottlebrush) by Wayne Douglass.



The Sandstone Areas of Central Queensland

Lorna Murray

Lorna Murray is a long-standing member of SGAP who has been active in the Society at Branch, Region and Federal levels. For many years she travelled widely in all states of Australia with husband Allen, visiting a variety of natural areas and photographing native plants.

During a complex geological history vast areas of Central Queensland have been formed into extremely interesting tablelands and deep gorges, featuring very impressive scenery and providing a diversity of habitats with varied plant associations. Many of these areas are now included in National Parks, with the largest area being the Carnarvon National Park, incorporating the sections of Carnarvon Gorge, Mt. Moffatt, Salvator Rosa, Ka Ka Mundi and the Buckland Tableland. Other smaller parks of similar sandstone formation include the Expedition Range National Park, with Robinson Gorge section, Isla Gorge National Park, Cania Gorge National Park and further north Blackdown Tableland National Park.

Carnarvon National Park

In recent times some sections of this Park have become more accessible, although some still have no easy access and few or no facilities for visitors. Forty regional ecosystems are known to exist within the park and nine of them are listed as endangered. Twenty-three plant species are listed as threatened under Queensland legislation.

Carnarvon Gorge Section: The best known and most frequently visited area is the Carnarvon Gorge Section, with a good camping area and accommodation facilities nearby. The walk up Carnarvon Creek, with the towering white sandstone cliffs on the sides, and interesting side gorges such as the Amphitheatre and the Moss Garden is an experience



Above: Sandstone cliffs in Carnarvon Gorge
Left: *Livistona nitida* & eucalypts

not to be missed. Then it is possible to climb to higher points such as Boolimba Bluff to get most interesting views of the gorge.

Within the gorge there is open woodland with a mixture of eucalypts, angophoras and cypress pine. *Livistona nitida*, the Carnarvon Fan Palm, is common and *Macrozamia moorei* can be seen in places. In one of the side gorges, Ward's Canyon, there is a colony of *Angiopteris evecta*, King Fern, and in some of the wettest habitats *Eucalyptus saligna*, Sydney Blue Gum, can be found. One of the interesting visitor attractions is the Art Gallery, where there are many Aboriginal hand paintings on the walls of the cave.

Mt. Moffatt Section: This is one of the most varied areas of Carnarvon National Park. When I first visited this area in the early 1970s the lower parts were still a cattle station and had not been converted to National Park status. However, the Booringa Shire Council, based on Mitchell, had just graded a new road to the top of the escarpment. A drive up this road, at that time involving the opening and closing of many gates as it passed through cattle properties, took us to the Consuelo Tableland. Shelter sheds with water storages had been installed at intervals, and lookout points marked on the sketch map. We were then able to get to this top tableland in an ordinary sedan car, whereas now a 4WD vehicle is generally necessary to get through some of the sandy patches on the road and up the steep climbs that have become very rough.

The varied landscape and combination of sandy and basalt soils in the Mount Moffatt section has led to a rich mosaic of diverse and contrasting plant communities. While most of Mount Moffatt is at least 700 metres above sea level, the Consuelo Tableland is more than 1,000 metres above sea level. Forming part of the Great Dividing Range, this area has been called the "Roof of Queensland". Water runoff from the area is fed into several major river systems. On the south-western side of the tableland, water flows along the twin branches of the Maranoa River and into the Murray-Darling catchment. To the east, water travels down steep-sided valleys, including Carnarvon Gorge, into the Comet and Dawson Rivers. These join the Fitzroy River, which meets the coast near Rockhampton. From the west the water flows to the Barcoo River and then into Cooper Creek.

Mt. Moffatt Section is home to more than 750 plant species, and the plant list is continually being extended as more species are being discovered. On first entering the Park the area is a fairly flat sandy plain, interrupted by the massive pillars and formations of hard-capped sandstone, which have been given names such as the Duchess, the Cathedral, the Chimneys, Marble Arch and Lot's Wife. The vegetation



is eucalypt and acacia woodland and, in a good season, particularly late winter to early summer, massed flowerings of many acacia species, including the shrubs, *A. buxifolia* and *A. conferta*, taller plants such as *A. bancroftiorum* and *A. neriifolia*, and many interesting smaller plants can be seen here. Aboriginal paintings occur at the Tombs, Kookaburra Cave and Kenniff Cave, although Kenniff Cave has been closed to tourists recently, because of the danger of the roof collapsing.



Calandrinia balonensis



Lomandra leucocephala

At the top shelter shed there is an expansive view from the north-west to the south. The track from here along the basalt-topped Consuelo Tableland goes to the head of Carnarvon Creek, where the creek is just a small trickle. Striking features in this area are the tall stringy bark trees of the mahogany forest, *Eucalyptus laevopinea*, and the large number of huge, very old plants of *Macrozamia moorei*.



Marlong Arch – Mt. Moffatt



Spyglass-Peak – Salvator Rosa

Salvator Rosa Section: The spring-fed Nogoa River and Louisa Creek wind through a picturesque broad valley beneath craggy sandstone outcrops in the Salvator Rosa Section of Carnarvon National Park. At the western edge of central Queensland's sandstone belt, Salvator Rosa contains deeply eroded and spectacular rock formations, such as



Salvator Rosa from the north

Spyglass Peak and the Sentinel, which dominate the skyline. Eucalypt woodland and open forests cover most of the Park. Here again the wildflower displays are spectacular in late winter and spring. At least ten of the Park's recorded 300 plant species are rare or threatened.

In one spot there is a grove of small trees of *Grevillea pteridifolia*, possibly the most southern occurrence of this species. Other interesting plants that can be seen near the base of sandstone formations include *Grevillea longistyla*, *Astrotricha intermedia*, *Astrotricha cordata* and *Homoranthus zeteticorum*.

In Salvator Rosa and also nearby Ka Ka Mundi there are interesting natural springs with a variety of tree ferns and other fern species.



Ferns and tree ferns at Bunbuncundoo Spring – Ka Ka Mundi



Blackdown Tableland National Park

Blackdown Tableland, situated west of Rockhampton and south of the rail siding Bluff, is isolated from the other sandstone areas. It will be visited on the Central Queensland pre-conference tour. The tableland rises abruptly above the surrounding dry plains and protects spectacular gorges and waterfalls. It can be accessed as far as the main camping area by conventional vehicle, but as the narrow bitumen road is very steep, it is not suitable for caravans and heavy trailers.

The tableland is bounded on all sides by scarps of from 60 m to 600 m. The altitude gives a cooler, moister environment than the surrounding land, with temperatures 10°C cooler. The area was leased for a number of years and used for grazing, but a deficiency of certain minerals in the soil resulted in brittle bones after a period and the area was not highly regarded by landowners. This is also thought to be the reason for a paucity of large native animals in this area.

There are spectacular views at Horseshoe Lookout and at Rainbow Falls, where the more active visitors can climb to the bottom of the Falls. Walking tracks have been provided near Horseshoe Lookout, from the campground and at Rainbow Falls. Roads for 4WD vehicles give access to some of the more remote parts of the tableland, including the Charlevue Lookout on Stoney Creek, where there is a sheer drop of over 300 m to the countryside below.

The Park has diverse plant communities including heathlands, dry eucalypt forests and pockets of ferns, mosses and orchids. As it is such an isolated area, there are many endemic species, including



Hakea plurinervia Photo by Garry Sankowsky



Grevillea longistyla Photo by Shirley McLaran



Dampiera adpressa
Photos by Glenn Leiper



Dampiera discolor

Macrozamia platyrhachis, *Eucalyptus sphaerocarpa* (Blackdown Stringybark), *Acacia gittinsii*, *Melaleuca pearsonii* and *Melaleuca sp.* Blackdown Tableland. Part of the tableland was a forestry reserve for many years before being converted to National Park status.

Other Areas

The other smaller areas, including Expedition Range National Park, Isla Gorge National Park and Cania Gorge National Park, have few or no facilities and difficult access to some parts. However, there are still interesting sandstone features, though not on the scale of the massive ramparts and sheer cliffs of the other Parks. There is still a diverse range of interesting flora and, in a good season, spectacular displays of colour from late winter to spring.

Conclusion

These sandstone areas of Queensland have a great variety of attractions in the spectacular scenery, the interesting history of the early settlers and of Aboriginal habitation, with art works remaining in many places. The varied landscapes lead to inland Queensland's most diverse flora, with many endemic species. This then provides habitat for an extensive range of fauna, including an impressive bird population and offering good opportunities for bird-watchers.

Although accommodation close to these Parks is limited and few conducted tours are yet available, there are good camping facilities in several places. For the independent traveller, who is self-sufficient in food and water, there are no more interesting places to visit than these inland National Parks of the sandstone areas of Queensland.

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