



Eucalyptus parramattensis (Calgaroo)

CALGAROO

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Newsletter of the
Parramatta and Hills District Group,
Australian Plants Society NSW Ltd
ABN 87 002 680 408

News from the President

Are we all set to go for our June meeting at Gumnut Hall? Angus Stewart and *Creating an Australian Garden*. Nothing more to be said, just anticipation. Let's see if we can double last attendance again.

The May Gathering at Hunter Wetlands Centre lived up to expectations. Over 80 attendees and a sparkling perfect day weatherwise. The lakes, the birdlife, the native plants were all wonderful and the Newcastle Group most hospitable. Morning activities were guided walks through the wetlands, visiting the propagation area and examining plants for sale. Jennifer Farrer and the Gornalls attended from Parra Hills and all there expressed their pleasure at being there. Louise Duff gave a great talk on the wetlands – some birds migrate to there from the Arctic.

The APS NSW AGM was held and unfortunately John Aitken stood down as President after two years. The Gatherings were initiated by John and the society owes him a great debt for that. No replacement has yet been found and Vice Presidents Graeme Ingall and Mark Abell are holding the fort. Can I remind you Parra Hills needs a new president at the end of this year – this job can sometimes be a little difficult but is always rewarding – I commend your interest.

The Growth and Promotions Committee has called for reps from District Groups to attend a Saturday workshop – on growth and promotion! Presuming they get adequate numbers it will take place on Sat July 19 10.00am – 3.30pm at Ultimo. Our Publicity Officer Brodie has put up her hand and I am calling for other interested volunteers. We can send at least 2 and perhaps 3 people. This is an important area and any learnings could be very useful for our group.

Our July activity features Lesley Waite with a Walk and Talk at Annangrove Environment Centre – check your calendars. August hots up with Samuel Gilbert Fete and the Yearly Get Together at Central Coast – unfortunately they clash but we can split our forces and have strong representation at both. The final crescendo in Aug is our meeting at Gumnut - Doug Rickard and Wildflowers of the West. Don't forget second Wed each month – Propagation at Bidjiwong.

The November Gathering is falling into place on Sat Nov 1 at Uniting Church Hall, Windsor. The speaker will be Jessica Mowle of University of Western Sydney talking on *Successfully Growing Wollemi Pines*. This day will mark the rebirth of the Hawkesbury Group – a significant event that will give us a new neighbour. I hope we can show our support with a solid attendance.

One final thing – two people from the Mid North Coast area attended the Newcastle Gathering. I am now spearheading action to get the Mid North Coast District Group reactivated and will report progress in the next *Calgaroo*. As I said this job can be rewarding, very rewarding.

Next meeting on Saturday, 28 June, at Gumnut Hall at 2pm. Check the directions to Gumnut Hall – see Page 2. Angus Stewart talks on *Creating an Australian Garden* and may have copies of his book of the same name for sale. Bring a friend! Don't miss it!



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Pip Gibian has volunteered for Afternoon Tea/Coffee Hostess for the June meeting.

Any member willing to volunteer for the August or subsequent meetings would be welcome to allow Committee members to mingle and discuss issues with members.

Please bring your queries and suggestions to Committee members – please be proactive.

Calendar

Jun 2014

Wed 18 Propagation at Bidjwong Community Nursery at 10am (next week)
Sat 28 Group Meeting at Gumnut Hall at 2pm with Angus Stewart

Jul 2014

Mon 7 Deadline for Calgaroo news / articles
Wed 9 Propagation at Bidjwong Community Nursery at 10am
Sat 26 Walk and Talk with Lesley Waite at the Environment Centre - 10am

APS NSW Ltd Gathering at Hunter Wetlands



A View of the Hunter Wetlands, Shortland
Photo: Tony Maxwell

The APS NSW Ltd gathering at Newcastle on Saturday, 17 May, attracted 82 members including five from our Group, maintaining much improved numbers. The meeting included the AGM and an interesting talk on the Hunter Wetlands from Louise Duff.

At the AGM John Aitken stood down as APS NSW President but will remain on the board. There were no takers for the President's job, for now vacant. Graeme Ingall remains Vice President and Secretary, Mark Abell also Vice President – both declined nomination for President for now.

Merle Thompson was re-elected Membership Officer, Tony Maxwell the Programs Officer and other positions remain as last year.

Rhonda Daniels gave a well received and impassioned speech that what we need most are volunteers prepared to do some work – whether they have a title or not.

Whether we have a President or not, we must press on and Rhonda's words are really relevant.

To Get to Gumnut Hall

Gumnut Hall is in Gumnut Place, Cherrybrook, off Gumnut Road.

It is very close to New Line Road but there is no vehicular access into Gumnut Place other than by round-about routes of more than 1km from New Line via Shepherds Drive, Kenburn Avenue, Tallowood Avenue and Gumnut Road OR from Boundary Road via Francis Greenway Drive, Macquarie Drive and Gumnut Road. Check your own directory. See you there!

2014 APS NSW Get-together, Sat and Sun, 16 & 17 Aug 2014, Central Coast

This year's Get-together is hosted by APS Central Coast Group on the NSW Central Coast - from Norah Head in the north to the Hawkesbury River in the south, from the beaches and sand dunes of the coast to the woodlands and heathlands inland.

Saturday 16 August

On Saturday morning we will be based at Soldiers Beach Surf Life Saving Club. This is a modern facility with stunning coastal views. Soldiers Beach is just south of Norah Head, between Toukley and The Entrance. We will have a number of walks, and presentations from Angus Stewart and Nola Parry.

Walks which will include patches of heathland, woodland and remnant coastal rainforest in the Norah Head and Bateau Bay areas will be concurrent with some presentations and selections will need to be made on Saturday morning.

Saturday night's dinner will be at Gosford RSL. Discounts are available at the nearby Galaxy and Ashwood motels by quoting 'APS' at the time of booking.

Sunday 17 August

Sunday morning walks will be in the heathland between Pearl Beach and Patonga, overlooking Broken Bay. This will be followed by a BBQ lunch at Kincumber Mountain Reserve. There are also a number of walks available at Kincumba Mountain. These may be enjoyed either instead of the main walks of the morning or as an after lunch activity.

For those July 2014, who want to arrive before Saturday, or stay in the area after lunch on Sunday, there are additional suggestions on the APS NSW website.

The Presidents' Dinner at the Wyoming Lantern Restaurant is on the Friday night and is open to all interested members of APS.

Book now. There are limits in the numbers who may participate in some of the presentations and walks. The application form is in the current edition of *Native Plants*. Registration deadline is 11 July 2014.

Our Library

At a recent meeting the Committee discussed the future of our Group library. It was agreed that we should seek the views of all members as to what should be done. So much material is now on the Internet that books are not used as much as before but they remain a source of information, particularly for those who do not access data on-line. Should we retain them and make them more available to members? Should we auction them off to members? Your views please!

The Hills Shire Council Living Sustainably Workshops

Our Bushland:

The Good and the Bad on Saturday, 12 June, from 10—11am

The first in a series of workshops about your local bushland. Discover our unique local threatened species and their habitats and identify the various threats to the bushland.

Conservation Management on Saturday, 19 June, from 10—11am

Explore how you can help protect your local bushland. Examine the various ways the threats to our bushland are managed.

In the Field on Saturday, 26 June, from 10—11am

Visit the site of a recent local success in terms of bushland restoration and gain some advice on how it was achieved.

These events are held at the Community Environment Centre which is located on Currie Ave, Annangrove.

Bookings are essential - Book online at: www.thehillsshireenvironment.eventbrite.com.au or phone Council on 02 9843 0555

Our Web Site

Chris Coe with the help of Sue Bell keep our web site ticking over and we thank them. Is there anything else you would like to see on the site? We can find so much information on our ANPSA and our APS NSW websites that these alone can occupy us. But can we add to our own site for our benefit?

If you haven't visited it recently go to <http://www.apsparrahills.org.au> But keep an eye on <http://www.anpsa.org.au> (ANPSA site) and <http://www.austplants-nsw.org.au/> (APS NSW site)

How Does the Environment Affect Your Plants? - How Do the Plants Adapt to these Conditions?

Betty Rymer

For any plant to grow it has certain requirements, light, warmth, moisture, nutrients and depth of rooting material. All these are supplied by the environment.

The Climate – gives light, warmth, moisture.

- The macroclimate is essentially the same everywhere;
- The microclimate varies due to deep valleys, more moisture, protection from the wind, amount of sun, etc.

The Biotic effect - biotic factors are things done by living organisms and abiotic factors are chemical and physical factors like climate and soil.

- the influence of one plant on another;
- the influence of animals on plants;
- shading;
- competition for nutrients; and
- animals, birds and insects eating plants

Soil such as Hawkesbury Sandstone which weathers to a porous, sandy soil with large particles and has little water retention and great drainage can be dry for most of the year – the opposite to clay. Plants must have water.

Hawkesbury Sandstone is poor in minerals as they are leached out by the water. Water and nutrients are taken up by the fine root hairs, emphasising the importance of root systems.

But why are minerals so important to a plant?

The leaves of a plant are in effect a factory for making food by means of photosynthesis. For plants to make sugars in the factory they must have water from the roots, sunlight for energy, magnesium and iron via the roots plus sunlight to create the green colour, and Stomates ¹ to take in the carbon dioxide from the air. All plants lose water through the stomates (pores found in the epidermis of leaves, stems and other organs that are used to control in an exchange of gas and transpiration.

To make protein plants must have nitrogen from nitrates in the soil. In spite of this there is a tremendous variety of Australian native plants growing in poor dry soils.

The vegetation on Hawkesbury Sandstone is variable from woodland to heath. All these plant communities are known as sclerophyll communities, meaning harsh leaf types.

Interestingly, there is usually a lack of annual weeds because they have a short life and need large amounts of nutrients over a short period of time.

Plants on dry sclerophyll areas will have some features to help prevent the plant losing too much water. Most water loss is through the leaves – therefore the leaves show special features such as

- a thick cuticle, eg as in Eucalypts, Banksias, etc;
- the reduction of leaf surface area to volume, eg needle-like leaves as in Banksias and Hakeas;
- the reduction of leaves themselves – whereby the function of the leaf is taken over by another part of the plant, eg by stems as in Casuarinas and phyllodes in Acacias;
- the stomates are depressed below the surface of the leaf, eg as with *Banksia serrata* or the rolling of the leaf as with Spinifex; and
- a high percentage of mechanical tissue, eg in Banksias.

When cells are flaccid ² the tissue supports the leaf and plants don't wilt in dry weather.

This is just a look at Hawkesbury Sandstone soil. What about other soils? What about your soil? Test your soil – put some in a glass of water, shake well and leave. See what layers of different particles you find. And does the water remain clear or does it go cloudy? If cloudy you have soil that has some clay content and that will retain some moisture on which your plants may draw in dry conditions, just what you want.

¹ Betty has used the term 'stomates' – let's find out what Wikipedia has to tell us.

In botany, a [stomate](#), plural [stomates](#), is a pore, found in the epidermis of leaves, stems and other organs that is used to control gas exchange. The pore is bordered by a pair of specialised [parenchyma](#) cells known as [guard cells](#) that are responsible for regulating the size of the opening. The term is also used collectively to refer to an entire stomatal complex, both the pore itself and its accompanying guard cells. Air containing [carbon dioxide](#) and [oxygen](#) enters the plant through these openings and is used in [photosynthesis](#) in the [mesophyll](#) cells (parenchyma cells with [chloroplasts](#)) and [respiration](#), respectively. Oxygen

produced as a by-product of photosynthesis diffuses out to the atmosphere through these same openings. Also, water vapor is released into the atmosphere through these pores in the process called [transpiration](#). Now we know – don't we?

²Flaccid means limp, lacking firmness, or resilience.

Betty asks that we don't blame the supplier for a plant death until we check whether we have planted the right plant for our soil.

Soils ain't Soils and Plant Selection

Jeff Howes has an article on the APS NSW web site under the above title. He reinforces the views expressed by Betty Rymer above.

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

Read the full article at <http://www.austplants-nsw.org.au/>

Bush Tucker Superfoods

***Yours* magazine

Superfoods aren't just grown in rainforests thousands of kilometres away – check out these local beauties.

Billygoat Plums or Kakadu Plums (*Terminalia ferdinandiana*)

These are full of antioxidants and have one of the highest concentrations of Vitamin C of any fruit in the world. "Health food companies are beginning to capitalise on the natural benefits by processing it into capsules and powder form," says Samantha Martin, author of Bush Tukka Guide.

Lilly Pilly*

The red and pink berries of the plant contain oxidants and vitamin C to boost the immune system. "They are a perfect addition to a smoothie or fruit salad," says Samantha. "They are also fantastic in jams, icecreams, savoury and sweet sauces, and baked into muffins."

Lemon Myrtle (*Backhousia citriodora*)

The leaves have the world's highest concentration of citral – an oil that has an anti-viral action. They're also rich in lutein, folate, vitamins A and E, zinc, magnesium, and calcium. "The fragrant leaves add a refreshing lemon flavour to sweet and savoury dishes," says Samantha. "They can also be boiled and drunk as a tea, which can be used as an anti-inflammatory to treat swollen joints."

*Ed. Lilly Pillies were classed as Eugenia's some years ago but have been divided into several genera including *Acmena*, *Syzygium* and *Waterhousea*. Many are subject to attack by psyllids but *Acmena smithii* which grows to 5m and sometimes much more is one that is resistant to these small insects. Some recent cultivars do not flower and fruit as well as the species.

***Yours* is a new Australian fortnightly magazine for women



Billygoat Plum



Lilly Pilly



Lemon Myrtle

Eremophila Study Group

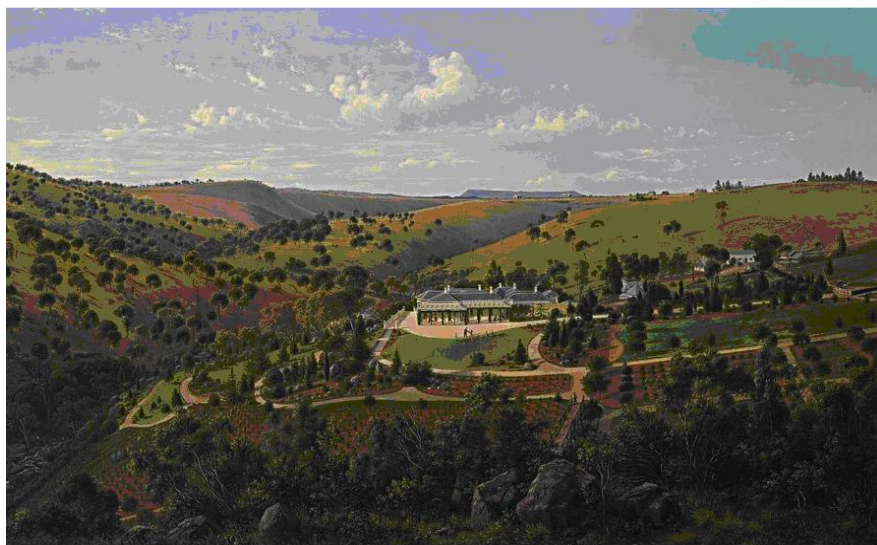
Ever thought of joining an ANPSA Study Group? Members must be members of their local APS/SGAP. One is not expected to be a specialist or even very knowledgeable, some members are complete novices but keen to learn. Just enjoy!

One such Group is the Eremophila Study Group which has as its leader Colin Jennings in Adelaide. There is, however, a Sydney Branch, led by Charles Farrugia, which usually meets in the Hills area three times a year. We are departing from our customary meeting places for our next meeting which will be held at the home of Grevillea Study Group leader, Peter Olde, at 140 Russell Lane, Oakdale, on Saturday, 5 July, at 10.30am. Peter is not only a Grevillea guru but knowledgeable about many Australian plants including Eremophila. Group members are invited to come to this meeting and consider joining this or another Study Group. We will car-pool to minimise the number of cars travelling to Oakdale. Please phone Gordon Brooks (9680 4951) if interested.

In search of The Australian Garden

Polina Volkova

Bill Gammage in his book "The Biggest Estate on Earth" described Australia as having "grasslands [that] were park-like." The arrival of Europeans and the ensuing waves of people from every corner of the globe have since reshaped the scenery that was cultivated over thousands of years by the Indigenous peoples through their land management practices. Australian suburbia has tended to reflect this cultural mosaic through garden design and plant selection. It seems that a uniquely Australian garden concept is floundering among a sea of more definitive traditions.

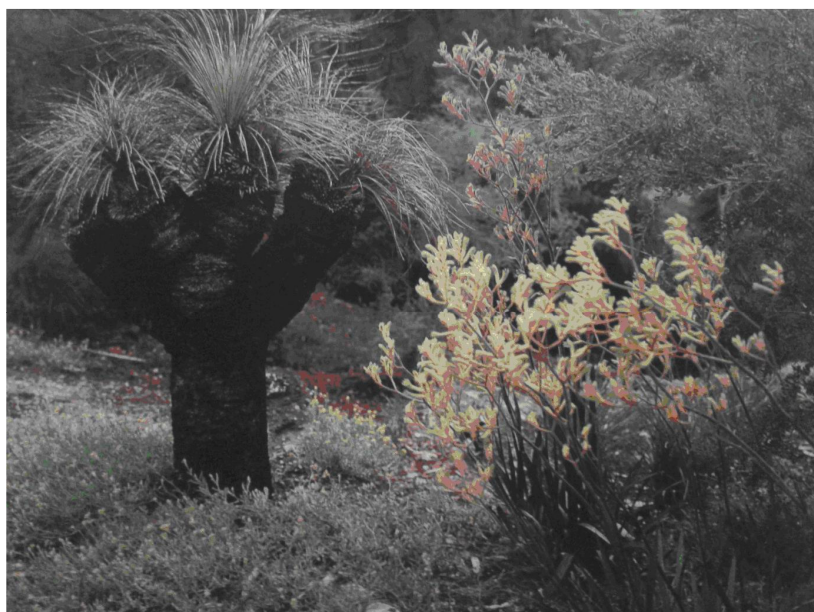


Glenora (Source: Gammage (2010). Painting by Eugene von Guerard)

The lukewarm reception of the 'bush garden' can in part be attributed to the misconception that it's a self-maintaining entity, a concept introduced in the 1960s and 1970s. George Seddon points out that "neither gardening nor plants are like that" which is perhaps why a truly Australian garden hasn't been given the chance to show its colours yet. In the 18th century when the Colony was in its infancy, many of those that attempted to cultivate delicate native perennials were sorely disappointed when most of their transplanted finds died. This frustration highlighted the need for a unique approach to growing Australian flora that at the time was unexplored.

Some native plants particularly Acacias, Eucalypts and the NSW Christmas bush were successfully grown around NSW and became favourites in Sydney gardens. Growing varieties that are local from provenance stock can be an advantage when time and resources are scarce. The native garden inadvertently becomes a refuge for endangered flora that is declining in other parts of the country or within the local area. Endemic traits like pest resistance, water and nutrient requirements are already in the genotype and can be used to the gardener's advantage. Nevertheless, care and maintenance are still strongly suggested because even local varieties have exceptions due to genetic variation.

Australian native plants can be quite versatile, taking for example the Silky Oak (*Grevillea robusta*) originally from Queensland and now grown as far south as Victoria. *Podocarpus elatus* also known as the plum pine is another Queensland native that has made its way across the country to WA. Factors like soil fertility, water availability, climate and other environmental factors must be taken into account when choosing a plant that will last. The NSW Australian Plant Society suggests a long list of species to choose from including Grevilleas, Acacias, Brachysemas, Cassias and Casuarinas. Paul Urquhart further adds that the native garden can be supplemented with exotic species that suit the specific climate and terrain of the area.



A native garden (Source: Urquhart (1999). Image by Leigh Clapp)

According to Urquhart, plants that echo the Australian landscape complemented by uniquely Australian art are the elements that underlie the 'Australian garden' concept. Meanwhile, experimenting with different styles using native flora can lead the avid gardener on a personal discovery quest that is all 'Australian.' Angus Stewart lists formal, cottage, tropical, bush, Japanese and Balinese as some garden designs to try with a brief description for each in his book 'Creating an Australian Garden'. As with any good design, it needs planning and a number of things to consider.

One of the most important garden design factors to take into account is its purpose. Both Urquhart and Stewart emphasise garden use as one of the defining garden characteristics once a site assessment has been done. Stewart subdivides

these uses into general gardening, rest and relaxation and chores. Simply asking the question “What do you do in your garden?” can answer these 3 categories. Regardless of the garden style chosen, native plants have a way of attracting sometimes unexpected visitors.

Native wildlife often finds food and shelter in a garden comprising of native flora. The garden’s significance increases when close to reserves and other native bushland areas as it takes on the role of a wildlife corridor and preserves the bush-suburbia continuity. Rainbow lorikeets and cockatoos by day and possums with flying foxes by night become an increasingly common sight as Grevillea, Eucalyptus, Pittosporum and other native species establish. A well placed log in a secluded part of the garden can be the gardener’s solution to slug problems as blue-tongue lizards lap up the slimy pests and retreat back into their new home. These new neighbours are also instrumental in pollinating a variety of plants and driving away pest species, as is the case with kookaburras and Indian Mynas.



The authors Urquhart and Stewart along with many other authoritative figures in landscape design and gardening unanimously agree that the Australian garden is also a native garden or at least dominated by native flora. Through the ups and downs of the nation’s fascination with the Australian garden concept, a truly Australian garden is slowly emerging. Where before native plant cultivation and propagation was vexing to say the least, now the practice is being refined to enable hybrid varieties to be commercially produced.

From a scraggly collection of natives that stood out like a sore thumb in the landscape of suburbia, real garden masterpieces are starting to emerge. To avoid being overcrowded and disjointed, the native garden takes careful planning and the effortless natural flow of curves is a result of thoughtful placement. The nostalgic reminiscence of Australia as a “park-like estate” by Bill Gammage can once again be brought to life through the public’s enthusiasm and expert guidance to build on the experience and knowledge of the Traditional Owners of this land. As areas of native flora shrink it’s more important than ever to realise the Australian garden dream and bring the ‘bush’ back into the encroaching concrete jungle.

Banksia ericifolia (Source: ANPSA. (Image by Brian Walters))

References:

Stewart, A., 2010, *Creating an Australian Garden*, Allen and Unwin, Crows Nest, NSW.

Urquhart, P., 1999, *The New Native Garden: Designing with Australian Plants*, Lansdowne, Sydney NSW.

Gammage, B., 2011, *The Biggest Estate on Earth: How Aborigines Made Australia*, Allen and Unwin.

Seddon, G., 2005, *The Old Country: Australian Landscapes, Plants and People*, Cambridge University Press, Melbourne Vic.

Former Secretary Scores at the Royal Easter Show

A 2nd Prize was awarded at the Royal Easter Show to Narelle Hulbert, our Secretary back in 1983 – 85, for her Kangaroo Paw, *Anigozanthus* ‘Pink Pearl’.

Narelle, who attended our 40th Birthday luncheon in 2012, has moved to the Central Coast and is a member of APS Central Coast Group. Other members of that Group also had some success. Narelle also edited *Calgaroo* for a year or two.

10th FJC Rogers Seminar

Organised by APS Victoria to celebrate the life of the late Fred Rogers who joined the Australian Plants Society in Melbourne in 1959 and was elected Victorian President in 1963 and Federal President in 1965, this year’s seminar will be held in Bendigo, on 18 and 19 October 2014.

On Saturday there will be a full day conference and formal dinner and on Sunday bus tours of local gardens and nurseries. The theme will be ‘Brachychiton and Allied Genera’. More details are at www.apsvic.org.au/FJCR and you are invited to register your interest at bendigonativeplantgroup@yahoo.com.au



Anigozanthus ‘Pink Pearl’
Photo: Jonathan Steeds

Save Our Flora

Maria Hitchcock has issued another *Save Our Flora* bulletin that includes some very interesting information from members and a list of rare and endangered Phebalium and Banksia species.

Contact Maria at saveourflora@gmail.com or phone Maria on (02) 6775 1139 or Bob Ross on (02) 6495 0306

Phebalium Sp

Critically endangered

Phebalium daviesii (Tas)

Phebalium distans (Qld)

Vulnerable

Phebalium glandulosum

ssp eglandulosum (NSW, Qld)

Phebalium lowanense (SA, Vic)

Phebalium whitei (NSW, Qld)

Banksia Sp

Critically endangered

Banksia anatona (WA)

Banksia aurantia (WA)

Banksia fuscobracteata (WA)

Banksia serratuloides ssp perissa (WA)

Endangered

Banksia brownii (WA)

Banksia cuneata (WA)

Banksia ionthocarpa (WA)

Banksia mimica (WA)

Banksia montana (WA)

Banksia nivea ssp uliginosa (WA)

Banksia oligantha (WA)

Banksia pseudoplumosa (WA)

Vulnerable

Banksia goodii (WA)

Banksia serratuloides
ssp serratuloides (WA)

Banksia sphaerocarpa
var. dolichostyla (WA)

Banksia squarrosa
ssp argillacea (WA)

Banksia verticillata (WA)

Australian Flowers Bloom Red because of Honeyeaters

*Sarah Zielinski

Australia is a bird lover's delight. Even those of us who haven't taken up birding as an obsession can't help but be delighted by the wealth of brightly coloured, charismatic species.

One large and diverse group of birds commonly found in Australia is the honeyeaters. These small- to medium-sized birds feed on the nectar of flowers, similar to the hummingbirds of the Americas (though honeyeaters don't share the hummingbirds' ability to hover).

Flowering plants don't feed honeyeaters — or any other kind of pollinators — as a public service. The nectar serves as a lure, and the birds pick up pollen from one flower or plant and take it to another, which enables fertilisation and reproduction.



Phylidonyris novaehollandiae (New Holland Honeyeater)

Many Australian flowering plants have thus converged on a similar method of drawing honeyeaters to them — producing flowers in colors that stand out to the birds, Martin Burd of Monash University in Melbourne and colleagues report February 25 in the Proceedings of the Royal Society B.

The researchers looked at 234 flowering plants native to Australia — 155 pollinated by insects, 57 pollinated by birds and 22 by both — and used a computer algorithm to convert the variety of wavelengths reflected by a flower into a single value that could be compared to the color vision system of a bird pollinator. Some birds have vision systems similar to humans, with receptors for blue, green and red wavelengths. Another group that includes parrots also has a receptor for ultraviolet wavelengths. A third group — this one contains the honeyeaters — has a receptor for wavelengths in the violet range.

The colors of flowers pollinated only by birds weren't all that different from those visited only by insects, the researchers found. But about half of the bird-pollinated blooms fell into a similar color space that humans see as a shade of red and that stand out even more in the honeyeaters' vision.

The plants aren't all closely related; they all converged on a similar coloring for their flowers as they evolved to attract their honeyeater pollinators, the researchers conclude.

*Sarah Zielinski is a reporter with *Science News* in which this article first appeared. *Science News* may be accessed at <https://www.sciencenews.org/>

Some material has been held over until July. But let me have your articles, short or long. Other members are interested!