

CALEYI



NORTHERN BEACHES GROUP

austplants.com.au/northern-beaches

December 2021

Australian Plants Society Northern Beaches
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APS Northern Beaches Group acknowledges the Traditional Owners of the land on which our activities take place.

We pay our respects to Elders past, present and emerging, and recognise the continuing connection to lands, waters and communities.

CALENDAR

APS Northern Beaches Christmas Lunch either Saturday 11th or Sunday 12th December, 2021.

When this date is confirmed it is essential that you indicate if you will be attending.

As usual barbecue chickens and bread are supplied and those participating are asked to bring one dish to share. An email will be circulated for your contributions eg. salad, main dish, dessert etc.

We are required to check everyone's vaccination certificate. (either digital or printed form).

Many thanks to our wonderful contributors - Penny Hunstead, Russell Beardmore, Georgine Jakobi, Jennifer McLean, Pip Gibian, Narelle Barden and Estelle Borrows.

If you have any photographs, articles, links or suggestions for Caley please feel free to send to me Jane March march@ozemail.com.au 0407 220 380.

LATE SEASON BLOOMERS

Russell Beardmore

Early spring is the time when our bushland is full of colour with the generous flowering of plants such as *Boronia ledifolia*, *Eriostemon australasius*, *Phebalium squamulosum* and various pea flowers. By October, the "big show" is largely over - with the notable exception of Flannel Flowers! - and on some tracks our first impression is that there is not much to be seen. But right into November, there is always something interesting.

From late October until early November, we have done walks at Manly Dam, North Head, Chiltern Road, Topham Track in KNP and Deep Creek. They have all rewarded us with some wonderful flowers. Of the Boronias, the best



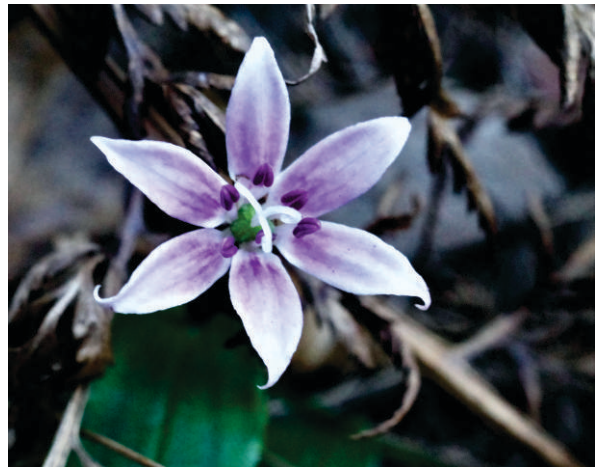
come last with the beautiful *B. serrulata* in full bloom on KNP tracks. The



intense yellow flowers of *Goodenia stelligera* compete on Chiltern Road with



a prolific flowering of *Xyris operculata*.



Orchids are still present with *Cryptostylis subulata* (tongue orchid) at



Manly Dam and the extraordinary Potato Orchid, *Gastrodia sesamoides*, on the roadside near the Topham track.

The lovely pink Stylidiids seem to leave their run until late in the season, with both *S. graminifolium* and *S. productum* on show on a few of the tracks.

Thysanotus lilies, with their striking purple colour and amazing frilly petals, were coming into bloom on the Topham Track.

Finally, a flower I had never seen before was in abundance at one spot at Deep Creek, *Schelhammera undulata*. Flowers like this make it so worthwhile to explore our tracks late, late into the year.
Russell Beardmore

SLADES TRACK WALK – SATURDAY, 20TH NOVEMBER 2021

Penny Hunstead



Rock and trees. pic: Georgine Jakobi

This walk took place on a mild, cloudy day and included members of the Northern Beaches and North Shore Groups. The overcast conditions were perfect for viewing and photographing the flowers. The walk could be described as Easy, Grade 2.

Species of a plant community are never well represented in a walk report. This is because identification is limited to the trackside species. Taller species, in flower, can be seen from afar, but smaller, important representatives of the plant community may not be seen. However, although we would have seen more species in flower, on a Winter walk, we were rewarded with many flowering plants in the Duffy's Forest Ecological Community. There was no showy blossoming, but quite an abundance of delightful little flowers.

The dominant tree species in this area of Duffys Forest were, *Angophora costata* (in flower), *Corymbia gummifera*, and the *Eucalyptus* spp. *Capitellata*, *haemastoma*, *oblonga*, *racemose* and *sieberi*. Also present were, *Allocasuarina littoralis*, *Banksia serrata* and *Ceratopetalum*

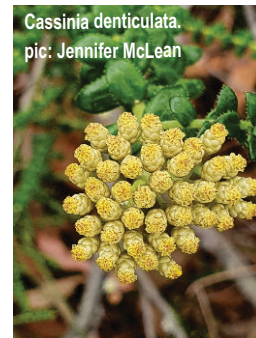


Daviesia squarrosa. pic: Russell Beardmore

Conospermum longifolium w spider. pic: Ed

The more numerous species of flowering plants were amongst the herbs, small shrubs, vines, orchids and grasses .

The flowering small shrubs and herbs were: *Daviesia squarrosa*, *Conospermum longifolium*, *Cassinia denticulata*, *Haemodorum corymbosum*, *Platysace linearifolia*, *Hibbertia linearis*.



Cassinia denticulata. pic: Jennifer McLean



Haemodorum corymbosum. pic: RB



Platysace linearifolia. pic: RB



Hibbertia linearis. pic: RB

In the tall shrub species, *Kunzea ambigua*, *Lambertia formosa*, *Persoonia laevis*, *Grevillea* spp. *buxifolia*, *linearifolia* and *sericea*, were in flower. *Comesperma ericinum*, *Stylidium laricifolium*, *Goodenia heterophylla*, *Bauera rubioides* and *Dampiera purpurea*.



Grevillea sericea. pic: GJ



Comesperma ericinum. pic: RB



Goodenia heterophylla. pic: RB



Dampiera purpurea. pic: RB

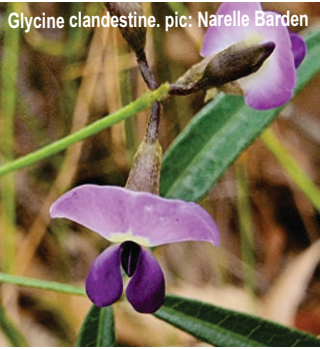
The ground cover, *Scaevola ramosissima* and ubiquitous *Actinotus minor* were also in flower, together with *Austrostipa pubescens* , an attractive grass.



Scaevola ramosissima pic: Estelle Burrows



Gompholobium grandiflorum seed pods. pic: JMcL



Glycine clandestine. pic: Narelle Barden



Dipodium punctatum. pic: JMcl



Cymbidium suave. pic: EB



Cryptostylis subulate. pic: RB

The flowers of the vine *Glycine clandestine* and the orchids, *Dipodium punctatum*, *Cymbidium suave* and *Cryptostylis subulate* were spotted by the "eagle-eyed"!

Stopping along the way to look at and photograph the flowers, we took about 25 minutes to reach Slades Lookout, from where there were panoramic views over Cowan Creek and up to Bobbin Head. There was an information board, at the lookout, giving the story of the Slade family.



Walk leader Anne at the Slades lookout. pic: GJ

It is interesting to note that flowering species, not seen on the outward walk, were spotted on the return. This is a common experience for bushwalkers.

We assembled for a long table get-together at Hills Flower Market café and enjoyed coffee and lunch there.

PENNY'S QUIRKY TREES

All photos Penny Hunstead

Chiltern Track, Ingleside.



Towlers Bay Track, Ku-Ring-Gai Chase.



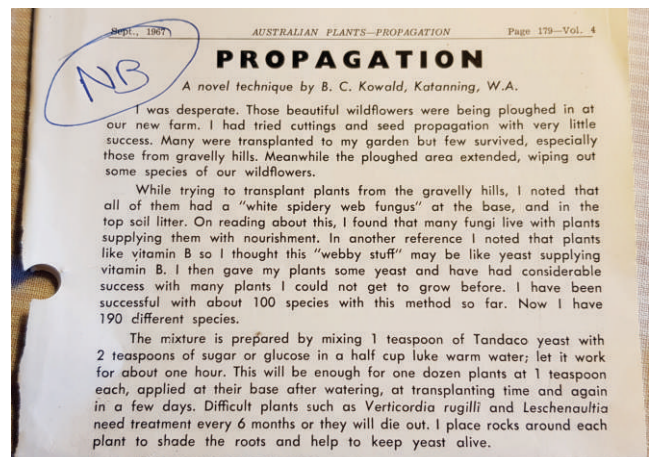
Plus Penny found this great advice in her archive!



Slades Track, Duffys Forest



A forest in the SW of Western Australia.



PROPAGATION

A novel technique by B. C. Kowald, Katanning, W.A.

I was desperate. Those beautiful wildflowers were being ploughed in at our new farm. I had tried cuttings and seed propagation with very little success. Many were transplanted to my garden but few survived, especially those from gravelly hills. Meanwhile the ploughed area extended, wiping out some species of our wildflowers.

While trying to transplant plants from the gravelly hills, I noted that all of them had a "white spidery web fungus" at the base, and in the top soil litter. On reading about this, I found that many fungi live with plants supplying them with nourishment. In another reference I noted that plants like vitamin B so I thought this "webby stuff" may be like yeast supplying vitamin B. I then gave my plants some yeast and have had considerable success with many plants I could not get to grow before. I have been successful with about 100 species with this method so far. Now I have 190 different species.

The mixture is prepared by mixing 1 teaspoon of Tandaco yeast with 2 teaspoons of sugar or glucose in a half cup luke warm water; let it work for about one hour. This will be enough for one dozen plants at 1 teaspoon each, applied at their base after watering, at transplanting time and again in a few days. Difficult plants such as *Verticordia rugilli* and *Leschenaultia* need treatment every 6 months or they will die out. I place rocks around each plant to shade the roots and help to keep yeast alive.



SCIENTISTS DISCOVER UNKNOWN PLANT SPECIES GROWING ON AUSTRALIA'S SACRED ULURU

www.sciencealert.com November 17, 2021 David Nield

Scientists have made what is being described as a once-in-a-lifetime discovery, finding a new plant species on the giant rock of Uluru in Australia. What's more, the fig has been hiding in plain sight for years.

Ficus desertorum, or the desert fig, is the name that's been given to the new plant. Before now, it was believed to belong in a sub-category of *Ficus brachypoda*, a species of fig tree found extensively in the northern and central parts of Australia.

A closer look has revealed that this is in fact its own distinct species, with its own distinct regional habitat. The leaves are the giveaway: they're smoother, narrower, and thicker than those on related types of figs.



Ficus desertorum or the desert fig. (Australian Institute of Botanical Science)

"Careful study of collections held in herbaria across Australia, and with reference to historical specimens held in European herbaria, showed that the central Australian populations were indeed morphologically distinct from more northern or western populations," says systematic botanist Russell Barrett from the National Herbarium of New South Wales in Australia.

"These figs are an incredibly significant species to First Nations peoples in central Australia, for food, shelter, and spirituality. Damaging these trees could be punishable by death historically, such is their significance to the whole community."

Discussions with the Australian Central Land Council took place to see if a name used by the various First Nations people might be more appropriate for the new species. However, given the rich variety of words for the tree throughout the local languages, a more standard scientific name was chosen instead.

What's more, '*Ficus desertorum*' emphasizes just how unusual it is to find a fig like this in a desert environment.

The newly identified species of fig tree can also be found on other elevated landscapes in central Australia, including Kata Tjuta (the Olgas) and Karlu Karlu (Devils Marbles). It can be found on many rocky outcrops and around waterholes, with its leaves providing shelter for small animals such as birds and snails.



Ficus desertorum or the desert fig. (Australian Institute of Botanical Science)

"To recognize a new species for science is always exciting but to find one on Uluru is not something you expect in a lifetime of research," says Barrett. "Figs are famous for their long roots which seek out water, and this species has perfected that art."

"Roots have been reported following cracks in cliff walls for over 40 meters to reach precious water which might be hiding deep within the rock, or far below in a secluded pool. This is how the desert fig persists in the arid conditions found in the heart of Australia."

Some 750 fig species can be found worldwide, with around two-thirds of them found in Asia and Australasia – though Australia itself only contributes 43 native species to the total according to the latest records.

These figs have long been important for Australia's First Nations people, providing food in particularly arid environments. However, cataloging all the occurrences of these plants is difficult, across all of the wide, remote, rocky areas of the country.

As ever when it comes to discovering new species, one of the benefits should be in terms of its conservation: when a species has been identified scientifically, it can be tracked and monitored much more easily.

"We hope the description of this species with a new scientific name will enhance its protection in such an arid environment," says Barrett.

"While the species is quite widespread, and not currently threatened, it is only found in small populations, so shifts in climate, or localized impacts such as hot fires, could impact the species in the near future."

The research has been published in *Telopea*.

Indigenous names include tywerrk (Alyawarr; Anmatyerr); tjurrka (Arrente); utyeerk, utyeerke (Eastern Arrente); tywerrke (Western Arrente); ili, witjirri, yili (Pintupi); ili (Pitjantjatjara / Yankunytjatjara); wjirriki (Warlpiri). The figs as a food are known as mai pulka (Yankunytjatjara).

NEW NATIVE NURSERY IN NORTHERN SYDNEY – CICADA GLEN

Pip Gibian. First published in Calgaroo, Newsletter of the APS Parramatta and Hills District Group

A new nursery is open in northern Sydney. Those APS members mourning the loss of Wirreanda Nursery can take heart, as a new native nursery has opened in Ingleside. Kelly, who worked at Wirreanda for many years, is running the new retail nursery at Cicada Glen, on Mona Vale Road, (corner of Chiltern Road) Ingleside.



It aims to concentrate on local native species, unusual species and rainforest plants. At present the nursery is open Monday to Thursday, and soon will be on weekends. It offers a 10% discount to APS members. Read more here on the APS NSW website.



It is going to be a rather gorgeous nursery, I think. The site is unique. Already Kelly has stocked it very well. If you were thinking of visiting you should go to Harvest Seeds on the way. If you haven't seen it before, look in on the Bahai temple which is very beautiful. If you walk further along their road, past the temple, you come to their patch of wild *Grevillea caleyi*, which they are protecting.

Also in northern Sydney is Harvest Seeds and Native Plants at 281 Mona Vale Road, Terrey Hills. It is a native plant nursery serving the northern areas of Sydney and beyond with high quality native plants, seeds and tube stock. It also offers a 10% discount to APS members.



APS NSW - Central West Trip: being rescheduled - dates tbc

When: 1 Apr 2022 ,

Where: Burrendong, Wellington, Dubbo, Narromine, Parkes

APS NSW is establishing an interest group in which we share and acquire greater knowledge and skills in how to support regeneration, revegetation, restoration of NSW natural landscapes, leading to greater resilience.

One objective of the Society is to support the protection and conservation of native flora and fauna, which can be achieved by the conservation of natural environments, habitat management and the restoration of environments that have been degraded through human activity.

This trip will provide those attending the opportunity to acquire a greater understanding of native plants and habitat resilience and what individuals and collective groups can do to assist.

We have arranged to visit seven properties in the Central West; at Forest Reef near Milthorpe, Dubbo, Narromine and Toongi. Six of the owners are actively involved in restoring the natural revegetation, partially or completely on their properties. The property owners are enthusiastic to show and discuss with us what they have achieved in restoring their properties.

Three of the properties we will visit are owned by two members of APS NSW; Jean and Basil Baldwin at Forest Reef and Andrew and Jenny Knop who have properties at Dubbo and Narromine.

This is an exciting initiative by APS NSW, which will provide those attending a wonderful opportunity to explore the Central West of NSW and see what some of our innovative and committed property owners are doing to conserve natural habitats.

If you are interested in joining us from 15-18 October please register. We will then send you the full itinerary, locations of the properties we will be visiting and a summary of what the owners have achieved.

There is no charge for this trip. However, the cost of food, travel and accommodation will be at your own expense.

You are required to register if you plan to join us. This is so we can let the property owners know how many people they can expect.

The ANPSA 2022 Biennial Conference dates are Saturday 10 September to Friday 16 September 2022 at the Kiama Pavilion.



The theme is Australian flora, past present and future.

We will explore the flora of thousands of years ago to the present day and the world of the future!

We are hosting tours pre- and/or post-conference to beautiful places in NSW, like the South Coast, Blue Mountains, Lord Howe Island, Warrumbungles/Pilliga and Sydney.

We kick off the conference on the Saturday 10 September, with a complimentary tour of the Kiama region, followed by a Market fair - a combined farmers market and native plant sale - on the Sunday and then conference sessions and excursions from the Monday to the Friday.



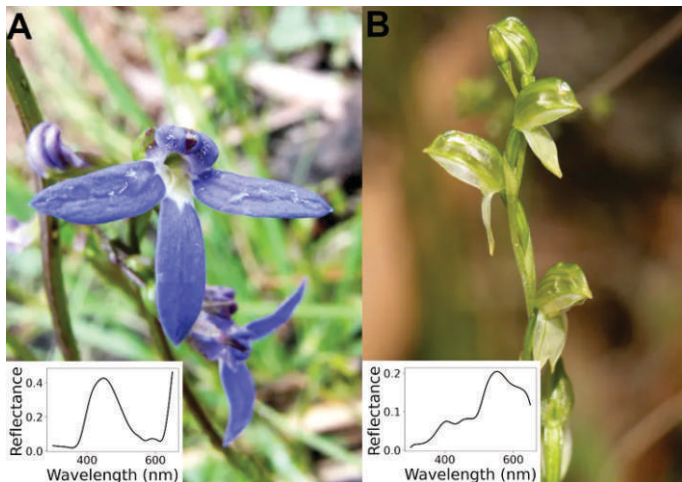
FLIES LIKE YELLOW, BEES LIKE BLUE: HOW FLOWER COLOURS CATER TO THE TASTE OF POLLINATING INSECTS

The Conversation September 2, 2021 Jair Garcia, Adrian Dyer, RMIT University, Mani Shrestha, Bayreuth University.

We all know the birds and the bees are important for pollination, and we often notice them in gardens and parks. But what about flies?

Flies are the second most common type of pollinator, so perhaps we should all be taught about the bees, the flies and then the birds. While we know animals may see colour differently, little was known about how fly pollination shapes the types of flowers we can find in nature.

In our new study we address this gap in our knowledge by evaluating how important fly pollinators sense and use colour, and how fly pollinated flowers have evolved colour signals.



Typical flowers preferred by bees (*Lobelia rhombifolia*, left) and flies (*Pterostylis melagramma*, right). Inserts show the spectral profile for each species Mani Shrestha.

The way we see influences what we choose

We know that different humans often have preferences for certain colours, and in a similar way bees prefer blue hues.

Our colleague Lea Hannah has observed that hoverflies (*Eristalis tenax*) are much better at distinguishing between different shades of yellow than between different blues. Other research has also reported hoverflies have innate responses to yellow colours.

Many flowering plants depend on attracting pollinators to reproduce, so the appearance of their flowers has evolved to cater to the preferences of the pollinators. We wanted to find out what this might mean for how different insects like bees or flies shape flower colours in a complex natural environment where both types of insect are present.

The Australian case study

Australia is a natural laboratory for understanding flower evolution due to its geological isolation. On the mainland Australian continent, flowers have predominately evolved colours to suit animal pollination.

Around Australia there are plant communities with different pollinators. For example, Macquarie Island has no bees, and flies are the only animal pollinator.

We assembled data from different locations, including a native habitat in mainland Australia where both bees and flies forage, to model how different insects influence flower colour signal evolution.

Measuring flower colours

Since we know different animals sense colour in different ways, we recorded the spectrum of different wavelengths of light reflected from the flowers with a spectrometer. We subsequently modelled these spectral signatures of plant flowers considering animal perception, allowing us to objectively quantify how signals have evolved. These analyses included mapping the evolutionary ancestry of the plants.

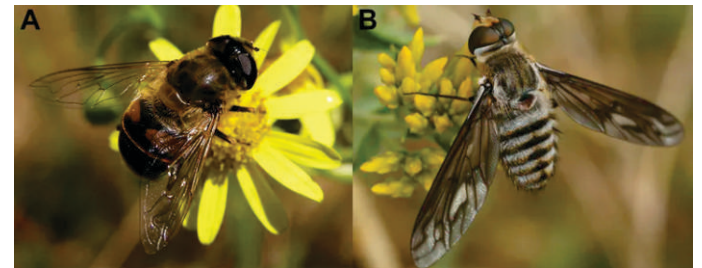
Generalisation or specialisation?

According to one school of thought, flower evolution is driven by competition between flowering plants. In this scenario, different species might have very different colours from one another, to increase their chances of being reliably identified and pollinated. This is a bit like how exclusive brands seek customers by having readily identifiable branding.

An alternative hypothesis to competition is facilitation. Plants may share preferred colour signals to attract a higher number of specific insects. This explanation is like how some competing businesses can do better by being physically close together to attract many customers.

Our results demonstrate how flower colour signalling has dynamically evolved depending on the availability of insect pollinators, as happens in marketplaces.

In Victoria, flowers have converged to evolve colour signals preferred by their pollinators. The flowers of fly-pollinated orchids are typically yellowish-green, while closely related orchids pollinated by bees have more bluish and purple colours. The flowers appeared to share the preferred colours of their main pollinator, consistent with a facilitation hypothesis.



Specialised flower visiting flies: a hoverfly (*Eristalis tenax*) (left panel), and a bee-fly (*Poecilanthrax apache*) (right panel) Michael Becker, Pdeley

Our research showed flies can see differences between flowers of different species in response to the pollinator local “market”. On Macquarie Island, where flies are the only pollinators, flower colours diverge from each other – but still stay within the range of the flies’ preferred colours. This is consistent with a competition strategy, where differences between plant species allow flies to more easily identify the colour of recently visited flowers.

When both fly and bee pollinators are present, flowers pollinated by flies appear to “filter out” bees to reduce the number of ineffective and opportunistic visitors. For example, in the Himalayas specialised plants require flies with long tongues to access floral rewards. This is similar to when a store wants to exclusively attract customers specifically interested in their product range.

Our findings on fly colour vision, along with novel precision agriculture techniques, can help using flies as alternative pollinators of crops. It also allows us to understand that if we want to see a full range of pollinating insects including beautiful hoverflies in our parks and gardens, we need to plant a range of flower types and colours.