

CALGAROO

May 2023



Eucalyptus parramattensis - Calgaroo

**Newsletter of the Parramatta and Hills District Group
Australian Plants Society NSW Ltd**

Our vision: inspiring people to admire, grow and conserve native plants

What's on in 2023

Saturday 20 May: APS NSW AGM & Gathering - hosted by Central Coast Group

**Saturday/Sunday 27-28 May: Visit Phil Baird's property at The Branch Karuah.
A weekend away. See page 2.**

**Saturday 24 June: Bushwalk Challenger Track West Head, Ku-ring-gai Chase NP
Leaders Lesley Waite, Ian Cox.**

Saturday 22 July: Visit Mt Annan Botanic Garden

Saturday 26 August: Bushwalk

Saturday 23 September: Members' meeting at Gumnut Hall, Gumnut Place Cherrybrook.

Saturday 28 October: Bushwalk Vineyard Creek Dundas. Leader Jennifer Farrer.

Saturday 25 November: Members' meeting and end-of-year celebration

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Visit Phil Baird's property at The Branch Saturday 27 May

Pip Gibian

Time: leave Sydney 8:30-9 am, arrive around 11:30 am.

Venue: Phil Baird's property at The Branch near Booral.

On 27th May, group members have been invited to visit Phil Baird's interesting country property. This property is in the locality of The Branch, north of Sydney and the Hunter River, and near the little township of Booral on Buckets Way, the road to Gloucester.

Phil's property used to belong to a logging family. Rather fortunately not all the tree species on the property were good timber so not all were cut down. Trees have also regrown. It is real woodland, fairly open and flat, with eucalypts and grass, but also a variable, not-so-tall shrub layer. The stand-out feature is the mass of *Banksia spinulosa* plants in the shrub layer, and their flowers. The colours in these banksias show huge variation, variable mixtures of yellows, oranges and reds, with dark styles, and even a pale one, almost cream, seen during my last visit. They are really beautiful. We have timed our visit for peak flowering of this species.



Since our last visit, Phil has had a botanist look at the property, and he now has an impressive list of plant species found. There are plenty of other species to look for. There are clear RFS access roads, so it is an easy property to explore. As you go further from his house you approach an edge of the property on The Branch, a waterway, which flows into the Karuah River. Along the bank, there is a strip of rainforest.

If you leave Sydney between 8.30 and 9 am, you should arrive by 11.30 am. Bring lunch and snacks. Phil will supply hot water for drinks, and I will have the "afternoon tea box". Bring your own cup. Phil says if you need food heated up, he can arrange that.

We decided to have a weekend away, with visits to the Hunter Botanic Gardens and the Hunter Wetlands Centre on Sunday. Both are very interesting, and we hope to arrange a guide at each place. The Wetlands also has lots of information, a shop and a good café for lunch. Members of the Newcastle APS group are heavily involved in its upkeep.

If you would like to join us for the day or the weekend, please phone our Secretary, Jennifer, on 0407 456 577 for further information. Full details of how to get there are in April's *Calgaroo*.

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Audrey's Callistemon

Pip Gibian

Audrey Taggart was a member of Parramatta Hills District Group in the 1980s. She was always cheerful, friendly and a great worker for the group. She used to bring in flowers of a beautiful pink Callistemon for the flower table. She said it was a small tree overhanging their garage. It was not a named species, and was not a known species, the knowledgeable decided.



In about 1992 Audrey and her husband retired to the Central Coast. She became a very active member of the Central Coast group of APS. She was especially known for promoting long-stem planting. For this technique, plants are grown in very small pots, usually tumbler size, and encouraged to grow very tall and straight. At planting a very deep hole is prepared and the roots and most of the stem are buried, after pruning of lower leaves if necessary, leaving just to upper foliage above ground. Growth is often surprisingly good. New roots also grow from the buried stem, and the original root ball is protected from drying out because it is planted so deeply. This method is especially good for regeneration planting along waterways. The deep roots bind the bank and decrease erosion. If by chance there is a flood, the plants may be battered but are much less likely to be washed away.



Audrey's Callistemon

Audrey was awarded life membership of APS NSW in 2007 for her outstanding contributions to the Society over many years.

Before she left Sydney, I had taken some plant table material and grown it from cuttings. We planted it at our country property at least 30 years ago, and it is still there and flowers annually. It was obviously taken to the Central Coast, as her son, Bruce, has a young plant in his new garden.

Unfortunately, Audrey is now suffering from moderately severe dementia. She requires care in a nursing home, and has been moved to Penrith to be nearer to Bruce and family. Late last year Bruce and I were allowed to plant one of her callistemons in the nursing home garden. Bruce has also told me that this plant was in the garden of Audrey's parental home near Wolli Creek in Earlwood. It was probably a chance spontaneous seedling. It hasn't been given its own name. Maybe Bruce should name it. I call it Audrey's Callistemon. It is great that we have a tangible memory of this lovely lady.

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Science in the Garden - Apical Dominance

Mark Abell

From *Gumleaves*, newsletter of the Hunter Valley Group, April 2023

As a start, I thought to look at the term "apical dominance" and what it means in the garden context. First of all, I asked ChatGPT (the AI program that has been making the news lately) to "explain apical dominance". It gave me the following textbook answer:

"Apical dominance is a phenomenon where the terminal bud (the apical bud) at the top of a plant stem suppresses the growth of lateral buds (buds located further down the stem) to direct the plant's energy and resources towards the development of the terminal bud. This results in a more vertical and elongated growth habit, and is commonly observed in many

woody plants such as trees and shrubs. The suppression of lateral buds is achieved through the release of a plant hormone called auxin, which is produced in the apical bud and travels downward through the stem, inhibiting the growth of lateral buds. This hormone also affects the direction of cell elongation, which causes the stem to grow taller. If the apical bud is removed or damaged, the lateral buds will be released from suppression and will begin to grow, resulting in a bushier growth habit. Apical dominance helps plants to grow taller, reach more sunlight and compete with other plants for resources. It also helps the plant to survive in harsh environments where the apical bud can be more likely to survive than the lateral buds.”

Whilst technically correct, it is not really helpful in the garden context. Plants that show strong apical dominance tend to have “long and leggy” stems with few side shoots, and these tend to be some distance away from the growing point. This is a good trait if you want quick growth and for the plants to reach good heights, and also for long-stemmed flowers for floristry.

Plants with weak apical dominance tend to be more compact and bushy, with many side shoots coming closer to the main growing point. This is a good trait for many garden plants as it generally results in smaller and naturally bushy plants.

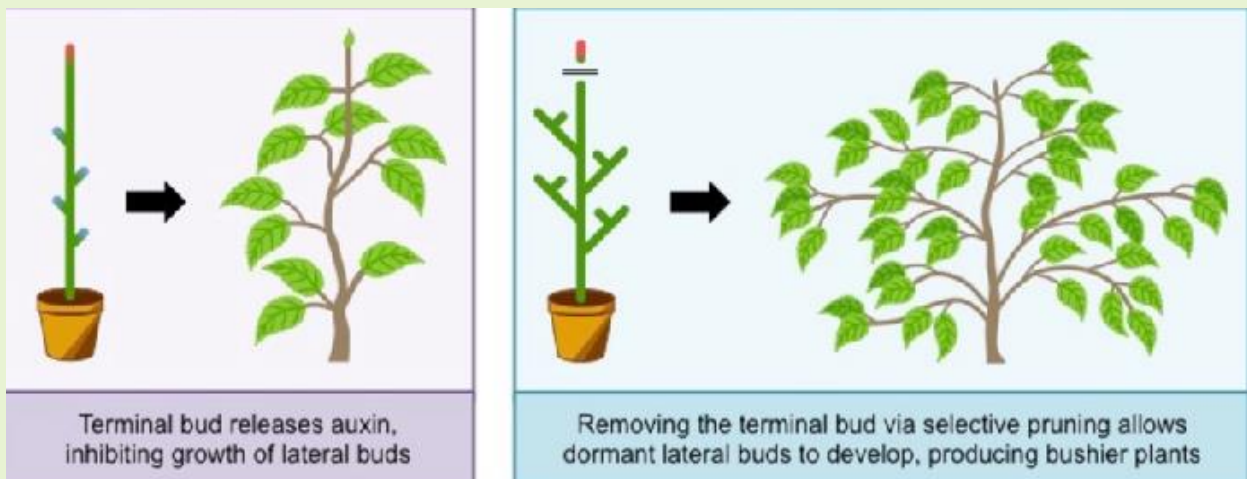


image: <https://botanicalgarden.berkeley.edu/glad-you-asked/plant-hormones>

Apical dominance can also be managed by pruning plants (including tip pruning). This results in the removal of the apical bud and thus stops the production of the hormone auxin which is suppressing the growth of the side shoots. The result is that the side shoots start to grow and the plant becomes bushier. So, whenever you are pruning your plants, you are altering the hormone balance and affecting the future growth as well as altering the current shape of the plant.

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Nature is in crisis. Here are 10 easy ways you can make a difference

Four senior academics worked with 22 conservation experts about what we could do to make a difference. They reported the results in an article in *The Conversation* that you can read [here](#).

Their top ten actions to help biodiversity are:

1. Choose marine stewardship council certified seafood products

Why? Overfishing is devastating for fish species. By-catch means even non-food species can die in the process.

2. Keep your dog on a leash in natural areas – including beaches

Why? Off-leash dogs scare and can attack native wildlife. When animals and birds have to spend time and energy fleeing, they miss out on time to eat, rest and feed their young.

3. Cut back on beef and lamb

Why? Producing beef and lamb often involves destroying or overgrazing natural habitat, as well as culling native predators like dingoes.

4. Donate to land protection organisations

Why? These organisations protect land in perpetuity. Donations help them expand and do important on-ground biodiversity management.

5. Make your investments biodiversity-friendly

Why? Many funds include companies whose business model relies on exploiting the natural environment. Your money could be contributing. Looking for biodiversity-positive investments can nudge funds and companies to do better.

6. Donate to threatened species and ecosystem advocacy organisations

Why? These groups rely on donations to fund biodiversity advocacy, helping to create better planning and policy outcomes for our species.

7. Plant and maintain a wildlife garden wherever you have space

Why? Our cities aren't just concrete jungles – they're important habitat for many threatened species. Gardening with wildlife in mind increases habitat and connections between green space in suburbs.

8. Vote for political candidates with strong environmental policies

Why? Electing pro-environment candidates changes the game. Once inside the tent, environmental candidates can shape public investment, planning, policy and programs.

9. Desex your cat and keep it inside or in a cat run

Why? Research shows every pet cat kept inside saves the lives of 110 native animals every year, on average. Desexing cats avoids unexpected litters and helps to keep the feral cat population down.

10. Push for better control of pest animals

Why? Pest species like feral horses, pigs, cats, foxes and rabbits are hugely destructive. Even native species can become destructive, such as when wallaby populations balloon when dingoes are killed off.

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Good advice . . .

I thought I'd share this. It's from the Newcastle Group's latest newsletter, and is the first report of the Newcastle Group's new President, Rhett Morson. Rhett recently joined the board of APS NSW.

No man is an island: I am not a gardener. I'm not a botanist. (I've forgotten all the Latin I was taught at school). In short - I am no expert, but I **am** interested in native plants and ecosystems.

I recently built an eco-house and wanted to have a completely native garden. How I came across this group was actually through birds. (I am also not an ornithologist)! I was researching what native plants I should choose to make an attractive habitat. I exhausted the library resources and the internet had some advice, but I needed an expert and asked a twitcher friend of mine. The local bird-watching group then put me on to our secretary

Maree and I watched a presentation she gave, on the “significance of gardens” – I had found my expert, what luck!

Maree gave me lots of fantastic advice, and here I am! I believe native plants are crucial to the preservation of ecosystems, and we should be active, not only in promoting their use, but also acting more holistically - flora, fauna, built environment, energy use, etc.

To become a thriving group, we must be on the lookout for fresh interest. We must encourage new and young members and seek their input, as they will have interests outside plants, too. I felt welcome when I joined, but I feel I stumbled upon the group, as opposed to discovering it and being drawn to it. Do we need to be more active in our “seeking out”?

I hope to be of assistance to our group and help shape its next stage.

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Eucalypts

Mark Henley - from Newcastle Group’s newsletter April/May 2023

I recently read that *Angophora costata* won Eucalypt Australia Community’s ‘Eucalypt of the Year 2023’. I immediately thought: ‘how can that be, considering that ‘Sydney red gum’ is an angophora, not a eucalyptus species

The Eucalypt Australia Community’s Facebook page explains why:

“The term ‘eucalypt’ is a word that is used to group three closely-related genera of plants: *Angophora*, *Corymbia* and *Eucalyptus*. The genus *Eucalyptus* holds around 750 species, including the well-known River Red Gum (*Eucalyptus camaldulensis*), Tasmanian Blue Gum (*Eucalyptus globulus*) and Silver Princess (*Eucalyptus caesia*).

The *Corymbia* genus contains about 100 species, including the much-loved Lemon-scented Gum (*Corymbia citriodora*) and Red-flowering Gum (*Corymbia ficifolia*).

Angophora has just 10 or so species and all are restricted to the east coast. As well as the Sydney Red Gum (*Angophora costata*), other examples include the Rough-barked Apple (*Angophora floribunda*) and Dwarf Apple (*Angophora hispida*).

The species in *Corymbia* were split from *Eucalyptus* in 1995, which is why many horticulturalists still refer to the Lemon-scented Gum as ‘*Eucalyptus citriodora*’. *Angophora* has existed as a genus since 1797, and has only been recognised as a eucalypt more recently.

So, every *Eucalyptus* is a eucalypt, but not all eucalypts are Eucalyptuses!”

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‘Beauty constantly surrounds you and awaits your discovery, if you will only walk outside your busy life for a moment and open your eyes.’

- Bradley Trevor Greive

Meet the Ladybird Beetles

Sydney Olympic Park website 28 March 2023

Fast, ferocious and fun: ladybird beetles are one of the most recognisable insects in the insect world. These pretty beetles come in a range of colours, sizes, stripes and spots and are extremely useful in pest control at Sydney Olympic Park.

About Ladybird Beetles

Most Ladybirds are predators of plant pests such as mites, aphids and scale and can eat up to 2,500 little pests in their lifetime. Other ladybirds target fungi or plants. The life cycle of a ladybird consists of 4 stages: the egg, which is yellow to cream in colour; the mobile larvae, a pupae stage and the adult beetle.

You may be interested in trying to find out how many you can discover - there are over 400 species in Australia and quite a few can be found at the Park; let's meet three of them:



28 spotted Ladybird Beetle

The 28 spotted Ladybird is a large beetle at approximately 10mm and is a plant predator, helping out by eating the leaves of the invasive weed – Common Nightshade *Solanum ptychanthum*. If you look closely, you may be able to see that this ladybird is quite hairy which matches their larvae which also has amazing spines.



Transverse Ladybird Beetle

Who said a ladybird must have spots?! The Transverse Ladybird is very common and recognisable by the black stripe running through the centre of its bright red to orange back and two sets of V-shaped markings present on either side. This ladybird is usually 5mm long and is a predator, eating aphids, leaf hoppers and scale.



Striped Ladybird Beetle

Striped ladybird beetles are the smallest of the three at 4mm long and, like the Transverse Ladybird, are striped with a bright red to orange colour. Three black stripes run vertically down the back with the centre stripe occurring where the wings meet. This species is

predatory on aphids in the larval stage but then the adults eat fungus, particularly on grasses as well as pollen and nectar.

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Myrtle Rust

The Australasian Plant Pathology Society (APPS) is holding an **Australasian Myrtle Rust Conference** on 21-23 June 2023 at the University of Sydney, Camperdown.

Austropuccinia psidii, the causal agent of **myrtle rust**, is a globally dispersed pathogen having devastating impacts in the Australasian region. Collaborative research efforts have improved our understanding of the pathogen and are starting to deliver management tools, while communities are rapidly mobilising to protect and conserve native plants. However, there is an urgent need to do more to prevent extinctions and to strengthen ecosystems.



Join us in Sydney for the Australasian Myrtle Rust Conference to contribute to and learn about the latest research and management approaches. Be part of the conversation as we ask, “where to from here?” This event will include a poster session and an optional field trip to view myrtle rust where it is heavily impacting Australian native plants. Full details [are here](#).

Myrtle Rust webinar

In March 2023 the Botanic Gardens Australia and New Zealand (BGANZ), and the Australian Network for Plant Conservation (ANPC) held a Myrtle Rust webinar, which you can view on YouTube [here](#).

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Dendrobium speciosum: My Experiences Growing Rock Orchids.

Richard Laney (From Sutherland Group’s newsletter April 2023)

I grew up in Sydney with a clump of neglected “Rock Lilies” in our suburban garden. Despite little attention, they survived and flowered profusely each spring, and were even used in my aunt’s wedding bouquet.

My specimens have been handed down through a couple of generations of the wider family so they have some history. I have short cane and long cane varieties. The long cane variety, which grows high up in the rainforest canopy, came from the Dorrigo area and would have been collected from the wild around 1910 when my great-grandfather pioneered a dairy farm. This was first at Deer Vale, then



Bostobrick and later just above Dorrigo township. I recently saw similar plants flowering in the canopy of rainforest west of Forster.

They grow best in part shade in rotted bark and like a regular feed. They need air around their roots. The short cane variety grows on rocks and leaf litter in full sun and also in part shade, so they are “rock orchids”, not ground orchids and can tolerate more sun. Mine would have come from the Central Coast and Sydney areas around 1935 and later. A few came with the purchase of our original cottage at Bundeena. We can now have up to 150 spikes of *D. speciosum* flowers each spring and some have a delightful fragrance.

Containers and Growing Medium

Large plastic pots and troughs are ideal. They can be moved out of the hot sun in summer and back for winter. Winter sunshine is essential for good flowering. I bury large pots half into the garden to prevent the pots from drying out and I erect shade cloth over them during the hottest times to prevent sunburn. Long cane varieties cannot tolerate hot sun. I use large-size pine bark, rotted if possible for medium and apply some dolomite and regular feedings of blood&bone, general fertilizer, or Osmocote during warmer months, with watering. Only occasional water is required in winter.



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Leaves are not the only plant part that can photosynthesize

Kevin Mills

Photosynthesis is the process plants developed to turn sunlight into energy, essential for them to grow. This happens in the leaves of plants, and occasionally on other plant parts. Leafless plants may photosynthesize through their stems, which have been modified to carry out this function.

Another example is some epiphytic orchids that photosynthesize through their roots, which grow on the surface of the substrate rather than in the soil. The aerial roots form the majority of the plant in these small orchids.

A species that I am familiar with is Norfolk Island endemic *Taeniophyllum norfolkeanum* (see photograph). The leaves are nonexistent and the flower and fruit are very tiny; the plant is all root! The roots are of course green. This tiny orchid grows on the trunk and branches of the Norfolk Island Pine *Araucaria heterophylla*, looking more like green spiders clinging to the bark.





Banksia robur at Ku-ring-gai Wildflower Garden – Philippa Gordon

The future is fungi

WITHOUT FUNGI, the world as we know it would not exist. Humans have harnessed the molecular powers of fungi since the beginning of civilisation, turning wheat into bread and fruit into wine, and our lives are richer for it.

Modern-day privileges such as chocolate, penicillin and detergent depend on fungi for their production. And one particular potent group contains psychoactive compounds that can transform experiences of love, creativity and connection. We are also learning to use fungi to transform organic matter into diverse and radical solutions for today's urgent ecological and social issues.



Yet we know substantially less about fungi than we do about animals and plants. The Kingdom Fungi classification was introduced in 1969, when ecologist Robert Harding Whittaker formalised the importance, scale and diversity of the group.

Previously, fungi were misclassified as plants, and dismissed as something lower-class, tucked away in obscure corners of botany departments. To date, 120,000 species of fungi have been formally identified, but scientists estimate there are more than 6 million.

That means 98 per cent are still to be discovered, highlighting the untapped potential of the study of fungi – mycology.

To continue reading this article from *Australian Geographic*, click [here](#).

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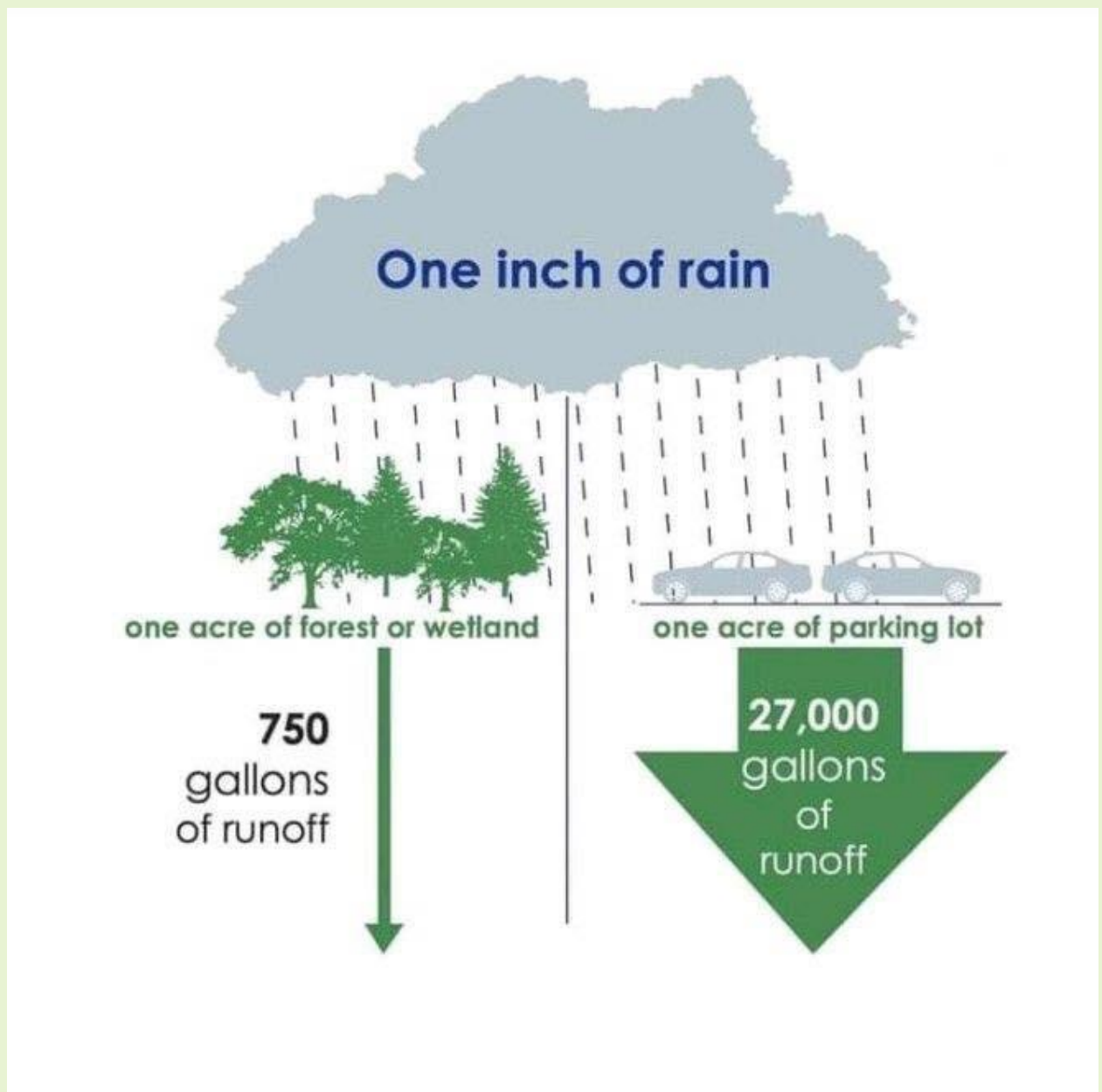
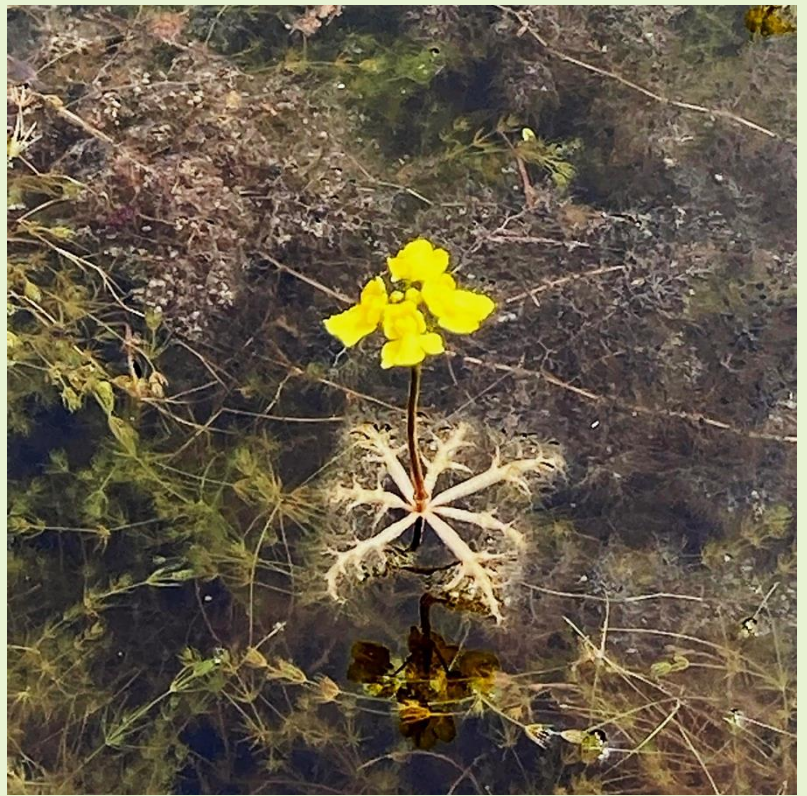
Resilient Swamp Gum.

Life after the storm!
Eucalyptus ovata (Swamp Gum), South Gippsland.

Who needs roots and soil when you can just be weird instead?

This species, *Utricularia inflata*, (or unfortunately -- Swollen Bladderwort) was found at Back Bay National Wildlife Refuge in south-eastern Virginia, USA, recently. This is an aquatic carnivorous plant! See those structures allowing it to float in the water? Those are actually part of the stem!

When an itty bitty aquatic critter swims by and touches one of the hairs, a 'trapdoor' opens in the tissue and sucks it inside to be dissolved by enzymes. Bye-bye, critter!



An epic global study of moss reveals it is far more vital to Earth's ecosystems than we knew (2 May 2023)

David Eldridge

Professor of Dryland Ecology, UNSW Sydney

Manuel Delgado-Baquerizo

Ecosystem ecologist, Spanish National Research Council



Mosses are some of the oldest land plants. They are found all over the world, from lush tropical rainforests to the driest deserts, and even the wind-swept hills of Antarctica.

They are everywhere; growing in cracks along roads and pathways, on the trunks of trees, on rocks and buildings, and importantly, on the soil.

Yet despite this ubiquity, we have a relatively poor understanding of how important they are, particularly the types of moss that thrive on soil.

New global research on soil mosses published today in *Nature Geoscience* reveals they play critical roles in sustaining life on our planet. Without soil mosses, Earth's ability to produce healthy soils, provide habitat for microbes and fight pathogens would be greatly diminished. Our mission is to share knowledge and inform decisions.

A global survey of soil mosses

The results of the new study indicate we have probably underestimated just how important soil mosses are. Using data from 123 sites across all continents including Antarctica, we show that the soil beneath mosses has more nitrogen, phosphorus and magnesium, and a greater activity of soil enzymes than bare surfaces with no plants.

In fact, mosses affect all major soil functions, increasing carbon sequestration, nutrient cycling and the breakdown of organic matter. These processes are critical for sustaining life on Earth.

Our modelling revealed that soil mosses cover a huge area of the planet, about 9 million square kilometres – equivalent to the area of China. And that's not counting mosses from boreal forests, which were not included in the study.

The strength of the effect mosses have on soil depends on their growing conditions. They have the strongest effect in natural low-productivity environments, such as deserts. They are also more important on sandy and salty soils, and where rainfall is highly variable.

To continue reading this article from *The Conversation*, click [here](#).

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Observations on Diuris pollination in NSW

Jennifer Farrer

This was James Indsto's talk at our April meeting. It was based on research that he undertook for his Master of Science degree.

The phenomenon of species imitating other species for their own advantage was first observed in the middle of the 19th century, when the English naturalist Henry Bates observed non-toxic butterflies imitating the colours and wing patterns of toxic butterflies. African orchids have been observed being pollinated by butterflies even though they do not offer the butterfly any reward.

In NSW Diuris orchids have been observed growing in close proximity to yellow pea flowers. When the nectar guides on the pea flowers are observed under ultraviolet light, these visual cues are much closer to the patterns on Diuris orchids. Bees can see in this part of the light spectrum and are thus encouraged to visit the orchid even though there will be no reward for them when they do.

Diuris aequalis mimics Gompholobium flowers. *Diuris maculata* mimics the "eggs and bacon" flowers of Daviesia and Bossiaea flowers. Even the pink flowers of *Diuris punctata* mimic the yellow flowers of *Dillwynia glaberrima* sufficiently enough to ensure visitation by species of native bees.

James collected pollen from bees and found pollen on their pollen receptors and bodies from both orchids and pea flowers. He also studied the pollination rate of the orchids. At 20% it was sufficient to ensure the continuation of the species.

James mapped the growing pattern of the orchids amongst the pea species they were imitating and found that orchids growing within 10 metres of the pea plant were the most likely to be pollinated

These findings will give us another activity for our spring bushwalks. Next time we see a Diuris orchid we should look to see which pea flowers it is imitating.

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Share your stories . . .

Your contributions to *Calgaroo* are always very welcome.

If you have interesting observations of plants in the garden or the bush, including photos, or any other news worth sharing, please send it to me at itcox@bigpond.com for the next edition.

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In the spirit of reconciliation, we acknowledge the Traditional Custodians of our Country, the people of the Dharug Nation, whose cultures and customs have nurtured, and continue to nurture, this land since time immemorial. We honour and celebrate the spiritual, cultural and customary connections of Traditional Owners to Country and the biodiversity that forms part of that Country.

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Parramatta and Hills District Group

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