CALEYI

Australian Plants SOCIETY NSW

NORTHERN BEACHES GROUP

austplants.com.au/northern-beaches

December 2023

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.

Blandfordia nobilis. Pic: M. Fagg

APS Northern Beaches Christmas Lunch 12.30pm Saturday December 9, 2023 at Stony Range Regional Botanic Garden, Dee Why. . See p. 3

Many thanks to all our members for their great contributions of articles, reports and wonderful photographs to Caleyi during 2023.

Please email stories, photos (as attachments please) etc for Caleyi to march@ozemail.com.au

GRACIE LIU FROGS IN BACKYARDS

Presentation at the November meeting

In a marvellous presentation Gracie Liu, Research Assistant and FrogID Validator at the Australian Museum, engaged us in most enlightening revelations concerning the current plight of frogs in Australia. When not in the field, attaching 3 g transmitters to elusive amphibians, Gracie and her colleagues are busy listening, with their headphones, identifying sounds to estimate the current distribution of these charming critters.

Gracie's visit coincided with the launch of FrogID Week, hosted by the Australian Museum November 3-12. 2023.

'This is Australia's biggest frog count. Held annually, it's when anyone with a smartphone can help record frog calls through the free FrogID app as a measurement of frog health and distribution around the country. It aims to monitor frog distributions and populations over time, helping us to understand how frogs and their ecosystems are responding to a changing planet. From croaks and barks, to whistles and bleats, every frog species makes a unique sound. Using the free FrogID app, you can record the frogs calling around you and help count Australia's frogs.'

The 2022 count recorded 17,319 calls, 10,216 frogs were verified, confirming 99 species.

Frogs drink through their skins and thus act as early indicators of problems for the total envronment.

To encourage frogs into your own backyards the establishment of ponds need not be vast but it is helpful to note these requirements:-

Water should have some shade, vegetation.
Rocks or shallow section to provide access

Frogs In our local area
Common Eastern Froglet *Crinia signifera*
Pic: Stephen Mahoney

Striped marsh frog *Limnodynastes peronii* &
Red-crowned toadlet *Pseudophryne australis*
Both pics: Jodi Rowley

ALISON HONE RESERVE

All words and photographs Harry Loots

It had been dry with the Southern Tablelands having endured several above 30 degree days in October but we were here in November looking for pretty flowers. My expectations were not great nevertheless it was an opportunity to get out into the bush to experience nature as it is, not as we may sometimes wish it to be. I have learnt that it is a mistake to anticipate a floral wonderland in an area holding an impressive list of both small and large plants that at their best would delight but at other times appear as a scrubby mass of twigs and spikey leaves that make bare legs bleed. This was the experience of a group of **Australian Plants Society** members at a recent **Quarterly Get-Together** led by **Ash Mahoney**, the Crown Land Manager of Alison Hone Reserve.

DrySclerophyll Woodland cleared for power lines.

Ten kilometres north-west of Goulburn on the Crookwell Road the **Alison Hone Reserve** is remnant bushland, technically an open Dry Sclerophyll Woodland. It was a Travelling Stock Reserve until 1981 when it was gazetted as a Reserve for Public Recreation and the Preservation of Native Flora and Fauna after the discovery of a rare orchid. At approximately 700 metres above sea level the reserve is on a low north-north-east running ridge that to its north includes Back Arm Nature Reserve and Narrangarril Nature Reserve and just to its south Mount Baw Baw at 860 metres. From Goulburn's Rocky Hill War Memorial Tower the nameless ridge appears in the distant western horizon as a thin slither of dark green against an otherwise featureless plain. There is a windfarm on its northern end where the Middle Arm Road cuts through the ridge.

Eucalytus mannifera (Brittle Gum) with Ozothamnus diosmifolius at bottom right.

Surrounded by pastures the relatively untouched scrub land growing on shallow, rocky and somewhat infertile soils was popular with birdwatchers belonging to the Goulburn Field Naturalists Society who cleaned the area of rubbish and started recording the 183 plant species thus far listed. As this includes 36 weeds there is work aplenty for the bush regenerator. In 1978 an ornithologist, Tom Hone and his wife Alison Hone found an endangered orchid, *Calochilus imberbis* more commonly accepted to be a form of *Calochilus robertsonii*. Such are the disputes among botanists as to the naming of ground orchids so maybe we should call it a purplish bearded orchid or the beardless bearded orchid. The argument persists.

Butterfly on Leptorhynchos squamantus (Scaly buttons).

In November not much was in flower except for an abundance of *Ozothamnus diosmifolius* (white dogwood) throughout the bush and a patch of *Leucochrysum albicans* (Hoary Sunray daisy) growing on a denuded ironstone wasteland near the car park. A few yellow petals of the *Goodenia hederacea* poked through taller plants where the area had been cleared for power lines. I also saw one feeble *Patersonia sericea* as well as a pink *Stylidium graminifolium* poking out from somewhere.

Leucochrysum albicans (Hoary sunray daisy) growing on denuded ironstone wasteland near the car park.

In this harsh environment common heath plants are not as luxuriant as in the wetter coastal climate although after crossing a deep dry creek bed we did see a *Dillwynia phylicoides* exhibiting its bright yellow pea flowers. The tiny straggly blue petals of *Wahlenbergia stricta* were common and unsurprisingly this plant is a successful flower in local gardens.

Eucalyptus mannifera (Brittle Gum)

Alas, unlike many an August walk we did not see any ground orchids such as the *Diuris sulphurea, Calochilus platychilus* or *Stegostyla moschata*, indeed the beardless bearded orchid had not been seen in the reserve for many years.

Various bugs on Leptorhynchos squamatos (Scaly Buttons)

PEA SHRUB FAMILY- POLYGALACEAE (ROSIDAE)

Presentation at the November meeting by Pamela Dawes

Polygalaceae have 3 native genera, 86 species in Australia; most in WA

Grown SE Australia:

VIC: Acetosa sagittata, Comosperma volubile

NSW and VIC: Polygonum aviculare

Northern NSW: Comosperma sphaerocarpum (Broom milkwort)
In Warrumbungles: Muehlenbeckia rhyticarya,

Northern Beaches & NSW / Vic coast to ranges:
Comosperma ericinum-
(Heath milkwort) - This slender shrub, low 1-1.5m with few erect stems, mostly in open heathy understoreys especially on drier shallow soils of rocky or sandy sites. Leaves 7-20mm x 1-4mm spirally arranged throughout the length of the stem but margins and tips usually turned down, paler green underneath, distinct mid vein.
Flowers (Oct-Jan) Pink to magenta, progressively opening from bottom in loose elongated terminal racemes.

Comesperma-ericinum. Pic: PlantNet.

Generally this Polygalaceae has leaves which are alternate
Sepals: 5, Petals: 3-5 lowermost petal often kneeled, lobed or pouched
Flowers: Pea (Fabaceae)-like with large wing-like lateral sepals. but the lower keeled petals usually have a tufted appendage at the tip.

Comesperma volubile- love creeper

Pic.Traralgon South and District Wildflowers

(Non native) Polygala virgata

Polygala myrtifolia –
(Myrtle-leaf Milkwort) Highly invasive weed from South Africa) – was nominated among 71 species, as a Weed of National Significance (WONS) but not included in list, however it remains a weed of potential national significance. Can form dense monocultures, excluding the ability of other desirable plants to establish and survive.

Capable of invading intact vegetation eventually completely dominating the shrub layer. Seedlings grow on disturbed, somewhat exposed sites but can grow in low-light conditions too. It is spread by hairy seeds for short distances or up to medium distances by entanglement in fur or feathers. Potentially spread long distances by birds and certainly over large areas via dumped garden waste or movement of contaminated soil.

Most occurrences are in or near coastal environments. Any control of Polygala myrtifolia should occur over several years with follow-up required to remove seedlings that normally germinate on mass. These may be removed by pulling or shallow digging but this is unlikely to be practicable in heavy infestations where burning is preferable as initial control. Follow up removal of seedlings will be required again either by hand pulling or through the use of fire for at least 3 years, as seeds remain viable in the soil for up to 10 years or more. They germinate on mass with 100s of plants per sq metre. It is advisable to leave small seedlings as competition between plants reduce plant numbers leaving fewer seedlings to remove later. Plants to 50cm can be reasonably easily hand pulled from sandy soils.

If fire is used as a control measure, most of the plants will need to be removed sometime before the fire as green plants do not burn well.

Polygala myrtifolia may flower through much of the year but the main flowering period is from August to December. Fruits ripen mostly between November to March and seeds germinate in May to June.

REMINDER

APS NORTHERN BEACHES XMAS LUNCH

12.30 pm Saturday December 9, 2023
Stony Range Botanic Garden, Dee Why.
Notification of attendance/apology much appreciated.
If attending please check the email notice in order to select a complimentary dish as your contribution. Also indicate if you wish to participate in the Kris Kringle (wrapped gift max value $10.)
Please call or email Jane 0407220380 march@ozemail.com.au

BELLS & BILLS
http://www.backyardbuddies.net.au/

Christmas plants are in full bloom! Top to bottom, left to right: West Australian Christmas Tree, Christmas Bells, NSW Christmas Bush, SA & TAS Chrismas Bush, Victorian Christmas Bush, and a Christmas Orchid.
Photo cesdit, top to bottom, left to right: Clare Snow, David Midgley, Tony Rodd, Arthur Chapman, Dracophylla, and Cskk.

As the holiday season swings around, take a moment to enjoy these Christmas Buddies. Christmas Greenies that Make Dinner For Your Visitors

West Australian Christmas Tree (Nuytsia floribunda) grows in Western Australia and its golden blossoms burst with brilliant colour and a sweet honey smell. The West Australian Christmas Tree is a kind of mistletoe, and like all mistletoes, it provides food for many insects, birds and mammals at times when other food is scarce. Birds like honeyeaters love mistletoes, and some butterflies lay their eggs on them so that their larvae can make a meal of it. Birds also love to nest in mistletoe as it provides shade and protection.

Christmas Bells (Blandfordia family) grow in New South Wales and Queensland, and true to their name, they have beautiful yellow flowers just like bells, or sometimes red flowers with lovely yellow tips. Christmas Bells flower during late spring and summer. Honeyeaters absolutely love the nectar these flowers provide, so if you have Christmas Bells around you won't have to worry about what to feed these visitors come Christmas lunch!

New South Wales Christmas Bush (Ceratopetalum gummiferum) grows in New South Wales and attracts insects and insect-eaters with its white flowers and pinky-red sepals (which are little leaves that protect the flower bud after the flowers die). Tawney Frogmouths and many small birds such as the Fairy Wren feed almost entirely on insects, and so love plants that attract insects. Many birds will give you a nice Christmas present for planting insect-attracting plants, by controlling bug numbers in your garden and providing an exciting show for you when they feed.

Victorian Christmas Bush (Prostanthera lasianthos) grows in Victoria, Queensland, New South Wales, ACT and Tasmania. It has lovely white, pink or purplish flowers which bloom in summer and provide nectar to birds. This Christmas Bush has another great plus in that it provides a protective habitat for birds to hide amongst.

South Australian and Tasmanian Christmas Bush (Bursaria spinosa) grows in all states except Western Australia. Not only does its small cream coloured flowers smell sweet and look like stars, but this plant is a favourite for many butterflies. Eltham or Dull Copper butterflies, Bright or Dark Copper butterflies, and Bathurst or Purple Copper butterflies all love to eat the leaves of this plant and lay their eggs on it. This Christmas Bush also provides a great home for many different kinds of birds to build their nests in. Tassie locals have an added present from this Christmas Bush - its fruits attract Green Rosellas to come and have a feed. It's the Christmas Bush that just keeps on giving!

Christmas Orchid (Calanthe triplicata) grows in Queensland and New South Wales. It produces nectar which is collected by bees and wasps. The incredible white flowers of this ground dwelling evergreen orchid will astound you with their beauty - in a certain light the white petals look almost like they're covered in glitter.

TIP
By planting local native plants in your garden, you'll attract lots of different insects, birdlife and animals to feed and maybe even nest. You can also extend their habitat in your suburb, and help them to make a home near you.

DID YOU KNOW?
The West Australian Christmas Tree is the largest mistletoe in the world. Mistletoes are not weeds and have co-evolved with Australian plants. They are semi-parasitic plants and are uncommon in healthy bush, but are greatly appreciated by many Australian animals, birds and insects as a food source and nesting area.

One final seasonal image Blandfordia grandiflore. RBG.

ANPSA BIENNIAL CONFERENCE 'GARDENS FOR LIFE' VICTORIA

30 September - 4 October 2024

A CHANGE OF VENUE

ANPSA 2024 Biennial Conference Melbourne

We have changed our venue for the ANPSA 2024 Conference from the Melbourne Convention and Exhibition Centre (MCEC), Docklands, Melbourne CBD to The Round in Nunawading, Melbourne.

The Round is a Performing arts and cultural centre in Nunawading, 379 - 399 Whitehorse Rd, Nunawading Victoria 3131. Nunawading is a suburb of Melbourne, 18km east of the CBD.
Website: https://www.theround.com.au/ Phone: (03) 9262 6555.

The Round, a beautiful venue set in extensive parkland was a stand-out, it ticked all the boxes. It was built, a $78 million project undertaken by the City of Whitehorse, over the last few years and opened in October 2023. It wasn't in existence when we were first selecting a venue. It has many versatile spaces eminently suitable for presentations, several airy light-filled spaces for our social gatherings in addition to outdoor spaces for relaxing with heaps of car-parking.

Transport

This venue is equidistant from two well-serviced metropolitan railway stations of Nunawading and
Mitcham. Both a 15 minute walk to The Round. There is also an extensive network of buses into the area. It is a few kilometers south of exits from the M3 freeway.

Accommodation

There is a large choice of reasonably priced accommodation available to attendees.
From many AirBnBs to Hotel/Motels such as:
- Nunawading Motor Inn (3 Star, $128-)
- Canterbury International Hotel (4 Star $122)
- Beau Monde International (4 Star, $104)
- Burvale Hotel (3 Star, $111-)
- Quality Hotel Manor (4 star, $116)
- Ringwood Lake Inn (4 star $121),
- Sage Hotel Melbourne Ringwood (4.5 stars, $152)
- The Sebel Melbourne Ringwood (5 star $216)
- Best Western, Box Hill ($119)
- City Edge Box Hill Apartments ($204)
- and many more not listed

There is also a selection of Caravan Parks available. All these caravan parks have powered sites and onsite cabins:
- Crystal Brook Tourist Park is an easy 15 minute drive to The Round. The entry is surrounded by eucalypts and it has a heated outdoor swimming pool. There are several bush parks nearby. Fees weren't available but contact through https://www.crystalbrooktp.com.au Ph: 03 8877 1601. Address: 182 Heidelberg-Warrandyte Road, Doncaster East 3109.
- Lilydale Pine Hill Caravan Park is half an hour from The Round, easily accessed using the Maroondah Highway. They have quoted a rate of $50 per night for a powered site and they can move caravans for storage off site at $5 per night for people taking tours.
Visit: www.lilydalepinehill.com.au

The Round. To see more on the new venue https://youtu.be/ZMyW380IU1k

- Sundowner Caravan and Cabin Park, half an hour from The Round, either paying tolls on Eastlink or tackling several traffic lights. The park has space but 85% are permanent. Cost is $34 per night, 7th night free. Visit www.sundownercp.com Email: sundowner@bigfoot.com.au
Ph: 03 9546 9587. Address: 870 Princes Highway, Springvale 3171.

Please note that prices listed above are current and may have changed when booking. ASN Events is also looking into a package deal from a couple of nearby hotels. These will be released as soon as we have the details.

Important Dates

After recent meetings with ASN Events we have the following key dates:
- December, 2023 - ANPSA 2024 Biennial Conference Website,
- Mid February 2024 - Early bird registration for the ANPSA 2024 Biennial Conference
- Mid February 2024 - Early bird booking/s for pre and post Conference Tours
- 1 July 2024 - closing of early bird registration for the ANPSA 2024 Biennial Conference. (Bookings will still be taken for the Conference but at full regular price)
- 31 July 2024 - closing of bookings for pre and post

Conference Tours

The Spring 2023 edition of Australian Plants is the 'ANPSA Conference 2024 Tour Edition'. The electronic pdf will be shared in our next Conference newsletter.

We look forward to seeing you there and invite you to register your interest through the website https://apsvic.org.au/anpsa-biennial-conference-2024/

Miriam Ford Convenor Nicky Zanen Co-Convenor
ANPSA 2024 Biennial Conference
Email: lilydalepinehill@bigpond.com
Address: 105 Warburton Highway, Lilydale 3140.
Phone: 03 9735 4577.

TO REGISTER YOUR INTEREST

Contact Details

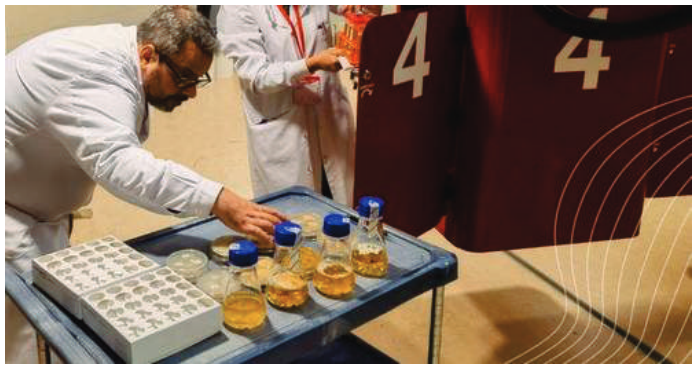
Email: anpsaconference@apsvic.org.au

https://apsvic.org.au/anpsa-biennial-conference-2024

FUNGI CREEPILY INFILTRATES SPACE STATIONS — BUT SCIENTISTS AREN'T SCARED. THEY'RE EXCITED

Space.com September 26, 2023 Sharmila Kuthunur
published .

'We are never going to be able to get rid of fungi entirely as we venture into space, so we need to understand them.'



Scientists load fungi species aboard a gondola of ESA's Large Diameter Centrifuge to conduct hypergravity tests on the organisms. (Image credit: UNOOSA)

In 1988, astronauts aboard the now-retired Russian space station Mir realized that something had blanketed one of their windows — from the outside. The thing had even started trudging its way within the station by slowly destroying the window's titanium-quartz surface. It was later revealed that the blanket was, in fact, fungi that had piggybacked to space. And it got there by hugging onto the astronauts themselves.

This fungi had managed to adapt to the space environment, and so well that it not only survived but thrived on windows, control panels, air conditioners and cable insulators. It even contaminated the crew's precious food and water supply. Although this incident was the first time a fungus was found significantly damaging the space station, it was not the last.

Space travelers have never been, and will never truly be, alone while traveling to space.

But rather than fear this truth, scientists are trying to take advantage of it. For instance, one team associated with the European Space Agency (ESA) recently conducted hypergravity experiments on fungi to better understand how these organisms survive effortlessly in the harsh environment of space — perhaps if we can understand their mechanisms, we can use fungi to build off-world settlements someday and maybe even incorporate them into off-world medications.

Many (if not all) space-borne fungal species are like sleuths: They remain dormant during launch and on the journey to space, but then "activate" and reproduce to form thick, living mats on various regions in the space station. These mats not only threaten astronaut health but also electronics, plumbing and other components on the station.

Since the 1988 incident, there have been numerous efforts to establish robust cleaning routines for scrubbing fungi off walls and equipment before the organisms cause serious damage. Alongside these preventive efforts, scientists have also realized that studying their growth and behavior in microgravity, specifically their adaptability to repair DNA damage caused by space radiation, could actually be useful for crews during long-term crewed space missions.

For example, in 2016, researchers at NASA's Jet Propulsion Laboratory in California launched fungi into space for the first time for research purposes onboard the International Space Station (ISS). The team studied how the ISS environment caused the species, known as Aspergillus nidulans, to create certain molecules it doesn't produce on Earth. This particular fungus is well-researched for osteoporosis drugs that could help with the bone disease, which affects 10 million people in the United States alone.

During long-term space missions to the moon and even Mars, such applications would help astronauts maintain their bone density, which research already shows declines despite regular exercise routines onboard the ISS.

Similar efforts to study fungi are also being carried out on Earth. Recently, the ESA studied how fungal colonies grow in "hypergravity" environments, where artificially-created gravity conditions using a centrifuge were up to 20 times higher than on Earth.

The two-week long research, which was conducted in ESA's space technology and development center (ESTEC) in the Netherlands, tested how fully grown fungal species placed in a lab-controlled gondola responded to stressful reactions, according to a statement published Monday (Sept. 25). The names of the fungal species were not mentioned.

"We are never going to be able to get rid of fungi entirely as we venture into space, so we need to understand them," André Antunes, a researcher at the Macau University of Science and Technology in China who is part of the recent ESA study, said in Monday's statement. "In addition, they offer positive opportunities as well as risks. Down on Earth fungi are employed to make food — such as yeast for fermentation — as well as medicines, chemical enzymes for industry as well as metal nanoparticles used in numerous fields."

'Russias Mir space station seen from Space Shuttle Atlantis during the approach for docking on 15 January 1997 (Image credit: NASA)

The team also selected certain fungal species for a second round of exposure to hypergravity, largely to investigate the extent of stress reactions. According to the statement, the study aims to better understand why fungal species thrive in microgravity conditions.

Using dormant fungi and their chemical makeup, NASA has also been exploring various technologies to grow lightweight structures on the moon and Mars that future space travelers can call home away from home.

Join our Space Forums to keep talking space on the latest missions, night sky and more! And if you have a news tip, correction or comment, let us know at: community@space.com.