

CALEYI



NORTHERN BEACHES GROUP
austplants.com.au/northern-beaches

October 2022

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

Thursday October 6, 2022 APS Northern Beaches meeting at Stony Range Regional Botanic Garden, Dee Why.

7.15 pm Lesser plant family Droseraceae - Conny

7.30 pm Presentation - Show & Tell. Don't forget to bring your specimens, stories and photographs.

8.30 pm Committee Meeting.

Supper - Conny & Pamela.

Saturday October 8. Set-up for Festival

Sunday October 9. 2022 Spring Festival. see p.7.

Wednesday October 12, APS Northern Beaches visit to the National Herbarium at Australian Botanic Garden, Mount Annan. More information/car share/register attendance. See p.2.

APS NSW Annual Gathering, Southern Highlands, NSW. 12 - 13 November 2022. see p. 6.

Many thanks to Penny Hunstead, Russell Beardmore, Jennifer McLean and David Drage for their great contributions to this edition.

Jane March march@ozemail.com.au 0407 220 380.

THE SLIPPERY DIP WALK – Saturday, 17th September 2022

Penny Hunstead

This walk, which is in **Garigal National Park**, took place on a mild day with scattered cloud. The terrain could be described as Easy, Grade 2. Unfortunately, we shared the way with many other walkers and a number of cars, as this track is an access to the airfield of a flying club, The Warringah Radio Control Society.

The identification of plants, on a walk, is limited to those that can be seen from the track. However, species can often be seen flowering at their best at trackside and roadside positions. The weather conditions, when Sydney's wildflower species were developing flowering wood, must have been just what the plants needed. There has been abundant flowering of so many species, notably in the genera of *Acacia*, *Boronia*, *Clematis*, and the families *Epacridaceae* and *Fabaceae*.

The plant community comprises Eucalypt woodland with understorey shrubs of predominantly *Acacia*, *Allocasuarina*, *Banksia*, *Dodonea*, *Kunzea* and *Leptospermum*.

Although fifty species have been documented as flowering at any one time of the year, on this walk, we were a little later than the peak flowering of Winter. However, sixteen species were seen to be flowering and we would probably have seen more, but our walk was cut short by some unexpected heavy rain, that had us hurrying back to our cars.

The flowering shrubs of medium height included, *Dillwynia floribunda*, *Kunzea capitata*, *Pultenaea stipularis*, *Pultenaea daphnoides* and *Phebalium squamulosum*.

Dillwynia floribunda. Pic:RB



Kunzea capitata. Pic:RB



Phebalium squamulosum. Pic:RB



Pultenaea stipularis Pic:RB





Acacia ulicifolia.pic: RB.



Dyllwynia retorta.pic: RB.



Epacris longiflora.pic: RB.



Epacris microphylla.pic: RB.

Although the main purpose of our walks is to observe flowers, there are other features of the plant communities that are interesting. I noted the fruits of the following species *Acacia terminalis*, *Allocasuarina distyla*, *Banksia serrata*, *Dodonaea triquetra*, *Hakea sericea*, *Isopogon anethifolius* and *Persoonia linifolia*.



Persoonia linifolia.pic: JM.



Lichen.pic: PH.

Smaller shrubs included *Acacia ulicifolia*, *Dyllwynia retorta*, *Epacris longiflora*, *Epacris microphylla*, *Grevillea buxifolia*, *Hibbertia linearis*, *Leucopogon microphyllus*, *Mirbelia rubiifolia* and *Tetradlea ericifolia*.



Grevillea buxifolia.pic: RB.



Hibbertia linearis.pic: RB.

All the rocks along our walk had lichens growing on them. Lichens fall into three groups, crustose, foliose and fruticose and are ubiquitous on rocks. The rocks that we saw on this walk were covered with predominantly crustose lichens. A white species of lichen, not usually seen was noted on a few of the large rocks. A comprehensive search of the internet failed to provide an identification of this species. Perhaps someone can help!



Mirbelia rubiifolia.pic: RB.



Tetradlea ericifolia.pic: RB.

After the walk, twelve of the thirteen walkers enjoyed lunch at a big round table, which was an excellent seating arrangement, allowing more conversation than is possible at a rectangular table and with no "head of the table". King Arthur had the same idea!
Penny Hunstead

APS NORTHERN BEACHES VISIT TO MOUNT ANNAN

At the APS Northern Beaches meeting on Thursday September 1, 2022, Hannah McPherson recounted the mammoth task involved with the relocation of the Royal Botanic Gardens herbarium collection.



Other flowering species included the herb, *Wahlenbergia gracilis*, the vine, *Kennedia rubicunda* and the orchid, *Thelymitra carnea*. Fairley and Moore note, in "Native Plants of the Sydney District" that although *Thelymitra carnea* commonly occurs in damp soils, it is rarely noticed because of its small size and pale colour and its tendency to open only around midday, in warm, sunny, still weather.



Wahlenbergia gracilis.pic: RB.



Kennedia rubicunda.pic: RB.

Moving our fantastic herbarium collection from the Royal Botanic Gardens in Sydney to it's new home at the Australian Botanic Garden, Mount Annan has been no mean feat! There have been highs and lows but we are nearly there. The new building is vast, shiny and new and has a dedicated space for just about everything we do. As we have a tour some of the features of the new herbarium we will also have a look at some of our treasures.'



Thelymitra carnea.pic: RB.



Isopogon anethifolius .pic:BD

We are very fortunate to be able to follow this inspiring talk with a visit to the new herbarium at Mount Anna in October. Please put Wednesday October 12, 2022 in your diary.

If you would like to join us for this exceptional opportunity please contact Jane March to register your interest. We will try to organise car shares for the drive. Also note we will book a table for lunch at a convenient eatery. Jane March march@ozemail.com.au or 0407 220 380.



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EARTH HARBOURS 20,000,000,000,000,000 ANTS – AND THEY WEIGH MORE THAN WILD BIRDS AND MAMMALS COMBINED

The Conversation: September 20, 2022 Mark Wong, The University of Western Australia, Benoit Guénard, Associate professor, University of Hong Kong, François Brassard, Charles Darwin University, Patrick Schultheiss, Julius Maximilian University of Würzburg, Runxi Wang, University of Hong Kong, Sabine Nooten,

Have you ever wondered exactly how many ants live on Earth? Possibly not, but it's certainly a question we've asked ourselves.

Our research published today provides an approximate answer. We conservatively estimate our planet harbours about 20 quadrillion ants. That's 20 thousand million millions, or in numerical form, 20,000,000,000,000,000 (20 with 15 zeroes).

We further estimate the world's ants collectively constitute about 12 million tonnes of dry carbon. This exceeds the mass of all the world's wild birds and wild mammals combined. It's also equal to about one-fifth of the total weight of humans.

Eminent biologist Edward O. Wilson once said insects and other invertebrates are "the little things that run the world" – and he was right. Ants, in particular, are a crucial part of nature. Among other roles, ants aerate the soil, disperse seeds, break down organic material, create habitat for other animals and form an important part of the food chain. Estimating ant numbers and mass provides an important baseline from which to monitor ant populations amid worrying environmental changes.

Counting the world's ants

There are more than 15,700 named species and subspecies of ants, and many others not yet named by science. Ants' high degree of social organisation has enabled them to colonise nearly all ecosystems and regions around the globe.

The astounding ubiquity of ants has prompted many naturalists to contemplate their exact number on Earth. But these were basically educated guesses. Systematic, evidence-based estimates have been lacking.

Our research involved an analysis of 489 studies of ant populations conducted by fellow ant scientists from around the world. This included non-English literature, in languages such as Spanish, French, German, Russian, Mandarin and Portuguese. The research spanned all continents and major habitats including forests, deserts, grasslands and cities. They used standardised methods for collecting and counting ants such as pitfall traps and leaf litter samples. As you can imagine, this is often tedious work.

From all this, we estimate there are approximately 20 quadrillion ants on Earth. This figure, though conservative, is between two and 20 times higher than previous estimates.

The previous figures employed a "top-down" approach by assuming ants comprise about 1% of the world's estimated insect population. In

contrast, our "bottom-up" estimate is more reliable because it uses data on ants observed directly in the field and makes fewer assumptions.

Our next step was to work out how much all these ants weigh. The mass of organisms is typically measured in terms of their carbon makeup. We estimated that 20 quadrillion average-sized ants corresponds to a dry weight or "biomass" of approximately 12 million tonnes of carbon.

This is more than the combined biomass of wild birds and mammals – and about 20% of total human biomass. Carbon makes up about half the dry weight of an ant. If the weight of other bodily elements was included, the total mass of the world's ants would be higher still.

We also found ants are distributed unevenly on Earth's surface. They vary sixfold between habitats and generally peak in the tropics. This underscores the importance of tropical regions in maintaining healthy ant populations. Ants were also particularly abundant in forests, and surprisingly, in arid regions. But they become less common in human-made habitats.

Our findings come with a few caveats. For example, the sampling locations in our dataset are unevenly distributed across geographic regions. And the vast majority of samples were collected from the ground layer, meaning we have very little information about ant numbers in trees or underground. This means our findings are somewhat incomplete.

We all need ants

Ants also provide vital "ecosystem services" for humans. For instance, a recent study found ants can be more effective than pesticides at helping farmers produce food.

Ants have also developed tight interactions with other organisms – and some species cannot survive without them.

For example, some birds rely on ants to flush out their prey. And thousands of plant species either feed or house ants in exchange for protection, or dispersal of their seeds. And many ants are predators, helping to keep populations of other insects in check. ant carries prey in jaws



A purple *Rhytidoponera* ant carries her prey between her jaws. Many ants serve as predators that help keep populations of other insects in check. Francois Brassard

Alarmingly, global insect numbers are declining due to threats such as habitat destruction and fragmentation, chemical use, invasive species and climate change. But data on insect biodiversity is alarmingly scarce. We hope our study provides a baseline for further research to help fill this gap.

It's in humanity's interest to monitor ant populations. Counting ants is not difficult, and citizen scientists from all over the world could help investigate how these important animals are faring at a time of great environmental change.

VIOLACEAE FAMILY

Jennifer McLean's Lesser plant family presentation at the September meeting.

The Violaceae family consists of approximately 1000 species in about 25 genera. The three large genera of *Viola*, *Rinorea* and *Hybanthus* contain most of the species which are widely distributed in both hemispheres. They are mostly tropical or subtropical plants but *Viola*, the largest genus, also occurs at higher cooler altitudes, and has a number of species in temperate regions. Many of the genera have a very restricted distribution.

Violaceae are mostly shrubs, vines or small trees but the South American tree *Leonia triandra* reaches 25m in height while the best-known genus of *Viola*, is herbaceous.

Leaves are usually simple, though a few species have palmate or deeply dissected leaves. They can be alternate or opposite. Flowers are solitary or in panicles and made up of parts of five, petals, sepals etc. Corollae petals of unequal size overlap, with the anterior petal usually noticeably the largest. They can be bisexual or unisexual (eg *Melicytus*) with fruits that are capsules which split by way of three seams.

Members of the Australasian genus *Hymenanthera* often have spinescent branchlets and berry fruit. *Hymenanthera dentata* is a medium to dense shrub with pale yellow insignificant, but scented flowers.



Hybanthus monopetalum . Pic:RB

Hybanthus monopetalus is a small shrub of about 50cm high and a similar width. It has narrow leaves about 4-5 cm long. Blue to mauve flowers are on stalks at the ends of the stems. They appear to have only one petal, any other petals being inconspicuous.



Viola hederacea . Pic:JM

Viola hederacea has round leaves and purple and white flowers held above the foliage. It spreads by underground runners and can be a lawn substitute for shady areas.



Viola betonicifolia. Pic: anbg.gov.au

Viola betonicifolia grows as a single tufted plant with long spearhead shaped leaves and a sturdy tap root. It has deep purple flowers about 2cm across which are held on slender stems above the foliage. It can set seed without obvious flowering, the plant producing some small, self-pollinating flowers that never open. This phenomenon is known as cleistogamy.

DOBROYD POINT WALK – 21st September 2022

Penny Hunstead

On a cloudy, windy morning, Anne and Penny were the guides for 16 members of other APS groups, who were visiting the Northern Beaches, post ANPSA Kiama Conference.

Before the walk, through heath plant communities, we assembled at the Arabanoo Lookout. From here, there are panoramic views north, over Manly and northern beaches headlands and east, over the old Quarantine Station and North Head.

Then we walked for about 30 minutes along a rocky track with boggy areas, to a T-junction and then about another 30 minutes over a metal grille walkway, back to the road. Luckily we were sheltered from the wind and that condition plus the overcast sky, enabled good conditions for flower photography. The visitors were as keen on photography as they were knowledgeable about the species in flower! About 50 species of flowering plants are documented for this area, but some visitors were able to point out species that Anne and Penny hadn't recorded and didn't know. One man from Tasmania, was an expert on the meanings of the names of the plants. When a *Dianella* was pointed out, he observed that Dian(a) was the Roman goddess of the hunt and "ella" means "small". He said he knew the meaning of most of the names. It was morning tea time and we weren't retracing steps to learn them!

There were about 30 of the 50 species, in flower. Many of the species, especially in the *Epacridaceae*, the *Fabaceae*, *Pittosporum revolutum*, *Grevillea* spp. and *Dampiera stricta* were flowering in abundance. The whole walk was the most rewarding experience with colour and beauty of form, all along the way. Little surprises were flowering species, growing out of place, e.g. a beautiful flowering specimen of *Callicoma serratifolia*, which was growing in a most wind-exposed position.

At the end of the walk, there is an observation area, where one has another panoramic view out of Sydney Heads and back to Sydney CBD. Below, is pretty Crater Cove, with seven little cottages, which date from 1923. This is now an historic site and fortunately has not been subject to vandalism.

Back at Arabanoo park, the visitors' coach driver had assembled a fine morning tea with all the trimmings. Happy and refreshed, the troupe set off for the North Head walks and a visit to Stony Range Regional Botanic Garden.

Later the group walked the **Eastern Suburbs Banksia Scrub** (Guided by Russell & Jennifer) and **The Hanging Swamp** (Guided by Conny & Pam) at **Manly's North Head**. Then on to **Dee Why** to visit **Stony Range Regional Botanic Garden** (hosted by Ted & Judith).

Here they enjoyed their lunch at North Head. JM



TEN DAYS TO PLANT 6000 NATIVE ORCHIDS? EASY FOR ARMY OF VOLUNTEERS

SMH September 11, 2022 Laura Chung

Spending 10 days on your hands and knees in regional NSW planting more than 6000 native orchids isn't for everyone. But for more than 40 volunteers, listening to the birds singing and swapping a few jokes helped during the long hours of trying to save the plant species from going extinct.

Three orchid species, the Crimson Spider Orchid, Sand-hill Spider Orchid and Oaklands Diuris, were transported more than 300 kilometres from Victoria before being planted in Albury and the NSW Riverina region by an army of 40 volunteers from the Australasian Native Orchid Society.

ANOS Victorian conservation officer Gary French said the project was initially daunting, but he was not one to shy away from a challenge. The mammoth task involved planting about 400 orchids a day, but the volunteers modified a few techniques to speed up the process.



Volunteers plant native orchids near Albury, NSW. Credit: Alex Pike/dpe

"By lunchtime on the 10th day, when the last plant was in the ground, it was a relief," he said. "Planting orchids are not like planting a tree or shrub. You have to be careful in how you plant it. It's not a matter of quickly putting it in the ground – it's much more detailed."

French said the sounds of nature and friendly banter with other volunteers helped him get through the long hours. But the project is far from over.

"Over the next three to five years, there will be some very detailed monitoring to keep tabs on the orchids to ensure they have survived and that there is pollination and seeding. Once you see that sort of thing and new plants are growing on the site, that is when you can tick it off."

There are more than 800 species of orchids in Australia, with 17 per cent of these on the federal threatened plant species list, says Dr Karen Sommerville, a research scientist at the Royal Botanic Garden.

"Part of the problem has been land clearing, domestic stock grazing or trampling hard on the plants – they are hard to see unless they are flowering," she said. "Other threats include weed invasions."

Scientific technical officer Jess Wait says growing orchids is a difficult task, especially because they are so particular in their pollination and germination behaviours.

Australian Botanic Garden scientific technical officer Jess Wait said since orchids are so particular in their germination and pollinating behaviours — with some relying on one insect species to pollinate them and a particular type of fungus to grow – if anything happens to disrupt these, their numbers can plummet.



Scientific technical officer Jess Wait says growing orchids is a difficult task, especially because they are so particular in their pollination and germination behaviours. Credit:Janie Barrett

"They are beautiful species and are highly complex. We appreciate them for the way they have evolved," she said.

NSW Environment Minister James Griffin said the government's Saving our Species program found there were fewer than 2000 Sand-hill Spider Orchids, 1300 Oaklands Diuris and 650 Crimson Spider Orchids in the wild.

"This project gives us enormous hope for the survival of these rare and beautiful species because their populations have been boosted with 6000 additional healthy plants," he said. "It's a fantastic example of the great conservation outcomes we can achieve when we partner with private landholders and expert scientists."



A Sand-hill Spider Orchid. Credit: M Cameron/dpe

The project was done with the NSW Environmental Trust and Saving our Species program, the Department of Planning and Environment, National Parks and Wildlife Service, Royal Botanic Gardens Victoria and the Australian Network for Plant Conservation.

Another Russell Beardmore gem.

Boronia ledifolia taken in July at Red Hill.



WILD ORCHID

One September morning,
as a planet wandering
the stars before light;
a flower bruised my heart.

From earth's blood rose
a naked bloom, touched
with the sign of grief as
garland to this alchemy.

The flowers kiss and bow
to their heady crown;
we come from the stars and
to stars we shall return.

Be careful where you
walk along a path,
so long as flowers grow
they touch the stars.

Edwin Wilson

APS NSW GET TOGETHER IN THE SOUTHERN HIGHLANDS

APS NSW November Annual Gathering, Southern Highlands, NSW Saturday 12 November - Sunday 13 November 2022

Venue: Exeter Village Hall, 10 Exeter Rd, Exeter NSW 2579



The Southern Highlands Group of APS NSW is hosting this year's weekend get-together at Exeter, Sutton Forest and Moss Vale on Saturday 12 and at Bowral on Sunday, 13 November.

The Southern Highlands Group has organised a variety of exciting activities for the weekend, including a plants sale on the Sunday.

This weekend offers a wonderful chance to see and enjoy a beautiful part of NSW and catch up with friends you may not have seen for a while. These weekends are extremely popular and it is essential that you register for the event.

Price of the get-together including morning tea, lunch and the get together sessions along with dinner and talk at Moss vale RSL on the Saturday night is \$90. If you only wish to attend the morning tea, lunch and get together sessions, the price is \$45. You can book and pay for both through the registration.

Guests are welcome to attend.

Program:

Please note that you will be given the addresses of the gardens we will be visiting when you arrive at the Exeter Hall.

Saturday, 12 November 2022

9.30am - Registration and morning tea provided by Exeter CWA

10am - Acknowledgement of Country welcome to participants. Bill Mullard and Heather Miles.

Speaker: Dan Clarke, APS NSW Conservation Officer and environmentalist - The Vegetation of the Wingecarribee Area.

Dan is a botanical consultant who operates DM Clarke Botanical Consulting Services which provides flora survey services, consultancy advice, and vegetation management and bushland regeneration services. Dan has worked as a botanist in the environmental consultancy industry since February 2011. He is currently the Conservation Officer for APS NSW. Dan has undertaken extensive vegetation surveys of the Wingecarribee area for the NSW National Parks and Wildlife Service. He is an experienced speaker and will inspire you with his investigations of the vegetation of the Wingecarribee area.

12 noon - lunch provided by Exeter CWA.

1.00 - 3.30pm - visit to two large but very different gardens. The group will be divided into two, with each half visiting the following gardens at different times.

Tanya Excel's 2.26ha property, at Moss Vale. A garden conversion.

Martin's rural property, at Sutton Forest. Extensive native and exotic plantings, large dam.

6.30pm for 7.00pm - Dinner, private room Moss Vale RSL Club, Cnr Hume Hwy & Bessemer St, Mittagong NSW 2575. Cost \$45.

A talk by Jane Lemann, member APS NSW Southern Highland Group and co-ordinator of Mt Gibraltar bush care.

Sunday, 13 November 2022

9.30 - 11.30am - escorted walks at Mt. Gibraltar. Choice of easy or more difficult.

12 - 1.00pm - Lunch, individual responsibility, with plenty of choice venues in Bowral.

1-3 pm: Kris Gow's and Sarah Cains' gardens in Bowral plus plant sale. Both are small gardens so staggered visits are required. The gardens are located on opposite sides of the same block so walking or driving between each is optional.

Registration

Get together registration – \$45.00

Includes weekend activities, morning tea and lunch on Saturday. (Saturday evening dinner not included.)

Get together registration plus dinner and talk on Saturday night – \$90.00

Includes Saturday morning tea, Saturday lunch, get together sessions and Saturday two-course dinner

To register go to <https://austplants.com.au/event-4877519/Registration>

If you have any questions please contact John Aitken at <http://office@austplants.com.au>



STONY RANGE SPRING FESTIVAL

Stony Range Regional Botanic Garden is an oasis of Australian native plants located at Dee Why in the heart of the Northern Beaches.

**61st
year**



Sunday 9 October

9 am - 3 pm

Stony Range Regional Botanic Garden

SALE OF NATIVE PLANTS

Take advantage of expert cultivation advice from Stony Range Botanic Garden volunteers & members of Australian Plants Society Northern Beaches Group.



Fun for children
face painting, treasure hunts, native animals



Fun for all
live music, native bees, guided walks
Sausage sizzle, Coffee Shop, Home made cakes.

Stony Range Regional Botanic Garden
810 Pittwater Rd, Dee Why stonysrange@gmail.com