

# CALEYI



**NORTHERN BEACHES GROUP**  
[austplants.com.au/northern-beaches](http://austplants.com.au/northern-beaches)

**November 2023**

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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 meeting Thursday November 2, 2023 at Stony Range Botanic Garden, Pittwater Rd, Dee Why.**

**7.15 pm. Lesser plant family. Santalaceae - Pamela Dawes.**

**7.30 pm Presentation. Gracie Lul - Creating a frog friendly garden. See more p. 7.**

**8.30 pm Committee Meeting.**

**Supper. Jennifer & Anne.**

**APS Northern Beaches Wednesday November 15, 2023, Guided walk of Macquarie University Arboretum with Sam Newton.** See more p. 7. Anne Gray will email full details including car share arrangements closer to the date.

**APS Northern Beaches Christmas Lunch Saturday December 9, 2023 at Stony Range Regional Botanic Garden, Dee Why.** See more p. 7.

Many thanks to Penny Hunstead, Anne Gray, Julia Tomkinson, and Pam Dawes for their great contributions to this edition of Caley. Please email stories, photos (as attachments please) etc for Caley to [march@ozemail.com.au](mailto:march@ozemail.com.au)

## THE SOLANACEAE FAMILY

Presentation by Penny Hunstead at the APS Northern Beaches October meeting.



The Solanaceae family has about 100 genera and 4,000 species, World-wide. It is postulated that the name came from "solanum" Latin for "the sun", having been used by Pliny the Elder (AD 23-79) for a plant which was most likely *Solanum nigrum*, a sun-loving plant.

The Solanaceae family is of World importance. Arising about 52million years ago, the genera evolved to provide species that are edible, ornamental, medicinal and psychotropic.

The botanical characteristics of this family, which includes climbers, herbs, shrubs and small trees, are:

- A bisexual flower with five petals, or petals fused and five sepals.
- Extipulate leaves.
- Tap roots.
- Fruit which is a berry or a capsule.

These plants are found on all continents, except Antarctica, with the majority of genera originating in Central and South America.

**The two most important genera of edible plants are :**

**Solanum**, *S. tuberosum* – the potato, *S. lycopersicum* – the tomato, *S. melongena* – the eggplant (originally white in colour and shaped like a chicken's egg)

**Capsicum**, *C. annum* -the bell pepper, *C. frutescens* – the chilli pepper .

The edible Solanums were from South America and the Capsicum spp, from Central and South America. They play a significant role in both cuisines, throughout the World and in human nutrition.

Thailand is one of the World's major exporters of chillies and the chilli (*Capsicum frutescens*) is a signature ingredient in Thai cuisine.

Tomatoes (*Solanum lycopersicum*) is the centre of Italian cuisine. The Italian for tomato is Pomodoro. Originally Pomo (apple) d'oro (of gold) because the first tomatoes introduced were like little golden apples.

The most famous story of the potato (*Solanum tuberosum*) is from nineteenth century Ireland. There, in the 1840s the potato blight (*Phytophthora infestans*) devastated the widely-planted potato crops and led to the terrible Potato Famine. Hardy, nutritious and easy to grow in the Irish soils, the introduced potato was relied on exclusively by half the population and eaten frequently by the other half.

It is said, in the Middle East, that a woman is not ready for marriage, until she knows 1,000 ways to cook eggplant (*Solanum melongena*). It may seem an unreasonable demand to American women, many of whom marry before they know how to cook anything at all.

**The notable ornamental genera are ;**

Petunia, Browallia, Brugmansia, Datura, Cestrum and Brunfelsia  
The original Petunia ( now, *P. x atkinsiana*) was from a South American Indian name Petun, meaning "worthless tobacco". Plant breeding and hybridization in the late 1800s lead to today's multiple varieties.

**The medicinal genera are:**



*Atropa belladonna* - deadly nightshade (pic: Samen & Saatgut),

*Datura stramonium* – Jimson weed, *Hyoscyamus niger* – henbane and *Nicotiana tabacum* – tobacco.

An interesting note about *Atropa belladonna*. Although it is a tropane alkaloid used pharmacologically, its effect on the eyes saw it used in the Renaissance by Italian courtesans to dilate the pupils and enhance their charms. Hence the species name "belladonna".

**The psychoactive alkaloid-rich genera are:**

Mandragora – Mandrake and Brugmansia suaveolens – angel's trumpet.

**There are nine Australian genera and 132 species. In addition there are 66 naturalised species, the majority of which are weeds.**

**Examples of the Australian genera are:**

*Anthotroche pannosa* – sandplains of southern W.A.

*Cyphanthera miersiana* – sand dunes near Wiluna, eastern W.A.

*Duboisia hopwoodii* – widespread in arid inland regions of all Australian states

*Anthocercis viscosa* --- sandy soil in southern coastal region of W.A.

*Grammosolen dixonii* -- deep sandy soils of Yorke and Eyre peninsulas

*Nicotiana velutina* --- sandy soils, widespread in arid inland regions of all Australian states

*Solanum centrale* -- widespread in the sandy deserts of Australia

**Examples of members of the Solanaceae from the Sydney region:**

*Solanum aviculare*.

Common name:  
kangaroo apple,  
poroporo.

Photo: T.M.Tame  
©The Royal Botanic  
Gardens & Domain  
Trust



*Nicotiana suaveolens* ,  
Common name:  
Native Tobacco.  
Photo: RBG.



*Cyphanthera albicans*,  
Common name:  
Grey Ray Flower.  
Photo ANBG.



Interesting note : Most genera of Australian native Solanaceae are found growing in sandy soils.

## VISIT TO CRANEBROOK Julia Tomkinson

On Sunday 15th October, seven of our group – Anne, Jane, Jennifer, Lorna, Penny, Russell and myself - made the fairly long drive to Cranebrook, on the outskirts of Penrith, to visit APS member Pam Gratton, who moved from the Northern Beaches to Western Sydney a few years ago to be nearer her family. Pam guided us on a walk from her house through a nearby part of the Cumberland Plain Woodland (CPW) ecological community.

According to Wikipedia: 'The Cumberland Plain Woodland, also known as Cumberland Plain Bushland or Western Sydney Woodland, is a grassy woodland community found predominantly in Western Sydney comprising an open tree canopy, groundcover with grasses and herbs, usually with layers of shrubs and/or small trees.

Situated in the Cumberland Plain, the CPW is a savanna that features dry sclerophyll woodlands, grasslands and/or forests, reminiscent of Mediterranean forests. According to the Office of Environment and Heritage, the community falls predominantly within the Coastal Valley Grassy Woodlands region, which is part of the Grassy Woodlands formation found in the eastern corridor of New South Wales.

Currently, less than 6% of the Woodlands remain, totalling only around 6400 hectares, separated into small areas distributed across the western suburbs of Sydney. The CPW was listed as an Endangered Ecological Community under the Threatened Species Conservation Act 1995 in June 1997. The greatest threats to the CPW include land clearing for agriculture, urban sprawl and the introduction of harmful weed species.'



Our walk took us close to a man-made lake opening off a rivulet, an offshoot of the Nepean River. In spite of barking dogs and a feral cat seen in silhouette near the edge of the lake, we saw a good collection of birds, particularly water birds: coots, dusky moorhens, swamphens, a little black cormorant, pacific black ducks and ibis. There were several female superb fairy wrens low down in the undergrowth, also swallows, a grey butcher bird, dusky woodswallow and restless flycatcher. Heard but not seen were reed warblers and an olive-backed oriole.

Around the edge of the lake we saw *Casuarina cunninghamiana* and *Allocuarina torulosa* trees, and in full flower with creamy white blossoms – *Melaleuca decora*. Other plants seen included *Indigofera australis*, *Callistemon viminalis*, *Dianella caerulea* and *Lomandra sp* (these latter two probably cultivated), *Melia azedarach* (white cedar or chinaberry tree) with pale pinkish-mauve flowers, *Acacia parramattensis*, and a sedge in full bloom with large russet-coloured flower heads (*Baumea sp?*). The *Eucalyptus* species included *E. moluccana*, *E. tereticornis*, *E. crebra* and *E. fibrosa*. Notable on various eucalypts were many mistletoe plants with sprays of orange flowers, possibly *Dendrophthoe vitellina*.



The more open bushland area included the Mountain View Reserve Bushcare Site and Wetland, with a view of part of the Penrith Lakes Scheme, a system of artificial lakes created from old quarries. The surrounding grassland areas looked fairly dry; they included *Themeda australis* (Kangaroo Grass) and *Eragrostis leptostachya*.



After our walk, we returned to Pam's house and were treated to a very pleasant lunch provided by Pam, with assistance from her daughter and two grandchildren.

Thanks to Pam for an enjoyable day, to Russell for many of the above bird identifications, and to Penny for plant names.

## TAXONOMY UNTANGLES TEA TREES TO HELP THEM THRIVE

Botanic Gardens of Sydney 17 OCT 2023

After years travelling across Australia sampling and sequencing numerous species in the genus *Leptospermum*, scientists have established four extra genera – renaming dozens of iconic tea tree species.



### A strong hunch sparks an investigation

The native Coast Tea Tree (originally *Leptospermum laevigatum*) has low-lying, thin twisted branches, which are dotted with fragrant white flowers. It is a vital species for maintaining the integrity of Australia's sand dunes and is found from the cliffs of north Nambucca Heads in New South Wales all the way down to northern Tasmania.

Botanic Gardens of Sydney Systematic Botanist, **Dr Peter Wilson**, held a long suspicion that a major group of *Leptospermum* species, the one that includes the species that produce manuka honey, were not closely related to this prominent species in the genus and he began investigating their origins.

Dr Wilson and his team spent many years travelling across the eastern states and even Western Australia, painstakingly collecting and sampling species within the genus *Leptospermum*, plus species from all related genera. Incredibly, after sequencing DNA from each sample, they found key differences between them.



Dr Peter Wilson and his team have spent years travelling to sample and identify species correctly. Credit: Michael Santos/Botanic Gardens of Sydney

The study exceeded Dr Wilson's expectations and revealed that four extra genera, two in Western Australia and two in the eastern states, should be recognised to untangle this part of the Myrtaceae family tree. "All species transferred out of the genus *Leptospermum*, like the Coast Tea Tree, will have new names," says Dr Wilson.

One of the new genera in the east is *Gaudium*, which comes from the Latin word for joy and is named after the late Botanic Gardens botanist Joy Thompson, who published a major study of the genus in 1989. This genus has 22 species and is the new home for the Coast Tea Tree – now named *Gaudium laevigatum*.

"Another of the new genera is *Aggregiflorum*, which means 'aggregated flowers' and is the smallest segregate genus in eastern Australia with just ten species – four of which occur in New South Wales."

### What's in a name?

Taxonomy is what helps us to understand a species origin, function and why it should be conserved. It is the science that discovers, describes, and classifies all living things. Having a correct scientific name is like a valid ID card – it links to all the available data on that species which is crucial for research and conservation purposes.

Scientific names are carefully controlled and take years, sometimes decades, to agree upon. Many aspects of the naming of plants, animals, fungi, bacteria and other organisms are controlled by agreed sets of international rules – the Codes of Nomenclature.

"These set of codes state a name must be permanently associated with a specimen, so you have to get it exactly right. They also say the names must be accessible to other taxonomists, usually by publishing in a peer-reviewed scientific journal. It's a long but rewarding process."

Dr Wilson

## DOGS AT NORTH HEAD? FOR A VERY GOOD REASON

Manly Observer October 5, 2023.



Meet Alice and Echo, a dynamic scent-detection-duo helping keep our eco-system in good health.

Northern Beaches Council has partnered with National Parks and Wildlife Service (NPWS) to stop the spread of *Phytophthora cinnamomi*, a soil borne pathogen that infects threatened and iconic plants, by using specially trained sniffer dogs to detect the disease.

The soil pathogen threatens a number of endangered species and can cause root rot in susceptible plants.

With funding from NPWS Saving Our Species program, the NPWS Invasive Species Unit developed a project in mid-2022 to see if conservation detection dogs could be trained to detect *Phytophthora* and prevent new infestations to protect threatened species.

With the expertise of TATE Animal Training Services and two of their newest dogs – Alice, a Springer Spaniel and Echo, a Brittany Spaniel, the dogs have been successful in identifying the pathogen in controlled trials.

Northern Beaches Mayor Sue Heins said *Phytophthora* free tube-stock, propagated and grown by environmental volunteers in Council's community nurseries, was donated by Council and infected with the disease by University of Sydney staff for training purposes.

## CURRAWONG TREASURES - Pamela Dawes

"Results from the pilot study have proven the dogs can discriminate the scent of *Phytophthora* and they can successfully locate infected tube stock when placed with uninfected tube stock. These dogs are simply incredible," Mayor Heins said.

"We're so pleased to be partnering with NPWS on this unique project and hope the hard work by the team at TATE and their dogs can stop the spread of this pathogen infecting our precious flora."



The detection dogs will continue training and testing to provide a low-cost tool to detect this pathogen. Conservation detection dogs play an important role at NPWS and are also used in detecting threatened species such as Koalas and underground orchids, as well as invasive animals and plants like the Hawkweed eradication program in Kosciuszko National Park.



NPWS Project Officer Julia Rayment said the infection of plants by *Phytophthora* is a big problem and is included in the NSW Biodiversity Conservation Act as a "Key Threatening Process" requiring action to be taken to stop its impact.

"Any activity that moves soil can spread the pathogen, including movement from humans and vehicles, as well as soil movement from regeneration and translocation of nursery stock. Therefore, preventing new incursions and good hygiene is paramount," Ms Rayment said.

With both dogs still yet to reach maturity, they will only improve in consistency and skill as they grow; however, early results show strong signs of real-world applicability.

"We're so pleased the trials have been successful and with access to more plants of all varieties, thanks to Northern Beaches Council, the dogs will increase their ability to discriminate and improve their level of correct responses," Dave Wilkins, Handler at TATE Animal Training Services said.

It is hoped that these dogs can be used to sniff out *Phytophthora* to prevent new incursions and keep our precious bushland safe.

For more information about the project visit the NPWS website or contact Julia Rayment, National Parks and Wildlife Service Project officer via email.

Information and images provided by Northern Beaches Council



## EXPOSING AUSTRALIA'S ONLINE TRADE IN PEST PLANTS – WE'VE FOUND THOUSANDS OF ILLEGAL ADVERTISEMENTS

The Conversation September 8, 2023. Jacob Maher, PhD Candidate, University of Adelaide, Phill Cassey, Australian Research Council Industry Laureate Fellow, University of Adelaide

Do you buy plants online? You might be breaking the law without even knowing it.

We found hundreds of different invasive plants and prohibited weeds advertised on a popular online marketplace.

For the first time, our research has exposed the frequent, high volume trade in pest plants across Australia.

State and territory governments are adopting our automated surveillance approach to help regulate the online trade in plants and other wildlife. Biosecurity officers can receive automatic alerts for suspected illegal trade, rather than manually monitoring websites or relying on reports from the public.

### Our only agenda is you.



Australians love online shopping and that passion extends to plants. Rawpixel.com, Shutterstock

### What's the problem and why all the fuss?

Certain plants are prohibited in Australia because they are harmful to our unique natural environment and agricultural industries. These weeds can threaten native species, fuel severe fires and choke rivers.

Weeds are also a social and cultural threat for First Nations people, because they can compete with traditional food and medicine plants, causing them to decline.

Overall, invasive plants are estimated to have cost Australia A\$200 billion since 1960.

Weeds that are controlled under state and territory laws are referred to as "noxious" or declared plants. Each state and territory has different laws prohibiting the sale and cultivation of these declared plants.

Compliance is generally high within the horticultural industry, save for the occasional high profile blunder. The main problem for Australia is the widespread invasive plant trade on public online marketplaces.

Trade of ornamental plants, which are the kinds popularly grown in homes and gardens, is the major current pathway enabling invasion and spread of weeds into new areas. They're travelling long distances, to homes in new places.

Invasive cacti and ornamental pond plants are among the most frequently advertised plants, but many are banned from sale and distribution in Australia.

Internet trade has historically been tricky to monitor and regulate, which has led to a variety of invasive species being widely traded.



Water hyacinth is considered the world's worst water weed. KEEP GOING, Shutterstock

### Scraping the web

We used specialised software called "web scrapers" to monitor trade on a public classifieds website. These automated web tools can be used to rapidly harvest information from advertisements. This allowed us to detect thousands of advertisements for weeds over a 12-month period.

We found 155 declared plant species traded on one website, and we suspect there could be more.

Prickly pear cacti were among the most frequently traded declared plants. This is concerning given their history in Australia. In the 1920s, about 25 million hectares of land became unusable due to prickly pear invasion.



The invasion of prickly pear was so dense in areas of Queensland and New South Wales that farming became impossible. Queensland Government

Aquatic weeds were another popular group. That includes water hyacinth, which is the world's most widespread invasive alien species according to a recently published global assessment.

We found some sellers advertised uses for the declared plants they were trading, including for food and medicinal properties.

Aquatic weeds were often stated to have water-filtering properties and provide habitat for fish. Those traits make Amazon frogbit a popular choice for aquariums and ponds, but if the weed enters creeks and rivers it can have devastating consequences.

### Everyone can do their bit

Better surveillance is not the only solution. Public awareness is key to reducing invasive plant trade. We can all make informed decisions about the plants we buy.

A significant hurdle is a phenomenon called "plant blindness". People tend to find plants harder to recognise than animals. We found many weeds sold using generic names such as lily, cactus or pond plant. Some people may not even know the true identity of a plant they are selling, let alone that it is a weed and illegal to trade.

Another complication is the fact that laws differ between states. Plants that might be legal for an interstate trader, might still be illegal for you to buy. This is why caution should be taken when sending or receiving plants by post. Always check your local regulations before buying or selling a plant online. You can find out what is declared on your state or territory's biosecurity website or on Weeds Australia.

Online marketplaces must also cooperate with local policies. These platforms should be enforced to self-regulate trade and include measures to prevent illegal advertisements from being posted in the first place. Failure to act may result in significant penalties from governments. Last year the Brazilian government fined Meta for failing to remove illegal wildlife trade from Facebook and WhatsApp.

For now, monitoring tools such as the web scrapers we have developed will help to prevent some weeds escaping backyards and into bushland. As plant lovers, it's important to be mindful of the plants we choose to buy and keep.

## HARRY LOOTS SCORES AGAIN.



Another year, another prize giving night. This year Harry Loots received the top award, the order of the shovel at an entertaining North Sydney Council night.

## APS NORTHERN BEACHES CALENDAR NOTES

**Thursday November 2, 2023 APS Northern Beaches meeting at Stony Range Botanic Garden, Dee Why.**

**7.15 pm Lesser plant family - Santalaceae - Pamela Dawes.**

**7.30 pm Presentation "Creating a frog-friendly garden". Gracie Liu.** PhD Candidate, UNSW Sydney & Australian Museum, Research Assistant and FrogID Validator.

Gracie states that she is 'Now undertaking my PhD, my research is aimed at understanding how species respond to human habitat modification. Conversion of land from natural to modified is one of the greatest threats to global biodiversity, and as urban and agricultural areas (and supporting industries) expand at increasing rates, understanding how species respond to habitat modification is vital for effective conservation. However, this information is lacking for some of the most threatened animal groups, particularly frogs.'

**8.30 pm Committee Meeting**

**Wednesday November 15, 2023, 10.30 am APS Northern Beaches Guided walk of Macquarie University Arboretum with Sam Newton.**

Anne will provide more details including meeting point, car share arrangements etc in an email closer to the date. As ever it's essential that you register for this event with Anne.

[annepsgray@optushome.com.au](mailto:annepsgray@optushome.com.au).

**Saturday December 9, 2023 APS Northern Beaches Christmas Lunch at Stony Range Regional Botanic Garden.** Georgine will circulate an email to gather details of dishes you bring to add to the BBQ chickens that APS supplies.

## APS NSW GET-TOGETHER - hosted by Southern Tablelands

**Saturday 18 November**

**Morning:**

**East Goulburn Public School, May St, Eastgrove, Goulburn**

9.30: Registration with a light morning tea

10.00: Welcome to Country and explanation of the day's activities

10.30-12.00: An Eremophila for every garden - talk and question time by Dr. Lyndal Thorburn, leader of the ANPSA Eremophila Study Group, .

12 noon: Explanation of activities for afternoon

12.15 Lunch

Afternoon: 1.30-4.00

Tour of the Goulburn Wetlands with John Reynolds. Pauline, the major organiser and keeper of the APS gardens, will also show guests around.

Saturday 18 November, 6.30 for 7pm, Dinner - cost \$58 - pay online on registration

The Mercure, 2 Lockyer St, Goulburn

Guest speaker Dr. Brian Faulkner, Biodiversity Assessment Officer, Goulburn-Mulwaree Council - Threatened species of the Goulburn-Mulwaree district.

2- course meal. Registration and payment required by 10 November via this event listing. Max 54 guests.

**Sunday 19 November, 9.30-12.00**

Visit to Peter Wauchope's extensive native garden in South Goulburn

**OR**

Bush walk for active and good walkers to Alison Hone Reserve, 10kms from Goulburn on the Crookwell Road. Guided by Ashlea Mahoney, who has been active in preserving the site.

12 - 5pm: Your own lunch arrangements or travel home.

Visits to other members' gardens within 20-30 km from Goulburn are also possible.

**You may attend:**

1. The weekend and the Saturday night dinner - cost \$93, OR
2. The weekend only - cost \$35, OR
3. The dinner only - cost \$58

<https://austplants.com.au/event-5334268/Registration>

## ANPSA BIENNIAL CONFERENCE 'GARDENS FOR



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**30 September - 4 October 2024**

**Melbourne Convention and Exhibition Centre**