

CALGAROO

February 2023



Eucalyptus parramattensis - Calgaroo

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

What's on in 2023

Saturday 25 February 2 pm: Member's Meeting and AGM at Gumnut Hall, Gumnut Place Cherrybrook.

The speaker will be Peter Ridgeway - *A Wide and Open Land* - tales from his walk across the Cumberland Plain. See page 2.

Saturday 11 March: APS NSW Quarterly gathering 10 am-3 pm
Bundeena. Hosted by the Sutherland group. Details [here](#)

Saturday 25 March 2 pm: Bushwalk at Windsor Downs on the Hakea and Dip Trails
Leaders Pip Gibian and Jennifer Farrer.

Saturday/Sunday 22-23 April: Visit to Phillip Baird's property at The Branch Karuah.
This will be a weekend away – see page 17

Saturday 27 May 2 pm: Members' meeting at Gumnut Hall, Gumnut Place Cherrybrook.
Speaker James Indsto - *Tales from Forensic Botany*.

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

Saturday 22 July: Visit to 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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Meeting Saturday 25 February 2 pm to 4 pm.

Peter Ridgway, a local ecologist, will talk about his experiences walking 179 km across the Cumberland Plain in 2019. Carrying his food and water and camping under the stars, he crossed one of the least-known landscapes in Australia, all within view of its largest city. This was a unique journey across a landscape few Australians will ever see.

Peter's journey started at Cattai National Park on the Hawkesbury River and finished at Picton. In this open country, the familiar forests of Sydney's sandstone are replaced by a fertile world of open woodlands, native grasslands and wetlands, home to some of the Nation's most unique and endangered wildlife. The traditional land of the Darug, Gundungurra, and Dharawal peoples, and the birthplace of the first Australian colony, it is a landscape that also holds the key to our entwined and conflicted origins. What was once a limitless tract of woodland is now being engulfed by the city to its east in the largest construction project ever undertaken in the Southern Hemisphere - the elimination of an ecosystem and a community.

The general meeting will be followed by a short AGM.

Location: Gumnut Hall Gumnut Place Cherrybrook. All welcome.

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Members' Meeting 28 January

Jennifer Farrer

On Saturday 28 January, we revived an old tradition in our Group of meeting in January to share photos and stories of our gardens and places we had visited. As we are lucky to have such a lovely covered outdoor area at Gumnut Hall, we utilised it to meet for a BBQ/picnic lunch before the meeting. It was lovely to see so many members come along for this social event. Although the weather was hot and humid, a gentle breeze and shade kept us cool enough.



At the meeting, we viewed the Powerpoint presentation that Alan Wright had prepared for our 50th celebration of photos of past activities. He has now added photos of the 50th celebration. This will now go into our archives box as a valuable record for the future. Many thanks to Alan for putting this together. We are so lucky to have someone of his talents contributing to our program.

Jennifer Farrer, Lesley Waite, Jim and Ricki Nash and Pip Gibian showed photos from their gardens and bushwalks.

We then adjourned for a sumptuous afternoon tea and more informal sharing and socialising.

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This poetic tribute to Carl Linnaeus' binomial naming system plus the amazing vagaries of botanical descriptive language first appeared in the Lamington Natural History Association's newsletter of April 2000. It was also published in the APS Far North Coast Group's newsletter of June/July 2001.

Thanks, Lesley for sharing it!

Banksia spinulosa varieties

By Eric Anderson

*I know a spinulosa
from the rarer paludosa
and from marginata, aemula and all.
I know it from dentata,
and from robur and serrara,
but varieties can send me up the wall!*

*It could be spinulosa,
perhaps collina's closer,
or maybe it's cunninghamii.
To add to the confusion
there's now a new intrusion,
this one they want to call new englandii.*

*I lose all my momentum
when that leafy indumentum
could be tomatose, pubescent or hirsute.
And if I look more fully,
is it villous or just woolly?
Or maybe there's a better word to suit.*

*And the edges of the leaves
are a factor that deceives,
when changes in one tree can be so
great.
A further complication
is if every variation
has a leaf which is entire to serrate.*

*Perhaps it's not dentated
but rather more serrated,
apiculate, retuse or mucronate.
And this one is a beaut –
recurved or revoluate,
acute and just a bit emarginate.*

*I'll leave those varied edges
to study shapes like wedges,
or sickle-like or truncate turbinate.
Now are the leaves mature,
or just a little newer,
like juveniles with a different trait?*

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Kevin Mills was guest speaker at our meeting on 26 November 2022. Here's a summary of Kevin's talk, written especially for us . . .

Ferns of the Southern Sydney Basin

Kevin Mills

Ferns are a distinct group of vascular plants and have been around for about 360 million years. Those early forests of fern ancestors produced the coal that we so rely upon today. The ferns are separated from the other vascular plant groups, conifers and flowering plants, in that they do not produce seeds, but spore. Ferns today range from tiny filmy ferns not much larger than a fingernail to tree ferns over 20 metres tall. The largest fern is said to be the Norfolk Island Tree Fern *Cyathea brownii*. There are about 130 indigenous species of fern growing in the greater Sydney region, out of a total for New South Wales of about 190 species.

The terms used to describe ferns are distinct from other plants, even though the parts of a fern reflect those of other plants. For example, the stems, branches and leaves of ferns have their own terms, namely stipe, rachis and pinnae. The creeping root of a fern is a rhizome while the unopened frond is called a crozier (crozier), the latter a distinct feature of ferns. The spore of ferns is produced in structures called sporangia which form distinct patterns below the fertile frond, where it is protected from the weather. The arrangement of the sori (an aggregate of sporangia) is an important feature to identify species.

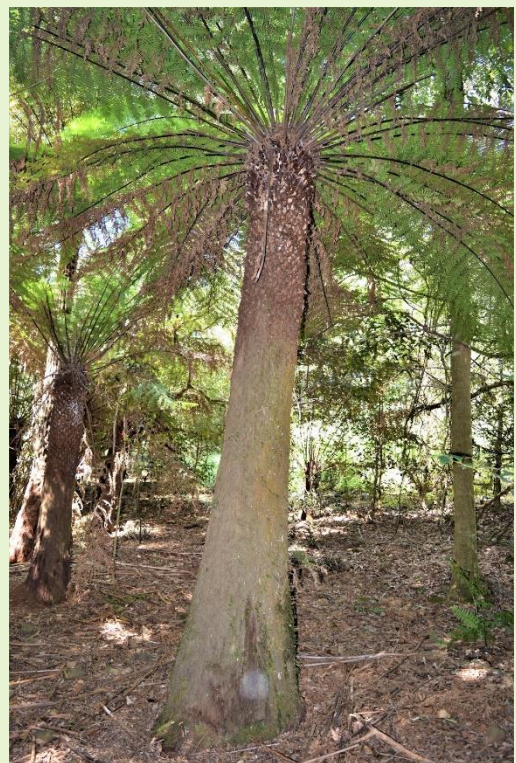
The ferns can conveniently be divided into the following groups, although these are not taxonomic groupings. Examples of the species in each group occurring in the southern Sydney Basin are illustrated.

Tree Ferns

There are four species of tree fern in the region, namely Rough Tree Fern *Cyathea australis*, Straw Tree Fern *Cyathea cooperi*, Prickly Tree Fern *Cyathea leichhardtiana* and Soft Tree Fern *Dicksonia antarctica*. *Cyathea cooperi* has commonly been planted in gardens for a long time, and is now well established as an introduced fern. Natural populations are uncommon to rare, and sometimes difficult to identify as natural.



Rough Tree Fern *Cyathea australis*



Soft Tree Fern *Dicksonia antarctica* (right)

Filmy Ferns

These small ferns occur in very moist places and only one species is common, namely Common Filmy Fern *Hymenophyllum cupressiforme*. The other eleven species of filmy fern in the region are restricted to high-altitude rainforest in very wet gullies. Some species grow on the trunks of tree ferns, while others occur on moist rock faces and mossy boulders.



Narrow Filmy Fern *Hymenophyllum rarum* Common Filmy Fern *Hymenophyllum cupressiforme*

Epiphytes and Lithophytes

Epiphytes are plants that grow on other plants but are not parasitic, using the tree or tree fern as a convenient place to grow but not taking nutrients from the host plant. Lithophytes grow on rock, in the case of ferns most often mossy boulders in rainforest. Well-known epiphytes include Bird's Nest Fern *Asplenium australasicum*, often grown in gardens, and Elkhorn *Platycerium bifurcatum*, also a common garden plant. The pendant fern Weeping Spleenwort *Asplenium flaccidum* often grows on the trunks of the Soft Tree Fern *Dicksonia antarctica*. Hare's Foot Fern *Davallia solida* var. *pyxidata* is mostly a lithophyte associated with sandstone cliffs, but also occurs as an epiphyte in the base of *Asplenium australasicum* high in rainforest trees.



Bird's Nest Fern *Asplenium australasicum*
flaccidum



Weeping Spleenwort *Asplenium*
flaccidum

Ground (Terrestrial) Ferns

By far the largest group of ferns is the terrestrial or ground ferns. These range from quite small species such as Screw Fern *Lindsaea linearis*, found on sandstone, to ferns with fronds over two metres tall, such as Downy Ground Fern *Hypolepis glandulifera* and King Fern *Todea barbara*. *Blechnum* is the largest genus in this region, locally containing 14 species since the genus *Doodia* was sunk into *Blechnum*.



Fishbone Water Fern *Blechnum nudum*



Downy Ground Fern *Hypolepis glandulifera*

Climbing Ferns

Climbing ferns mainly grow in the ground and climb up tree trunks and over mossy boulders, although sometimes they will grow as epiphytes. Three common species are Climbing Fishbone Fern *Arthropteris tenella*, Fragrant Fern *Dendroconche scandens* (syn. *Microsorium scandens*) and Kangaroo Fern *Zealandia pustulata* (syn. *Microsorium pustulatum*). *Zealandia pustulata* also occurs as an epiphyte in high-altitude rainforest, growing on the mossy branches of trees and the trunks of Soft Tree Fern *Dicksonia antarctica*.



Climbing Fishbone Fern *Arthropteris tenella* (left)



Fragrant Fern *Dendroconche scandens*

Aquatic Ferns

The number of local aquatic ferns, that is those ferns that grow entirely in freshwater, is not high. The most common aquatics are Ferny Azolla *Azolla pinnata* and Pacific Azolla *Azolla rubra*, often seen covering a small dam or detention basin in a floating red carpet. The invasive weed *Salvinia x molesta*, one of the world's worst aquatic weeds, occurs occasionally in dams and ponds.



Ferny Azolla *Azolla pinnata*

Fern Allies

Fern allies are closely related to true ferns, with links back to the origin of the ferns. These plants produce spore as do the ferns, but in this case, the spore is contained in a 'cone' (at least most of the local species do). Additionally, the fern allies do not produce fronds, but have small, closely-packed leaves. One common species is Swamp Selaginella *Selaginella uliginosa*, which occurs abundantly across the sandstone country. Carpets of small red plants are common along bush tracks in heath and woodland; the plants are green in the shade. The other local fern allies are much more restricted in their distribution.



Swamp Selaginella *Selaginella uliginosa*
lateralis



Slender Clubmoss *Lycopodiella*

Sandstone Species

It is worth mentioning that the extensive sandstone country of the Sydney Basin supports a distinct group of ferns. These species have evolved to survive in a somewhat harsh environment, at least for ferns. The often dry and nutrient-poor soils of the sandstone and the prevalence of bushfire steered the evolution of these species. Most species readily grow back after drought or wildfire, mostly by retaining an underground root system that can

reshoot after the fire, despite the complete loss of their aerial parts. Common species on the sandstone include species of *Sticherus* and *Gleichenia*, each genus contains three species in this region, most of which are very common throughout the sandstone country.



Umbrella Fern *Sticherus flabellatus dicarpa*



Pouched Coral Fern *Gleichenia*

Naturalised Ferns

A few species of fern have escaped our gardens and become naturalised, that is reproducing in the wild without human assistance. The main species is Fishbone Fern *Nephrolepis cordifolia*. Two other species have been increasing in distribution and abundance in recent years. Green Cliff Break *Pellaea viridis* is widespread but still uncommon, while Holly Fern *Cyrtomium falcatum* is increasing its distribution along the coast and is now quite common north of Batemans Bay.



Fishbone Fern *Nephrolepis cordifolia**



Holly Fern *Cyrtomium falcatum**

The author will be releasing a book on the ferns of the Illawarra and Shoalhaven regions soon. It will cover almost all of the ferns found in the greater Sydney region.

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NSW Region Get-together Southern Highlands 12-13 November 2022

Jennifer Farrer

This was the first Region Get Together since the COVID Lockdowns and everyone seemed very happy to be seeing each other again.

The weekend began as usual with the President's dinner and workshop which was held at the Imperial Hotel in Bowral for Presidents and Secretaries of NSW Groups. The topic for discussion was Workplace Health and Safety. A survey of the Groups earlier this year (to which Parra Hills responded) revealed a fairly patchy management of Health and Safety issues which resulted in a downgrade in the Region's Insurance cover. Expect to see stricter procedures for registering for our walks next year.

Saturday morning saw us assemble at the Exeter Community Hall in bright sunshine. This is a charming venue with a wide veranda to enjoy the morning tea and lunch provided by the local CWA. Dan Clarke, NSW Region's Conservation Officer gave us a presentation on the Vegetation of the Wingecarribee Area. This was based on a vegetation Mapping Survey that he carried out initially in 2015 for the NSW Government. The Co-Ordinator of the project was Steve Douglas, who will be known to older members when he was a member of our Group.

The area has a wide variety of geology and a very high rainfall. This means that there is also a wide variety of vegetation types. The following are represented in the area:

- Dry sclerophyll woodlands
- Wet moist sclerophyll forest
- Swampy woodlands
- Headlands and scrublands
- Swamps
- Gully Rainforest and Higher rainforest
- Grasslands comprising native grasses

The survey was conducted on 20 square metre plots in all the vegetation areas. The rugged terrain made this a challenging task in many areas. In some areas, there were as many as 80-90 species in one plot, indicating amazing biodiversity. Many of the plots were located on private land but in most cases, the owners were interested in the survey results and happy to retain the native bushland.

Dan has continued to work in the Wingecarribee area on further projects resulting from the initial survey work and so was a mine of information on the district.

After lunch, we drove to nearby Moss Vale to visit the garden of Tanya Excel. This is located in the former Anglican Rectory on a 5-hectare site. There are 26 neighbours. The garden has some remnant local Eucalypts, which we had learnt about in the morning session - *Eucalyptus elata*, *macarthurii*, *camfieldii* and *radiata*. Parts of the garden have the usual Southern Highlands cool climate European plantings but most of the site was mown grass. The Anglican clergy were not keen gardeners. Tanya engaged the services of a local nurseryman to plan an area of local species that were planted to provide habitat for local birdlife. Although the plantings are still quite small the number of bird species in the garden has already increased.



This remnant Eucalypt is estimated to be 400 years old

The rest of the afternoon was spent on a choice of three bushwalks in Morton National Park at Bundanoon. I chose to go on the Lovers Walk and was surprised to find that there was no leader and that we were expected to go off alone. However, there were many others on the walk and we had a very enjoyable time admiring the diverse array of wildflowers that have grown up since the 2020 bushfires, and attempting to identify them.



Above are single *Kunzea capitata* flowers regenerating after the bushfires. Also a profusion of *Dampiera stricta*, *Pimelea linifolia* and *Conospermum ericinum*



Calochilus robersonii



Mirbelia rubiifolia

When the initially flat and sandy path started to plunge over a steep rocky slope many walkers decided to return. However, three of us continued on and eventually the path levelled out between sandstone pagodas and more interesting flora.



Stylidium productum



Leptospermum rotundifolium



Goodenia glomerata endemic to Bundanoon

When we arrived at the fire trail which would lead us back to the car park there was a stunning view over the deep river valley below. Suddenly a rainstorm swept into the valley and in no time it was upon us. The kilometre or so walk back to the cars was a rather miserable affair with water deluging from the heavens above and swirling down the fire trail over our feet. Fortunately, it was only a short drive back to our accommodation in Bundanoon.

Dinner on Saturday evening was in a private room at the Mittagong RSL. This was a very convivial affair with the opportunity to meet more of the local members. The speaker was Jane Lemann who is one of Bowral's local heroes. For 25 years she has led a bush regeneration project to remove the weeds and restore the native vegetation on Mt Gibraltar. For 100 years there were quarries on The Gib removing and dressing the unique igneous stone found there which although geologically known as microsenite was marketed as Bowral Trachyte. There is only one other location in the world where it is found and that is in Russia. If you know Sydney you have seen Bowral trachyte. It is very common in buildings built in the late 19th and early 20th centuries. It is even in the kerb and gutter stones. Weeds took over The Gib quarries when they closed in 1986. It is testament to Jane's dedication and ability to inspire others that today The Gib bushland is now restored to its former glory.

On Sunday we were meant to go for a walk through the old quarries but despite the weather forecast the rain returned and it was cancelled. The plant sale and the two garden visits went ahead for the brave souls with umbrellas. The two gardens were within walking distance of each other. It definitely goes against the prevailing fashion to have a native garden in Anglophile Bowral. The two gardens both made bold statements to the street with gardens that included plantings on the nature strip. In both cases, the neighbours had extended the street gardens to their properties which was a nice compliment.



A beautiful native garden on the nature strip Boolwey St Bowral



This courtyard was planted with one species of mallee.

There was a wide range of plants propagated by members for sale. The rain certainly didn't deter buyers here. I was delighted to pick up a small murnong (native yam) plant amongst other goodies.

The Region Get-Togethers are a wonderful activity to attend. There is so much to enjoy on so many levels. There are the formal information sessions, the opportunity to see how local gardeners tackle their particular growing conditions, the bushwalks in new locations and the chance to meet fellow plant enthusiasts. It is a lot of work for the host Group but hopefully, the Southern Highlanders found the weekend as rewarding as the visitors did.

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A great display of *Alloxylon pinnatum* (Dorrigo Waratah) flowering opposite the Robertson Railway Station. Photo Bill de Belin

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In *Calgaroo* for September 2022 there's an article about an inspiring presentation by the Mullion Institute about revegetating Australia. Here's an extract from a recent media release from the Mulloon Institute:

NSW Government leads Australia with progressive legislation to heal our waterways



Westview Farm (Southern Highlands NSW) in 2020, two years after installation, as part of the catchment-scale [Mulloon Rehydration Initiative](#).

A landmark regulatory amendment has put the NSW Government at the forefront of environmental governance reform, according to the Mulloon Institute's (TMI) Chairman, Gary Nairn AO.

Acting on TMI's direct submission, last week the State Environmental Planning Policy was amended to smooth the path for the installation of natural structures to repair degraded streams, known as 'Landscape Rehydration Infrastructure'. The amendment removes the need for a Development Application from Councils, a time-consuming and costly process currently preventing critical land restoration projects from proceeding across Australia.

"Our waterways are severely degraded, behaving more like drains than the lifeblood of our landscapes," Gary Nairn said. "Landholders and conservationists who want to repair them confront the same regulatory hurdles as those who want to build roads, supermarkets and housing developments, it's absurd. We need a new governance regime for land restoration. This is a breakthrough step in that direction".

The NSW Government has defined Landscape Rehydration Infrastructure Works as: 'works involving placing permeable structures on the bed of a stream to reduce erosion and maintain or restore flows for ecological purposes'.

“These kinds of projects are not novel or untested,” says TMI CEO Carolyn Hall. “Around the world they have proven effective in hydrating vast landscapes, building soil and biodiversity, mitigating floods, halting erosion, re-establishing wetlands and driving carbon sequestration.

Every day landholders ask us for help with landscapes that are so degraded they no longer store moisture - even flooding rains don't hydrate them but simply erode them further. Before these landscapes were cleared of trees for agriculture, they were remarkably good at cycling available water on our arid continent. These structures simply slow things down and give those magical natural processes time to rebuild absorbent, resilient landscapes. We are truly inspired by the leadership of the NSW Government driving this change for landholders,” she said.

This will likely be a tipping point, leading to reform in other states. But the Mulloon Institute is pushing for more, lobbying for a National Code of Practice for Landscape Restoration and Rehydration. This would integrate the many environmental safeguards that protect water quality, biodiversity and cultural heritage into a streamlined compliance process.

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Our Propagation Group

Our Propagation Group meets once a month at Bidjiwong Community Nursery, located in Ted Horwood Reserve, North Rocks. The nursery is run by The Hills Shire Council, and they allow us to use their facilities - igloos, shade houses, automatic watering, soils and potting mixes, and a kitchen.

The Propagation Group shows our members how to propagate native plants, mainly from cuttings. It produces plants that we can sell to provide income for our Group, and plants for raffle prizes and to give to new members. We also donate plants to the Community Environment Centre Annangrove for the demonstration native garden.

Dates for 2023, all Wednesdays, are:

February 15
March 15
April 12
May 10
June 7
July 5
August 2
September 13
October 11
November 8
December 6

The times are from 10am to 2pm. If you'd like to come, just turn up, but please bring something to eat for morning tea.

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I've recently started converting my swimming pool into a pond.

This photo of the shallow end was taken about a week after the aquatic plants were added.

There's still much more planting and learning to do!



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Weekend away- Saturday/Sunday 22-23 April

On the Saturday we'll meet up at Phillip Baird's property in an area called The Branch, which is north of the Hunter River and the township of Heatherbrae. The property is largely uncleared woodland featuring many eucalypt species and a wide variety of understorey plants. Closer to the Branch River, a tributary of the Karuah River, there are rainforest areas. Phillip has a botanist's list of all the species found on his property, and it is quite extensive. The last time we visited him a few years ago was in Autumn and the *Banksia spinulosa* were flowering beautifully, and they should be out now. The car trip is likely to take two to two-and-a-half hours each way.

On the Sunday we plan to visit Hunter Region Botanic gardens, and the Hunter Wetlands Centre.

Ricki Nash has investigated accommodation for Saturday night at Karuah, Raymond Terrace and Heatherbrae. There's quite a range of different room types available, probably the cheapest being Karuah Motor Inn (\$138) and Sleepy Hill Motor Inn Raymond Terrace (\$131). Please feel free to contact Ricki by email nashj_e@bigpond.com or phone 0419 626 848 to discuss accommodation options.

We would like to know numbers to expect, so please register with Ricki to say you are coming. There will be further details about this weekend away in the March *Calgaroo*.

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Share your stories . . .

What have you been doing?

Email me at itcox@bigpond.com for the next *Calgaroo*.

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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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We support awareness and conservation of Australian native plants.