



*Eucalyptus parramattensis* - Calgaroo

# CALGAROO

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

## Calendar

### Feb

**Sat 22 2pm to 4pm** AGM at Gumnut Hall Guest speaker Kathy Potter from the Frog and Tadpole Study group

### March

**Wed 11** Propagation at Bidjiwong Community Nursery 10am to 1 pm

**Sat 21** APS Regional meeting

**10-12 noon** -Garden visit at Boongala Gardens and Rainforest, 76 Pitt Town Rd, Kenthurst

**12-1 pm: Lunch**

**1-3 pm:** at Gumnut Hall, Gumnut Place Cherrybrook at 2pm with guest speakers Sarah Cairns and Kris Gow on "Using Native Plants in Small Gardens" \*See P 8 for more details.

### April

**Wed 8** Propagation at Bidjiwong Community Nursery 10am to 1 pm

**Sat 18** 2pm - 4pm Meeting with speaker LachlanTurner on topic "Bushland Photography"

**Parramatta & Hills District  
Group, APS  
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## Australian Plant Society Gathering

**Saturday 21 March - hosted by Parramatta Hills Group**

This will be the third time we have hosted a **Region Gathering**. It is a wonderful opportunity to meet fellow members from other groups in New South Wales. Some members are so keen to attend these meetings that they will travel long distances to be there. So expect to meet people from all over the state not just suburban Sydney. As well as the opportunity to meet people with common interests there is also the chance to purchase plants you don't see in nurseries from growers such as Phil Keane, Brian Roache and our own Pip Gibian. We will probably also sell some of the plants our group has propagated at the Community Nursery in Baulkham Hills.

The program for the day will commence with a **morning visit to Boongala Gardens in Pitt Town Rd Kenthurst**. Many members will be familiar with this wonderful garden designed and planted by Malcolm and Jenny Johnson.

There is the garden of course and also plants for sale from his nursery. Visitors will also have the opportunity to go on one of Malcolm's guided walks of his rainforest area. There are also three native beehives on the property. Malcolm is very interested in the early history of Kenthurst. Some of you may have read his columns in the Kenthurst News. He has a built an early settler's cabin to house his collection of artefacts.

In the **afternoon** there will be a **meeting at Gumnut Hall**. The details of the speakers Kris Gow and Sarah Cairns are detailed on Page 8 and their topic will be "Using Native Plants in Small Gardens"

We need everyone to keep this date free in their diaries. We will need helpers for morning tea at Malcolm's place in the morning and even more helpers to provide and serve afternoon tea at Gumnut Hall. We will also need helpers to set up the hall for the meeting.

It should be a terrific day. See you there!



## Climbing Mount Banks - inspiring our sense of wonder

By APS newsletter Editor (Administrator) on 2 Feb 2020 10:44 PM

Ian Cox from Parramatta Hills Group shares his walk to Mount Banks in Blue Mountains National Park, one of the highest points in the Blue Mountains - just three weeks before bushfire

On 26 November 2019 Lesley Waite and I went on a magical walk to the summit of Mount Banks. The objectives of our visit were twofold - to indulge in the beautiful upper Blue Mountains flora, and to experience the magnificent surroundings and views. We were not disappointed in either of these. However, we were not to know that in less than three weeks this area and many others would be scorched and blackened by a massive bushfire.

The fire has changed everything, at least for the immediate future. It will be worth watching the vegetation's recovery and the re-greening of the landscape over the next few months and years.

The walk to the summit is not long or difficult but a bit steep in parts. As you can see above, at the start of the track previous walkers were happy to make their walking sticks available for

subsequent users. However, although one member of our duo is 'not young', he managed to make the journey without their help.

The track starts off in open woodland, but after a modest climb soon comes to low-growing heath and bare sandstone. This part of the track is where the best views are to be had, and also where the interesting plants are.



The heath vegetation is what I like best (above). You can easily see the plant that asks for a closer look. And there were so many. Our cameras worked overtime!



The heath is dominated by the Proteaceae family such as dwarf *Banksia serrata*, *Hakea dactyloides* (left photo above), *Hakea salicifolia*, *Isopogon anemonifolius*, *Lambertia formosa* and *Conospermum taxifolium* (right photo above).

One plant that is quite prolific and makes its presence known with profuse white flowers is *Hakea teretifolia*. Here, it is semi-prostrate, less than half a metre high, and quite attractive so long as we didn't get too close to its needle-sharp leaves. It is in the background of this photo below of Lesley engrossed in botanical research,



Another notable plant is *Darwinia fascicularis* ssp. *oligantha*. We noticed this plant near Wentworth Falls on a previous trip, sprawling over the rocks as if taking advantage of the glorious views. It was doing exactly the same here. It seems to position itself only over and around rocks that afford the best outlook - a very clever plant! You can see it doing this in the photo below.



The views are breathtaking. You feel so privileged to be here, amid the wonders of nature! The darwinia and hakea are both enjoying the view of the Grose Valley below.



When the Parramatta and Hills Group walked here over 20 years ago, I vividly recall seeing a profusion of *Boronia floribunda* flowering at this time of year. However today we noticed only a few of this species. Why is this? Could it be because of different fire regimes, or climate change?



Ironstone bands on the sandstone form an unusual pattern.

As you start the climb towards the summit, you can clearly see the thick forest growing in the rich basaltic soil that caps Mount Banks:



Made it!



Here the forest is dominated by *Eucalyptus cypellocarpa*. The understorey is quite thick, and contains several species of ferns. Because of the tall trees surrounding the summit there are no sweeping views in all directions, and

you don't get the feeling that you're on one of the highest points in the Blue Mountains. But you do get a great sense of achievement!

At the summit is a memorial plaque to George Caley, which reads:

*George Caley*  
*Botanist - Explorer*  
*With companions travelled via Kurrajong and ascended*  
*the Mount on 15<sup>th</sup> November 1804.*

He named it Mount Banks after Sir Joseph Banks. There ended his heroic attempt to cross the Blue Mountains.

Caley took three weeks to reach Mount Banks. In a letter to Banks after his return he wrote: "The roughness of the country I found beyond description." And from his journal: "... it was the most laborious (journey) man ever went to. Every day sweat poured down in torrents, and our clothes were commonly as wet as if they had been dipped in water."

Caley's epic journey, and our visit today, couldn't have been more different!

All photos: Lesley Waite/Ian Cox

## MY MOTHER'S ORCHIDS

When I was a child my father became interested in cymbidium orchids. Being very capable, he built a large shade house in the back yard. My mother started frequenting a tiny stall in the old Paddy's Market selling Australian native orchids. These occupied a little corner of the shade house. Most were *Dendrobium kingianum*, in several shades of pink, a couple were *D. speciosum* and there were a few of the natural hybrid *D. delicatum*.

A great many years later, after my father's death,



driver. My mother's orchids were tipped out of their old clay pots and stuck into the crevices and gaps between these rocks. This was to their liking much more than we ever imagined. The original rock pile is now completely covered by a mass of orchids 10 m. long and up to 5m. wide. Self-seeded extras extend the ends and a few clumps have appeared elsewhere. My husband, Tom, has



they lived happily on the south side of her little house. During her final illness I rescued them and took them to Dural. The large concrete laundry tub of *D. speciosa* went to my sister's house, and subsequently broke the concrete as it expanded. During the construction of the driveway on our bush block, the inconvenient lumps of sandstone had been piled up on one side by the bulldozer



moved small clumps to other suitable parts of the garden and added some purchased ones of different colours. Each spring they flower magnificently. If only my mother could see them now. She would be so delighted.

Unfortunately climate change is causing havoc. In the past 2 years the hotter summer sun has severely burnt the orchid leaves in the more exposed areas. At present many areas are looking terrible. The plants do recover in autumn, but we fear they will be progressively weakened by this annual assault.

*From Pip Gibian*

## Developing soils for Barangaroo



2012

### Talk by Simon Leake on developing soils for Barangaroo Reserve Headland Park at Gumnut Hall - Saturday 23 November 2019

Barangaroo Reserve a naturalistic bushland reserve, located on a headland in the middle of Sydney. It arose from the redevelopment of a massive hard industrial concrete wharf. The judgement of the 2004-2006 design competition for the site recommended: *A natural headland form to define the headland.* Redevelopment in 2012 created of a semi-natural sandstone headland. Simon Leake recreated soils for the site to support Sydney sandstone flora.

In 2019 the American Society of Landscape Architects presented Barangaroo Reserve with an honor award calling it: a *stunning revival of Sydney Harbor's historic headland ... while creating an active naturalistic environmentally sensitive civic space.*

### Personal historic influences

Simon Leake studied soil science at the University of Sydney. During that time he was taught by John Clements who included talks on the natural plant ecology at Sydney Harbour's North Head. A few years after graduating from university Simon formed Sydney Environmental and Soil Laboratory (SESL).

Simon knew from his interest in Australian vegetation and knowledge about Australian soils that Sydney sandstone flora thrived in low nutrient soils. Key features of Sydney sandstone soils are that they tend to have a low levels of phosphorous, a slightly acid pH and are well drained.

During a stay at Somersby on the NSW central coast, Simon luckily was at the right place and at the right time. A controlled burn was planned. Simon sampled the soils both before and after the burn. Prior to the burn the levels of phosphorous were 46 parts per million (ppm). After the burn the soil phosphorous levels roughly doubled to 90 ppm. Similarly calcium



2015

was low at 336 before the burn. Calcium also roughly doubled to 756 ppm after the burn. In the Sydney sandstone environment about half of the total phosphorous and calcium are usually held in the plants, and only released back to the soil after a bushfire.

Balls Head and Bobbin Head,, were also visited during the design of Barangaroo to study their famous Sydney Sandstone flora.

### **Sydney Olympic park - previous work on the redevelopment of an industrial site**

On an earlier project at the Sydney Olympic site, Simon used crushed sandstone to create a plant growing medium. It was named a "facsimile soil". Over 500 hectares of local indigenous plants are now growing on facsimile soil at Homebush Bay.

A key difference between the work at Sydney Olympic park and the Barangaroo site is the choice of planting material. Barangaroo uses Sydney sandstone flora that naturally thrives on low nutrient sandstone derived soils.

### **Development of pot growing media and constructed soils for the Barangaroo plants**

Pot trials using Sydney sandstone flora tested the constructed soils for the Barangaroo project. The aims of the pot trials were:

1. Develop suitable potting soil for the propagation and growth of the Barangaroo plants.
2. Develop a suitable constructed soil for the Barangaroo Reserve.

Crushed sandstone and two levels of greenwaste were added to identify suitable levels of phosphorous and calcium. Greenwaste is comprised from household and commercial vegetation clippings, for example: lawnmower clippings, waste kitchen food, and leaves from vegetation removal. These materials are all usually rich in nitrogen.

Additional insights into Manganese use by Australian plants were discovered during the pot trial work. It was found that one of the scribbly gums *Eucalyptus haemastoma* had high levels of Manganese in leaves. Russetting of the edges of the leaves on the was a symptoms of toxicity in the scribbly gums. Simon concluded that scribbly gums may be strong Manganese accumulators, that naturally grow in very poor soils. This supports the observations by others that scribbly gums grow on the most sandy soils and that manganese may be one of the environmental factors that determines the distribution of some Eucalypt species.

### **The Barangaroo achievement**

Over 76,000 plants from 84 different tree and shrub species are at Barangaroo Reserve, including more than 920 individual trees, palms and tree ferns. Plant establishment is excellent and growth rates are high. Plant losses are less than 1%!

Scott Hawken and Bruce Mackenzie (2016) state in their review of the site:

What has Barangaroo Reserve delivered? Surprisingly for such a new park, it is the plants that are the standout feature. The species selection is meticulous and botanically expansive.

**Based upon the talk by Simon Leake and the references below. Photos from the two Landscape Architecture Australia articles.**

Leake (2015) Observations on manganese deficiency and toxicity in some Australian native plants. *Communications in soil science and plant analysis* 46 (Supp1) 176-187.

Hawken, S. and Mackenzie, B. (2016) Barangaroo Reserve. *Landscape Architecture Australia* 149 (February) 40-51.

Tanner, H. (2017) Making the grand vision work. *Landscape Architecture Australia* 154 (May) 32-35.



## From our Acting/Past President, Tony Maxwell

As some are aware I have put much work into assembling **native plant distribution lists** for various regions in SE Australia. Initial work has concentrated on 51 areas within 300km of Sydney - bounded by Taree, Dubbo and Batemans Bay. I am presenting this on a regional basis and this email covers Northern Sydney Region (9 areas) The areas are Sydney Harbour, Garigal, Kuringai, Lane Cove, Berowra, Muogamarra, Marramarra, Hills and Castlereagh.

Thumbnail maps of the areas are attached - note these concentrate on reserved areas. This area of interest covers 3 APS District Groups, Northern Beaches, North Shore and Parramatta Hills.

The data on which this is based is reputable, publicly available, dated and electronically stored. It is summarised in the Sources Tab of the main spreadsheet and the detail is available if required. The Occurrence numbers are the occurrences sum of two main sources - Atlas of Living Australia (ALA) and National Parks and Wildlife Service (NPWS). I also present % data for each species per area to minimise differences due to area sizes and sampling intensity.

I believe the data is the most accurate and comprehensive currently available.

### **So why do all this?**

One reason may be that I have always had an unfashionable interest in geography. But really I feel if APS are the "experts" on native plants we should know where they are. Distribution trends across areas should inform discussion within our groups - it may even encourage collaboration between groups. I have tried to present the data in ways that facilitate such examinations.

### **And now we have a new reason - horror bushfires.**

Northern Sydney has escaped this scourge so far but many of the other regions I cover have not. All data in

this whole project (180 areas in SE Aust) is pre current fires. So it forms a pre fires reference point to measure the success or otherwise of the regeneration process.

APS NSW is currently working on a response to this issue before and leading up to Kiama 2021 national conference.

I will circulate similar data for other regions over the next few days. These are Hunter North, Hunter South, Central Coast, Central Tablelands, Central West, Southern Sydney and Illawarra/Shoalhaven.

Beyond that I am currently working on Eurobodalla and Far South Coast. So I commend a knowledge of distribution trends and the study of the regeneration process after fires.

I am going to struggle to finish this. If you think it is worthwhile then many hands make light work.

Bit complex but I could probably put together a pack to define the process. All the base data is there ready to go.

Rush me your offers if so inclined.

Might be nice for Kiama Sep 2021. I have suggested this to people I know or know about - would appreciate if it could be forwarded on to others if appropriate.

I commend your interest and would love comments and suggestions - positive or negative.

Editor's Note: I am sure Tony will be able to email you copies of the relevant files if you want to see them. The information is too extensive for this publication. Contact him as per his details at the end of this newsletter.

This project is all the more urgent since this Black Summer Bushfire season. It is a worthwhile project for our organisation to assist in the repair of our damaged ecosystems.

### **What species and ecological communities are most at risk of reduced recovery after the 2019-20 fires?**

A number of species (both threatened and not currently threatened) have had their entire global populations burnt in these fires. Some of these have very restricted distributions. We need to closely monitor the recovery of these species over the next two years.

Some species and ecological communities are sensitive to severe fires. What impacts the recovery of plants and animals after a fire?

### **The key factors that may affect the recovery of plants and animals after a fire are as follows:**

- The large extent of the fires in some areas can mean that it takes time for animals to disperse from unburnt habitats back into burnt areas.
- High severity fires means the loss of more plants and animals at those sites, potentially less refuge areas for wildlife, and the need for longer recovery times.
- Drought conditions increase plant and animal stress, and if droughts persist, it delays recovery further.
- Any short intervals (mostly less than 15 years) between the 2019-20 fires and previous fires may lead to declines in some species.

**Guest Speaker: Sarah Cains and Kris Gow,  
Southern Highland Group APS NSW.**

Sarah and Kris will discuss the use of Australian native plants for small or cottage gardens. When most people are planning a cottage garden the plants they immediately consider are exotic and include delphiniums, lupins, foxgloves and hollyhock, roses, daffodils, lavender and rosemary, to name a few. Many Australian native plants, however, are ideal for small gardens, such as the Native daisy (*Brachyscome*), Fan flower (*Scaevola*), **Pink paper daisy** (*Rhodanthe chlorocephala rosea*), **Native daffodil** (*Calostemma luteum*), **Everlasting daisy** (*Bracteantha bracteata*), **Kangaroo paw** (*Anigozanthos*), **Flannel flower** (*Actinotus helianthi*, *Banksia spinulosa* 'Cherry Candles' to name but a few. Not only are they beautiful but they are drought-hardy, easy to care for (they need little extra watering or feeding once established) and they attract plenty of wildlife

Both Sarah and Kris have beautiful small gardens in Bowral which we will hopefully be able to visit at the weekend gathering which is being hosted by the Southern Highland Group, 14-15 November 2020.

Sarah will be talking about design of small gardens and Kris, who is a former President of the Southern Highlands Group, will be speaking about plant choice for the small garden.



## APS Quarterly gathering: Saturday 21 March: Australian native plants for cottage gardens

APS' first quarterly gathering for 2020 will be hosted by Parramatta-Hills Group at Gumnut Community Centre, Gumnut Place, Cherrybrook.

**10-12 noon:** Garden visit at Boongala Gardens and Rainforest, 76 Pitt Town Rd, Kenthurst

The magnificent and extensive gardens over 11 acres have been developed over a number of years by Mal and Jenny Johnston. The property also includes a lush rainforest, which has been maturing for the last 25 years. Discover a wide range of Australian plants, wildflowers and the birdlife they attract. Admission: \$3 donation to Flying Doctor Service.

**12-1 pm: Lunch.** Bring your own and enjoy it in the grounds of Gumnut Community Centre. Tea and coffee will be provided.

**1 pm-3 pm:** Using Australian native plants for small or cottage gardens with Sarah Cains and Kris Gow, Southern Highlands Group

When most people are planning a cottage garden the plants they immediately consider are exotic. However, many Australian native plants are ideal for small gardens, such as the native daisy (*Brachyscome*), fan flower (*Scaevola*), pink paper daisy (*Rhodanthe chlorocephala rosea*), native daffodil (*Calostemma luteum*), everlasting daisy (*Bracteantha bracteata*), kangaroo paw (*Anigozanthos*), flannel flower (*Actinotus helianthi*) and *Banksia spinulosa* 'Cherry Candles' to name but a few. Not only are they beautiful but they are drought-hardy, easy to care for (they need little extra watering or feeding once established) and they attract plenty of wildlife.

Sarah Cains will talk about design of small gardens and Kris Gow, a former President of Southern Highlands Group, will speak about plant choice for the small garden.

Plants will be available for sale at both Boongala Gardens and Gumnut Community Centre.

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