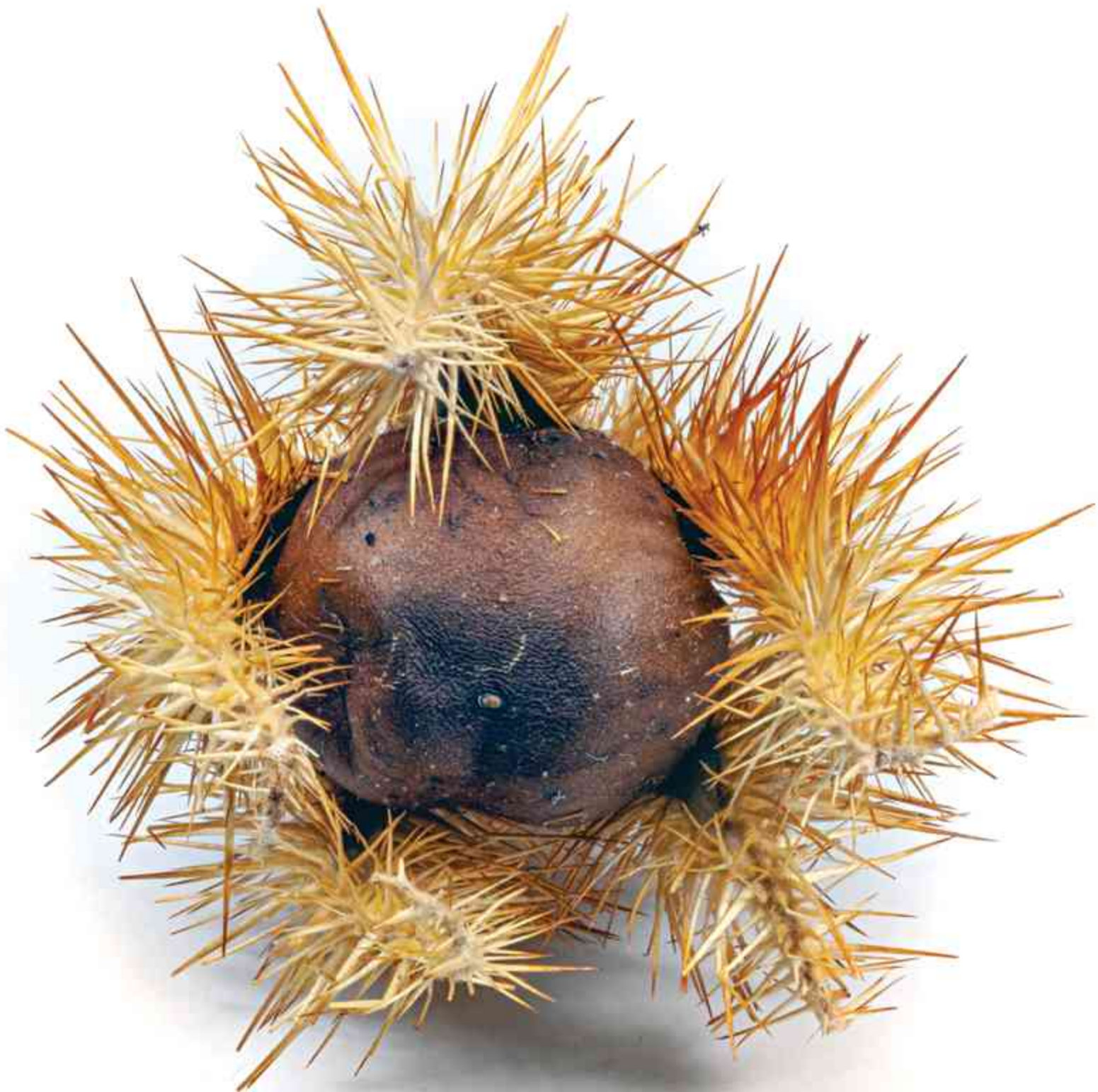


# *Fron*ds

30 years

*Friends of the Australian National Botanic Gardens*  
*Number 94 April 2020*





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PAM ROONEY

Recovery: hail damaged stem and new growth, purple leaved *Banksia robur*, ANBG

### IN THIS ISSUE

- 3 The Banks Royal Commission
- 7 Botanical Bookshop
- 8 SEEDS: sponsorship, new staff,  
a conference and an exhibition
- 10 Hope for wild tropical mountaintop plants
- 11 Eurobodalla Regional Botanic Gardens' fire,  
New Year's Eve
- 12 Botanical heritage on fire
- 14 Garden Shorts
- 16 Friendly Chatter
  - Botanic Art Groups
  - Growing Friends
  - Plant Science Group
  - Photographic Group
  - Volunteer Guides
- 18 Friends Briefs
- 20 What's On at the Gardens, including Thursday Talks

Front Cover: Seed of *Solanum* sp. photo: William Hall © ANBG



# The Banks Royal Commission

Boronia Halstead

This is a story about the relationships between early collectors of *Banksias* from two centuries ago, their patrons and the context in which they worked, now glimpsed through some of the names of the plants in the new Banksia Garden. It is set in a time of discovery and building empire. The plants being found in the New World were the subject of great curiosity. The imposing figure of Joseph Banks weaves in and out of many of the lives of these early collectors, firing interest at home and directly or indirectly sponsoring their endeavours. With the patronage of King George III, Banks began to develop the Royal Botanic Gardens at Kew as the showcase for plants collected from the New World, with Banks becoming its unofficial director on his return from the *Endeavour* voyage.

## Early taxonomic relationships

The frame for the relationships starts with the formal publication by Carolus Linnaeus the Younger in 1782 of the *Banksia* genus, commemorating Joseph Banks. Linnaeus published four of the five species collected by Banks and Solander on the *Endeavour* voyage. The fifth species, *Banksia robur*, was published in 1800, by the Spanish botanist Antonio Jose Cavanilles (along with *B. marginata* and *B. oblongifolia*).

The first taxonomic arrangement of *Banksia* (covering 31 species) came another 28 years later, when the Scottish botanist, Robert Brown, published his *Prodromus Florae Novae Hollandiae et Insulae Van Diemen*. He also published the genus *Dryandra* (now merged into *Banksia*) at this time, listing 13 species. This name honoured the Swedish botanist Jonas Dryander, Brown's predecessor as Banks' librarian and curator.

In Robert Brown's *Supplementum* to the second edition of his *Prodromus* in 1830, he described 11 additional *Banksia* species, nine of which had not been published previously. The

characters for this story are immortalised in the names Robert Brown gave to some of these new species of banksias. They were the late 18th Century and early 19th Century collectors Daniel Solander, Archibald Menzies, George Caley, Peter Good, William Baxter and Robert Brown himself; the artist, Ferdinand Bauer and the botanist/librarian/curator, Jonas Dryander. Visitors to the Banksia Garden will find plants that carry most of these names: *B. solandri*, *B. menzeisii*, *B. caleyi*, *B. baxteri*, *B. baueri*, *B. brownii* and *B. dryandroides*. *B. goodii* was named after Peter Good, but it is not in the Banksia Garden.

On Joseph Banks' return to England from the *Endeavour* voyage to the South Seas, he became something of a celebrity on the world's scientific stage. He and Daniel Solander had collected almost 1000 species of plants in New South Wales, including those first five specimens of *Banksia*. Solander was meticulous in his documentation of the specimens from the voyage and became Banks' secretary and librarian on his return to London. He lived in Banks' Soho Square house amid the specimens and books in his care, until his death in 1782. His documentation of plants and animals now comprises 51 manuscript volumes in the Library of the British Museum. Their collaboration and close friendship was commemorated in Brown's naming of *B. solandri*, based on a specimen collected by William Baxter in the vicinity of King George Sound (near Albany). The plant is a large shrub-like species, with fawn coloured cylindrical flower heads and large, deeply serrated leaves. It is restricted to the Stirling Ranges in Western Australia. It has no lignotuber and relies on reseedling to regenerate after fire.

## Banks' and Britain's imperial botanic project

At this time, botanising was part of the imperial agenda to establish colonies and exploit botanical resources, sending and

receiving plants and plant material to and from the expanding known world.

Botany itself was evolving from a focus on herbal pharmaceutical practice to systematic plant classification. Solander arrived in England from Sweden in 1763, sent by Linnaeus the Elder to promote his method of classification. He started working in the British Museum in its first decade, where he met Joseph Banks, converting Banks to the Linnaean system.

Banks was driving both the collection of new plants and their systematic curation. His role was often indirect, as a wealthy patron of science who used his extensive network of connections with King George III, the Admiralty, the scientific community in the British Museum, and as President of The Royal Society to fund and promote scientific exploration.



*Banksia coccinea*.

Ferdinand Bauer 1760-1826, artist.

Publisher, London: F. Bauer, Date 1813

Description

print : engraving with hand colouring; plate

mark 38.9 x 25.1 cm., on sheet 49.6 x 33.0 cm.

State Library of Victoria,

Accession no: 30328102131488/4

### Banks' 'floating gardens'

Banks took on responsibility for building up King George's private garden in Kew in 1787, with a mission to build *acknowledged superiority ... over every other similar establishment in Europe*.<sup>1</sup> He became interested in acquiring not just seeds, but the finest specimens of living plants from around the world. The competition to have the 'best' collection is reflected in Banks' instructions to one of the collectors, Archibald Menzies:

*You are to consider every one of [the plants], as well as the Seeds of the Plants which you shall collect during the voyage, as wholly and entirely the property of His Majesty, and on no account whatever to part with any of them, or any cuttings, slips, or parts of any of them for any purpose whatever but for his Majesty's use.*<sup>2</sup>

Banks worked with the Admiralty to change the design of ships so that they could be 'floating gardens' with 'plant cabins'. This ambitious project required vessels to carry highly skilled gardeners and collectors with a trained eye, who could distinguish plants with novelty from those already acquired. Vessel commanders were required to ensure that plants were kept alive at sea, often for many months, through extreme changes of climate.

Plants were thus able to be moved to and from London, the Cape, Timor, Van Diemen's Land, Tahiti and the West Indies. Plants grown at Kew Gardens for sending to New South Wales included grape vines, apples, pears, hops, plums, carob, mulberries, walnuts, nectarines, peaches, willows and olives, and seeds of herbs, conifers, oaks and many other plants.<sup>3</sup>

### Collection voyages

One of the earliest voyages to test the viability of 'plant cabins' on long sea

1. Desmond, R. 1995, *Kew: the history of the Royal Botanic Gardens*, p 92.

2. Banks letter to Archibald Menzies, 22 February 1791.

3. <http://www.asbs.org.au/newsletter/pdf/18-dec-177.pdf>

voyages, at Banks' urging, was the 1791 (to 1795) voyage of HMS *Discovery*, under the command of George Vancouver. Archibald Menzies was the ship's surgeon and naturalist, recommended by Banks for the voyage and charged with caring for the plants he was required to collect for Kew. Here are more of Banks' exacting instructions to Menzies for the care of plants collected:

*When you meet with curious or valuable Plants which you do not think likely to be propagated from seeds in His Majesty's Garden, you are to dig up proper Specimens of them, plant them in the Glass Frame provided for that purpose, and use your utmost endeavours to preserve them alive till you return. ... As soon as you shall have provided yourself with living plants, and planted them in the Glass frame before mentioned, you are at all times, when the Ship shall be watered, to acquaint the Commanding Officer what quantity of water you judge necessary for their support and preservation, by the week or month, in order that he may be enabled to make a competent provision of that article for their future maintenance and nourishment.*<sup>4</sup>

4. Banks letter to Archibald Menzies, 22 February 1791.

The *Discovery* spent 17 days at King George Sound in September 1791. Here, Menzies became the first recorded European to find banksias in southwest WA. He took banksia seeds and plants back to Banks and other collectors, including the seed of *B. grandis*, *B. illicifolia*, *B. coccinea* and *B. praemorsa*.<sup>5</sup> Menzies was also the first European to collect specimens of dryandras.

5. Groves, E. 2013, Archibald Menzies's visit to King George Sound, Western Australia, September–October 1791, *Archives of natural history* 40:1, (139–148)



*Banksia menziesii*, Firewood banksia

M FAGG APII ©



*Banksia caleyi*, from *The Legacy of Banks & Solander Exhibition* by the ANBG Botanical Art Groups, 2020, Artist: Leonie Paynter



In 1830 Robert Brown named *B. menziesii* in honour of Menzies. Neither Brown nor Menzies ever saw the plant growing.<sup>6</sup> The common name for this plant is Firewood Banksia because it burns well. It is a shrub or tree, up to 10m tall, with spectacular, large, acorn-shaped flower heads, in shades from red, through pink to yellow. The plant can resprout from a lignotuber after fire, as well as regenerate from seed.

George Caley came on the Australian plant collection scene in 1800, sponsored by Banks. He collected thousands of specimens of plants, enriching the collections in Banks' herbarium and Robert Brown's own collection, as well as providing seed and plants for the gardens at Kew. Brown used Caley's material to describe 14 species of Proteaceae. Caley's specimen of *B. spinulosa* var *collina* collected at Newcastle was declared the neotype for the taxon by Alex George. Robert Brown named *B. caleyi* in his honour in 1830. It has the common names of Caley's Banksia or Red Lantern Banksia. It is one of the pendulous banksias, with drooping reddish flower heads on a shrub up to 2m in height, with serrated leaves. It is killed by fire. The species is found south and east of the Stirling Ranges in southwest WA.

Robert Brown was part of the team of 'men of science' hand-picked by Banks for Matthew Flinder's *Investigator* voyage. Supporting the mission was Ferdinand Bauer as natural history artist, William Westall as landscape artist, and Peter Good as the gardener. Before departure Brown acquainted himself with existing Australian specimens in Banks' herbarium. He was also familiar with the specimens brought back by his friend, Archibald Menzies. The voyage embarked in July 1801. En route, Brown spent two weeks making botanical expeditions at the biodiversity hotspot around the Cape of Good Hope where he would have

6. [https://en.wikipedia.org/wiki/Banksia\\_menziesii](https://en.wikipedia.org/wiki/Banksia_menziesii)

seen members of the Proteaceae family. The next port of call was King George Sound, part of another global hotspot, where Brown collected some five hundred species, including 17 specimens of banksias, dryandras and the Albany pitcher plant. At Lucky Bay east of Esperance, Brown collected specimens of *B. nutans*, *B. repens*, *B. pulchella*, and *B. speciosa*.<sup>7</sup> The new banksia plants were given space in the garden on the quarterdeck.<sup>8</sup> Soon after arriving in Port Jackson, Brown wrote to Banks, advising that he had so far collected 20 species of *Banksia*, of which four were new.<sup>9</sup> Almost two years later, Brown informed Banks that the region was '... by far the richest in new and remarkable plants that we have yet seen'.<sup>10</sup>

In Sydney, Brown based himself at Parramatta, and he and Peter Good accompanied George Caley on some

7. Vallance, T. G., Moore D. T. and Groves, E. W. 2001, *Nature's Investigator: the diary of Robert Brown in Australia, 1801-1805*, Australian Biological Resources Study.

8. Brown's journal entry, 28 December 1801, Vallance et al, p 103.

9. Mabblerley, D.J. 1985, *Jupiter Botanicus: Robert Brown of the British Museum*, British Museum.

10. Brown to Banks, letter, 6 August 1803



*Banksia brownii* Feather-leaved banksia

collecting expeditions over the three months they spent there, before Brown and Good departed on the *Investigator* to circumnavigate New Holland in an anticlockwise direction. Brown collected three species of *Banksias* on Fraser Island and one at Sandy Cape (possibly *B. aemula*).<sup>11</sup> Peter Good contracted dysentery on the last leg of the voyage and died in Sydney Cove when the vessel returned.

Brown sent his collection of live plants back to England on the *Porpoise*, but they were lost when the vessel was wrecked on a reef a week after departure. Brown and Bauer botanised in Australia for another two years before returning to England in October 1805 with the remainder of their collections, including 3,600 specimens of plants and 2,073 drawings by Bauer. The collections and drawings formed the wellspring for Brown's future publication of the *Prodomus*.

Brown's prodigious contribution to botany and the taxonomy of Australian plants, including banksias, is remembered in the name of *B. brownii*, as well as the genus *Brunonia*. William Baxter suggested to Brown that he should formally name *B. brownii* after himself as Baxter had already been using this name for the species. *Banksia brownii* has the common name of Feather-leaved Banksia. It usually has reddish flower spikes, held on an erect shrub up to 6m high. It is found in ranges near Albany in WA but is critically endangered and very susceptible to *Phytophthora cinnamomi* infection. It is a reseeding banksia and is killed by fire. Overly frequent fires could threaten remaining populations.

Peter Good distinguished himself as a collector in his own right and alongside Robert Brown on the voyage of the *Investigator*, keeping a diary and making detailed notes about growing conditions to accompany specimens collected in Australia, destined for Kew Gardens.

11. Vallance et al p 234.

Good's collections of seeds and plants from this voyage were combined with Brown's collection after Good's death. *B. goodii* was named in his honour by Robert Brown in 1830. The plant was first collected by William Baxter at King George Sound in 1829. *B. goodii* is a creeping shrub with yellow flower heads – one of the smallest banksias. It is rare and endangered, and has a very restricted range of less than 25kms in fragmented populations, between Albany and the



*Banksia goodii*



*Banksia baueri* Possum banksia



*Banksia baxteri*, Bird's nest banksia

Porongurups in southwest WA.

Ferdinand Bauer was the botanical artist on the *Investigator* voyage and worked closely with Brown in producing detailed plant studies, and collecting plants. He used a microscope to produce remarkably accurate drawings. He made 1540 drawings of Australian plants on the voyage. He drew specimens in pencil, then used an elaborate colour coding system, so that he could complete illustrations accurately at a later time. The code had 1000 different shades, including 200 greens and a similar number of browns and yellows. He was a perfectionist and continued working on his sketches and etchings of plants collected in New Holland for many years after his return to England.

Bauer and his brother Franz are commemorated both in the plant genus *Bauera* (and the family *Baueraceae*), and in *B. baueri*. The first specimen of this plant was collected by William Baxter at King Georges Sound, and described by Robert Brown. Its common names are Possum Banksia or Woolly Banksia, as it has large possum-like flower heads, held low to the ground on a many-branched shrub. It is killed by fire and regenerates from seed. It grows on sandy soils in shrubland in southwest WA.

William Baxter was an English plant collector employed by plant nurseries in the 1820s to collect plants in Australia. On four trips, he visited the southwest coast (around King George Sound and Esperance) of Australia, Mornington Peninsula and Kangaroo Island (1823, 1825 and 1828-9), where he collected banksia and dryandra seeds and plants. Among them were the first specimens of *B. gardneri* and *B. dryandroides*, collected at King George Sound in 1823.<sup>12</sup> In 1824, he collected *Banksia media* between Cape Arid and Lucky Bay, then *B. caleyi*, *B. baxteri*, *B. goodii*, *B. brownii*, and *B. baueri* and *B. solandri*

12. George, A. 2012, *The Banksia album: two hundred years of botanical art*, National Library of Australia.

in travels around Albany in 1829.

Brown cited a specimen of *B. spinulosa* var *cunninghamii* collected by Baxter at Mornington Peninsular in his 1830 *Supplementum*. Specimens of some of the plants he collected are held at Kew Gardens today.

Baxter collected the type specimen of *B. baxteri* which was named in his honour by Brown in 1830. Its common name is the Birdsnest Banksia. It has prominent ovoid lemon yellow flower heads and distinctive leaves with triangular-shaped lobes on a shrub up to four metres high. It grows between Albany and the Stirling Ranges. It is killed by fire and holds its seeds in follicles until they open with fire.

### Musings for the Garden

Visitors to the Banksia Garden might imagine how it felt to be one of the first Europeans to find extraordinary banksia plants in the wild. The ANBG horticultural team knows how difficult it can be to grow many of these plants away from their natural environment today, but how much more difficult would it have been to keep them alive on a long sea voyage to another hemisphere, or propagate and attempt to grow them in a European setting?

This short account explores just a few of the fascinating human threads linking many of the plants in the new Banksia Garden – men commissioned to find seeds, plants and herbarium specimens for the Royal Botanic Gardens at Kew via Joseph Banks. There is a contemporary twist tying up some of these connections: some of the *B. solandri* and *B. brownii* plants in the new Banksia Garden are grafted onto root stock of the eastern states species first collected by Banks and Solander, completing a circle in both botanical and historical time.



## Banksias: Second Edition

Alex George, Kevin Collins and Kathy Collins

Banksias are Australia's most iconic plants after Eucalypts – known for thousands of years to Australians and – through writing and art – to many more who have never visited this land.

This extensively revised edition includes the recently discovered *Banksia vincentia*, with descriptions and illustrations of all 79 known species with many new photographs and updated species descriptions. It provides the history of their discovery, evolution, how to find and grow them, and how they have inspired artists and artisans. With some 400 beautiful colour illustrations it is the comprehensive, up-to-date guide to these unique and fascinating plants.

**RRP: \$69.95, Hardback, 384 pages 233 x 152mm,  
Over 400 illustrations in full colour**

The launch of the second edition of this book is planned for Sunday the 26th April, 1 pm, Botanical Bookshop. The launch will include a brief talk about the book given by Alex George and/or Kevin Collins (co-authors). Hand-signed copies will be available for sale.



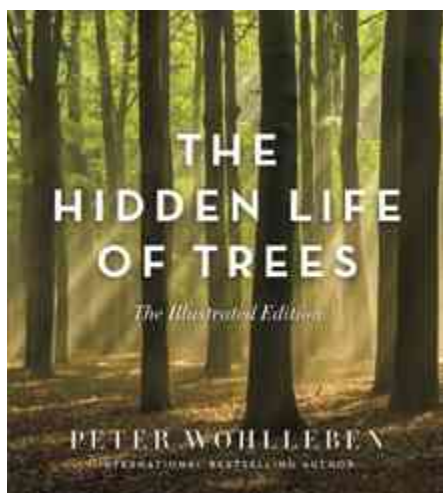
Back cover Illustration:  
Celia Rosser, *Banksia lemanniana* 1988. Watercolour and pencil, 55.8 x 76.2 cm.  
Monash University Collection. Courtesy of Monash University Museum of Art.



### THE HIDDEN LIFE OF TREES – The Illustrated Edition

**2018, Peter Wohlleben, Hardback, 166 pages, Colour photographs, \$50.00**

Peter Wohlleben's international bestseller 'The Hidden Life of Trees' opened readers' eyes to the amazing processes at work in forests every day. Now, this beautifully illustrated edition brings those wonders



to life through stunning colour photographs, plus informative text from the original book.

The text is simple and understandable, and the messages strong and powerful. In this volume, Wohlleben explains the interconnectedness of forest ecosystems, the importance of fungal communication, life lessons learned in tree school, recycling systems and more. Dotted throughout the text are insightful quotes from the author that help sum up so many of the messages in the book. The beautiful photographs provide the perfect complement to Wohlleben's words, with striking close-ups of bark, seeds, fungi and insect life, as well as panoramic shots of vast green forests and landscapes.

*Opening this book, you are about to enter a wonderland. (Tim Flannery, author of Atmosphere of Hope and The Weather Makers.)*

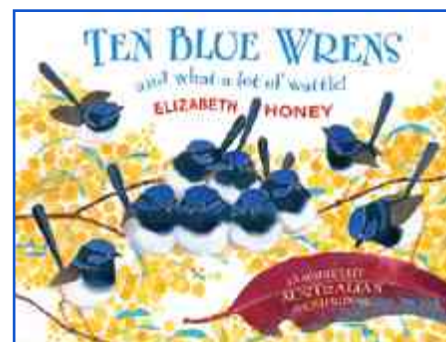
*A veritable tree whisperer, Mr Wohlleben projects an irresistible enthusiasm for his subject, and after a few hours in his company you will never look in the same way at our ubiquitous but enigmatic neighbours. (Wall Street Journal)*

### TEN BLUE WRENS and what a lot of wattle!

**2015, Elizabeth Honey, Soft cover, 31 pages, Colour illustrations, \$15.00**

An absolutely Australian counting book that brings to life some great Aussie icons! This fun book features bowerbirds, Uluru, gum leaves, kelpies, potoroos, pavlova, aussie rules football, Indigenous artists doing some dot painting, Sydney Harbour Bridge and of course blue wrens and wattle! The colourful illustrations were made by cutting the designs out of plastic paper and making stencils, which were then dabbed with coloured paint with a sponge to create the final eye-catching artworks.

A great early learning book for young children!



## SEEDS: sponsorship, new staff, a conference and an exhibition

### Tom North, Curator of the National Seed Bank

The Seedy Volunteers, or Seedy Vols, at the National Seed Bank have secured a sponsorship with John McGrath Auto Group that will provide this group of Friend volunteers with much needed investment in new field equipment and an increase in our ability to take on more and longer field trips.

The sponsorship has so far provided: First Aid training to 15 Seedy Vols; remote wilderness First Aid training to seed bank staff; a Toughpad for assistance with collections mapping and field notes; and Garmin inReach for satellite phone and emergency communication as well as coordinates for collections.

The Seedy Vols are also decked out in new ANBG/John McGrath branded uniforms which improves the public visibility of the work that we do. Our partnership with John McGrath is for three years and over that time we are aiming to complete the collection of the entire ACT flora.

The Seedy Vols program commenced in 2011 and targets the collection of seed from native plants in threatened communities within the ACT and surrounding NSW regions. To prepare for this work the Seedy Vols undertake special training in collecting seeds, plant identification, recording notes and taking herbarium specimens. They support expert

ANBG staff on field trips and later assist with seed cleaning and sorting in the National Seed Bank.

The National Seed bank is also pleased to welcome two new staff to the small team. Millie Stevens is the new Research Technician, taking on the role left vacant by Caroline Chong. Millie's role involves germination research and building capacity to deliver ex situ conservation, in particular across species from Commonwealth National Parks. Dr Gemma Farrell is our new Seed Scientist. Many of you may remember Gemma from her work with us on the Alpine project. Gemma is now working on a number of projects including the Tropical Mountain Plant Science project which runs for another two years.

The extra staff and volunteers mean that our current seed bank facility is bursting at the seams to hold everyone plus the collections. The seed bank holds around 8,200 individual seed collections from approximately 3,700 taxa, with collections going back to the early 1960s. We're looking forward to a new seed bank, which is getting closer, with more room for staff, students and volunteers, plus it will be purpose built with appropriate conditions and security to hold our precious collections. We hope we will be able to give you more detail on the new seed bank in the August issue of *FronDS*.

The Australasian Seed Science Conference, is being held from 5–9 April at the ANU, hosted by the ANBG. The Friends sponsored the Keynote Speaker, Dr Si-Chong Chen, from the Millennium Seed Bank of the Royal Botanic Gardens Kew. Dr Chen's area of expertise is as an ecologist working on macroecological patterns in seed ecology. The conference themes cover biology, evolutionary ecology, societal and cultural uses of seeds, plus the practical topics of sourcing, using and seed bank management. The conference



**Seed of *Epacris petrophila***

**Micrograph taken by Brook Clinton at the National Seed Bank, ANBG.**

Seed from a specimen collected by Sarah Fethers on 19 March 2008, on Snowy river, southern NSW, near the Victorian border.

The image was used in the \$1 stamp booklet issue, *Seed Banking Australia*, from Australia Post Collectables, November 2019, with the following text:

'The common name of *Epacris petrophila* is Snow Heath, indicating the environment in which it

occurs. It is dominant in alpine and subalpine feldmark, heath and bogs in the Australian alpine region. The species occurs in the ACT (Namadgi National Park), NSW (Kosciuszko National Park), in high altitude areas in Victoria (Lake Mountain, Baw Baw Plateau and Mt Howlitt) and in Tasmania (Central Plateau). This near-threatened low, bushy shrub is usually erect and grows to around 80 centimetres high. It bears small, terminal clusters of white flowers between December and February.'



website, at [www.seedscience2020.com.au](http://www.seedscience2020.com.au), lists the leading speakers and their areas of expertise.

*(Late note: unfortunately the conference has been postponed to September 2021 due to travel restrictions relating to Covid 19.)*

The exhibition, *Seeds in the Bank*, in the Visitor Centre Gallery, opened on 5 March and runs until 12 April, to cover the period of the conference. It displays the extraordinary diversity and beauty of the seeds of Australian native plants collected from all over the country and held in the National Seed Bank. An example is on the front cover of this issue of *FronDS*.

A number of techniques are used to photograph seeds. Images of very small seeds, less than one mm in diameter, are taken with the high magnification microscope. Larger seeds are photographed using a normal camera fitted with a macro lens. In both cases the final image is the result of image stacking where numerous photos are taken at different focal points, then the images are electronically stacked to give an image that is in focus from front to back or top to bottom. The number of images taken may vary between six and 90 per seed. Two further techniques used to produce these images are a scanning electron microscope or a small X-ray unit. The use of X-rays also helps to determine whether the seeds are potentially viable.

In addition to the photographic prints there are a number of original artworks by members of the Botanic Art Groups. The exhibition displays sculptural glass works from the studio of Curtis Glass Art. The sculptures have been created especially for the exhibition and designed to engage your imagination with the architectural beauty of seeds. So come to the Gallery and wonder at the hidden world of seeds.



Tom North and Seedy Vol, Cathy Franzi, collecting grass seed at Molonglo Reach

FANNY KAROUTA-MANASSE



Hanging the exhibition, *Seeds in the Bank*

PAM ROONEY



Rosemary Purdie, guest speaker at the launch of the seed photo exhibition

BARBARA PODGER



Seedy Vols, Margaret Clarke and Barbara Podger in the field, wearing their John McGrath sponsored shirts



## Hope for wild tropical mountaintop plants

### Toby Golson

Since our first communication in *FronDS* in April 2019, ANBG staff have successfully participated in four field trips to far north Queensland as part of the Ian Potter Foundation funded collaborative TroMPS (Tropical Mountain Plants Science) Project. Led by the Australian Tropical Herbarium (ATH), the project is aimed at helping secure the future of Australia's climate-threatened tropical mountaintop plants by establishing an ex situ conservation reserve to 'backup' at-risk wild populations. The project incorporates scientific research, horticultural display and public education activities that underpin and complement the ex-situ conservation objective.

Field collections of propagation material, backed up by herbarium voucher specimens, are central to this project. Field expeditions, some quite straightforward, others more challenging, but always great fun, have involved personnel from the ATH, Royal Botanic Gardens Victoria Cranbourne, Cairns Botanic

Gardens, Traditional Owner groups as well as Canberra-based specialists. In April 2019, Dr Lydia Guja, Seed Conservation Biologist and Manager of the National Seed Bank (NSB) and Pete Bredell, senior horticulturalist from the Nursery, spent time collecting along Mt Lewis Road as part of the project's initial field collecting trip. In June, Julie Percival, currently ANBG threatened species coordinator, and Toby Golson, currently Living Collections coordinator, visited Mt Bellenden Ker, Mt Fisher and Mt Windsor. In August, Nursery manager Joe McAuliffe had the pleasure of climbing Queensland's highest peak Mt Bartle Frere and camping for three nights near the summit. Finally, because they wanted a dose of real tropical heat, Julie and Lydia returned to Mt Lewis and Mt Windsor with Millie Stevens, research technician from the NSB, and Mya Anlezark, senior horticulturalist, in December.

As a result of these trips, there are currently around 40 species in propagation at the Nursery. These are all endemic to the higher altitudes of the Wet Tropics where they are distributed predominantly in mountain refugia that are some of the most severely climate change-threatened habitats in the country. ANBG is sharing the work of propagation for the project with the Royal Botanic Gardens Victoria Cranbourne, and together we hope to establish conservation collections here in Canberra and distribute plants to Mt Tomah, Brisbane, Cranbourne and Dandenong Ranges Botanic Gardens. Current propagation success is a great achievement for our specialist nursery staff given most of the species haven't previously been cultivated, as well as allowing for differences in climatic conditions between the Wet Tropics and Canberra.

The project also aims to secure seed collections to ensure the conservation of genetically diverse material, enable future use of seed, and conduct research to better understand tropical mountaintop seed biology and ecology. NSB is working closely with project partners from PlantBank at The Australian Botanic Gardens Mt Annan to investigate the little known storage and germination requirements of tropical mountaintop species. Following the December collecting trip Millie Stevens travelled to PlantBank to assist with initial testing of seed to determine desiccation and freezing tolerances of species not previously held in seed banks. The results of such tests will inform what conditions are best for seed storage to ensure they remain viable. Seed scientist, Dr Gemma Farrell (nee Hoyle, who previously conducted alpine seed research at the ANU and NSB), has joined the TroMPS seed research team at NSB. Gemma will undertake the next steps in our seed research, determining what conditions are required for germination and the limits at which species are able to germinate and survive. Building a picture of how and which species might persist in a changing climate is an integral part of this science and conservation project.



Lydia Guja, Amelia Stevens (NSB ANBG), Karen Sommerville & Graeme Errington (PlantBank RBGSYD).  
Collecting *Dracophyllum sayeri* Mt Bellenden Kerr



Mya Anlezark and Julie Percival (ANBG)  
Collecting *Symplocos graniticola* Mt Lewis

STUART WORBOYS

LYDIA GUJA



## ***Eurobodalla Regional Botanic Gardens' fire, New Year's Eve***

### **Michael Anlezark, Manager**

At approximately 7.30 am on New Year's Eve 2019 intense fire raged from the west towards Batemans Bay; it crossed the Princes Highway and roared through the Eurobodalla Regional Botanic Garden. The speed and intensity of the fire was shocking; in less than 30 minutes the entire 103 acre site was engulfed.

With roads closed and continuing threats of fire it was not possible to access the site until almost 48 hours later. What confronted us was alarming; charred trees, ground and shrub



layers gone and fence posts still burning, everything now just black and brown. Incredibly through the trees we could see the Visitor Centre still standing although we couldn't get to it as the bridge was now gone.

The fruits of our recent \$3million redevelopment were mostly intact, our visitor centre, new café, herbarium and upgraded propagation facilities survived with just minor damage.

What was destroyed were our maintenance depots containing every tool we owned. Shipping containers became ovens that baked our mowers and utility vehicles. We lost our tractor, bird hide, every bridge, walkway, gazebo and pergola, irrigation infrastructure, shade houses, water tanks, garden residence and sheds. Our Pavilion was partially destroyed as was the bbq shelter and some playground equipment.

Almost every plant on site was affected except for valuable stock plants that were sheltered within the nursery complex. Tragically most of our wildlife was now either dead or gone.

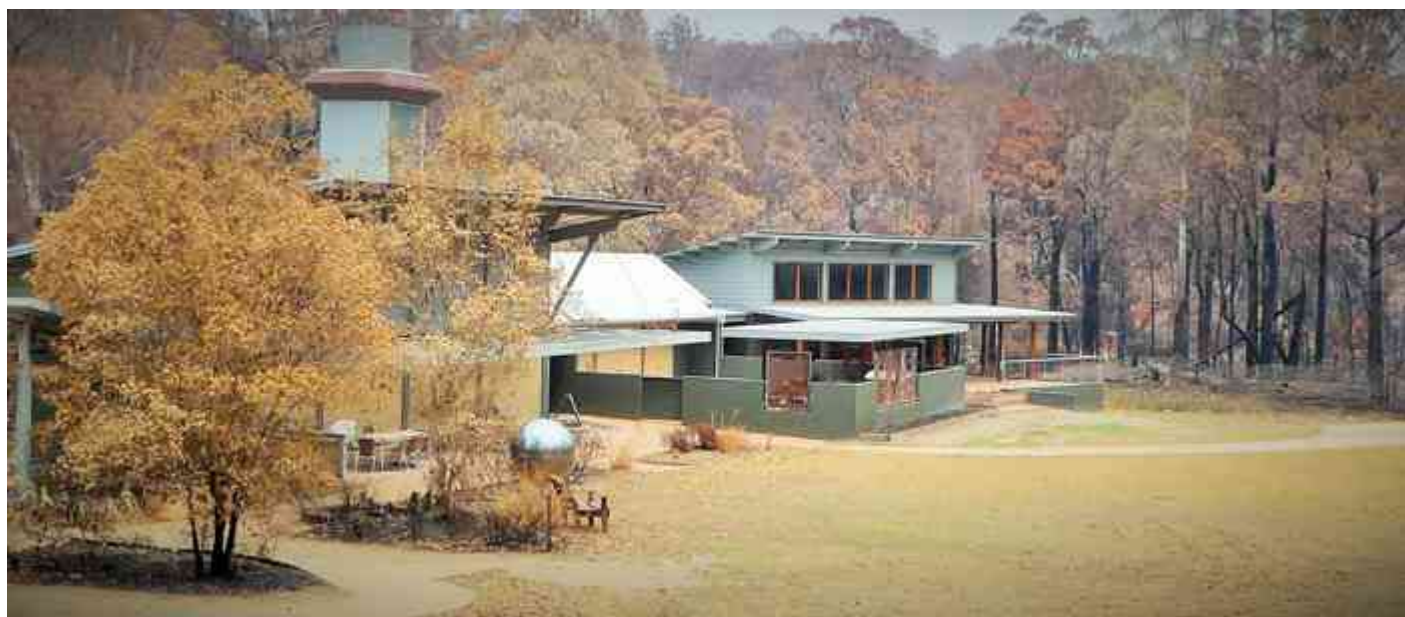
Recovery started immediately, saving whatever plants we could from throughout our nursery and damaged orchid house and with emergency repairs to water infrastructure.

Over the following weeks we removed many dangerous trees and moved over 4500 plants out of our nursery and into the safe homes of our volunteers, keen to participate in our 'foster a box' scheme. As the site became safer we were able to allow volunteers in to assist and with the help of the Army start cleaning up and rebuilding burnt retaining walls and path edges.

Insurance claims are being processed and plans for a new bridge drawn up. With the continued support and commitment of Eurobodalla Shire Council, our Friends group, volunteers and the community, there is no doubt that the Garden will continue to recover.

A tragic fire will provide us with the opportunity to create a place that was better than before and allow us to continue our role of education and conservation of the precious South East Corner Bioregional flora.

**For information about the reopening of the gardens go to: [www.erbg.org.au](http://www.erbg.org.au)**



IMAGES: MICHAEL ANLEZARK



# Botanical heritage on fire

Denis Warne

The past summer confronted us with a fire season like none we had known before. Pictures of desperate koalas and kangaroos struggling across burnt out areas have been common – but what about our botanical heritage? Many national parks have been substantially burnt, threatening an unknown number of critically endangered plant species. Two botanic gardens, no doubt familiar to many Friends, suffered voracious fires – Eurobodalla Regional Botanic Garden, and Blue Mountains Botanic Garden (Mt Tomah). Mt Tomah has since reopened.

Both the NSW Department of Planning, Industry & Environment and the Royal Botanic Gardens Sydney (RBGS) have provided perspectives on the impact of the 2019-20 fires for NSW, but the issues are similar in all

affected states. While severity varies from place to place, the statistics are staggering. For NSW alone, 5.3 million hectares (6.7 per cent of NSW) has been fire-affected, including:

- More than 37 per cent of the national park estate.
- More than 80 per cent of the World Heritage listed Greater Blue Mountains Area and 54 per cent of the NSW components of the Gondwana Rainforests of Australia World Heritage property.

However, despite the fires raging, some of our critically endangered species have been helped to pull through. Here are the stories of three.

## Saving the Jewels

*Wollemia nobilis* (Wollemi Pine) is perhaps our most famous floral species; a single stand was discovered in 1994, and

around 200 are now known to exist in the wild. They are on the international Red List as critically endangered because their tiny geographic distribution means a single event could drive them to extinction in the wild. The Gospers fire, threatening a large part of the Blue



Nightcap Oak shoot, (*Eidothea hardeniana*)



Helicopter lowering fire fighter into the Wollemi forest. (Both photos: Environment, Energy and Science Group | Department of Planning, Industry and Environment)



Mountains and surrounds, was potentially one such event. Enormous efforts were made to save the wild stands. Large air tankers spread fire retardant and specialist firefighters were winched into the remote site by helicopter to set up an irrigation system in the gorge to increase moisture content of the ground fuels. As the fire approached, NPWS firefighters were again winched in to operate the irrigation system and helicopters water-bucketed the fire edge.

Subsequently, a detailed scientific assessment, undertaken by the NSW Government, noted that while some trees are charred, the species has survived this summer's fires. Positively, this fire has been the first opportunity to see the fire response of mature Wollemi Pine in a natural setting. Such information will aid managing fire in these sites in the future.

In the Nightcap National Park in north-east NSW, another 'dinosaur tree' and other threatened species were in the path of northern NSW fires in November 2019. *Eidothea hardeniana* (Nightcap Oak) has only 120 specimens left in the wild and, like the Wollemi Pine, is only found in a single location. Under a government Saving our Species program, emergency cuttings were taken and removed to a specialist nursery as 'insurance'. Cuttings were also taken of the endangered *Elaeocarpus sedentarius* (Minyon Quandong) and *Uromyrtus australis* (Peach Myrtle). The populations of Nightcap Oak and these other endangered species were reported safe on 5 February.

Yet another endangered species may have a role for our own Gardens. *Hibbertia circinata* (Mount Imlay Guinea Flower) was first identified in 2018 below a rocky knoll near the summit of Mt Imlay, in the Mt Imlay National Park near Eden on the south coast of NSW. It is a small shrub to 1.5m tall with small yellow flowers and all known specimens in the wild are in the vicinity of the summit and ridge of

Mt Imlay. Once again, a small population with small geographic distribution, exposes the species to possible extinction in a single event. Accordingly, in 2019 the species was classified as critically endangered. In late December the 'Border Fire' badly burnt the Mt Imlay Park. At the time of writing, the status of the wild populations of the Mount Imlay Guinea Flower is uncertain. However, it is present in the ANBG and, to the great relief of Gardens' staff, the plants survived the damage wrought by the January 20 hailstorm. Should restoration in the wild be required, the Gardens is in a position to contribute via seed or live plants

In all the above cases, and many more, post-fire assessments are being conducted, both to understand the impact of fires on the species and to inform future conservation efforts which could include ongoing special protection or translocation of species in the wild.

### Rehabilitation

Damage, however, extends beyond individual species; rehabilitation of whole ecosystems across considerable expanses is needed. National parks, botanic gardens and not-for-profit organisations are all springing into action. The Commonwealth Government has funded some initial rehabilitation activities and the Threatened Species Commissioner is to establish an expert panel to prioritise recovery for threatened species and ecological communities.

Even the experts don't quite know yet how it will all play out. Some rehabilitation will happen naturally – the Australian bush is good at that. Rainforests will struggle the most as they are not adapted to fire. What we probably know least about in such extensive fires are all the small species that provide ecosystem services, such as the birds, insects, fungi, lichen and algae. We do know that weeds and pests will be a major impediment to rehabilitation. For those who wish to be involved, the Australian Network for Plant

Conservation (ANPC) recommends joining a local bushcare volunteer group in fire impacted areas. Greening Australia and Conservation Volunteers Australia have also received funding towards habitat rehabilitation in recently announced Commonwealth funding.

For all of us who simply wish to enjoy time in the bush environment again, some of ANPC's detailed recommendations apply:

- If walking in burnt areas, keep to formed tracks and avoid areas where plants might be re-growing.
- Be even more vigilant than normal about the inadvertent introduction of weeds, pests or disease as the burnt ecosystem will be fragile for some time.
- Be vigilant in nearby unburnt areas too, as these act as refuges for biodiversity from which species can repopulate burnt areas.
- Don't clear dead items as they may sprout or provide shelter – let nature do its thing.

For the fire damaged Botanic Gardens and for the long term conservation activities of all Botanic Gardens, every Friend will help!

### Note for the Future (RBGS)

'The expectation that climate change will continue to facilitate fires in the future highlights the importance of ensuring that we preserve plants in seed banks and botanic gardens, and understand the response of plants to a changing climate. We need to make a substantial inroad to collecting as many of Australia's 25,000 or so plant species, and their genetic diversity, as possible to be sure of preserving them into the future, and combine this with programs to recover threatened species and restore species in the wild.

Plants are vital for life. These fires highlight how much more research is needed to ensure their, and our, survival.'

## GARDENS SHORTS

### *Recovering from the hail storm*

The hail storm that swept through Canberra on 20 January 2020 with hail as big as golf balls resulted in significant and lasting damage to plants, buildings and property in the Gardens.

Staff, contractors, surveyors and volunteers immediately got onto the task of cleaning up leaves and branches that had been stripped from plants and covered almost every square centimetre of paths. Gardens staff are grateful to the nearly forty members of the Friends who assisted with clearing the main concourse outside of the Visitor Centre, the café area and the Eucalypt Lawn. With safety to staff and visitors as the foundation, recovery efforts have continued including tree surgery, patching up and covering skylights and tiled roofs, making areas safe where glass was broken, cleaning all roofs and gutters from debris and moving nursery collections from greenhouses that were badly damaged.

While the precious living collection took a battering, it is anticipated that the plants will mostly recover over the coming months.



Leaves and branches litter the paths of the Rainforest Gully after plants were stripped bare by hail.



Paths hidden by leaf litter outside the Ellis Rowan Building after hail storm

### *Report from Executive Director, Judy West*

It has been a challenging start to the Gardens' 50th Anniversary year. The effects of the hail storm on 20 January are still visible with plants still suffering from external and internal damage, while others are beginning to show signs of recovery. I commend the resilience of the staff during the onslaught of drought, smoke, fire mitigation and hail damage and thank the many Friends who assisted in clean-up immediately following the storm.

The Gardens is moving forward into 2020 with lots of exciting new developments and collaborations. This month, we will host the Australasian Seed Science Conference, a significant international event and effort to organise speakers and workshops with leading experts, focusing on the importance of seed science to the future of plant conservation and food security. Thank you to the Friends for financial support of the conference international speaker.

With great anticipation, we will officially open the Banksia Garden with a Banksia Festival from 23 April through 3 May. The Banksia Garden will be a showcase for the Gardens giving visitors a whole new perspective on this iconic Australian genus. It has been possible through the dedication of our staff and many collaborations across the country.

We have funding for capital works projects, which will be completed by the end of June, including refurbishment of the Banks Building following extensive hail damage – the glasshouse room will have a covered roof.

A complete upgrade is also planned for the Crosbie Morrison foyer and toilets. The timber bridge at the end of the Tasmanian Gully will be replaced with eco-friendly material, a similar product to the rainforest boardwalk. Replacement environmental monitoring stations will soon appear in the Rainforest Gully and the Red Centre Garden.



PHOTOS: PARKS AUSTRALIA



## Let the 50th Anniversary celebrations begin!

The Gardens launched our 50th anniversary program on 5 March with the popular Summer Sounds kicking off the exciting year-long celebration (still summer by the date of the equinox!).

From now through December 2020, the Gardens will host activities to celebrate our golden anniversary and showcase the importance of this national institution. Throughout the year, there will be events and exhibitions featuring week-long festivals, music, cinema, giant sculptures, wildlife and art, for all ages to enjoy.

The Gardens has been working closely with Canberra distillery Underground Spirits to create a special anniversary gin, using botanical ingredients from the Gardens. The gin was launched alongside the Gardens' 50th anniversary and is now available for purchase through Underground's website [www.undergroundspirits.com.au](http://www.undergroundspirits.com.au)



### Paradise Lost

To coincide with the 250th anniversary of Cook's first voyage to Australia,

the Embassy of Sweden in Canberra, together with the Gardens, will present an exhibition, *Paradise Lost – Daniel Solander's Legacy*. The exhibition commemorates the legacy of the Swedish *Endeavour* botanist Daniel Solander and the first encounter between Sweden and the Pacific Region, New Zealand and Australia.

The exhibition consists of artwork by ten artists, selected to bring a unique vision to this historical event and Daniel Solander's legacy. The Embassy of Sweden in Canberra toured the exhibition last year in Wellington, New Zealand. It will be on show at the Gardens from 20 May – 14 June.

### Sonata among the Banksias

*Banksia serrata* was first collected on 29 April 1770 by Joseph Banks and Daniel Solander at Botany Bay. It marked the official beginning of botany in Australia. To celebrate the 50<sup>th</sup> Anniversary of the Gardens and the inauguration of the new Banksia Garden, the Canberra International Music Festival (CIMF) has co-commissioned a special musical piece, *Banksia Sonata* from Bree Van Reyk, drummer, percussionist, composer and sound artist.



HEIDRUN LOHR

Bree Van Reyk was commissioned to compose a musical piece for the opening of the Banksia Garden

Inspired by the Gardens and the people who recognise and cherish the beauty and diversity of Australia's plants, the aim was to have a piece of music that can be played within the Banksia Garden as people experience its splendour.

*Banksia Sonata* will be performed by *Ensemble Offspring* as part of the Banksia Festival and a CIMF concert on Friday 1 May.

### Sharing inspiration beyond the Gardens' gates

Gardens curator, David Taylor, recently shared his passion for Australian plants with the Friends of the National Museum of Australia at a special event for donors to the Museum's new Forecourt Garden of Australian plants. Guests were excited to learn more about the specific native plantings and especially how they fare in the Canberra climate. The garden is designed as a mosaic and represents the regeneration of native species following a 'cool burn' that is used in traditional Indigenous land management.



David Taylor talks about the plants of the Forecourt Garden at the National Museum to Friends of the NMA

### Botanic Art Groups

This year started with our first ever *Australian Wildlife* exhibition, running from mid December. Despite the worrying conditions, many people came and appreciated the opportunity to see such lovely artwork. Unfortunately, weather restricted access to the Gardens for a number of days. Nevertheless, we were pleased with sales of paintings and cards and plan to hold another wildlife exhibition in the future.

It is shaping up to be an exciting 2020. The Seed Bank has commissioned a number of our botanical artists to paint seeds to be included in their exhibition, *Seeds from the Bank* (Visitor Centre Gallery, 5 March to 12 April). This will be followed by our 13<sup>th</sup> annual botanical art exhibition from 18 April to 17 May. This year our theme is *Legacy of Banks and Solander*. All art works will feature either a plant species collected in Australia by Banks and Solander during the voyage by *HMS Endeavour* in 1770, or alternatively any *Banksia* species. The exhibition will coincide with the opening of the new Banksia Garden. We are delighted to include a beautiful exhibition bookmark with the April *Fronde* and we ask all Friends to encourage others to visit. **As usual Friends are invited to an exclusive preview on Friday 17 April beginning at 2 pm when works are available for sale.**

Later in the year in August we will be participating in a joint exhibition with South Korean botanical artists at the Visitor Centre Gallery, entitled *Two Worlds*. This exhibition will then travel to South Korea in December. There will be more information about these events in the August *Fronde*.

**OUR ANNUAL BOTANICAL ART EXHIBITION, *Legacy of Banks and Solander*, will be held from 18 April to 17 May, 2020.**

Kate Ramsey

### Growing Friends

Gardeners in Canberra have had a tough few months and Growing Friends are no exception. After weathering the hot, dry summer pretty well, we were hit with the full force of the hail storm on the afternoon of 20 January. The Growing Friends igloo, shade house and potted plants were amongst the casualties. Despite the Gardens being fully closed the next day, the Rangers allowed three Growing Friends in to survey the damage and to repot plants whose pots had been shattered. Approximately 100 plants were lost directly and another 300 were repotted in the hope that they could be saved. Of the latter, we have already lost some which did not survive repotting and some are still looking poorly, but with tender loving care and favorable weather we may be able to nurse most back to health. It is estimated that, in the end, we will have about 200-300 fewer plants for our autumn sale. Temporary repairs have been made to the Growing Friends igloo. Likewise, the shadehouse area, which was more badly affected than the igloo, has been temporarily patched. More long-term repairs will be made as part of the already planned refurbishment of the area.

Looking beyond the events of the last few months, what to propagate is an ongoing matter for Growing Friends members to consider. Whilst a wide variety of plants are chosen, plants which are suitable for the typical

Canberra suburban block are a particular focus. As new housing in the ACT heads towards larger houses and smaller gardens on smaller blocks of land, plants which grow up to two metres high, and are frost and drought tolerant are always popular at the Growing Friends sales. Also, as all plants are sourced from the ANBG, buyers wanting to see how plants grow in Canberra can search out the plant in the Gardens.

You don't have to have 'green thumbs' or be experienced in propagating native plants to join Growing Friends. We have many very experienced members only too willing to help new members learn more about native plants and how to propagate them. For more information please email [growingfriends@friendsanbg.org.au](mailto:growingfriends@friendsanbg.org.au)

Donna Growcock

### Plant Science Group

Traceability of specimen provenance is key to best practice conservation. In December's talk entitled 'Keeping track of the kids: lineage matters!', Dr Rosemary Purdie (Honorary Living Collections Botanist, ANBG) discussed collecting requirements for propagation material, and how the ANBG's Integrated Botanical Information System helps keep track of each plant and its lineage.

Conventions for naming plant species have evolved to underpin western science and do not reflect Indigenous views of the world around them. However, Indigenous ecological knowledge represents a wealth of experience that could contribute to land management. In her February talk, "Linking Indigenous botanical knowledge and western plant species concept", Dr Linda Broadhurst (Director CANBR) discussed the challenges in reconciling and deriving the benefits of both bodies of knowledge.

The Plant Science Group meets on the first Monday of the month. For further information, contact: [plantscience@friendsanbg.org.au](mailto:plantscience@friendsanbg.org.au)

John Busby



*Epacris longiflora*; Jann Ollerenshaw



This year we celebrate the 30th Anniversary of the Friends. A key part of the partnership between the Gardens and the Friends are our special interest groups which are the subjects of Friendly Chatter. These groups support the Gardens in various ways and provide an avenue for members of the public to experience the Gardens in ways of specific interest. Is this your year to join one of our groups?

30 years

## Photographic Group

The Photographic Group aims to support photographers in capturing and understanding the beauty of nature, and updating skills by monthly lectures, photography walks or outings. Our members are also involved in photographing events at the Gardens.

In November 2019 we held our annual exhibition *Treasures*. This was a fundraising event for the Friends with total sales reaching \$5,737, of which \$1730.20 was contributed to Friends to support developments in the Gardens.

To commemorate the Gardens and Friends anniversaries in 2020, and 250 years since Joseph Banks visited Australia, the Photographic Group is organising a photographic competition as part of its Annual Exhibition, *Reflections*, in November. This Competition is open to all Friends of the ANBG and details are included in this issue of *Fronde* (p24).

Membership is open to all Friends. You will find us under 'Get Involved' on the Friends website or you can email us at [photo@friendsanbg.org.au](mailto:photo@friendsanbg.org.au). Our meetings are generally held on the last Friday of the month in the Theatre opposite the Visitor Centre at 10.30 am until 12 midday. Details of each month's events are in the Calendar sections of the Friends website or communicated by email in our monthly PG newsletter.

Helen Dawes

## Volunteer Guides

Weather was the big issue of summer, for Guides and all of ANBG. High temperatures, lack of rain, followed by wind and hail created challenging and damaging conditions for plants; and the heat, smoke and hail proved challenging for Guides and visitors. Flora tours were suspended for three weeks, due to damage to the new vehicle and closure of the hail-damaged upper gardens.

Walks were cancelled on days with hazardous smoke levels.

As far as possible, however, guided walks proceeded, with Guides taking the opportunity to showcase lower areas of gardens and carpark plantings. It was the right time to focus on how remarkable Australian plants survive in tough conditions, how green shoots bring renewal and restore hope, and the value of the Gardens in nurturing some of the threatened species, including some from south coast forests that would have been affected by the summer fires, such as the *Hibbertia circinata* from Mt Imlay.

Now it's autumn, guided tours are in full swing. In this anniversary year Guides are offering a more diverse range of guided experiences. We have done some research on our visitors, seasonal variations, published articles and arrangements in other botanical gardens; and have used this information to add extra colour and variety to our walks. Some of the guided walks will now feature key themes, related to historic dates, celebratory occasions and current issues.

Clever ways that plants (especially *Eucalypts*) recover from fire and other damage will feature in walks from 30 March for one week. From Saturday 1 to Sunday 9 August, when the days may seem dreary, you can join a *Colour in Winter* walk. But no need to wait until then: from 24 April to 3 May, there are *Wow Banksia* walks, as part of the Banksia festival where you can enjoy, and hear about, amazing banksias from all around Australia and why we think banksias really do have a 'wow' factor. You may also spot guides roving in the new Banksia Garden, ready to explain how this garden was developed and why it is so special.

Check the Friends and ANBG websites, as well as the Visitor Centre, for up-to-date information about the various options for seeing the Gardens in new

and exciting ways. Guided walks start from the Visitor Centre at 11 am and 2 pm.

From 1 April, Flora Explorer tours depart at 11.30 (previously 10.30) and 1.30 on weekends and public holidays.

Lesley King



LESLEY KING

A glimpse of winter colour

Colour in Winter walks

Saturday 1 August to Sunday 9 August  
(See *What's On* for details)

**AAFBG Biennial Conference**  
Brisbane Botanic Gardens  
May 22nd – 24th 2020

**2020 Banks and Solander**  
Friends Celebrating 250 Years

**Featuring...**  
**Joseph Banks Society Lecture**  
**Speakers and Walks**  
**Tours and Talks**

For More Information  
see [www.fbbgsa.org.au](http://www.fbbgsa.org.au)

## Friends Briefs

A few days after the terrible hail of February I was prowling around the Banks Building, which had been damaged, and came across John Connolly toiling away in hot and humid conditions, on his own, repairing a down-pipe, smashed by the hail. It looked hard work. In many ways this symbolised the extraordinary efforts of our members behind the scenes, in this case fixing water storage vital for Growing Friends. Every week for some hours Pam Cooke and Lesley Harland sit in our rather gloomy office working their way through the vast correspondence that keeps an organisation with 2,500 members going, while at least three or four times per week Helen Elliot our Treasurer, who I think works six days per week, contacts me or David More to authorise some bill payment.

Of course the Guides and Visitor Centre Greeters are the public face of Friends but there is a lot more going on under the surface which you may miss. Volunteering is alive and well at the Gardens and we can always use more support! The above are only a few examples.

Late in 2019 unfortunately Jann Ollerenshaw had to stand down from Council. We thank her for her work and are delighted to report she is hopefully on the mend. I am very pleased that Lynden Ayliffe agreed to take on the role of Secretary. In the meantime we recruited a long-standing Friend, former Chair of the Public Fund and experienced Board Member, Neville Page to fulfil the vacancy pro tem.

Meanwhile a terrific diversity of projects, outlined here briefly, to be spelt out in more detail elsewhere, are now underway. All are supported with funds from Friends and the Public Fund, and in some cases, with work by Friends:

- Summer Sounds in March – we were thrilled to receive \$10,000 support from the ACT Government Cultural Events fund, a first. This, plus \$12,500, will go to the Gardens.

- Video wall – now operating outside the Theatre, will display information and videos about plant related work. Cost: \$52,142
- Summer Canberra Herbarium interns. The Friends bought book vouchers from the Book Shop for these ten bright young graduates from around Australia, to recognise their six weeks of work and to encourage their interest in plant science and management.
- Leah Dann doing a PhD on Norfolk Island – financial support of \$45,000 over three years and some Friends have been to Norfolk to give practical field work support.
- Pat and Warwick Wright – supporting them to represent FANBG at the 350th Anniversary Edinburgh Royal Botanic Gardens Conference.
- ‘Bees, Butterflies, Birds: Maximising Biodiversity by Supporting Pollinators’ – supporting this public workshop run by the Conservation Council of the ACT, now sold out.
- Plant Health Australia, a citizen science program to detect potential diseases in Gardens – we are doing a trial along with Friends and Management from the Royal Botanic Gardens in Sydney and Melbourne.
- Dr Don Beer’s book on the history of the founding of the Australian

National Botanic Gardens – contributing to the cost of publication.

- Banksia Garden – financial support of \$100,000 by the Friends and \$17,200 by the Public Fund.
- The Australasian Seed Science Conference – the Public Fund is sponsoring the keynote speaker with \$10,000 (see article on Seeds, p8).
- ‘Living on the edge’ arid/alpine thermal tolerance of plants – facilitating an ARC Grant project that will bring together many agencies to examine adaptability in the face of climate change to divergent plant species. \$36,000 over three years.

**Max Bourke AM President.**

### 2020 Volunteer Botanical Training Program

It was a summer of heat, smoke, hail and fire but the 2020 Volunteer Botanical Training Program participants weathered it all with patience and good humor. This year’s trainees came from the ACT, NSW, Victoria and the Northern Territory with backgrounds in Biological Sciences, Environmental Sciences and Forestry and were joined by an ANBG staff member.

While field work was curtailed due to hazardous environmental conditions the trainees completed a full program of lectures, training sessions and workshops



Volunteer Botanical Trainees, 2020

BRONWYN COLLINS



ranging from plant identification, fire ecology and weed management to how to write CVs and job applications. Among the many tasks undertaken trainees mounted and put away specimens in the collection and assisted in finding hundreds of specimens to match spirit vouchers, seed vouchers, and fruit that had become separated from its matching herbarium sheet. They sorted over 60 boxes of *Syzygium*, assisted in processing slides for the Australian Plant Image Index, and provided assistance in the Seed Bank. As in previous years, trainees also collaborated with ANBG staff to produce plant profiles for the ANBG Growing Native Plants page. And when the weather stabilised they finally made it into the field with a well-earned three day trip to the coast, including a visit with our colleagues at Booderee Botanic Gardens.

**Bronwyn Collins**

**Volunteer Botanical Training Program  
Coordinator, Australian National Herbarium  
Centre for Australian National Biodiversity  
Research, National Research Collections Australia  
National Facilities and Collections  
CSIRO**

### Vale Denise Newman

Friends Life Member, Denise Newman, died on 29 November 2019. Denise became an ANBG Volunteer Guide in 1999 and an Explainer a few years later. Progressive dementia forced her to give up guiding in about 2012. She was awarded Life Membership of the Friends in 2014 in recognition of her contributions.

Denise was an inspiration. She had no formal training in botany but was a great lover of all Australian flora and had an extensive native garden. Her enthusiasm was boundless. She was forever researching and would seek out anybody who might further her botanical knowledge. She unearthed interesting and often quirky facts about Australian plants which she shared with fellow Guides and used to enliven her public walks.

I am lucky enough to have her notes. Below is but one extract:

The spores of *Lycopodium* (clubmoss) are highly flammable and were used



to produce explosive lighting effects in the theatre, a function now performed by magnesium powder. The inventor of the first internal combustion engine, Sadi Carnot, at the Great Exhibition of 1851, showed an engine driven by the explosion of *Lycopodium* spore powder. (Ref: *Field Guide to the Native Plants of Sydney* by Les Robinson (1994) p303.)

**Margaret Webber  
Volunteer Guide**



### Vale Barbara Daly

Barbara Daly passed away on 19 February, 2020 aged 94. She was born in Sydney on 13 July, 1925, and went to school at Canberra High School. Barbara was a remarkable person, possessed of multiple talents. During World War II Barbara served as an aircraft control and warning (ACW) radar technician in the Royal Australian Air Force with the rank of Aircraftwoman. She had a long career in the nursing profession, working in the UK, USA and Australia.

But it is her time as a dedicated volunteer at ANBG for which we remember her, and especially for her work on 'In Flower This Week'. Murray Fagg recalls helping Barbara as a volunteer in March 1991 to produce this weekly handout, a role that she maintained through until

2013. In that time IFTW transitioned from a hand-written photocopied page to a computer-printed sheet in May 1993 and later a website report.

Barbara was made a Life Member of the Friends in 2008, being the third person to be awarded such an honour. Barbara loved travelling, both in Australia and overseas. Among numerous trips was one to northwestern Yunnan in China on the Tibetan plateau, as part of a plant study group. Another trip was an archaeology dig to Central Asia. Barbara loved her Volkswagen camper van which took her all over Australia, going to conferences and field trips, and visiting national parks and botanic gardens, which were her true love. We will miss her bright cheery smile and inquisitive nature.

**Neville Page**

Details of events are correct at the time of printing. For changes and updates please check the Friends' website at [www.friendsanbg.org.au](http://www.friendsanbg.org.au) or the Gardens' site at: [www.anbg.gov.au](http://www.anbg.gov.au)

## Guided Walks

**Daily at 11 am and 2 pm**

Meet a volunteer guide at the Visitor Centre for a free one-hour tour of the Gardens.

## Flora Explorer tours

**Weekends & public holidays, 11.30 am and 1.30 pm. Cost: \$8 for adults, \$5 for children and concessions.**

**Children under three travel free.**

Forty-five minutes of discovery around the Gardens. Purchase tickets from the bookshop.

## Storytime in the Gardens

**10 am – 11 am. Cost: \$5.00 per child**

First Friday of every month (except 1 May). 10.00 am – 11.00 am. Suitable for pre-schoolers

## Introduction to Digital Photography Workshop

**Sunday 5 April, 9.00 am – 4.00 pm**

The Photographic Group of the Friends will be conducting an Introduction to Photography Workshop open to people to get more out of their digital camera. Cost: \$170. Contact: [photo@friendsanbg.org.au](mailto:photo@friendsanbg.org.au)

## Australasian Seed Science Conference

**Sunday 5 April – Thursday 9 April**

Hosted by the ANBG, this conference brings together leading botanical and conservation experts and seed scientists. Contact [assc2020@arinex.com.au](mailto:assc2020@arinex.com.au) for program and general enquiries.

## Bilby Holiday Trail

**Friday 10 – Monday 13 April**

**11 am – 12.00 pm.**

Get outdoors for a special school holiday trail. Pick up your Bilby pack from the Visitor Centre and enjoy *Storytime on the café lawn* from Haigh's Chocolates. Bilby prize competitions, craft and more. See Gardens website for information on bookings.

## NatureArt School Holiday Programs

**Tuesday 14 – Friday 17 April &**

**Monday 13 – Thursday 16 July**

**10.00 am – 2.00 pm,**

**Suitable for 5-12 yr olds. Cost \$70.**

Explore the natural world through observation and art. All materials provided. See Gardens website for information on bookings.

## Removing Woody Weeds from Black Mountain and within ANBG

Check Friends website for meeting place for each weeding work party.

Please email your name and phone number to [friendsofblackmountain@gmail.com](mailto:friendsofblackmountain@gmail.com) or phone Linda (0437 298 711) or Libby (02 6296 1936) so there is enough delicious morning tea.

Saturday 4 April, 8.30 to 11.30 am

Saturday 2 May, 9.00 to 12 noon

Saturday 6 June, 9.00 to 12 noon

Saturday 4 July, 9.00 to 12 noon

Saturday 1 August 9.00 to 12 noon

Saturday 5 September, 9.00 to 12 noon

## ANBG BANKSIA WEEK

**For more detailed information on the following events see:**

[www.anbg.gov.au](http://www.anbg.gov.au)

Friday 24 April & Saturday 2 May Kids Workshop: **Weird and Wonderful Banksias**

Friday 24 April Storytime: **Big Bad Banksia Men**

Friday 24 April **afterDARK Lanterns**

Saturday 25 April Whiinyu Yhuuramullan Burrall – **Sun Dreaming Morning \***

Sunday 26 April & Sunday 3 May 10 am – 12 pm Workshop: **Festival Flowers**

Sunday 26 April Book Launch – **Banksias: Second Edition**

Monday 27 April Workshop: **Big Shot Banksias**

Tuesday 28 April Official Banksia Garden opening (Invitation only)

Tuesday 28 April Nordic Walk with Natives

Tuesday 28 April **Bubbles and Banksias** (Friends only)

Wednesday 29 April Tai Chi

Wednesday 29 & Thursday 30 April Masterclass: **Grafting Banksias \***

Wednesday 29 or Thursday 30 April **afterDARK Bushtucker \***

Friday 1 May Canberra International Music Festival - Concert 1: **Banksia Sonata**

Saturday 2 May & Sunday 3 May Two-day Workshop: **Banksia Serrata In Watercolour**

Saturday 2 May A Growing Friends Perspective: **Propagating native plants**

Saturday 2 May **Bubbles and Banksias** evening event

\* These events are still to be confirmed, please check the ANBG website



## Bubbles and Banksias, Banksia Garden

Friends of ANBG are invited to an evening celebration of the opening of the Banksia Garden on Tuesday 28 April.

Come from 4.30 pm for a guided stroll around the new Garden and discover the delights of an array of Banksias from around Australia. Enjoy music, a sparkling wine and delicious treats, and hear our very special guest speakers talk about the design of the Garden, and share secrets about the growing of Banksias and some of their uses.

The occasion will also include the unveiling of a commissioned Friends 30th Anniversary limited edition ceramic vase which will be for sale on the night.

Bookings are essential – see the Friends website, [www.friendsanbg.org.au](http://www.friendsanbg.org.au) for details and cost.

This is a Friends 30th Anniversary event for members, who may invite one guest.



**Wow Banksia walk,**  
Volunteer Guide, Kath Holtzapffel, with northern Queensland *Banksia aquilonia* thriving in the ANBG

## EXHIBITIONS

**Visitor Centre Gallery, Open Daily 9.30 am – 4.30 pm, FREE**

### **Seeds from the Bank 5 March – 12 April**

A showcase of seeds and images from the National Seed Bank's diverse collection. The exhibition highlights the importance of images for reference and research and engages the imagination of the viewer.

### **Legacy of Banks and Solander 18 April – 17 May**

The annual Friends Botanic Art Groups exhibition features Australian native flora collected by Banks and Solander who sailed on the HMAS Endeavour 250 years ago. A range of Banksia species will feature in the exhibition as part of the Banksia Festival.

### **Paradise Lost - Daniel Solander's Legacy 20 May – 14 June**

Employed by Joseph Banks, Daniel Solander was responsible for the collection and identification of over 1,300 plant specimens. This touring exhibition is NZ's artists' creative response to the legacy of Daniel Solander.

### **Detritus 17 June – 12 July**

Artist Emilie Patteson uses hot glass to encase and burn plant specimens, as well as creating natural dyes to stain paper. This exhibition is an exploration of life cycles of growth and decay.

### **Talking with Trees 15 July – 9 August**

Using photography, video and augmented reality, the artist shows historic images and how the Gardens have evolved into a site of understanding native flora. It also shows the Gardens as a place of reflection, discovery and protection.

### **Native Plants through visitor eyes 14 August – 13 September**

This is a joint exhibition between the Korean Botanical Art Group and the Friends of ANBG Botanic Art Groups. Works feature native plants from each country in watercolour and graphite. The Korean Botanical Art Group visited ANBG in 2017 and met with the Friends Botanic Art Groups.

### **WOW Banksia walk**

**24 April - 3 May, 11 am & 2 pm daily**

Banksias have always been a part of the Gardens with some early plantings pre-dating the formal opening in 1970. Guides have developed this walk to show off some of the attractive and interesting mature specimens in the collection.  
**Free walk, no bookings required**

### **Bubbles and Banksias, Banksia Garden**

**28 April 5.00 pm – 7.00 pm**

Friends of ANBG are invited to a celebration of the opening of the new Banksia Garden, with sparkling wine and delicious morsels. Enjoy an evening walk around the new Garden, with music and special guests.  
**Bookings essential – see Friends website for more details.**

### **MEGAfauna – once there were Giants!**

**Saturday 4 – Sunday 26 July**

Embark on an adventure trail filled with nature, science and history. Come face to face with Australia's prehistoric past by immersing yourself in the Gardens' newest Megafauna trail, the first of its kind in Australia.

### **Colour in Winter Walks**

**Saturday 1 August to Sunday 9 August  
11 am and 2 pm daily**

Brighten up your winter days by joining one of these walks and discover that it is not only flowers that add colour to the garden.  
**Free walk, no bookings required**

## THURSDAY TALKS: APRIL TO AUGUST 2020

**Lunchtime talks are held at 12.30 pm every Thursday from February to November in the Gardens' Theatrette.**

Talks last for one hour. Admission is by gold coin donation. There is no need to book but please note that for safety reasons the ANBG Theatrette seating is strictly limited to 90 people. The Friends of the ANBG thank the speakers who volunteer their time and talents to further the knowledge of all attending events in the Gardens. The Friends use the 'gold' coin donations received at each activity to support Gardens' programs and development and thank all those who have donated.

Some summaries or PowerPoint presentations of Thursday Talks are available to Friends from the ANBG library. A donation to the Friends for the use of this material will be gratefully accepted. For more details on speakers' topics and biographies see the Friends' website <https://www.friendsanbg.org.au/calendar>

Please direct queries about Thursday Talks to Jan Finley; [jfinley@webone.com.au](mailto:jfinley@webone.com.au)

For more details on speakers' topics and biographies see the Friends' website <https://www.friendsanbg.org.au/calendar>

### APRIL

**Thursday 9 April**

**Dr Francisco Sanchez-Bayo 'The Decline of the Entomofauna and its Drivers'**

Francisco, from the Department of Environment and Energy, Canberra, works on the environmental impact and risk of chemical contaminant and ecology. He will discuss the serious and dramatic rates of decline worldwide in the biodiversity of insects. The main drivers are: habitat loss; pollution; biological factors; and climate change.

**Thursday 16 April**

**Dr Anna Howe 'Planting Democracy: Plantings, Places and People in the Parliamentary Triangle'**

Anna, an urban geographer, has discovered on her many walks around the Parliamentary Triangle, how those who created this landscape have expressed our democracy and changing national identity. Now facing increasing and diverse demands, how will this centre of the nation continue to evolve?

**Thursday 23 April**

**Dr Chris Cargill 'The 3 R's: Riccia, Riella and Research'**

Chris, Curator of the Cryptogam Collections at the Australian National Herbarium, will talk about her latest research on the fascinating and beautiful thalloid liverwort *Riccia*. Chris will also discuss her collaborative projects with colleagues from Victoria to Valencia on the enigmatic, aquatic liverwort *Riella* and the halophytic *Monocarpus sphaerocarpus*.



**Thursday 30 April**

**David Taylor and Kevin Collins 'The New Banksia Garden at the ANBG'**

David Taylor, Curator of Living Collections, ANBG, and Kevin Collins, *Banksia* specialist from Western Australia, will talk about the new Banksia Garden at the ANBG. They will take you through some of the challenges, thinking, planning and collaboration that has gone into bringing this garden to reality and why all the efforts are worthwhile.

### MAY

**Thursday 7 May**

**Dr Haylee Weaver 'Parasites of Australian Animals: Unseen Biodiversity'**

Haylee, from the Department of Agriculture, Water and the Environment, will talk on the fascinating biodiversity of parasites inhabiting some of Australia's iconic (and lesser known) animals. The parasites of Australia are a vastly overlooked component of ecosystems, and our understanding of how they contribute to ecosystem function is still being investigated.

**Thursday 14 May**

**Professor Adrienne Nicotra 'Living on the Edge: How do Plants of Threatened Ecological Communities Cope with Extreme Temperature?'**

Adrienne, from the Research School of Biology, ANU, will talk on a research partnership between the ANU, ANBG and Friends, the University of Technology Sydney, the Sydney Botanical Gardens, and Save the Species Program, which seeks to provide critical data on the physiological tolerances of Australian native species from alpine, desert and threatened ecological communities.

**Thursday 21 May**

**Dr Alicia Grealey 'Eggshell Collection Genomics: Approaches and Applications to the Study of Australian Birds'**

Alicia, from the ANU Research School of Biology will talk about developing techniques that are offering opportunities to examine how diversity has changed across time and that the study of museum eggshells are an untapped resource of genomic information for thousands of avian species including rare and extinct taxa.

**Thursday 28 May**

**Doug Laing 'Fall of the Warbler'**

Doug, a retired diplomat, will talk about the long migration of the sparrow-size wood warblers, many of which make a brief pit-stop to refuel in New York's Central Park before continuing north. In May 2018 Doug was witness to this truly great spectacle. He will describe the experience, wonder at the drivers behind this migration, and look at some of the technology that is helping science better understand it.

### JUNE

**Thursday 4 June**

**Dr Natasha Robinson 'Reintroducing Bandicoots and Quolls to Booderee National Park'**

Natasha, is a Research Fellow with the National Environmental Science Program, Threatened Species Recovery Hub. Booderee National Park has experienced large declines and extinctions of native species, especially mammals. Natasha will talk about what species have been reintroduced, and what has been learnt so far regarding their ecology and threats to their survival.



**Thursday 11 June**

**Richard Swain 'Reclaim Kosci builds an urgent campaign in response to laws allowing an overpopulation of feral horses to damage Australia's Kosciuszko National Park'**

Richard is of Wiradjuri descent, and born and bred in the Snowy Mountains. Invasive species are one of the greatest causes of biodiversity loss in the Australian continent. He will discuss the Reclaim Kosci campaign to protect the conservation values of the Kosciuszko National Park and repeal the 2018 feral horse protection legislation, and the desperate need to restore its heavily damaged catchments.

**Thursday 18 June**

**Peter Coyne 'Australia's Amazing Orchids'**

Peter's career was in nature conservation, and in retirement he has found time to grow orchids. Peter will discuss what makes orchids so exceptional, our local orchids and growing orchids in Canberra.

**Thursday 25 June**

**Leanne Wilkinson 'Watery Goals and Our Way of Life'**

Leanne from the Department of Agriculture Water and the Environment will discuss how the UN Sustainable development goals affect us and why the protection of wetlands is essential to our continued well-being.

## JULY

**Thursday 2 July**

**Dr Bob Godfree 'How Great Historical Droughts have Shaped Australia'**

Bob, a Senior Research Scientist at CSIRO, will talk about his research on the impact of great droughts on Australian people and landscapes. He will focus on the 1895-1903 Federation Drought, which devastated inland Australia. Lessons learnt give key insights into the likely future of the Australian landscapes and society in coming decades of climate change.



**Thursday 9 July**

**Jackson Taylor-Grant 'The Culture of Fire; How Fire has Influenced People and Landscape'**

Jackson is the Senior Indigenous Ranger with the ACT Parks and Conservation Services and his talk will take you on a journey through the development of community and culture through fire. The journey is being taken by many around Australia and now more than ever we need to share the story of fire's culture.

**Thursday 16 July**

**Dr Penny Olsen 'The Norfolk Island Morepork: Rebuilding a Population from the Last Survivor'**

Penny is an Honorary Professor at the School of Environment and Society, ANU. In 1986 she organised a group to visit Norfolk Island and conduct a search for the Morepork. The group discovered that only one individual remained. What do you do with one owl? A recovery program began and today a small population persists.

**Thursday 23 July**

**Associate Professor Cris Brack 'The Value and Future of Canberra's Urban Forest: Trees'**

Cris, from the School of Environment and Society, ANU, will talk on the urban forest that has been part of the fundamental fabric of Canberra since the original award-winning designs of Walter and Marion Griffin. The value of these urban forests is growing even faster than the numbers of trees planted, but so too is the difficulty of managing them.

**Thursday 30 July**

**Jason Cummings 'Reconnecting People and Nature to Inspire Conservation Action'**

Jason has worked as a CEO in conservation organisations in Canberra, and recently completed a Churchill Fellowship in the United Kingdom (UK). In the UK he explored leading practices in nature interpretation and visitor facilities and will share those experiences and how they are influencing projects underway in Canberra to enhance the way we engage our communities locally to inspire conservation action.

## AUGUST

**Thursday 6 August**

**Dr Sophie Lewis 'Climate Change and Australia's Extreme Events'**

Sophie, Scientist of the Year 2019, and from the University of NSW, Canberra, will discuss how in recent years, Australia has experienced unprecedented heat, including heatwaves and record-breaking hot days, months, seasons and years. She will discuss human influences on past, present and future extreme climate events in Australia. Are our recent extremes a sign of a new normal and how bad could it get?

**Thursday 13 August**

**Jo Harding and Dr Kate Grarock 'Bush Blitz - 10 Years Old and Going Strong!'**

Both Jo and Kate from Bush Blitz will discuss how since 2010 Bush Blitz has been discovering new species - over 1,700 new species across 41 expeditions, making it the largest program of its type in the world. Bush Blitz is also engaged with land managers, traditional owners, teachers and students. Find out about where Bush Blitz has been and where it is going over the next few years!

**Thursday 20 August**

**Dr Leo Joseph 'Australian Bird Names are all Sorted Out. Yes? No? Maybe?'**

Leo, Director of the Australian National Wildlife Collection, CSIRO, will focus on birds from northern Australia generally and north Queensland specifically to show where knowledge of the names we need to apply to birds still needs a lot more work. Examples will come from lorikeets, friarbirds, orioles, quail-thrush, whipbirds, black-cockatoos, pigeons and maybe a few more!

**Thursday 27 August**

**Dr Liz Truswell 'One Small Tract of Bushland in Southwest WA and the Fight for its Preservation'**

Liz, a geoscientist and a visiting fellow at the ANU, will talk on a small section of the flora that she saw in the late spring and early summers of 2018 and 2019 in the small community of Augusta. She will also describe the community's ongoing attempts to preserve it. This is a part of Southwest WA's biodiversity hotspot which has an exceptional concentration of endemic species, facing ongoing loss of habitat.



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No discount on redemption of gift vouchers.

[www.botanicalbookshop.com.au](http://www.botanicalbookshop.com.au)

more information on our Facebook page at 'Botanical Bookshop'



Canberra Tree Week	2 – 10 May
World Bee Day	20 May
Botanic Gardens Day	31 May
Reconciliation Day	1 June
NAIDOC Week	5 – 12 July
National Science Week	10 – 18 August



**'REFLECTIONS' 2020, FRIENDS OF THE ANBG,  
PHOTOGRAPHIC GROUP EXHIBITION & COMPETITION**

**Thursday 19 November to Sunday 6 December 2020**  
**The Competition is open to all Friends of the ANBG**

### **Entries invited in Four Categories**

- \* Plant Portrait \* Wildlife \* Banksia – creative
- \* Rare, threatened or endangered plants

Photos submitted for the first three categories must be taken at the ANBG. Competition Prizes: \$400 first prize and \$200 second prize in each of the four categories.

**Prizes of \$200 each will also be awarded** for: Friends Council President's Award, Rangers' Choice and People's Choice. Prize-winners can win in only one section – People's Choice excepted.

**Photographers must be financial members of the Friends of the ANBG during the exhibition period, with membership having commenced on or before 1st January 2020.**

Entries will be restricted to 3 per person. Entrants will be notified if their photograph/s are accepted to be framed for the exhibition. Entries will be required by mid-October and need to be of high quality. Judging will take place before the exhibition. The panel for category prizes will comprise 3 judges, 2 external and 1 ANBG.

Refer to the Friends website for competition rules and further information:

[http://friendsanbg.org.au/2020\\_Photo\\_Group\\_Competition](http://friendsanbg.org.au/2020_Photo_Group_Competition)

## **FRIENDS BENEFITS**

*As a Friend you are entitled to:*

Three issues of *FronDS* a year

Three hour free parking pass

Discount at:

Botanical Bookshop (most items)

Pollen

Jindii Eco Spa

Cool Country Natives in

Pialligo

Australian Choice, Canb.

Centre

*You also receive:*

Advance details of lectures

Advance bookings for some events

Discounts on some events

ANBG library membership –

borrow books, serials, videos,

DVDs plus use of computers and interactive CD ROMs

Function facilities – special rates for functions at ANBG

*And opportunities to:*

Join Botanical Art Groups

Growing Friends

Photographic Group

Plant Science Group

Assist with Gardens' research projects

Become a Guide

Relax in the Friends Lounge

in the Ellis Rowan Building,

open to members 9.30 am to

4.30 pm. Relax with tea/coffee

and lots of interesting reading.

