

Fronds

Friends of the Australian National Botanic Gardens
Number 104 August 2023





Friends of the Australian National Botanic Gardens

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The deadline for articles is mid-February for the April issue, mid-June for the August issue and mid-October for the December issue.

Email material to the Fronds Committee at the above email address or place in the Friends letterbox, located inside the Gardens Visitor Centre, between 9.30 am and 4.30 pm, Monday to Sunday. Editorial messages: telephone 02 6250 9548.

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In this issue

Kakadu to Canberra: Preparing for the new Conservatory	3
Mario Russo: The man behind the sign	5
Ferns – a journey of wonder and discovery	6
Conserving Australia's rarest <i>Macadamia</i>	8
Friendly Chatter	10
Survive and Thrive	13
Friends Briefs	14
Botanical Bookshop book reviews	16
A continental bird	17
Gardens Shorts	18
What's on at the Gardens	20
Thursday Talks: August to December 2023	22



Friends of the ANBG is a member of the AAFBG

Front cover: *Melichrus adpressus* in the ACT is restricted to Black Mountain sandstone. See Thursday Talk, 12 October, page 23. Photograph provided by Helen Kennedy.

Kakadu to Canberra: Preparing for the new Conservatory

By Joe McAuliffe, ANBG

Over recent years, visitors to the Gardens will have likely noticed the Ian Potter National Conservatory construction site, along the main path above Pollen Café.

As the days of a cold Canberra winter slowly tick by, the construction is at an exciting phase as the building reaches skyward in its final building stages.

But not so obvious to the public, in another part of the Gardens, the greenhouses, the second major thrust of the project is afoot.

Through this period and in fact as far back as 2015, the ANBG's nursery team has been preparing and growing plants in anticipation for the new Conservatory. Some visitors may remember the old display greenhouse where some of the tropical collections were housed and displayed. The first important hurdle for the nursery's horticulturists was to salvage important plant collections from this display and at the same time convert the then planted display into a fully functioning tropical greenhouse. Its sole purpose was to house both salvaged and new plant collections for the Conservatory.

The ANBG tropical plant collection focuses on tropical species from across Northern Australia and into surrounding Pacific regions, that would otherwise be difficult to grow outside. This includes species from the Kimberley, Kakadu National Park, Cape York, Christmas Island and Norfolk Island. Plants are largely from tropical habitat including monsoonal rainforests and north Australian tropical savanna.

Some of the salvaged plants will be included in the initial Conservatory plantings. Some of those plants are amongst the Gardens' oldest tropical collections, and the horticultural team have worked tirelessly to ensure

these valuable collections are healthy and available for inclusion in the new exhibit. Some beautiful examples of these plants include the large and now impressive King Fern (*Angiopteris evecta*). This magnificent specimen was germinated from spore in 1973, an impressive 50 years old. Tucked away next to that in the greenhouses is a 52 year old Pup Pandan (*Pandanus gemmifer*). Both plants were in the collection prior to the ANBG's official opening in 1970.

It is anticipated that at least some of these plants will be lifted by a crane and lowered through an opening in the Conservatory's roof.

In addition to these plants, we have two large plants (*Xanthostemon chrysanthus* and *Syzygium tierneyanum*) both over 5 m tall that are being grown by Emaho Trees in Queensland. Another Queensland grower, Eumundi Palms holds a *Licuala ramsayi* and five beautiful Queensland Black Palms (*Normanbya normanbyi*). These and a few other special selections from the tropical greenhouse collection will form the canopy of the main exhibit.

Once the Conservatory building is completed, the horticultural team will be busy moving in approximately 200 m³ of soil.

The main exhibit will comprise rainforest plants from Queensland's wet tropics. The soils that will be used for this will be a profiled Ferrosol, a soil type known to support lush tropical rainforests and which is valued in high yielding horticultural applications.

Downstairs the planting thematic changes to include plants from Christmas Island and Kakadu National Parks. A Kandosol profile will be used to support tropical plants that require exceptional drainage.



Joe McAuliffe



Joe McAuliffe

Top: At 50 years old, this *Angiopteris evecta* (King Fern) will be a feature in the new Conservatory.

Above: The Native Moth Orchid, *Phalaenopsis rosenstromii*, is just one of many plants the horticultural team hopes to rotate through the displays.

Both profiles are designed by SESL Australia, specialists in sustainable environments, and have been trialed in the Gardens' greenhouses to test plant performance in each soil type. Once the soils are in place, the remainder of the selected plants held in the ANBG greenhouses can be planted into the exhibits.

Kakadu to Canberra (cont.)

The greenhouse horticultural team has been cultivating an impressive selection of Australian tropical flora specifically for the new displays. For such a bespoke building, the horticulturists have challenged themselves to create new and different ways to display their plants with unconventional horticultural techniques.

An example of this is the living chandeliers which will complement the main exhibits canopy. Stainless steel tubes supporting a variety of epiphytic plants will be hoisted within and above the planted canopy to create a living chandelier.

Moving downstairs, the lower exhibits retain a tropical feel through a selection of tropical plants of a different kind. You can expect to see plants from places like Kakadu and Christmas Island National Parks and learn about these special places and the unique flora found there.

Complementing this display will be a unique plant library, celebrating plant sciences. The library will be a great spot to learn more about some of the endemic flora from these very special places as well as some of the great scientific pursuits of the Gardens and its partners.

There are many other interesting and unexpected components to the new Conservatory. Horticulturists have plans to rotate plants and displays to maintain an ever-changing display of Australian tropical flora not seen before in Canberra. The horticulturists have even more innovative display concepts up their sleeves. I guess we will all have to wait for those surprises.



Joe McAuliffe

Top: Greenhouse horticulturist Caitlin Conroy inspects plants in the Kandosol soil trial. Soil selection and soil profile design is one of many important components the horticultural team is working on.

Middle: Living chandeliers will form part of the rainforest canopy display. Here, the horticultural team has used *Dischidia* species to create the pendulous chandelier components.

Bottom: *Pneumatopteris truncata*, the Christmas Island Dales Waterfall Fern, was grown at the Gardens as part of a scientific partnership project with the National Seed Bank. Here, Caitlin Conroy (L) and Carol Dale (R) hold the mature specimens grown from that work. The horticultural team hopes to include this species and details on the scientific work within one of the Conservatory's library displays.



Joe McAuliffe



Joe McAuliffe

Seeking Conservatory volunteers

Expressions of interest are open for people who are interested in volunteering in the Conservatory.

This is a front of house role where volunteers will have the opportunity to provide a meaningful experience to visitors and promote the appreciation of Australia's tropical flora.

No botanic background is required as full training will be provided to equip you with the knowledge and skills you need for this role.

Volunteers will be required for a 7-day roster/3 shifts per day (except Christmas Day) to cover the Conservatory's opening hours of 10.00 am – 4.00 pm daily. It is expected that volunteers will commit to at least two shifts per month.

Please contact volunteer@anbg.gov.au to apply or ask for more information.

Mario Russo: The man behind the sign

By Pam Cooke and Rosetta Tammaro

An imposing New England Blackbutt, *Eucalyptus andrewsii* subsp. *campanulata*, growing near the new Ian Potter National Conservatory, bears the sign "Mario Russo's chip-hoe leaning tree". Does this tree lean? Was it the chip-hoe that did the leaning? And who was Mario Russo?

Mario Russo was a gardener at the ANBG for nearly 20 years. He was born on 13 November 1925 in Giardini, Sicily. It is somewhat significant that giardini is Italian for gardens. Mario married Carmelina in Italy in 1949 and had two daughters. He migrated to Australia in April 1956 and worked very hard in Cairns to establish himself financially. Moving to Queanbeyan where his wife's father and brother were already established, he was joined by his wife and daughters who emigrated to Australia in August 1957. A third daughter was born in 1959 before the family moved to Dickson.

Mario started work in the Gardens in 1972. He was always a passionate gardener and he was known in Dickson for the wonderful pink roses that he grew in his front yard. He also had a magnificent vegetable patch and colleagues at the ANBG were frequently the recipients of his produce.

At the ANBG, he worked in the terraces above the bottom depot, the area above the new Conservatory. He really loved his days at the Gardens and was a hard worker and very popular with other staff.

Mario was one of the very few Gardens' staff selected to meet King Charles, then the Prince of Wales, when he and Diana, Princess of Wales, opened the Visitor Centre in November 1985. It was just a week before Mario's 60th birthday. Mario felt very proud to take his place in the line and to shake the hands of the Prince and Princess.



Pam Rooney

Mario Russo's chip-hoe leaning tree is a New England Blackbutt, grown from seed collected in 1969 and probably planted about the same time Mario began work in the Gardens. It would have been a few years before it was big enough to support his chip-hoe.

Mario was a passionate singer as well as a passionate gardener. He had a magnificent voice. His idol was Mario Lanza and one of his favourite songs was 'O Sole Mio', a song from the south of Italy that extols the virtues of a sunny day. Mario often sang as he worked and many visitors stopped to listen to him. In fact, many years after he retired, a tourist from Queensland returned to the Gardens and asked a staff member if the gentleman with the amazing voice was still there. He had obviously impressed her.

Mario's love of the ANBG was shared with his family and when his younger daughter, Rosetta, was married, she asked to have her wedding photos taken in the Gardens. Mario put in much extra work to make sure the rainforest, where the photos were taken, was looking its best. Now the next generations of the family visit, sometimes on school excursions and proudly point to the sign that honours their 'Nonno'.



©ANBG-1974

Above: Mario (R) at work in the Gardens. Right: Mario's polished and inscribed chip-hoe, presented as a gift on his retirement.



Pam Rooney

Mario often left his hoe leaning up against the tree near the current sign when he returned to the bottom depot for other equipment or for meal breaks.

When Mario retired on his 65th birthday after nearly 20 years at the ANBG, he asked if he could keep his chip-hoe which he had used virtually every day of his employment but was told it was not possible. He felt rather sad. However, that turned to delight when at his farewell function, he was presented with his treasured hoe. The handle had been separated from the metal chipper and autographed by his colleagues who had the steel blade polished and mounted on the plaque with the inscription:

Mario
from staff and friends
Australian National Botanic Gardens
1972-1990

The very popular gardener died in June 2018 but his name lives on at the base of the magnificent eucalypt.



Pam Rooney

Ferns – a journey of wonder and discovery

By Alison Turner and Marilyn Faunt, Volunteer Guides

When pteridomania (or fern mania) swept through the UK and Australia in the 1840s, the unique selling point of ferns was that only people of discernment and good taste could appreciate their flowerless charms. Fern designs embellished the decorative arts, adorning crockery, furniture and even buildings. In Australia it was Eugene von Guerard's painting, *Ferntree Gully in the Dandenong Ranges* (1857), that established the tree fern as a national symbol, and fern gullies became a must-see for colonists and visitors alike.

The study, collection and cultivation of ferns was very fashionable, whether it was in the new glasshouses, Australian shade houses, private homes or botanical gardens. Today, while of little economic benefit, the interest in ferns still remains in their decorative charms, although they do and have played an important role in shaping our planet.

When, as curious ANBG guides, we learnt about ferns in 2021, we were not suffering from pteridomania, but had a more practical goal in mind. Our study was part of our annual professional development plan, and we intended to share our new knowledge with other guides. This article shares some of the interesting things we learnt.

Ferns evolved about 360 million years ago (MYA), after algae, mosses, liverworts and hornworts, but before gymnosperms and flowering plants. Unlike the more primitive plants, ferns have a vascular system to transport water and nutrients around the plant. However, similar to the more primitive plants, ferns reproduce via spores and produce neither seeds or flowers.

About 280 MYA ferns were the dominant species on our planet.



Fern patterns adorned ornaments in the 1800s.

Brian Gunning

Sharing an ancestor and many characteristics with modern day ferns, the *Lepidodendrales* (now extinct) could grow up to 55 m tall and 2 m wide at the base. The compressed carbonised remains of *Lepidodendrales* are one of the chief constituents of coal, so one could say that the energy source in coal is solar energy from millions of years ago now stored as carbon bonds.

Ferns need water for reproduction, so are typically found in rainforests, in the shade, in crevices or in the wet gullies of forests. They can grow in water, in the soil, or are epiphytic.

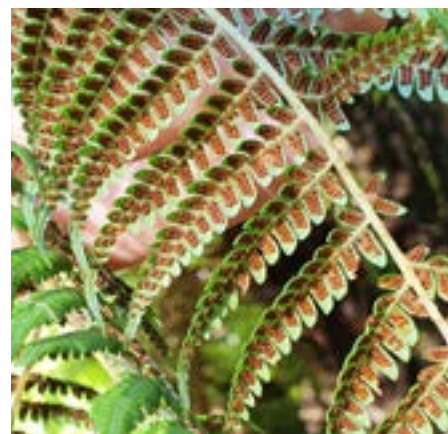
The life cycle of ferns has two free living stages. Typically, mature fern plants produce sori, small clusters of sporangia on the back of their leaves which eventually release spores. These spores can land on a surface and may grow into a tiny scale-like plant (2–8 mm) called a gametophyte.

Within the gametophyte, fertilisation may occur in the presence of water. The resultant zygote develops into a sporophyte, which is the plant we identify as the mature fern. This life cycle can take from one month to 2–3 years.

Ferns can be identified by the pattern of leaf growth, the leaf shape, the characteristics of the stipe (main stem), the rhizome (usually underground) and the patterns and placement of sori, which contain the spores.

Searching for sori can be fun. Some sori form wonderful patterns such as those found on Maidenhair Ferns (*Adiantum* spp.) We found that on some ferns (eg Hare's Foot Fern, *Davallia pyxidata*) the sori are visible most of the year. For others, such as the False Bracken (*Calochlaena dubia*) and Elkhorns (*Platycerium bifurcatum*), it took us eight months to find our first ones. Sori are usually pale green when they first appear and then brown as they age. We had more luck finding new sori in late summer.

There are lots of great stories about ferns. They feature in folk lore and were attributed magical powers. Fern seed was thought to be invisible, and finding it would make one invisible – at least according to Prince Hal in Shakespeare's *Henry IV*, published in 1597.



Alison Turner

Sori of *Cyathea australis*, the Rough Tree Fern.



Kangaroo Fern

Mother Shield Fern

Rough Tree Fern

Rough Maidenhair Fern

Austral Lady Fern

Malcolm Watson

Saved from climate change?

The tiny *Azolla* ferns, such as *Azolla filiculoides* (found in the ANBG pond near the entry clock), were responsible for taking our planet's CO₂ levels from 3500 ppm to 650 ppm around 52 MYA and turning the then tropical north pole into a frozen place.

Sadly, *Azolla* will not save us from climate change today, as it would need over 30,000 years and 77 per cent of all the world's lakes to take our current 410 ppm to our preindustrial levels of 300 ppm.

Fern control

CSIRO scientists played a key role in saving communities living on the Sepik River in Papua New Guinea (PNG) in the 1980s, when the water fern *Salvinia* carpeted the river surface.

Fishing was no longer possible, and the people were cut off from their main carbohydrate food, the pith of Sago Palms harvested from swamps which they towed home by canoe. Mud dwelling organisms also died and the fern clogged irrigation channels and water pumps.

As part of an international collaboration, CSIRO scientists tested a weevil in Queensland, which was ultimately released in PNG and offered effective control of the fern.

Observation prevents starvation?

The 1860 expedition of Robert Burke and William Wills may have had a different outcome if they had been more observant of the hospitable local aborigines.

Stranded at Cooper's Creek, Burke and Wills collected, ground, and made a paste from the spore cases of the fern Nardoo. While this paste was filling, it contained an enzyme, thiaminase, which destroys vitamin B1 and ultimately led to their deaths from the disease beri beri.

The local aborigines roasted the spore cases first, which deactivated the thiaminase. Nardoo was a such an important food source to aboriginal people that it was processed in large amounts with so-called 'Nardoo mills', sets of flat grinding stones scattered around the edges of water courses such as the Willandra Lakes.

Red light district

95 MYA when dinosaurs ruled the Earth, flowering plants created thick forest canopies. Ferns adapted to these low-light conditions thanks to a red light-sensing protein called neochrome that it is thought was transferred by a gene from a hornwort 180 MYA.

Light-sensing proteins help plants orient their leaves towards light and most plants detect only blue light. Leaf pigments in the canopy absorb most of the blue light so that predominantly red light reaches the forest floor.

Right, top: New red growth of the Prickly Rasp Fern, *Doodia aspera*, in spring.
Right, bottom: Soft Tree Fern, *Dicksonia antarctica*, the most numerous fern at the ANBG.

Endangered

The ANBG has been very successful in growing the nationally Critically Endangered *Pneumatopteris truncata* (Dales Waterfall Fern) found normally in the Christmas Island National Park. These will be displayed in the Ian Potter National Conservatory.

There are around 125 fern species in the ANBG, representing just over one quarter of the 400 ferns found in Australia. They are found in the wetter areas of the Gardens, such as the rainforest, Sydney Gully and around the ponds. We hope you enjoy your fern journey.



Alison Turner



Alison Turner

Conserving Australia's rarest Macadamia

By Toby Golson, ANBG

All four species of *Macadamia*, an endemic Australian rainforest genus, are restricted to lowland subtropical rainforest, from near Lismore in northern NSW to Bulburin National Park in south-east Queensland, and are threatened primarily due to extensive land clearing.

M. integrifolia is Australia's best known and most commercially important indigenous bush tucker species. It has been growing at ANBG since the 1970s, with the oldest specimen in section 75 above Top Depot grown from seed that came into the collection in 1968 flowering and fruiting regularly.

Two of the three other species are also doing well in Canberra's unfriendly climes: *M. ternifolia* and *M. tetraphylla*.

A felicitous donation

In December 2016, the head of the Landcare nursery at Gin Gin near Bundaberg, Ray Johnson, visited ANBG and kindly donated two plants of the rarest and most recently described fourth species, *M. jansenii*, first made known to botany only in 1984 and restricted to one population of about 200 plants in Bulburin National Park near Bundaberg. It is listed as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. An ex-situ gene bank collection of 41 genetically distinct individuals has been propagated and conserved at Tondoon Botanic Gardens, Gladstone.



Toby Golson with flowering *M. ternifolia* in the Mary Valley near Gympie.



Macadamia jansenii fruit.

In 2017, the Commonwealth Threatened Species Commissioner included *M. jansenii* among 30 species in need of critical conservation intervention. This provided funding for a range of measures, including the establishment of four additional genetically representative replicate conservation collections at ex-situ sites to 'spread the risk' in the event of the Tondoon collection failing.

This funding was further supplemented in the 2018-19 financial year with a \$3,000 grant from the Friends Public Fund. The first 21 plants arrived at ANBG in December 2020 and were planted in a prominent position in the rainforest gully.

Tondoon Botanic Gardens

In August 2022, with a Botanic Gardens of Australia and New Zealand (BGANZ) grant and in-kind ANBG funding, I visited Tondoon, whose curator, Brent Braddick, has been transferring genetic material of regionally endemic Port Curtis species to us since 2009. This beautiful garden highlights the surrounding local flora, and the extensive planting of *M. jansenii* adds significantly to its horticultural, scientific and conservation value.

We visited Bulburin National Park with Ray Johnson. Like most of

the Australian east coast, the park experienced a savage, extended drought in the years up to 2019. This was followed by fires that burnt right into its heart but which fortunately spared almost all of the known *M. jansenii*.

While also precipitating extensive flooding, consistent rainfall since has enabled widespread recovery of the rainforest. Sadly, this has been accompanied by ever increasing infestations of Cats Claw Creeper (*Dolichandra unguis-cati*) and *Caesalpineae*. All but a couple of individuals, *M. jansenii* trees exhibit a multi-stemmed coppice growth form, more shrub than tree-like, which reflects a history of fire and/or physical disturbance. The few tall single-stemmed specimens are no more than 8 m high, which is the dominant form in cultivated specimens. Many individuals were displaying young racemes of creamy pink flowers.

Support from Macadamia Conservation Trust

In Gympie, further south, I met up with Ian McConachie of the Macadamia Conservation Trust, an organisation set up to conserve Australia's wild *Macadamia* trees in their native habitat, whose trustee is the peak body for the *Macadamia* industry, the Australian Macadamia Society. Ian showed me a number of wild *M. integrifolia* and *M. ternifolia* trees in the Mary Valley before we went on to look at the newly opened 'Walk with Wild Macadamias' track in Amamoor State Forest. Ian is a veteran of 60 years in the industry as a grower and, more recently, as an avid conservationist and author of an upcoming definitive history of the *Macadamia* story. He also played a major role in ensuring the establishment of ex-situ conservation collections of *M. jansenii*.

Ian McConachie

Ian McConachie

Plants arrive from Tondoon

While I was away, 17 *M. jansonii* plants arrived at ANBG, the second tranche of plants from Tondoon. These can be seen together with those planted in 2020 in a group planting in section 159 in ANBG extending from the Main Path at the Brisbane Bridge along the lower side of the smaller path westwards to where the large *Eucalyptus viminalis* fell across the path in 2022.

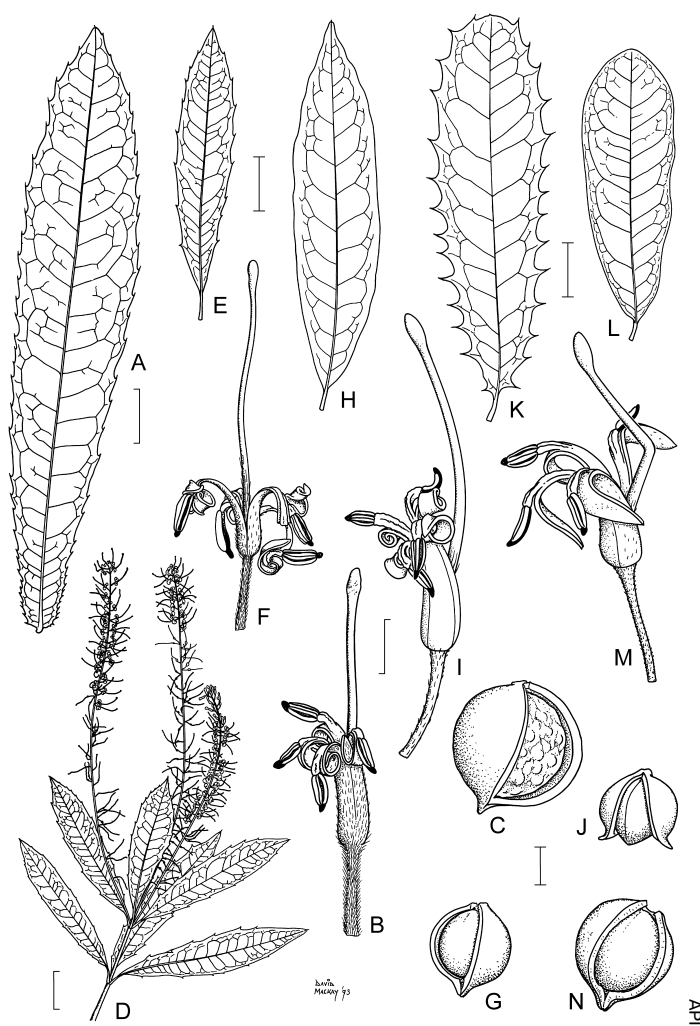
Providing horticultural needs

The site was chosen primarily due to its protected position befitting an understorey shrub, with a well-formed canopy above, primarily of *Araucaria bidwillii*, affording protection from exposure to the elements. The theme for the section is Queensland rainforest, and the prominent position of the *M. jansonii* in this section aids in educating visitors about its significance.

As is standard practice for the rainforest gully, no soil preparation was undertaken. Artificial fertilisers have not been used for over 20 years, and the plants survive on nutrient recycling enabled by the retention of all leaf and tree litter and plentiful irrigation.

A small number of plants are very small and have been placed within tree guards to ensure their security. Like the other *Macadamia* species, *M. jansonii* is proving to be extremely hardy and adaptable in cultivation, suffering Canberra's extremes of climate with ease, though generally growing slowly.

Further upslope from this planting in the adjacent section 64 is our oldest *M. ternifolia*, planted in the early 1990s, which has flowered regularly over the last few years: hopefully the *M. jansonii* will emulate their cousin.



Distinguishing features of four *Macadamia* species. A-C, *M. tetraphylla*. D-G, *M. ternifolia*. H-J, *M. jansonii*. K-N, *M. integrifolia*. From *Flora of Australia* Volume 16 (1995) figure 181. Illustrator: D Mackay. Reproduced with permission from Australian Biology Resources Study.

Securing the collection

We have lost one of the 38 specimens since planting. The *Macadamia* Conservation Trust, through its indomitable executive officer, Denise Bond, maintains a registry of the four dispersed replicate ex-situ conservation collections housed at ANBG, Brisbane Botanic Gardens, Bundaberg Botanic Gardens and the Queensland Government's Maroochy research facility at Nambour. Losses at any of the sites are then able to be made up with replacement genetic material from the stock collection at Tondoon.

Acknowledgement

I would like to thank the Friends for their continuing valuable support for conservation activities undertaken by the ANBG as well as Brett, Ray and Ian for their cheerful collaboration and warm hospitality during my trip.

About the author

Toby Golson is the horticulturalist responsible for the ANBG's in-ground rainforest collection. In 2019, he received a BGANZ Professional Development Award, enabling him to visit *Macadamia* populations in the wild. He has also received a grant for *Macadamia* conservation from the Friends.

Friendly Chatter

Botanic Art Group

In April we held our annual exhibition with the theme of *High Country Natives*. Over 80 artworks were exhibited by some of our 130 members. The theme inspired many members to branch out and explore different styles of composition. Members of the public particularly enjoyed artworks that focused on habitat in the high country landscape. Also popular, were paintings that featured collections of flora.

The exhibition featured a variety of mediums as well as traditional watercolours. Some artists used pastel, etchings, or scratchboard, and there were a number of coloured pencil works. Coloured pencils have grown in popularity amongst members and later in the year we will be holding several workshops using this medium in botanical art.

Although many visitors were very complimentary about the exhibition, sale numbers were somewhat less than in previous years, which probably reflects our current economic situation. Cheryl Hodges kindly donated a beautiful painting of *Eucalyptus benthamii* for the raffle. This was very popular, with everyone hoping to win!

The Friends purchased two artworks for the Gardens' collection: *Hakea laurina* by Jacqui Gilleland and *Acacia leprosa* by Annette Dahler.

The success of the exhibition was due in large part to the support of members, not only those who produced artworks but all those who volunteered on the desk, designed the publicity bookmarks and hung the diverse range of paintings. We are very fortunate to have so many members who are willing to fill in when help is needed.



M Fagg, April



G Gilleland, April

Eremophila splendens (top) and *Eucryphia lucida* 'Pink Cloud' (bottom) will be available at the Growing Friends spring sale. See page 20 for details.

Going forward, weekend workshops are being offered to members with topics including Beginning Botanical Art in Watercolour, Watercolour Techniques, as well as Coloured Pencils.

Our regular monthly meetings are on the second Thursday, second Saturday and fourth Wednesday of the month at the Gardens. New members are welcome to join the group, just contact us through the Friends website.

Kate Ramsey

Growing Friends

At the time of writing, we are nearing the winter solstice after, apparently, the coldest May in Canberra on record. However, Growing Friends members are enthusiastically potting on the many cuttings collected, and seedlings grown, over recent months, in preparation for the spring sale. As a warmer than normal winter is predicted, members are hoping for a bumper selection of plants ready for sale. (See page 20 for details.)

On this occasion, the sale will also include a wide collection of second-hand botanical books, for those garden enthusiasts who wish to research or expand their knowledge. Subject matter includes plant selection, propagation and cultivation skills, as well as identification of plant characteristics and plant provenance.

Growing Friends would like to pay a special tribute to a long-time member, Jan Simpson, who passed away in April. Jan provided an exceptional amount of plant advice from her encyclopedic knowledge, and the group was often amazed how she was able to identify the location of the Gardens' plants. Her unending stories on the provenance of plants were legendary, and a veritable treasure trove of information.

Her friendship and contribution to the group will be very much missed. Many of the books on sale in September come from Jan's extensive library.

New members are always welcome. No prior experience is required as more experienced Growing Friends are always ready to share their collective wisdom.

For more information, please email growingfriends@friendsanbg.org.au

Donna Growcock

Nature Journaling

Once again, we are pleased to present a fruit of our journaling contemplation, this time, a water colour of *Banksia robur* (see next page).

We meet on the first Sunday of the month at the Visitor Centre at 10.00 am. If you would like to join us, please contact lespage26@gmail.com

Lesley Page



Banksia robur watercolour by Lesley Page, Nature Journaling Group.

Lesley Page

Illuminate 2023 is this year's annual photographic exhibition of the Photographic Group.

'Illuminate' has two meanings: one is about physical light, and the other is about intellectual or spiritual enlightenment. We hope our images invite others to discover, appreciate and value Australia's unique flora and fauna.

The exhibition will feature a range of photographs taken within the Gardens, and of Australian fauna and flora in their natural environment. Our exhibition includes plant portraits, close-up shots of flowers, birds and insects, intimate landscapes within the Gardens, and fauna from our local region.

All photographs exhibited are for sale and, given exhibition timing, they make great Christmas presents.

We will also have other items for sale, such as unframed prints, cards, and specialty calendars by individual members.

The exhibition will be open to the public between Thursday 23 November to Sunday 10 December 2023, from 9.30 am to 4.30 pm at the ANBG Visitor Centre.

Steven Playford

Photographic Group

The Photographic Group is using the cooler months to stay indoors in the ANBG Theatrette and listen to fascinating speakers.

In May, Ben Kopilow (owner of Fusion Photography) spoke on 'Post-production: Exercising restraint and taste in photo editing'.

Con Boekel presented (via video) in June, giving feedback on photos submitted for the Garden's 2024 calendar.

In July, PhD researcher Tobias Hayashi gave us insights into how the Swan Greenhood Orchid uses pheromones to lure male gnats into its flower to achieve pollination. He also shared some great photos and ideas about photographing orchids.

Upcoming talks include:

- 25 August, 10.00 am ANBG Theatrette. Gavin Smith will talk about snakes of the Canberra region and how to better appreciate these important members of our ecosystem.

Stunning specimen of Sturt's Desert Pea, *Swainsona formosa*, that graced the Red Centre Garden in April this year.

- 29 September. We will enjoy wattles and other flowering plants in a walk guided by the amazing Volunteer Guides. Begins 10.00 am outside the Visitor Centre. If the weather forecast is for heavy rain, storms or hail the walk will be cancelled. It will proceed if the forecast is for light or intermittent rain.

- 29 October. 10.00 am ANBG Theatrette. Michael Mulvaney from Canberra Nature Map will talk about using our photos for this great citizen science initiative.



Steven Playford

Friendly Chatter (cont.)

Plant Science Group

The Plant Science Group has held talks on the second Monday in each month, except in April and June when these were held on the third Monday due to Public Holidays.

This year these have included Dr Diego Munoz-Concha, a visitor to the Gardens from Chile, who spoke about his research involving tissue culture focusing on the tree *Gomortega keule*, which is endemic to a small coastal mountain range in central-south Chile.

Professor Adrienne Nicotra (Research School of Biology, ANU) presented the latest developments in the ARC Linkage Project investigating thermal tolerance in threatened ecological communities under climate change. This project was supported by funds and volunteer time of the Friends.

Alexander Schmidt-Lebuhn, Peter Gray and Brendan Lepschi from the Australian National Herbarium gave talks covering topics such as the phylogenetics and biological control of invasive weeds, the relocation of the Herbarium's spirit collection, and insights into how taxonomists work and how new species are discovered.

In June, Heidi Zimmer, a research scientist at the Centre for Australian National Biodiversity Research, based at CSIRO, described her recent fieldwork on Norfolk Island to find vulnerable orchids, particularly the critically endangered *Adelopetalum apetalum*.

This was followed in July by Zoe Groeneveld describing work on orchids being undertaken at the Herbarium.

If you wish to receive information about the talks and other activities of the group, please email plantscience@friendsanbg.org.au

Lesley Harland



Fire remains and regrowth at at Eurobodalla Regional Botanic Gardens.

Pam Rooney

Volunteer Guides

Guides 'Big Day Out'

On an unseasonally cold morning in late March, 28 Volunteer Guides boarded a bus for an excursion to the NSW South Coast. Those who were lucky enough to join the tour enjoyed a wonderful day out.

We learned a great deal about coastal vegetation and recovery, and experienced mild coastal weather instead of the cold Canberra weather we'd left behind.

On the journey to the coast, tour organiser extraordinaire Pam Cooke conducted a 'Who am I?' quiz, with the answers being other people on the bus. After Covid lock-downs this was a great way to learn more about our fellow Guides.

Our first official stop was the Eurobodalla Regional Botanic Gardens (ERBG). These gardens suffered three destructive events in under three years: catastrophic fires that burnt right through the Gardens; devastating floods that washed away much of the remaining infrastructure; and then Covid lockdowns.

We were amazed by the extent of regrowth and recovery of the plants, and inspired by the resilience and strength of the staff.

Our second visit was to the Burrawang Coastal Club, which escaped the fires. It was wonderful to see the original vegetation, including magnificent Bangalays (*Eucalyptus botryoides*) that are more than 300 years old, and to learn about the benefits of cultural burning and other sensitive management practices at Burrawang.

A few weeks later, 24 members of the Friends of the ERBG visited the ANBG as our guests. It was a delight to welcome them and return some of their generous hospitality.

After a morning tea and an official welcome, our guests were taken in small groups to see the activities of the Growing Friends and then on a guided walk.

Kerry Moir



Always welcomes Friends...

...with a 10% discount on purchases over \$10 (including gift vouchers) on presentation of their current membership card.

No discounts given on redemption of gift vouchers or sale table items.

For more information please visit the Botanical Bookshop Facebook page, Instagram or website

botanicalbookshop.com.au

Survive and Thrive

Fire recovery and climate change resilience for threatened sub-alpine plant species

Great progress is being made in Survive and Thrive, a project to secure sub-alpine plant species devastated by the 2020 bushfires in Namadgi National Park and adjacent reserves.

We're now past the half-way mark, and to date the Survive and Thrive team has undertaken 48 field trips, trekked to over 20 locations, slogged through bogs, over massive granite boulders and up and down a lot of mountain sides.

With invaluable support from the National Seed Bank volunteers, collection of seeds from four, and cuttings from all five, of the priority target species have been completed.

The collected cuttings are growing well. The ANBG nursery team has grown 265 viable plants with some already flowering and setting seed under their expert care. This is especially important for species where mature, viable seed could not be located in the wild.

The nursery team is currently conducting research into plant growth habits, flowering, pollination needs and seed set, and some species have already been planted out into the Gardens to test the feasibility of maintaining plants in in-ground ex-situ collections, and to showcase to visitors.

Seeds of four of our five primary target species (plus six secondary target species) have now been cleaned, processed and stored in the National Seed Bank where they will be kept safe, in case species are lost from the wild.

But there's no point banking seeds unless we know how to turn them back into plants in the future: that's where seed scientist Dr Gemma Hoyle comes in. Gemma's challenge is to work out



Dr Gemma Hoyle at work in the laboratory.

the germination requirements of each species – not always easy when it comes to Australia's flora.

Gemma is testing the effects on germination of physical cues such as heat treatments, light, and a nick or a scratch of the seed coat, and chemical cues such as smoke water and gibberellic acid (a plant growth hormone). Gemma's ground-breaking research is already providing vital knowledge of these previously unstudied plant species.

The team has been sharing news about the project through presentations and media articles, including a webinar hosted by Costa Georgiadis as part of Botanic Gardens Day in May.

Finally, to close the loop, information gathered through the project has now been provided to the Department's Threatened Species listing team to help in determining if any of these species need further recognition and conservation attention.

Survive and Thrive is supported by a range of partners including the ANBG, National Parks Conservation Trust, Australian Alps National Park

Management Program, the ACT and NSW Governments and WWF Australia.

The outstanding results achieved demonstrate what can be accomplished when teams across the ANBG, supported by a range of partners, link their expertise and activities to a shared purpose.

Great work from the whole team!

**National Parks
Conservation Trust**



Friends Briefs

Friends of ANBG Student Scholarships

An exciting Friends ANBG Scholarship program has been established.

Friends Council and the Public Fund Management Committee recently approved the guidelines developed by the ANBG for ongoing arrangements to support students (Honours, Masters, or PhD) engaging in collaborative research projects with the ANBG that bring direct benefits to the Gardens and its objectives.

The scholarship program aims to enhance the knowledge and conservation of Australia's diverse plant heritage, contributing to the ANBG's mission to inspire, inform and connect people with Australian flora.

Three scholarships up to the value of \$7,500 will be available each year. The Friends and the Public Fund will each provide \$7,500 annually, and a third scholarship will be supported by the Don Beer Memorial Fund, with \$5,000 financed by donations from the family of Don Beer supplemented by Friends and public donations.

Scholarships will only be awarded for students enrolled in an Australian university. They will be for multiple years, and subject to satisfactory annual progress (for PhD and Masters students). PhD and Masters students will have to have been awarded a stipend scholarship (eg an Australian Research Training Program Scholarship). They are intended to support students in their research, to attend conferences, undertake fieldwork or as a personal stipend.

To learn more and access the application forms, please visit friendsanbg.org.au/node/1890

Applications open on 1 August 2023 and close on Friday 27 October 2023 at 5.00 pm AEST.

Recent scholarships

The introduction of an ongoing research scholarship program will build on the success of two recent scholarships.

In 2019, **Leah Dann** embarked on a PhD research project at the University of Queensland on 'Barriers to regeneration of Norfolk Island's threatened plants'. This ongoing research has revealed the impacts weedy guava is having on the native forest.

In sites with guava there is no understorey or regeneration of native forest, including numerous threatened species, whereas in managed sites where guava has been removed, regeneration is occurring. This information will assist park staff in their weed management program and helps prioritise the Norfolk Island species most at need of ex situ conservation in the ANBG and National Seed Bank's collections.

In April 2022 Leah's book *A guide to propagating Norfolk Island's native plants and seeds* was published by the National Environmental Science Program. Research was presented at the Australasian Plant Conservation Conference in April 2022 and to the Friends Thursday Talks.



Leah Dann

In 2022, **Alex McLachlan** undertook an Honours research project at the University of Canberra on the 'Germination, dormancy and viability of alpine *Euphrasia* under climate change'.

This research discovered that alpine *Euphrasia* require cold winter conditions to alleviate seed dormancy, and that they germinate in unusually cold temperatures as compared to the majority of alpine flora. These results suggest a warmed climate may significantly reduce regeneration from seed.

Previously there were no germination protocols available for these species so the information produced by the research enables the National Seed Bank to now undertake viability and germination testing that is required to curate these collections to international standards.

The thesis was awarded first class honours and the research was also presented at the Ecological Society of Australia conference in November 2022, and to the Friends Thursday Talks.

Alan Henderson

Below left: Leah Dann in the field.
Below right: *Euphrasia collina* ssp *diversicolour*.



Alex McLachlan

The Don Beer Memorial Scholarship

Friends Council has recently resolved to establish the Don Beer Memorial Scholarship as part of our Public Fund. The scholarships will be for the study of, and research into, Australian native plants. Administration of the scholarships program will operate alongside the ANBG Scholarship Program. The Memorial Scholarship has been made possible by an extremely generous commitment of \$25,000 from Ella Beer. Donations towards the scholarship program are also welcomed from Friends and the general public, all of which are tax deductible under the Friends Public Fund.

Don had a life-long interest in, and love of, nature. When he moved from Armidale in northern NSW to Canberra in 2004, he was delighted to learn of the opportunity to volunteer at the Gardens. He signed up straight away and over many years, he made many good friends through his involvement with the Guides and the Friends.

In his professional life, Don was a historian. He found the Gardens so impressive that he was inspired to research the establishment and development of the Gardens. Several years of research culminated in the 2020 publication of Don's book, *Miracle on Black Mountain: A history of the Australian National Botanic Gardens*.

Don passed away on 4 January 2022. He had served as a Friends Council Member, a Guide and as Convenor of the Gardens' Volunteer Guides for a number of years.

If you would like to enquire about making a tax deductible donation to the Don Beer Memorial Scholarship, please contact the Friends President, Neville Page at nevbpage3@gmail.com

Neville Page



Design for the *More than a garden* exhibition accepted by Council.

2023 Annual General Meeting

The 35th AGM of the Friends of the ANBG will be held on Thursday 19 October 2023 at 3.00 pm in the Gardens' Theatre, followed by light refreshments in the Dickson Room.

On the agenda will be elections for Vice-President, Secretary, Treasurer and two Ordinary Members. If a current member of Council nominates for and is elected to another vacant position, there will be an additional vacancy for an Ordinary Member.

A notice will be issued on the Friends website and in the e-newsletter nearer the date, along with papers and how to nominate. If you have any questions please email info@friendsanbg.org.au or secretary@friendsanbg.org.au

Linda Beveridge



More than a garden

When you enter the ANBG Visitor Centre you probably walk straight through the foyer to the gallery area, bookshop, or to a helpful volunteer at the information desk. That will soon change. Friends Council recently accepted a Project Committee proposal developed by the ANBG for a permanent exhibition in the foyer space.

Jointly funded by the ANBG, the Friends and the Public Fund, the exhibition will tell a behind-the-scenes story of the Gardens using infographic panels and diagrams, featuring real seed and plant specimens to explain the roles of the National Seed Bank, ANBG Nursery and the Australian National Herbarium. It will also explain the plant labels used across the Gardens and how to read them.

Visitors will be given an insight to functions that would otherwise be off-limits to the general public. Adopting the tagline 'More than a garden', the objective is to enrich the visitor experience by offering an understanding of the scientific, research and conservation functions of the Gardens.

The exhibition will broaden the public's understanding of the purpose of the Gardens and promote it as a scientific institution, complementing its role as a place for recreation and living collections.

Work at the Visitor Centre is scheduled to begin in September and be completed by December 2023.

When complete, the exhibits will transform a currently under-utilised space to create a visually interesting and informative first impression for visitors to the Gardens.

Alan Henderson

Don Beer (L) and his wife Ella (R) at the signing table for the launch of his book about the ANBG.

Friends Briefs (cont.)

Appointment of President and Patron of AAFBG

The Australian Association of Friends of Botanic Gardens (AAFBG), of which we are a member, celebrated 30 years this year. At its AGM in May in Melbourne, our Vice President, Linda Beveridge, was elected as President of the Association. Dr Judy West was appointed the new Patron of the Association.

Barbara Podger

New look for Friends

Keen eyed *Fronds* readers may have noticed that this edition looks slightly different.

That's because changes to the Friends logo, colours and fonts have been made as part of the redesign and development of the website. To maintain a cohesive look and feel to all Friends products, the new look has also been applied to *Fronds*.

New templates are also available in the Marketing Materials folder on the Friends Google Drive for other products, like bookmarks and brochures, which should now be used when you need to update existing materials or create new ones.

Sharon Abrahams

Botanical Bookshop book reviews



Australian nature from the heart. The paintings of Sally Elmer and Peter Slater. 2021

Hardcover, 224 pages, \$50.00

This beautiful coffee table book contains a remarkable collection of images including birds, mammals, insects, reptiles and more. The paintings are incredibly life-like, and in some cases, you could be fooled into thinking you were looking at a photograph! Each image is set against a backdrop of stunning Australian landscapes, from desert and bush to rainforest and wetlands. The accompanying text gives fascinating background information and insights which adds to the enjoyment of this lovely book.



Dust makers. 2022

Edited by Penny Jaye and RA Stephens

Paperback, 165 pages, \$20.00

For this exciting collection of short stories, editors Penny Jaye and RA Stephens challenged Australia's Young Adult fiction authors to consider themes of sustainability, our environment and the legacy we leave for one another. The result is 13 amazing stories which cover a range of genres and settings from historical to dystopian, sci-fi to contemporary.

The stories are uplifting (the children working together with a River Care Program to be part of the solution to help contain a noxious weed outbreak in 'Invasion'), thought provoking (all of them really) and heartbreaking ("Can a butterfly beat a Dust Maker?" whispers Annika's brother as they say goodbye to their beloved jungle in 'Before the Dust Makers'). The descriptive text which explains the important ecological concepts and basic workings of the planet is well targeted to this younger audience, but doesn't fall short on scientific language or addressing more complicated concepts. Ecosystems, pollution, species extinction, atmosphere, food supply, oceans, soil, forests and climate change are just some of the topics covered within these thought provoking short stories.

The messages are loud and clear: we need to think carefully about the impact we have on our world and the difference our actions could make.

A continental bird

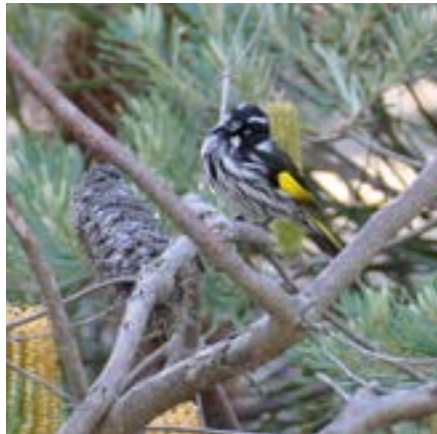
By Rick Kuhn

New Holland Honeyeaters are a common, if often fleeting, sight in the ANBG. Primarily nectar feeders, they are often seen where plants, like banksias, are in flower. Especially when feeding young, they also take spiders and insects. The ACT is well within the New Holland Honeyeater's range: from eastern, south Queensland, through eastern NSW, most of Victoria, southern central, Tasmania, eastern South Australia, and southern and south-western Western Australia.

The bird has had many names. Noongar peoples of south-western Western Australia have called it woorening, bandene, jone-jone or jingee. Unfortunately, most of the names used by other Aboriginal peoples have not been recorded. Among the labels English-speakers have used, *Australian Bird Names* records Fuchsia-bird, Yellow-winged Honeyeater and White-bearded Honeyeater. New Holland Honeyeater is currently the appropriate common name, according to Birdlife Australia. These honeyeaters were first noticed by members of the First Fleet soon after its arrival. John White, in his journal published in 1790, was the first to describe it in English. He was a surgeon and naturalist on the First Fleet and became the colony's first Surgeon-General. On 21 July 1788, he called it the New Holland Creeper.

'New Holland' was a term for Australia or parts of it used from the 17th to the 19th century. White's illustration of the purported male of the species was not entirely accurate, that of the female much better. In reality there is little difference apart from size between the sexes.

Back in England, John Latham in 1790 gave the bird its first scientific name *Certhia novaehollandiae*, following, in Latin, White's description.



Other birds have novaehollandiae in their names, including *Dromaius novaehollandiae*, Emu; *Cereopsis novaehollandiae*, Cape Barren Goose; and *Tachybaptus novaehollandiae*, Australasian Grebe, which is also common in the ACT.

Latham was also a naturalist and by profession a medical bloke, though a physician, more exalted at that time than a mere surgeon. He gave scientific names to many Australian birds and corresponded with Sir Joseph Banks, scion of wealthy gentry family, who had accompanied James Cook's voyage which explored the east coast of Australia.

Today, the New Holland Honeyeater is scientifically known as *Phylidonyris novaehollandiae*.



Wake up with the birds

We are delighted to announce that experienced guides are once again offering early morning bird watching walks in the Gardens this spring. These will be held on two weekends: 16–17 September and 7–8 October.

The ANBG provides a fantastic habitat for many of Canberra's birds, with water and nectar in abundance. Spring is a great time to observe the feeding and nesting behaviour of our birds and their young.

Join us for a 90 minute guided walk. Find out how to identify our most common black birds, for example magpies, currawongs, ravens, choughs and magpie larks; be introduced to cockatoos, parrots and honeyeaters; learn some tips on distinguishing between all those small brown birds; and discover the habitats where birds are most commonly encountered in the Gardens.

Meet at the Visitor Centre at 7.45 am. Please wear comfortable footwear and warm clothes and bring your own binoculars if you have them.

Following the bird walk you might like to stay on for coffee, tea or breakfast at Pollen, the Gardens Café (bookings at pollencafe.com.au).

The cost for the walk is \$15 for Friends of the ANBG, and \$20 for others. (Not suitable for children under 8 years old.) Bookings are essential. See the Friends website friendsanbg.org.au and use the link to the booking site. For enquiries, email birds@friendsanbg.org.au or call 0410 577 677.

Top left: New Holland Honeyeater, Banksia Garden ANBG, 27 April 2023.
Left: New Holland Creeper, female. From John White, *Journal of a Voyage to New South Wales*, London, Debrett, 1790, plate 65.

John White

Gardens Shorts

From the Acting Executive Director

Winter is truly a beautiful time of year to visit the ANBG. While the flowers are few you can still find some lovely surprises around the corner. I was admiring some of our *Banksia menziesii* in the Banksia Garden earlier this morning. You also don't have to look too hard to see buds on many of our plants ready for warmer spring temperatures.

A winter tradition that has now become part of the ANBG's events program is the return of MEGAfauna. The megafauna replicas placed around the Gardens are spectacular and always popular with our younger visitors during the July school holidays. I personally enjoyed meeting the giant crocodile, *Quinkana*, which made its appearance this year for the first time, as well as the incredible *Diprotodon* puppets created by Brisbane-based Dead Puppet Society.

The construction of the Ian Potter National Conservatory continues at pace. With the ground floor base now in place, visitors to the site will see the steel frame emerge over the coming months, in readiness for the glass block walls that will complete the Conservatory construction this summer. We are also finalising plans in readiness for construction of the new Seed Bank Facility, likely to commence construction this spring. We are currently finalising contracts with the builder and will advise the Friends on the start date.

I am also pleased to report that over the next few months a number of new staff members will join our team, as a result of the recent Federal Budget. This will include new horticulturalists, focused on maintenance of the new Conservatory collection and Gardens' living collection.



Cryptogams are organisms which reproduce by spores instead of flowers or seeds. They include ferns, mosses, liverworts, hornworts, fungi, lichens, slime moulds and algae.

We will also increase our Seed Bank personnel to include a specialist seed collector and collection curators. All helping to ensure Australia's unique threatened flora is better protected as part of the Australian Government's Nature Positive Plan. I am sure this additional investment will result in important plant conservation outcomes in the coming years.

For now, please enjoy our magnificent Gardens displays. On our coolest Canberra winter days, that touch of frost on foliage briefly adds to our collections' everchanging beauty.

Anthony Whalan

Hidden no more: Digitising the cryptogam collections

The Australian National Herbarium (ANH) cryptogam collections are usually a quiet place to visit, but since March 2023 have been a hive of activity!

A project is currently underway to digitise all specimens held by the ANH, with the assistance of specialist Dutch company Picturae. After completing the ANH's collection of flowering plants at the CSIRO Black Mountain site, the Picturae team have now started on the cryptogams at the ANBG.

It's a time-consuming process as each specimen must be carefully unwrapped, positioned and then photographed using specialised equipment, and will continue until the end of 2023.

At the end of the project, digital images of all our bryophyte, lichen, fern, gymnosperm and marine algal collections will eventually be made available online for researchers and the public to view.

This project was funded entirely by CSIRO.

Plant collecting in high elevation cloud forests

In April, senior nursery horticulturist Kathryn Scobie participated in a plant collecting trip to the high elevation cloud forests of the Queensland Wet Tropics World Heritage areas of Mt Lewis and Mowbray National Parks and the heathlands of Mt Emerald. The goal of the trip was to collect and grow material for conservation and display.

Over 30 new ANBG collections were made including ferns, orchids, palms, herbs, rainforest vines and several high elevation heathland species, many of which are destined for eventual display in the new Conservatory.



High elevation cloud forests of the Queensland Wet Tropics World Heritage areas.

The trip was a collaboration between the Australian Tropical Herbarium, Royal Botanic Gardens Victoria Cranbourne, James Cook University and the ANBG, with assistance from Australian Rhododendron Society volunteers.

MEGAfauna: A walk through time!

July saw the return of MEGAfauna, a highlight in the Gardens' events calendar. New sculptures of *Quinkana*, the land dwelling crocodile, and *Procoptodon goliah*, a giant short faced kangaroo, joined old favourites along a new trail route, to the delight of explorers! This year's event also showcased several new experiences.

Left: *Quinkana*, the land dwelling crocodile, made its first appearance at MEGAfauna. Right: Life-sized *Diprotodon* puppets roamed the Gardens at night in afterDARK events.



MEGAfauna coincided with NAIDOC Week (2–9 July 2023). To complement and connect across the events the Gardens worked with Wilay Designs to create the new map and artwork for the event.

Wilay Designs is a creative partnership between Ngunnawal sisters and artists Jazz and Kristal. Wilay Designs art is inspired by their Ngunnawal culture, and the stories passed down by their family.

Their art is not only a reflection of their own identity and perspective, but also a way to start positive conversations about culture, educate others, and promote understanding by sharing knowledge.

Another exciting addition were the incredible life-sized *Diprotodon* puppets created and manipulated by Dead Puppet Society. Dead Puppet Society is an Australian based production and design house creating deeply imaginative visual theatre, public art and sculpture, combining timeless craftsmanship with cutting edge technology. Three *Diprotodon* puppets roamed the trail throughout the first week, also emerging at MEGAfauna afterDARK events to amaze visitors.

MEGAfauna: A walk through time! was supported by ACT Government, Ovolo Nishi, and the Friends of the ANBG.



Friends Benefits

As a Friend you are entitled to:

- Three issues of *Fronds* a year
- Three hour free parking pass

Discounts at:

- Botanical Bookshop (most items)
- Pollen
- Jindii Eco Spa
- Cool Country Natives, Pialligo
- Australian Choice, Canberra Centre

You also receive:

- Advance details of lectures
- Advance bookings for some events
- Discounts on some events
- ANBG library membership – borrow books, serials, videos and DVDs, and use computers and interactive CDs
- Special rates for functions at ANBG

You can join:

- Botanic Art Group
- Growing Friends
- Photographic Group
- Plant Science Group
- Nature Journaling Group
- Assist with ANBG research projects
- Become a guide

And you can relax with tea/coffee and interesting reading material in the Friends Lounge in the Ellis Rowan Building, open 9.30 am to 4.30 pm.

What's on at the Gardens

August to December 2023

Details are correct at the time of printing. Please check the Friends website friendsanbg.org.au or the ANBG website anbg.gov.au for changes and updates.

Storytime in the Gardens

First Friday of the month

10.00 – 11.00 am

\$5 per child, adults and infants under 12-months free

Crosbie Morrison Lawn

Book on ANBG website

Join us on the first Friday of every month for family fun with stories about Australian plants and animals. Each themed session is packed with stories, songs and craft. Suitable for pre-schoolers.

Removing Woody Weeds from Black Mountain and/or within ANBG

**Saturday 5 August and
2 September 9.00 am – 12.00 noon**

**Saturday 7 October, 4 November
and 2 December
8.30 am to 11.30 am**

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

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

Guided Walks

**11.00 am and 2.00 pm daily
Free***

Enhance your visit and discover the spectacular colours of leaves, bark, flowers and seeds in the Gardens with a Volunteer Guide.

*Meet at the clock near the bridge. No booking required for individuals, but groups of more than six people should contact walks@friendsanbg.org.au a week in advance.

The Art of Living Together

14–20 August

11.00 am and 2.00 pm

Free*

When plants and animals interact, both participants may benefit, one may benefit while the other is not affected, or one may benefit while the other is harmed. Join a free guided walk to see some interesting examples of plants that interact with each other and plants that interact with insects, birds and mammals and decide who gets the better deal from each of these interactions.

A Celebration of Wattles

4–10 September

11.00 am and 2.00pm

Free*

Learn some other interesting facts and hear stories about wattles on a free guided walk.

Questacon takeover in Science Week

Saturday 19 August

9.00 am – 5.00 pm

Book on ANBG website

Join us at Questacon as the Department of Climate Change, Environment, Energy and Water takes over Q Lab. Have fun with hands on science and experiments from the Gardens, Bush Blitz and more.

Family fun in Science Week

Monday 14, Tuesday 15 and

Friday 18 August

4.00 – 5.30 pm

\$5 per child (4+). Children 3 and under are free. Adults free (all children must be accompanied by a supervising adult)

Book on ANBG website

Book your family in for hands on experiments and activities all about Australia's plants. Suitable for primary school aged children and their families.

Botanica: Spirits and Food Festival

Saturday 2 and Sunday

3 September

1.00 – 5.00 pm

\$70

Book online (see below)

Botanica is a sensory experience featuring the finest creations from botanical crafters including distilleries, artisanal producers and food vendors. The festival showcases producers focusing on utilising Australia's diverse native flora. You can sample a curated selection of spirits and food whilst enjoying the live stage program featuring masterclasses, talks and demonstrations. For further event info and tickets visit

botanicafestival.com.au

Growing Friends 2023 Spring Native Plant Sale

Saturday 16 September

8.30 am – 11.00 am, unless sold out earlier

Banksia Centre car park

Growing Friends' Spring Native Plant Sale offers plants to meet a variety of needs and conditions in time for planting before summer.

Larger plants include Tasmanian Leatherwood, *Eucryphia lucida* 'Pink Cloud', with delicate pink flowers that are attractive to bees; and *Podocarpus elatus*, the Brown Pine or Plum Pine, in both male and female forms

Shrubs include *Eremophila splendens* with its beautiful reddish flowers; *Micranthemum hexandrum*, and the Box Micranthemum, which with its small dark green leaves, bronze to reddish new growth, profuse, scented, creamy white flowers would be attractive as a specimen plant or a hedge.

Eremophila glabra 'Kalbarri Carpet' would be an excellent ground cover, with soft silvery grey foliage and yellow flowers and a spreading habit. It can also be planted in a rockery or container.

A selection of telopeas promises to be ready for the sale along with a range of correas. You will find the familiar and the unusual across many of the plant families.

All plants for sale are propagated by the Growing Friends from cuttings or seeds sourced from the ANBG with the support of ANBG staff. Most of the plants for sale cost \$6; some larger plants cost \$10. Proceeds from sales go to support the Gardens via the Friends of the ANBG.

A full list of plants available for sale can be obtained from the Friends website approximately a week prior to the sale.

This year, second-hand books relating to identification, propagation and cultivation of Australian native plants will also be on sale.

Floriade: Wake Up with the Birds

Saturday and Sunday 16–17 September and 7–8 October
7.45 am ANBG
Bookings essential

See page 17 for more information.



Woodcraft Guild ACT

30 September – 2 October
9.30 am – 4.30 pm
Various | Book online

Exhibition, workshops and demonstrations by the Woodcraft Guild ACT during Floriade.

ANPSC Spring Plant Sale

14 October
8.30am – until sold out
ANBG carpark

Browse Canberra's best range of Australian native plants, including many local species.

Annual General Meeting Friends of ANBG

Thursday 19 October 2023
3.00 pm
Gardens' Theatre

All members are invited to the 35th AGM of the Friends of the ANBG. The meeting will be followed by light refreshments in the Dickson Room. See page 15 for more information.

Children's Week

21–29 October
Various | Book online

To celebrate Children's Week, there will be a variety of activities at the Gardens including Lucky Jim performing through music, singing and dancing performances.

Sunset Cinema

23 November 2023 – 24 February 2024
Wednesday to Saturday nights (except Christmas and New Years)
Eucalypt Lawn
Book online (see below)

Canberra's favourite outdoor cinema returns for another season of movies under the stars. With their signature mix of new releases, family favourites and timeless classics, enjoy this summer's best movies along with delicious food, beverages and popcorn. Visit sunsetcinema.com.au/canberra

Exhibitions

Visitor Centre Gallery

Open Daily 9.30 am – 4.30 pm
Free

9 August – 17 September **Bushland Retrospective**

Catch a glimpse of Anton Uildriks' paintings produced over two decades. This exhibition aims to provide the viewer with an appreciation of Australian flora and fauna and inspire young artists to pursue their own creativity.

20 September – 29 October **Plant Stories: Woven Tapestry Narratives**

Through contemporary woven tapestry, ten artists explore their associations with, interests in and memories of particular plants, state and national floral symbols, markers of the seasons, night and day, geographic locations, connection to nature, renewal and growth.

1–19 November **Botanic Images**

A unique collection of botanic art and photographic works donated to the Gardens by the Friends of the ANBG. The exhibition showcases the talents of the Botanic Art Group and the Photographic Group in depicting botany.

23 November – 10 December **Illuminate 2023**

An exhibition of photographs taken within the Gardens and of Australian fauna and flora in their natural environment by Friends of the ANBG Photographic Group.

See page 11 for more information.

Thursday Talks

August to December 2023

One hour talks are held at 12.30 pm every Thursday from February to November in the Gardens' Theatrette. Admission is by gold coin donation. The Friends use the donations received to support Gardens' programs and development and thank all those who have donated.

Bookings are a good idea as talks sometimes book out very quickly. The booking link for each talk is on the Friends' website at friendsanbg.org.au/calendar Bookings can be made from the Friday before the talk until the Wednesday night before the talk.

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. Some summaries or PowerPoint presentations of Thursday Talks are available from the ANBG library. Please direct queries to talks@friendsanbg.org.au

August

Thursday 3 August

Dr Cécile Gueidan
Using novel approaches to strengthen the relevance of lichen collections

Cécile, from CSIRO, says the symbiotic nature of lichens brings yet another challenge. She will present ongoing research done at the Australian National Herbarium using novel approaches in order to unlock the potential of its lichen collections.

Thursday 10 August

Murraya Lane
Recent research on koalas and their habitats in burnt and unburnt landscapes

Murraya, from ANU, will talk about resident and rehabilitated koalas and compare the nutritional composition between mature foliage and epicormic growth in unburnt and burnt landscapes.



Thursday 17 August

Dr David Bush
Australian native tree species for bioenergy and carbon capture

Biomass bioenergy is likely to be an important part of the overall mix of renewable energy sources needed to meet overall and peak demand in future. David, from CSIRO, will talk about how testing of native species has revealed some promising candidates for these purposes, including some threatened species.

Thursday 24 August

Bronwyn Saunders
The story behind the story, and Diprotodon herd insights

The Story Behind the Story looks at how the book, *Diprotodon: A megafauna journey*, came about and the manuscript's own journey through research to publication. Diprotodon Herd Insights is about likely *Diprotodon* behaviours, family herds and mating habits. If you would like to pre-order a copy of Bronwyn's book go to publish.csiro.au/book/8087



Thursday 31 August

Professor Adrienne Nicotra
Living on the edge: Understanding the thermal ecology of plants from threatened ecological communities

Adrienne, from ANU, will talk about the latest advances in examining how plants from extreme environments (desert and alpine) respond to and tolerate extreme heat and cold. This research seeks to identify ways to predict responses of plants from threatened ecological communities to a warmer and increasingly variable climate.

September

Thursday 7 September

Suzette Searle
Wattle days are here again

Suzette will talk about wattle days, and the people and organisations involved in their promotion, before and particularly after the official proclamation in 1992 of 1 September as National Wattle Day across Australia.

Thursday 14 September

Dr Francisco Encinas-Viso
The diversity of Australian alpine plant-pollinator communities

Francisco, from the Australian National Herbarium, will present factors that drive the diversity of Australian alpine plant-pollinator communities, what changes are due to climate change and an overview of anthropogenic factors that have shaped these communities in Kosciuszko National Park.

Left: Owen, the koala, released after vet check and tagged.
Right: Francisco Encinas-Viso.



Provided



K Christensen



H Kennedy

Above left: Valerie Kirk and a tapestry.

Above centre: *Opodiphthera eucalypti* is featured on the first plate of Australian Lepidoptera (known then as *Antheraea eucalypti*) and is present in Canberra.

Above right: *Melichrus urceolatus* is widespread in the ACT.

Thursday 21 September

Emeritus Prof Valery Kirk AM Plant stories: Woven tapestry narratives

Valerie, ANBG Artist-in-residence 2022–23, will talk about her adventures and experiences here and overseas and how they influenced her recent work.

Thursday 28 September

Dr Toner Stevenson Eclipse chasers: Astronomical observations in Australia and the Pacific

Toner, from University of Sydney, will explain the science of a total solar eclipse, how the temperature, plants and animals are impacted. Some exciting challenges from eclipses, including the recent eclipse in Western Australia, will highlight the involvement of women, and the experiences and contributions of First Nations Peoples.

Toner is happy to sign copies of her book after the talk.

October

Thursday 5 October

Glenn Cocking Moths in the ACT: What might the Scott sisters have found if they were here?

Glenn will give an overview of moths that live in the ACT, drawing attention to some that are very widespread, and particularly some that were studied by the Scott sisters. He will also give some guidance on how to go about identifying the myriad of moth species present in the ACT.

Thursday 12 October

Helen Kennedy *Melichrus urceolatus* on Black Mountain is a different species to *M. urceolatus* on Mount Ainslie!

Helen, a local botanist, will present updated taxonomy for *Melichrus*, especially on the locally relevant results which show that Nancy Burbidge was right when she thought there were actually two species in the ACT.

Thursday 19 October

Don Beer Memorial Talk

See details on the Friends website.

Thursday 26 October

See details on the Friends website.

November

Thursday 2 November

Dr Erin Hahn Conservation time machine: Harnessing degraded DNA for wildlife protection

Dr Erin Hahn, a wildlife Research Scientist at CSIRO, will unveil the power of DNA in wildlife conservation. Discover how 100-year-old museum specimens help predict species' response to climate change, and how she's collecting airborne DNA to monitor rare species and invasive species. A fascinating glimpse into the future of Australian wildlife protection.

Thursday 9 November

Emeritus Prof Libby Robin What birdo is that? Birds and the humans who love them

Birds and their people can be funny, intriguing and surprising. Libby will tell some of the back-stories from across centuries. It builds to a crescendo in the 21st century where global warming and biodiversity loss have become existential threats to life on Earth. Libby is happy to sign copies of her new book after the talk. Copies can be ordered from Melbourne University Press mup.com.au/books/what-birdo-is-that-paperback-softback

Thursday 16 November

Margaret Saul Botanical art and illustration: Convergence of art and science

Join Margaret Saul, a distinguished botanical artist, illustrator and instructor, to experience a visual feast of botanical art arising from the exploratory voyages of Australia through to the masterful works by her and her contemporaries.

Thursday 23 November

See details on the Friends website.

Thursday 30 November

Dr Roger Farrow Three years on from the 2020 mega-fires: The course of recovery of the vegetation in Morton and Tallaganda National Parks

Roger, an unretired entomologist following a career in CSIRO Entomology, will illustrate three years of a complex pattern of succession that is apparent in two different plant communities: heathland in Morton NP and forest in Tallaganda NP.



Friends of the
**Australian National
Botanic Gardens**

Helping The Gardens Grow