

Fronds

*Friends of the Australian National Botanic Gardens
Number 93 December 2019*





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RAINER REHWINKEL

Qualup Bells, ANBG

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Cover: *Banksia spinulosa*, ANBG, photo – Pam Rooney

Qualup Bells - *Pimelea physodes* - a showstopper

Rainer Rehwinkel

Braving Canberra's cold, and flowering from the end of June through July and August, and still going strong in early September, is this beautiful Western Australian, the Qualup Bells (*Pimelea physodes*). Whenever I've seen these over the last few months, they've been a showstopper, with passers-by invariably pausing to admire them and taking a photo or two. These plants are in a bed beside the main path, between the Visitor Centre and Pollen.

I've always admired riceflowers (*Pimelea* spp.), with several attractive species found in the dry forests, woodlands and grasslands of the Canberra region. The most common here is the Slender Riceflower (*P. linifolia*) a low open shrub of the stony rises of Canberra. It bears its clustered creamy flowerheads at the ends of its branches in spring. Similar, though much more compact, and far less common, is the Smooth Riceflower (*P. glauca*) of grassy groundlayers in grasslands and woodlands. Another grassland species, the Curved Riceflower (*P. curviflora*) has its flowers arranged along its stems, tiny tubular affairs in greenish yellow, or rarely, reddish brown. The Curved Riceflower looks and behaves like a forb rather than a woody plant, though this may be a function of it being

repeatedly grazed in its grassy habitats. I have seen this species attain the stature of a shrub to a height of 45cm at one ungrazed site.

These eastern riceflowers bear little resemblance to the spectacular Qualup Bells. Endemic to south-western WA, this species has, to the untrained eye, large petals. Closer inspection reveals that small flowers are indeed arranged in clustered heads at the tips of the branches, and the "petals" are, in fact, leafy bracts that surround the flowerheads. If you look carefully at the Slender and Smooth Riceflowers, you'll notice that their flowerheads are also surrounded by leafy bracts, though in those species, they're certainly not as showy as in the WA species.

According to a factsheet by the Australian Native Plants Society, Qualup Bells have long been favoured as bush-gathered cutflowers, though that practice has now been restricted. They are now being successfully cultivated for that purpose.

The ANPS factsheet states that the Qualup Bells requires a well-drained acid soil, and a sunny position free from frosts. It apparently resents the humid conditions of eastern Australia. The site at the ANBG seems to suit it well, with several shrubs in the ground and one in a large tub. With seed available from Australian seed suppliers, and with a warmer, dryer climate, perhaps we'll see more of these spectacular Western Australians in our future gardens.

The riceflowers belong to family Thymelaeaceae, and are found mostly in Africa and Australia, with some Asian and European representatives. The best-known family member is the exotic Sweet Daphne (*Daphne odora*), prized for its sweetly scented flowers.

Riceflowers had a very important use by Indigenous Australians. Their bark is characteristically stringy, a fact you'd realise if ever you've tried picking a flower off a shrub: the bark comes away in long strips. Many years ago, I saw a string-bag made of riceflower string, woven by Indigenous people of the Monaro. That bag had been in possession of a landholder for many years and it was still as pliant and flexible as if it had been made the previous year. The common riceflower that grows in that part of the world, Poison Riceflower (*P. pauciflora*), is a tall shrub, to three metres, with long slender branches (ideal for making long lengths of string). Its clustered small yellow tubular flowers, like those of the other eastern species, are backed by small green leaf-like bracts.

Riceflowers: varied, beautiful and useful!

Rainer Rehwinkel is co-author of the book by Eddy, D, Mallinson, D, Rehwinkel, R and Sharp, S. (1998) *Grassland Flora, a field guide for the Southern Tablelands (NSW & ACT)*. Environment ACT.



RAINER REHWINKEL

Now you see them, now you don't: a threatened species walk

Naarilla Hirsch, Volunteer Guide

Walks on Threatened Species Day this September highlighted the diversity of threatened plant species and communities on show in the ANBG, the range of threats faced by these plants and communities, and the critical role the ANBG plays in their conservation.

Over 1,300 plant species and almost 80 ecological communities are listed as threatened under either or both Commonwealth and State/Territory legislation. The Commonwealth legislation categorises listings into extinct, critically endangered, endangered and vulnerable; at least 300 of the threatened plants listed are in the ANBG.

The Commonwealth legislation listing covers not just plant species and ecological communities, but also threatening processes. Those affecting plants include land clearance for agriculture, urban development and infrastructure,

invasion by garden escapees and by novel biota, land degradation by feral animals, dieback due to the root-rot fungus *Phytophthora cinnamomi*, and climate change. These were common threats to many of the plants we looked at on the walk, as were inappropriate fire regimes and impacts from a range of human and commercial activities.

At least 300 of the threatened plants listed under the Commonwealth legislation can be found in the ANBG.

The area around the Visitor Centre showcases a number of threatened plants and plant communities. After viewing the bogs and fenlands pipe pots we moved on to the Nielsen Park Sheoak (*Allocasuarina protuensis*), listed as endangered (i.e. with a probability of extinction of at least 20 per cent in the immediate future). Despite occurring in the environs of Sydney Harbour, this sheoak was only

discovered in 1986 in a single population of 10 plants. The last known wild tree died in 2003, but since then it has been translocated to the original site, with 120 plants surviving in 2008. Recreational use of that area remains a significant threat to this species.

The Box Gum grassy woodland garden is at the entrance to the main carpark. Construction is a significant reason for the critically endangered status of these communities which have a probable extinction rate of at least 50 per cent in the immediate future. It is actually possible to see a construction site across Clunies Ross St in the ANU, from this site. As well as widespread species such as Common Everlasting (*Chrysocephalum apiculatum*), box gum grassy woodland contains threatened species such as Button Wrinklewort (*Rutidosia leptorhynchoides*) and Small Purple Pea (*Swainsona recta*) and is also home to threatened fauna such as the Superb Parrot.

Button Wrinklewort is restricted to a few tiny sites in the ACT and south-western Victoria. Extensive research on its genetics by Andrew Young and others at CSIRO has highlighted some of the problems in restoring this threatened plant to the wild. One is that there are two chromosomal races – diploid populations that are spread across the whole range, and tetraploids in the south-west of Victoria. Fertility is reduced if the two races interbreed, highlighting the importance of the data the ANBG hold behind each plant growing in the Gardens and seed in the seed bank.

Button Wrinklewort has been found to be self-incompatible. This system works effectively in large, genetically diverse populations, but results in reduced fertilisation in small fragmented populations. This suggests that seed collection for translocation projects for Button Wrinklewort should be from plants located several metres apart in order to minimise the relatedness of progeny.



Grassy woodland garden, ANBG

Nearby is the Small Purple-pea (*Swainsona recta*), an endangered plant only occurring in small populations, many of which are on railway easements. The ANBG has created a seed orchard of this plant to produce seed and bulk up stocks for propagation. Some have been planted on a biodiversity offset block in Williamsdale and, as part of the *Wandiyali Swainsona* Project, the ANBG has translocated 300 seedlings to establish a new self-sustaining population near Queanbeyan.

On our walk, we paused to reflect more on the status of our Eucalypts – of the over 800 species, 61 (7.6 per cent) are listed as endangered. One is the Green Mallee Ash (*Eucalyptus langleyi*), which occurs in a small area of scrubland near Nowra. Initially there were 32 trees, but only 20 remain following destruction of some during pipeline construction in 2000. Conservation measures include design of walking tracks to minimize the risk of recreational user damage, fire management and weed control.

Along Banks walk is Morrisby's Gum (*E. morrisbyi*). The main wild population no longer produces seed, but a seed orchard was established in the mid-1990s and hundreds of seedlings have been planted along roads and on private property since then. Beside it in the pipe pot is Border Boronia (*Boronia repanda*), listed as endangered but with no populations managed in conservation reserves. Threats to it include fire reduction activities, quarrying and inappropriate seed collection.

Outside the café is a Tall Astelia (*Astelia australiana*). This plant forms large colonies on humus-rich waterlogged soils in *Nothofagus* and *E. regnans* forests, reflecting its ancient origins in the rainforests of Gondwana. Male (maroon) and female (green) flowers are separate and the pollination vectors are unknown. Threats include the impact of nearby timber harvesting and competition from other plants.

All except one *Zieria* are endemic to Australia, and 21 of the 60 species (35

per cent) are listed as endangered. Just past the Wollemi Pines is Headland Zieria (*Zieria prostrata*), which occurs on four headlands near Coffs Harbour and has a soil seedbank of extremely low viability. A cultivar known as Carpet Star is readily available and is a good ground cover. Further along in the rock garden, the vulnerable Lemon-scented Zieria (*Z. citriodora*) has a pleasant perfume and could potentially be bred in large enough numbers to be released to nurseries, providing money for conservation.

On the main path, Zigzag Grevillea (*Grevillea flexulosa*) was thought to be extinct until rediscovered recently. Occurring in the Jarrah forest biogeographic region, this species is threatened by dieback from *Phytophthora cinnamomi* and loss of habitat. Its lemon or creamy-white flowers are perfumed and attract butterflies, insects and nectar-feeding birds.

The walk ended with visits to the Conservation and Research, and the *Pomaderris* gardens, both showcasing a number of threatened plants and the ANBG's role in their conservation. We left appreciative of the opportunity to see almost 40 of our threatened plants and plant communities.



Button Wrinklewort



Morrisby's Gum



Small Purple-pea



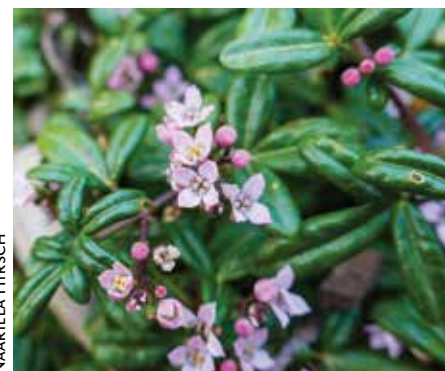
Zigzag Grevillea



Nielsen Park Sheoak



Tall Astelia



Headland Zieria

From 'Banksia Centre Garden for the Disabled' . . .

In 1980, as part of the International Year of Disabled persons, the Gardens, in its annual report, noted the completion of a major event, 'the Banksia Centre Garden for the Disabled'.

The Gardens' photographic collection, the Australian Plant Image Index (APII), has a number of photos of this garden and its clients. It was an easy-access garden with wide paths, many resting places, and some raised beds with 'colourful perfumed flowers and scented and textured foliage'. Mrs Tamie Fraser, wife of then Prime Minister, Malcolm Fraser, took a great interest in this development and opened the garden and the Banksia Centre on 21 July 1982.

In 1983-84 the Centre promoted horticulture for disabled people, gave advice on accessible gardens, developed tools for disabled gardeners and welcomed 1,800 people with disabilities to the Centre's programs. It became the leading advocate for therapeutic horticulture in Australia. By 1986 the Centre was

assisting twenty local and twenty interstate organisations. In 1988-89, 2,080 people attended while by 1990-91 usage had grown to 3,900.

In 1993 the Gardens decided that services for disabled people should be integrated with services for people of all abilities, so the role of the Garden changed. Over the years accessibility for all abilities has become a consideration throughout the Gardens' design.

In the 1990s the Banksia Centre was renamed the Banks Centre as part of a policy to name buildings after people, not plants, to avoid confusion. Where visitors once expected to see *Banksias*, there will now be *Banksias*.



National Capital Development Commission sign for development of Garden for the Disabled (later Banksia Centre), ANBG, 1981



Raised beds Garden for the Disabled 1982



Daisies on No Steps Trail, 1992



Banksia Centre, Garden for the Disabled, garden bays, ANBG, 1982. In later years, the curved timber walls were replaced with rock walls. Compare this with the photograph, lower right on page 7, and you see that the curving paths and alcoves of the original design are retained in the new design



Raised beds with exotic plants grown by clients, 1985

. . . to 'Banksia Garden' for all

The new Banksia Garden will open in April 2020, to celebrate the ANBG's 50th anniversary. Gardens' staff have been busy building the very beautiful sandstone walls and in September 2019 those of the central tiered garden bed had been completed. Major earthworks include removing clay from the area and spreading and mounding sandstone based coarse sand in preparation for planting. All watering will be from below so drainage and irrigation pipes are being installed. In the nursery, staff continue to be busy propagating and maintaining plants. A transformation.

Anne Rawson



PHOTOS: PAM ROONEY

Friendly Chatter

Botanic Art Groups

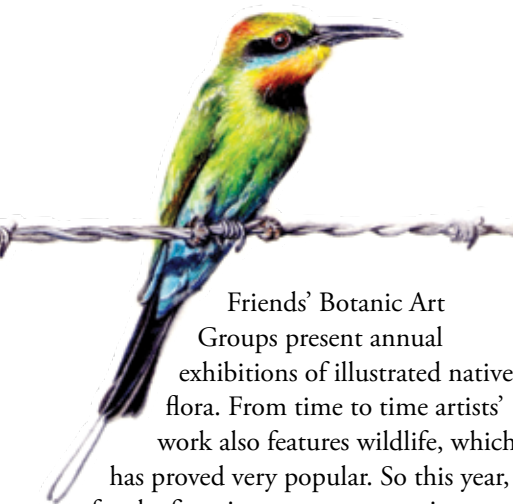
NATIVE WILDLIFE EXHIBITION

Visitor Centre Gallery

14 December 2019 - 12 January 2020

Closed Christmas Day

Daily 9.30 am - 4.30 pm



Friends' Botanic Art Groups present annual exhibitions of illustrated native flora. From time to time artists' work also features wildlife, which has proved very popular. So this year, for the first time, we are mounting an additional exhibition featuring native wildlife exclusively. **All Friends are invited to a preview on Friday 13 December from 2 pm to 4.30 pm.** Be amongst the first to choose something special and unique as a Christmas present for someone in your family, or for yourself. Paintings will be in a variety of styles and include a diverse range of wildlife from birds, marsupials and insects to marine life. All are for sale. Entry is free.

OUR ANNUAL BOTANICAL ART EXHIBITION will be held from 18 April to 17 May, 2020.

Kate Ramsey



Botanic Art Groups Images:
Kristen O'Keefe, Rainbow Bee-eater
Vivian Pinder, Water Dragon

Growing Friends

Growing Friends have been busy propagating plants from the Gardens. Our next sale is on 28 March 2020. In the past year, plant sales have raised over \$12,000. Propagation sessions are held on the first Saturday of each month and are a great way to see different parts of the Gardens and learn about the wide range of native plant families and species. If you are interested in joining, please talk to one of the Growing Friends, or telephone John Connolly (0477 257 188) or Maurice Hermann (0429 361 256).

Wendy Merritt

Plant Science Group

Recent talks at the Plant Science Group have ranged from pollination to changing taxonomic landscapes:

August: A window to the past: using museum specimens to study temporal changes of plant-pollinator interactions (Francisco Encinas-Viso, CANBR - CSIRO).

September: Evolution of Australian heliozelid moths and their pollination mutualism with *Boronia* (Rutaceae) (Liz Milla, Postdoctoral Fellow, CSIRO Black Mountain).

November: *Acacia* taxonomy and applications (Dr Phillip Kodela, Australian Biological Resources Study)

The Plant Science Group meets on the first Monday of the month. For further information contact:

plantscience@friendsanbg.org.au

John Busby



Photographic Group members and other contributors were each presented with a copy of 'Australian Water Dragons' by Lisa Mitchell. They were some of the photographers who submitted images for inclusion in the production of the book.

HELEN DAWES

Photographic Group

The Photographic Group provides opportunities for Friends who have an interest in photography to share their experience and learn about photography while also extending their knowledge of the Gardens. Meetings are held on the last Friday of the month in the theatre opposite the Visitor Centre. To join the group contact: photo@friendsanbg.org.au.

The Group had a successful 2019 with presentations, two macro workshops, a trip to the Eurobodalla Botanic Gardens and walks, both guided and unguided, in our own ANBG. The committee has worked hard to ensure that our members are provided with activities that stimulate them. And, with 2020 being the 50th birthday of the Gardens, the 30th birthday of the Friends, and the 10th birthday of the Photographic Group, our plans to help celebrate these occasions are well underway.

On Sunday 5 April 2020, a full-day INTRODUCTION TO DIGITAL PHOTOGRAPHY WORKSHOP will be held. The aim is to help participants understand the basic operation and principles of their camera. It is designed for people who have a camera and wish to utilise its many features. The full day workshop includes sections on theory and practical. Cost is \$170. (see p22)

Helen Dawes

Volunteer Guides

Thirty volunteer Guides from ANBG attended the 16th Australian Botanic Guides Conference 2019, at Kings Park, Perth. Altogether there were 150 conference attendees, with representatives from each state and territory (except the Northern Territory), as well as from Wellington and Christchurch, New Zealand. The theme of the conference was *Beauty rich and rare*, which is a particularly apt description of the flora featured in Kings Park Botanic Gardens and found across Western Australia. WA has almost half of Australia's 25,000 plant species, and two-thirds of these do not occur naturally anywhere else on earth.

Conference participants were welcomed to country by Dr Noel Nannup, who spoke about the pleasure of walking on country, the importance of story-telling and the joy you get from discovering something about nature for yourself. We were immediately transfixed, thinking about how we can apply these ideas to our guiding. In the course of the conference we also heard about initiatives to link Aboriginal experience with modern science (explored in a film available on YouTube by Dr Nannup and Professor Hopper *Synergies: Walking Together—Belonging to Country*.) The strong emphasis on connecting with Aboriginal heritage was sustained throughout.

The complementarity of gardens and bushland was also an ongoing theme, reflected in other presentations, in walks through the gardens, and the day excursion to nature reserves further afield. Presentations covered the development and management of the Kings Park Botanic Gardens, including their seed collecting and plant breeding activities (Grady Brand, Luke Sweedman, Digby Growns); and the evolutionary development of this biodiversity hotspot (Professor Kingsley Dixon). As an old landscape with a stable climate, the southwest (an area the size of England) is recognised as a global biodiversity hotspot for flora and fauna. The

Noongar Aboriginal word *kwongan* has come into common usage to refer to this floristic region's shrubland vegetation and associated countryside (equivalent to South Africa's *fynbos*)

The theme of *Beauty rich and rare* came to life – actually larger than life – when the *Adorable Florables*, a group of wildflower characters, turned up at the conference soiree, to our amusement and delight. This was undoubtedly a conference highlight. These characters, who are actually Kings Park Botanic Gardens employees, can be found meandering through the Gardens during the spring festival, entertaining visitors with their lively banksia, bee, kangaroo paw and wattle personalities!

The conference also provided opportunities to learn from other botanic

gardens: the various training, mentoring, planning and operational arrangements used by the different volunteer guide organisations. We could all relate to the highly amusing depiction of flawed and good guiding techniques, highlighted in a training video produced by Kings Park guides.

Overall, the conference was an impressive volunteer achievement: run by volunteers for volunteers. It was a reminder of how much we, as volunteer Guides, appreciate being part of a group that has a positive, encouraging and learning culture. As volunteers we are always learning; and never more so than when learning is part of enjoyable, social activities and on location, in bush or botanic gardens.

Lesley King



ANBG Friends and Guides with an *Adorable Florable*, Perth



Guides in their element discovering plant wonders in the Stirling Range National Park, WA (post conference tour)

Friends Life Membership: Anne Campbell

As announced at the AGM, Life Membership for distinguished service to the Friends has been awarded to Dr Anne Campbell.



Anne has been a Volunteer Guide since 2008 and often contributed to the development of special walks, as well as to the Red Centre Guiding Handbook. In 2012/13 she worked on the development of the Eucalypt Discovery Walk. She was also one of the original Flora Explorer drivers and helped develop the original route for the Flora tour.

Her professional background enabled Anne to support scientific activities – a Botanical Resource Centre volunteer in its early days, and subsequently convenor of the Plant Science Group. She organised a trip for both that group and the Guides to visit the PlantBank at the Australian Botanic Garden, Mt Annan.

Anne served on Friends Council for four years and has been a regular volunteer at Summer Sounds and, more recently, at the Visitor Centre. Anne is the sort of committed volunteer that every organisation such as the Friends needs. Anne has moved back to her former home city of Adelaide, but will receive the award on her next visit to Canberra.

Schools Photo Exhibition

Local Shooting Stars

One hundred and eighteen students from local colleges, high schools and primary schools competed in this year's Annual School Photographic Competition, run by the Friends. In its 23rd year, the competition attracted 294 entries from 14 schools across Canberra and Yass. It was the first time that primary school age students were able to enter with prizes for colour and monochrome works. College and high school students

were also able to enter "altered reality" photographs thus stretching themselves creatively. A group from the Friends Photographic Group judged the entries and commented on the high standard of the images this year. Nineteen cash prizes were presented on 2 November at the ANBG theatre. Highly commended and commended certificates were also awarded to 39 entries. The first and second placegetters came from 5 different schools, each of which received a cash reward. The featured photos on this page won first prize in each of the five categories.

An exhibition of the works was held in the Visitors Centre from 30 October to 17 November 2019. It was wonderful to see the range of entries sparked by the flora and fauna of the ANBG.

Cecilia Melano



Sweden, Riley Wilson, Canberra High School



Bird, Ky Trotter, Canberra College



Dripping Bottle Brush, Amy Lancaster, UCSSC
Lake Ginninderra College, Altered reality



House Made of Sticks, Samuel Wagner,
Aranda Primary School



Banksia, Alyse Rooney,
Hawker Primary School

Collaborating for the future

In collaboration with Parks Australia, a new charity, the National Parks Conservation Trust, was launched on 27 November 2019 to raise awareness and support for new conservation initiatives with lasting benefit for plants, animals and people in and around Australia's remarkable Commonwealth reserves. These reserves are iconic places, some with World-Heritage listing. They include wild places, steeped in Indigenous cultures, such as Kakadu, Uluru-Kata Tjuta and Booderee national parks; unique island reserves such as Christmas Island, Pulu Keeling and Norfolk Island; and 58 Australian Marine Parks which include some of the last unknown frontiers on earth. The ANBG is part of this extraordinary portfolio. It is also the only one with a vitally engaged group of Friends.

"The new Parks Trust will largely focus on fundraising in other Commonwealth parks," Judy explained. "But on occasion, ANBG management may identify a major project that needs national support. In those cases the Parks Trust will create and manage the fundraising campaign and, if the Friends want to contribute, the Trust and the Friends will collaborate."

News about fundraising for future conservation projects can be found on the Parks Trust website, www.parkstrust.org.au. Trust Representative, Sarah Kimball, is looking forward to connecting people with projects. "Trust campaigns will give people opportunities to learn about and get involved in vital conservation work, some of which will be at the ANBG. There is so much we can do to change the future for Australia's natural and cultural heritage!"



Book Review

***The Secrets of Great Botanists and What They Teach Us About Gardening.* Mathew Biggs, Exisle Publishing, \$34.99**

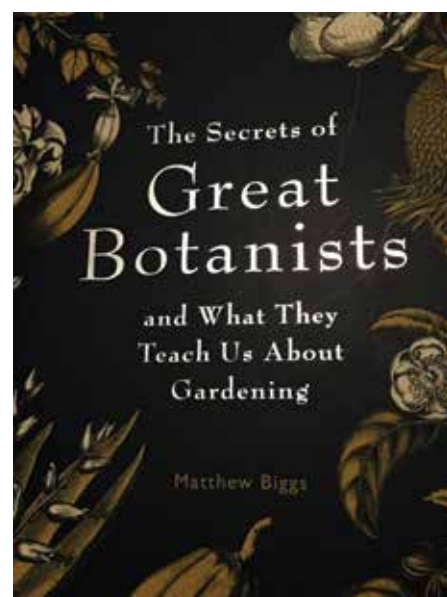
Reviewer: Cathy Robertson

Welcome to a book filled with the discoveries of 36 gardener-botanist-explorers, commencing with the father of Pharmacology, Pedanius Dioscorides (40 – 90 AD) and closing with the inventor of the green wall, Patrick Blanc b 1953. Biggs presents a personal selection of men and women who unlocked the secrets of botany and technology that are the bedrock of our society. The diverse range of discoveries include: the plant classification system, medicine, cytology (plant cells and chromosomes), paleo-botany (fossil plants), botanical photography, economic crops developed by plant breeders and geneticists, botanical atlas creators and urban architecture. Divided into 35 sections with botanical illustrations for plants discovered by or named for each one, the author has included cleverly researched and presented tips to inspire reader-gardeners to experiment with plants and growing techniques. Period botanical water colours and vibrant photographs illuminate the elegant text and inspire and educate the reader.

Where Biggs has cultivated new ground is by unearthing eight virtually unrecognised women botanists. E.K. Janaki Ammal (1897-1984) is a remarkable illustration. Born in rural India, she was the first woman awarded a PhD in botany in the USA with a study of the chromosomes in *Nicandra physalodes*, the shoo-fly plant, (a member of the potato family endemic to South America). Her research on breeding sugar cane strains enabled India to become a major sugar cane exporter. Later whilst working in London, Ammal co-authored the Chromosome Atlas of Cultivated

Plants. She was appointed as the Royal Society's Cytologist at the Royal Horticultural Society at Wisley. In 1951, Ammal was invited by the Prime Minister of India to modernise the Botanical Survey of India. Among her many discoveries were the origins of cultivated strawberries, the plant identification method using chromosome counts and the effects of colchicine on the cell division of a number of plants including magnolias. Ammal's research identified that the Black Mulberry, has the highest chromosome count of any flowering plant. The gardening tip for this section is: *Modus macroura*, a dwarf Black Mulberry, as an ideal option for small gardens.

The Secrets of Great Botanists will provide inspiration and practical guidance for gardeners at all levels, from successful plant cultivation to adding interesting plants to your garden.





Australian National Botanic Gardens



The Gardens are turning 50. The Friends are

2020 marks 50 years since the Gardens opened to the public and to celebrate this milestone

A snapshot of celebratory events 2020

For more details on all these events see:

Gardens website – <https://parksaustralia.gov.au/botanic-garden> and the Friends website – <http://friendsanbg.org.au>

COMMENCING PRE-CHRISTMAS 2019

21 November 2019 – 11 January 2020: Sunset Cinema

14 December 2019 - 12 January 2020: *Native Wildlife*, Friends' Botanic Art Group Exhibition

JANUARY 2020

12 January: *Grow This in Canberra (Summer)*, take a walk with Growing Friends guide

13 – 19 January: Snakes Alive! See snakes, lizards, turtles, frogs and more

17 January – 1 March: *Promiscuous Provenance*, an exhibition at the Visitor Centre by artist Anna Glynn

18 January – 2 February: Summer Sounds 2020, relax and enjoy music on the Eucalypt Lawn on six evenings

FEBRUARY 2020

6 February: Thursday Talks commence, talks in 2020 will showcase the ANBG's science and conservation programs. See the Thursday Talks program in each issue of *Fronde* and on the Friends website.

28 February – 1 March: Bonsai Exhibition of Australian Native Plants

MARCH 2020

March: Enlighten Festival, Luminous Botanicus V, experience the Gardens at night

5 March – 12 April: *Seeds in the Bank*, an exhibition at the Visitor Centre. A glimpse into the collection of the National Seed Bank and the seeds collected to support the conservation of our native flora.

15 March: *Grow This in Canberra (Autumn)*, take a walk with Growing Friends guide

21 March: Australian Native Plant Society Autumn Plant Sale

23 March: National Eucalypt Day, enjoy walks and workshops

28 March: Growing Friends Plant Sale, purchase a selection of native plants propagated from Gardens' stock

APRIL 2020

3 April: Sundial Afternoon, lecture, picnic, and visits to the ANBG and Mt Stromlo sundials

5 – 9 April: Australasian Seed Science Conference, hosted by the ANBG

5 April: Workshop – Introduction to Digital Photography offered by the Photographic Group for Friends' members

10 – 13 April: Easter Bilby Trail at the Gardens

18 April – 17 May: Botanic Art Group *Banksias*, an exhibition at the Visitor Centre. Beautiful botanical paintings and drawings dedicated to *Banksias*. Artworks for sale

24 April – 3 May: *Banksia Festival*, a week-long celebration of all things *Banksia*, & Banksia Garden Grand Opening

28 April: Friends *Bubbles and Banksias*, an evening event with special guests, food and wine

re turning 30. Celebrate throughout 2020!

the Gardens and Friends are hosting an array of community events, exhibitions and programs

MAY 2020

- 1 May: Canberra International Music Festival Concert** at the Gardens. Hear the new work by percussionist Bree van Reyk, commissioned by the Gardens, to celebrate the anniversary year and the opening of the new Banksia Garden
- 20 May – 14 June: *Paradise Lost – Solander***, an art exhibition at the Visitor Centre commemorating the legacy of the Swedish botanist Daniel Solander. Presented by the Embassy of Sweden in Canberra and the Solander Gallery in Wellington
- 20 May – 14 June:** Walk with a Gardens Guide to see plants collected by Banks and Solander
- 31 May: Botanic Gardens Day**, Gardens around Australia and New Zealand celebrate the wonders of Botanic Gardens.

JUNE 2020

- Mid-June: *Grow This in Canberra (Winter)***, take a walk with Growing Friends guide
- 17 June – 12 July: *Detritus***, a beautiful display of glassworks and drawings at the Visitor Centre

JULY 2020

- 15 July – 9 August: *Talking with Trees***, a special photographic exhibition at the Visitor Centre, complemented by public programs in the Gardens.

AUGUST 2020

- 14 August – 13 September: *Native Plants Through Visitors' Eyes***, at the Visitor Centre, a joint exhibition between the Korean Botanical Art Group and the Friends Botanic Art Groups, illustrating the importance of Gardens and why they attract visitors from all over the world.

SEPTEMBER 2020

- 1 September: Wattle Week walks**, celebrate our national floral emblem
- 16 September – 25 October: 50th Anniversary**, at the Visitor Centre. See how the Gardens have transformed over the last 50 years in a special Anniversary exhibition, featuring Australian botanical artworks as part of the GLAM Arts Trail
- September – October: *Wake up with the Birds***, join our expert birding guides in a morning bird walk

OCTOBER 2020

- 17 October: Australian Native Plant Society Spring Plant Sale**
- Mid-October: *Grow This in Canberra (Spring)***, take a walk with Growing Friends guide
- 18 October: The Garden Party**, everyone is invited to the Gardens' birthday party!
- 22 October: Anniversary Dinner**, Gardens' Golden Anniversary Dinner
- October:** Friends birthday party and AGM
- 28 October – 15 November: 24th Annual Friends School Photographic Competition**, exhibition at the Visitor Centre

NOVEMBER 2020

- 14 November: Growing Friends Spring Plant Sale**, purchase a selection of native plants propagated from Gardens' stock
- 19 November – 6 December: Competition and Exhibition– *Reflections***. To commemorate the anniversary events in 2020 and 250 years since Joseph Banks visited Australia, the Friends of ANBG Photographic Group will organise a photographic competition as part of the Group's annual photographic exhibition at the Visitor Centre
- 19 November – 9 January 2021: Sunset Cinema**

Friends Annual General Meeting; major projects and related activities

Summary of the Report from the President Max Bourke

Friends' President Max Bourke introduced his first annual report by remarking that it had been an extraordinary year for the Friends and himself and noting it was a steep learning curve, despite the handsome briefing he had received from Lesley Jackman, his predecessor.

With the **Gardens' 50th Anniversary** and the **Friends' 30th Anniversary** in 2020, there had been a lot of planning and spending. Simpler guidelines for project funding in line with the Friends' objectives were needed and Max thanked David Coutts and his team who undertook this activity. He particularly mentioned the importance of the financial support given to Professor Adrienne Nicotra, ANU, who is also a Director of the Public Fund, for her long-standing project to unlock secrets of plant behaviour at a time when the world's plants are facing a potential climatic disaster.

He declared the Friends' organisation to be in robust good health from both membership and financial perspectives, with a huge range of services being delivered by its interest groups and by all the Friends' volunteers who dedicated so much time and expertise in support of the Friends.

Max thanked the Fronds team; the Growing Friends; the Photographic Group; the Art Groups; the Seedy Vols; Wendy Antoniak for the monthly E-Newsletter; David Moore and others for the updates to the IT system; Jan Finley and her team for the Thursday Talks.

Max praised the work of the Membership Team, Lesley Harland and Pam Cooke, who are 'totally behind the scenes'. He mentioned that through them last year, he wrote to many people who make significant tax deductible donations to the work of Friends which goes to the Gardens.

A good IT system remains elusive. Max commended the activity led by David More and more recently by Alan Henderson to find a modern IT system for membership/donations, which is continuing.

Max listed **eight major Friends' funded projects** including: Gardens 50th Anniversary Book written and illustrated by Murray Fagg; iconic displays of large plants; employment of a special science communicator to publicise the work of the Gardens to external communities; a video exhibition wall outside the entrance to the Theatrette promoting Gardens' activities; the Banksia Garden's interpretative signage; an international speaker for the Australasian Seed Conference in April 2020; and a special seed exhibition in the Visitor Centre for this Conference.

Max acknowledged the engagement of Executive Director, Dr Judy West, the General Manager Peter Byron and all the staff of the Gardens in working collegially with the Friends and all members and colleagues on Council for achieving the outcomes laid out in the Friends' Management Plan. He urged the Friends to redouble our efforts in the next fifty years.

Summary of the Report from the Treasurer, Helen Elliot for the year ended 30 June 2019

The Treasurer, Helen Elliot tabled her written report, the Auditor's Report, the Friends' Financial Statements and the Friends' Public Fund Financial Statements for the year ended 30 June 2019. She explained that although income from memberships is the largest income source, significant funds are raised by the ongoing commitment of many special interest groups such as Thursday Talks, the Growing Friends with their plant sales, events such as Summer Sounds and Wake up with the birds as well as the Botanical Artists, and Photographic Group who hold

their popular exhibitions each year at the Visitor Centre.

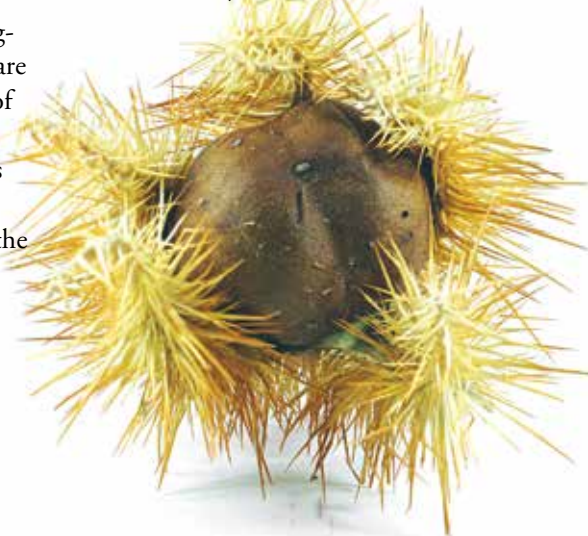
She applauded the tireless efforts of the Friends' volunteers who had raised \$208,000 in income for the year, which, in the main, would be donated towards projects proposed by the Gardens. She also acknowledged the work of the Projects Committee which reviews for funding many proposals during the year and tables them at the Friends Council for discussion and decision.

Helen noted that the Friends had donated \$100,325 to the Gardens including \$27,880 from the Public Fund. The first tranche of \$26,750 (of the Friends \$100,000 commitment) was donated to the new Banksia Garden as well as \$18,600 towards the new Conservatory for the Interpretation Plan.

The Public Fund generously provided the Seed Bank with \$24,880 worth of new equipment as well as x-ray assessment of legacy collections. Helen reminded the meeting that it is a registered charity, receiving tax deductible donations from members and the general public. During the financial year it received \$21,885 in donations and tax deductible receipts were issued to all donors.

Helen thanked all Friends' volunteers who work so tirelessly to generate income and profile the steadfast work of the Friends. She also thanked the Gardens' management and staff, Council members and other members of the Friends for continuing their support and membership.

Seed of *Solanum* sp. photographed by Seed Bank Volunteer, William Hall



Report to the ANBG Friends AGM from Executive Director, Dr Judy West

This was another productive year of growth and development at the Gardens. We are currently in the planning phase for two major Master Plan projects: the Ian Potter National Conservatory and the National Seed Bank (NSB).

Funding has been secured for the construction of the National Seed Bank, ... Construction is planned to commence in late 2020 and completed by early 2022.

The Ian Potter National Conservatory project has gone through an intense period of design and light modelling to ensure ideal growing conditions for our unique collection of Australian tropical plants. Construction for the Conservatory is planned to commence in early 2020 and be completed by late 2021.

Funding has been secured for the construction of the NSB, the tender for the architect is soon to be released to the market. Construction is planned to commence in late 2020 and completed by early 2022.

The completion of the Pomaderris Garden and the Conservation and Research Garden, both featuring a range of significant, rare and threatened species, has augmented the genetically representative collections available for research, future translocations and landscape enhancement. There was also a significant increase in agreements with external partners to deliver outcomes for high priority threatened species (more than 15 partnership projects are currently active).

The Gardens will celebrate its 50th Anniversary in 2020. The construction of a Banksia Garden is well underway with an opening planned for 28 April. The design integrates many *Banksia* elements into the infrastructure, materials and interpretative elements. It will display a wide range of species including almost 70 taxa of *Banksia*.

The NSB contributes to international, national and local plant conservation through collection and banking of new seed collections, development of germination protocols, supply of seeds for research and supply of seedlings for display at the Gardens. During the year, NSB accessioned 128 collections of seed from 69 species from across Australia (ACT, NSW, NT, QLD and Norfolk Island).

This year our IT team completed the public release of the web-based 'Find A Plant' application (<http://www.anbg.gov.au/fap>) with funding support from the Friends. This mobile application allows visitors to find individual plants and garden beds using a map-based interface displaying locations for more than 29,000 individual plantings to an accuracy of about one metre.

Our volunteer program continues to be strong with over 200 volunteers working in 16 different programs across the Gardens and Australian National Herbarium (ANH). We successfully recruited 15 new Volunteer Guides in 2018, providing them with an intensive training program. Volunteers are an invaluable resource to the Gardens, assisting to support activities as Visitor Centre Hosts, Volunteer Guides, Herbarium Specimen Mounters, Seed Bank Volunteers, Nursery Volunteers, Growing Friends and more.

We continue to attract visitors to the Gardens by providing a variety of opportunities to engage, educate and inspire visitors. During the year, visitation was 502,778, a 2.1% decrease on the 2017-18 year. Student visitation increased to 15,334 from 14,487 the previous year, the highest visitation in the last 11 years.

We worked with many new partners for the first time to deliver new and signature events and public programs. The most successful of these included: the Carramar Koala Quest with the theme of conservation of Australian native flora and fauna; part of the Enlighten

Festival, Luminous Botanicus IV shade of trees - an immersive, illuminated after dark experience which saw the Rainforest to Red Centre area transformed with lighting, sound and digital light projections; and 'Magic Garden' Concert No 9 of the Canberra Music Festival included musicians scattered across the Gardens.

In 2018 we upgraded the Flora Explorer 12-seater electric bus, facilitating popular tours for groups and visitors available on weekends and selected public holidays. The images decorating the groovy bus were donated to our Australian Image Index by Kevin Thiele (previous Curator of the WA Herbarium)

To celebrate the 50th Anniversary of the Gardens in 2020, a series of events, programs and products are being developed to showcase the Gardens' history and achievements over the past 50 years. Under the theme of 'Celebrating Australia's Plants', the 50th Anniversary provides a platform for staff recognition and public outreach, highlighting the Gardens as a world renowned scientific institution, as well as a popular Canberra tourism destination – both now and into the future.

In conclusion, I would like to acknowledge the importance of the Friends and its Public Fund for ongoing support of the Gardens.



Volunteers painstakingly clean and sort collections that have come to the Seed Bank from field trips

ANDREW TATNELL

Plants from the past – plants for the future

Botanic Gardens Australia and New Zealand Inc. Conference, Wellington, NZ, October 2019

One hundred and ten delegates from 30 botanic gardens in Australia and New Zealand gathered in Wellington for the Bi-annual Conference of BGANZ. They were presented with a feast of different ideas.

Headline “acts” came from Wales, Hong Kong, Australia and New Zealand.

Robbie Blackhall-Miles plant grower (President of the Australasian Plant Society and Keeper of the British National Collection of South-Eastern Australia Banksias) was a very impressive opening speaker on the subject of “Plant Blindness” and really challenged the garden representatives. His thesis, why do discussions about biodiversity loss always seem to come back to animals, raised issues for all garden managers. He gave some quite brilliant concepts for ‘marketing’ the role and function of botanic gardens to try to reverse plant blindness.

A real diversity of speakers followed including Rob Tipa on traditional use of endemic New Zealand plants. Professor Alexandra Cook from Hong Kong University, a scholar of historical plant theories told an intriguing tale of how the renowned philosopher Jean-Jacques Rousseau in the early eighteenth century argued very strongly for the care of endemic plants in their own locations rather than “exotic” species in botanic gardens, a thesis which resonates today.

Dr Nick Waipara from Biosecurity New Zealand gave an outstanding presentation on the potential role of botanic gardens in dealing with both invasive species and pests. He was particularly interesting giving a deep set of reasons based on his Maori heritage and the role that Marois should play in biosecurity of their own substantial estate within Aotearoa.

An amusing and very focussed talk by Greg Bourke (no relative), Curator of the Blue Mountains Botanic Garden, and carnivorous plants expert, concentrated on the “value” of plants. By this he meant ways of communicating the social and economic value of plants as a key mission of botanic gardens.

There were numerous excellent papers on methods for communication and engagement of audiences in botanic gardens and the ANBG’s Helen McHugh was eagerly taking note of these ideas.

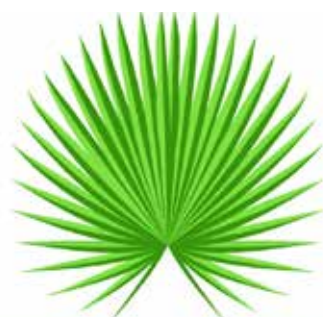
As well there were many brief reports of considerable achievements with techniques for dealing with issues related to plants on the brink of extinction, an issue that almost all botanic gardens are working on intensely.

An excellent conference presented in a brilliant venue, the famous museum Te Papa, on the shore of Wellington Harbour.

Max Bourke

And looking forward...

Australian Friends of Botanic Gardens’ Biennial Conference, Mt Coot-tha, Brisbane May 22 – 24, 2020



2020 Banks and Solander
Friends Celebrating 250 Years

The Friends of the Brisbane Botanic Gardens and Sherwood Arboretum are hosting the next biennial conference of the Australian Association of Friends of Botanic Gardens (AAFBG) at the Mt Coot-tha Botanic Gardens in Brisbane from 22-24 May, 2020.

As 2020 represents 250 years since Cook's first voyage on HMS Endeavour,

the theme of the Conference will be a celebration of the botanical collecting work of Joseph Banks and Daniel Solander who accompanied Cook on the voyage. After circumnavigating New Zealand, the ship travelled up the east coast of Australia with Banks and Solander collecting large numbers of botanical specimens at each stop.

The logo for the conference is the Cabbage Tree Palm, *Livistona australis*, that was first collected by Banks and Solander.

A full program of interesting speakers is proposed and once again the Conference will devote considerable time to presentations from small regional gardens – a very popular initiative introduced at the

2018 Conference in Benalla, Victoria.

Guided walks through the Mt Coot-tha gardens during the conference will have a Banks and Solander theme. The conference dinner will also be held at Mt Coot-tha on the evening of Saturday 23 May.

A pre-Conference tour to the Sunshine Coast is proposed, as is a post-Conference tour to the Gold Coast. The local botanic gardens in both of these areas are inspirational and should not be missed.

More information about the conference can be found at the AAFBG's website, www.friendsbotanicgardens.org.



Garden Shorts

Grow your own Australian National Botanic Gardens plants

Ask your local nursery for native plants now available under the Australian National Botanic Gardens label for your home garden. It is now possible to get plants uniquely selected by our expert staff for their horticultural potential, interesting aesthetic appeal or first time availability commercially. Some of the plants being reviewed for potential sale are rare and threatened species in the wild. Each plant featured under the



Asterolasia 'Lemon Essence' is one of the plants currently available under the Gardens label.

Gardens label undergoes a rigorous trial process under industry conditions before it is released for sale. Sales from every plant purchased will go towards supporting our living collection and threatened species conservation programs at the Gardens.

Australian Crop Wild Relatives

The Gardens is excited to be part of the Crop Wild Relatives project which is identifying and collecting crop wild relative species in Kakadu National Park for conservation. Crop wild relatives are wild plant species that are genetically linked to common food plants. Australia's wild relatives include species

of *Ipomoea* (sweet potato), *Cajanus* (pigeonpea), *Glycine* (soybean), *Musa* (banana), *Oryza* (rice), *Sorghum* (sorghum), *Solanum* (eggplant) and *Vigna* (mungbean, cowpea).

The project has created great opportunities for two-way knowledge sharing with Indigenous land managers plus training opportunities for collecting and processing seed from these important species. This local traditional knowledge gives our staff a better understanding of when and where to harvest for optimum seed maturity.

The project partners from the Australian Grains Genebank, George Brown Darwin Botanic Gardens and Indigenous land managers, have collected 18 and identified 22 species of crop wild relatives across Kakadu. The project is coordinated by the Australian Seed Bank Partnership, funded by the Global Crop Trust in collaboration with the Royal Botanic Gardens, Kew.

A new form of seed dispersal with Australian Seed Bank stamps

Australia Post Collectables, in collaboration with the Australian Seed Bank Partnership, has issued a special series of three stamps to celebrate the



The seed of the near threatened *Epacris petrophila* is normally only visible under a microscope, but from now you will see it all over the country as a \$1 stamp on envelopes and maxicards.

importance of seed banking. The Seed Banking in Australia \$1 stamps feature the seeds of native plant species, each of which is threatened in the wild. Each is also secured in seed banks around the country. One of the three pictures used, *Epacris petrophila* (alpine shrub from the Australian Alps and high-altitude areas in Victoria and Tasmania) is an image from seed stored at the National Seed Bank here at the Gardens. Seed banking is a crucial insurance policy in the conservation of native flora species and the resilience of our botanical world. This practice is recognised through these three stamp designs.

You can purchase the special issue of stamps both in-store or on the Australia Post collectables website and spread the word about the importance of seed conservation by using these beautiful seed stamps.

Australasian Seed Science Conference 2020

The Gardens is proud to host the Australasian Seed Science Conference from 5 - 9 April 2020, presented by the Australian Seed Bank Partnership. The Conference will be held at Kambri, Australian National University.

Delegates will have the opportunity to meet and share ideas and attend workshops with leading experts, focusing on the importance of seed science to the future of plant conservation and food security. Conference themes include seed biology and evolutionary ecology, seed sourcing and end use, seed and gene bank management, and seeds in culture and society. Visit the conference website to register your interest and receive updates on the program, including keynotes, abstracts, events and conference sponsorship opportunities at www.seedscience2020.com.au.



Seeds of Balloon plant, *Cardiospermum halicacabum* var. *halicacabum*

WILLIAM HALL

A Range of New Projects for the Gardens

Each edition of *Fronde*s usually has a detailed story about one of the projects funded directly by Friends through our diverse fund raising efforts or through donations given under the tax deductible Public Fund program run so ably by Barbara Podger and her team. The Council, Public Fund and the Management of the Gardens have recently signed off on a suite of new projects which have commenced rolling out and will do so over the next few years.

Eight new projects have been agreed, five direct from Friends' funds and three from the Public Fund. The total cost of these projects will be approximately \$295,000 spread over the next three years.

In brief, the projects are:

- A Hearing Loop in the Theatrette has already been installed and is working very well making lectures for hearing impaired much more enjoyable, and bringing the Theatrette up to the standard of most public hall spaces.
- Support for a special book on the Gardens for the 50th anniversary next year. Murray Fagg is well advanced on producing what will be a handsome coffee-table publication to be sold through the Bookshop. It calls not only on Murray's vast knowledge of the history of the Gardens but his expertise in photography both historic and current.
- Making the presence of the ANBG more obvious is a key to better visitation. So the Horticultural team have come up with the idea of an iconic display of spectacular large plants particularly around the entrance. From time to time mature species of large specimen native trees and shrubs come on the market and these will be acquired to proclaim "THIS IS A BOTANIC GARDEN"!

- Speaking to our existing and potential audiences will be the aim of the next project. A contract for a specialist science communicator to put together a program of science communication relevant to the Gardens. This project will run over two years.
- First-time or even repeat visitors will benefit from a Video Wall which will run short videos introducing people to features of the Gardens. This will be located at the entrance to the Theatrette.
- Interpretation signage for the new Banksia Garden, to open in 2020, will be funded through the Public Fund.
- Funds will be provided for an international speaker for the Australasian Seed Science conference in Canberra in April 2020 and other engagements (Public Fund).
- A special seed exhibition in the Visitor Centre for the Seed Science conference in April 2020 (Public Fund).

Several additional projects are under discussion and may be approved later. The ability of the Friends to provide this funding is only possible due to the excellent support for the Gardens by Friends members. THANK YOU.

Max Bourke, President

Wake up with the Birds, 2019

This year the weekend guided walks enabled many visitors to see the early morning bird activity in the Gardens. We were lucky the weather was fine, sometimes cold, sometimes warm and we found several nests.

As usual, the Red Wattle Birds were most active defending nests and feeding young and attacking any birds which dared to sup from their nectar laden plants. Some people were lucky enough to see the yellow gape of the insatiable youngsters. Other honeyeaters were spotted, although the numbers seemed down on previous years, including the Yellow-faced and White-naped Honeyeaters returning from their migration, and the resident New Holland Honeyeaters and Eastern Spinebills. A pair of Magpie Larks built a tiny mud nest over the café pond and were feeding young by the last weekend. Wood Ducks had a batch of ducklings for us to watch as they grazed and the



Red-browed Finch, ANBG

LOUISE PROSSER



Gathering nesting material, ANBG, Striated Thornbill

ALISON MILTON

Australian Magpie decorated a nest with blue tape again.

The male Blue Satin Bowerbird was seen at his bower just off the main path and seemed to attract females, however he has some competition – several adult birds, and another bower was seen being constructed nearby.

Many of the visitors were delighted at the behaviour of the Eastern Yellow Robins near the Sydney basin. The Tawny Frogmouths selected a tree left for faunal use on the Eucalypt Lawn to make their nest but the young were yet to show. Red-browed Finches and a Grey Shrike-thrush were glean-ing insects from the lawn nearby. Crimson Rosellas and Galahs were nesting or preparing holes for nesting in the Eucalypts and a pair of Spotted Pardalotes was seen.

Some visitors saw the Common Bronzewing nesting and being attacked by a Magpie, and others were lucky to see the Owlet Nightjar emerging from its hollow to bask in the early morning sun.

Many thanks to the guides and helpers who volunteered to make it really enjoyable to 'wake up with the birds' at the Gardens. Thanks to all participants who have given a considerable donation to the Friends to support the work of the Gardens.

Jonette McDonnell



ALLISON MILTON

White-browed Scrub-wren, ANBG

Telling the time by the Sun – an enlightening afternoon

Using the apparent movement of the sun to mark the passage of time goes back to antiquity, with many different cultures having devices using a light spot or a shadow to record time. Before clocks were invented, sundials were used in public places to mark the hours of the day.

Today many gardens large and small feature a sundial. Canberra is fortunate to have a number of publicly accessible sundials; several of them devised by the Adelaide based physicists Marg Folkard and John Ward of Sundials Australia.

On Friday 3 April 2020 we have an opportunity to hear Marg Folkard talk about the history and science of sundials, as well as the exacting art of creating them. She will focus in particular on two sundials – the armillary sphere in the ANBG and the analemmatic or human sundial at Mt Stromlo.

The Sundials Afternoon will start in the ANBG Theatre. After this, we will inspect the sundial near the rockery in the ANBG, enjoy afternoon tea together, and then drive to Mt Stromlo to tell the time by our own shadows in the late afternoon light.

This event has been organised jointly by the Friends of the ANBG and the



PAM ROONEY

Armillary Sphere, ANBG

Australian Garden History Society (AGHS), as part of celebrations for the AGHS' 40th birthday, the ANBG Friends' 30th birthday, and the 20th anniversary of the gifting of the sundial to the ANBG by the Friends. Bookings will open in early February 2020. We will publicise the arrangements and cost closer to the time.

Lynden Ayliffe, Friends of the ANBG
Nancy Clarke, AGHS

Summer Sounds 2020, Volunteers needed

Planning for the Summer Sounds 2020 concert season is well underway.

The 2020 concerts will be held on Saturday 18, Sunday 19 & Saturday 25, Sunday 26 January; and Saturday 1 & Sunday 2 February.

The success and smooth running of the concerts has always been dependent on a small army of volunteers.

This year volunteers are once again needed to assist with collecting entry fees, supervising car parking, driving assistance vehicles to and from the Eucalypt Lawn, and helping at the Information Tent. You might even find time to relax and enjoy the concerts!

A link to the online sign-up is on the Friends' website under Summer Sounds 2020. If you have not been involved with the concerts before, and would like further information, please contact: summerconcerts@friendsanbg.org.au.



The Complete Guide to Australian Birds, 2018

George Adams, Soft cover, 574 pages, Colour photographs & maps, \$45.00

What a great photographic field guide for Aussie birds! Not just a field guide, this beautifully illustrated book contains fascinating information about the birds, including common and scientific names, size, description, behaviour, preferred habitat, feeding habits, voice, status and breeding. A very sensible layout means the information about the birds, the distribution maps and identification photographs are all arranged across a double page so it is easy to see all you need for each species that you are looking up.

Another thing we like is the photographs...there are often a couple of pictures for each species, and they show the bird in different poses that you may likely see in the wild e.g. in flight, roosting, feeding, swimming, in a flock, with their young, etc.

Also, some birds are photographed in their nests which is very helpful for

those of us who find it quite difficult identifying the owners of those amazing piles of shaped twigs!

A great bird guide for every wildlife enthusiast and an excellent book for the beginner and experienced birdwatcher!

Somewhere in Australia, Marcello Pennacchio, 2013, Soft cover, 23 pages, Colour illustrations, \$16.00

Feel like singing a story to the children?...join little Joey and his friends in this glorious Australian counting book based on the classic rhyme 'Over in the Meadow'. Beautiful colour illustrations by Danny Snell bring each page to life, and the verses take us on a journey around Australia, including the Top End, the Outback, Tasmania, east and west coastlines and even a platypus living in a river going out to sea gets a look in! We loved all the verses and were especially excited to see the Wollemi Pine and Thorny Devil feature, both these can be seen here at the Gardens (the Wollemi a part of the living collection, the Thorny Devil an amazing sculpture in the Red Centre Garden).

We know you are already humming the song so here's one verse to practice on...

"In the centre of Australia, near a place called Uluru,
lived a mother kookaburra and her little chicks two.
'Laugh,' said the mother. 'We laugh,' said the two,
as they laughed and they flew over a rock called Uluru."

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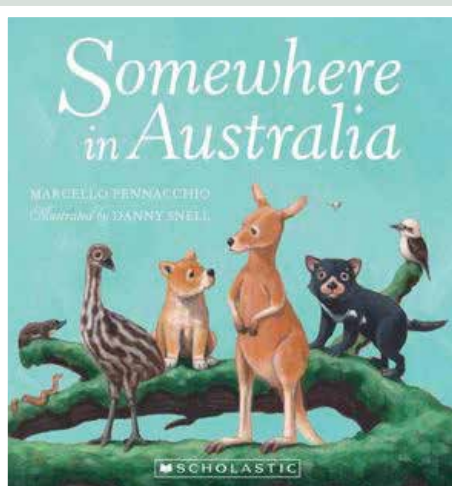
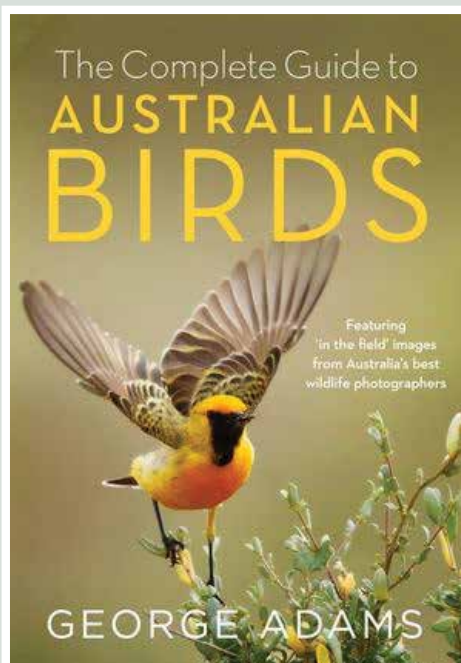
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Australian National Botanic Gardens



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No discount on redemption of gift vouchers.

www.botanicalbookshop.com.au

more information on our Facebook page at 'Botanical Bookshop'

Details of events are correct at the time of printing. For changes and updates please check the Friends' website at www.friendsanbg.org.au or the Gardens' site at: 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, 10.30 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, Suitable for pre-schoolers.

Sunset Cinema

Thursday 21 November – Saturday 11 January 2020 every Wednesday, Thursday, Friday and Saturday

Enjoy latest releases, family and classic films on the Gardens' Eucalypt Lawn. Information on the ANBG website.

2020 Summer Sounds Program

5.30 – 7.30 pm

\$5 adults, \$3 child and concession, 3 years and under free

PARTY WEEKEND – Top 40 hits of the 70s, 80s, 90s and today

Saturday 18 January - Purc Randall Se-Lah

Sunday 19 January - Something Like This

TRIBUTE WEEKEND – A celebration of music icons Fleetwood Mac and Aussie rock and pop legends

Saturday 25 January – Sweet Little Lies

Sunday 26 January - The Bad Henrys featuring Purc Randall Se-Lah

JAZZY WEEKEND – Smooth jazz and swing

Saturday 1 February – Annie and the Armadillos

Sunday 2 February – The Liam Budge Jazz Quartet

Kids Activities

There's fun for the kids in the Gumnut Hut - face painting, storytelling and arts and craft

Food and Drink

Le Petit Breton – French crepes

Lenton Bar – Beer, wine, coffee

Cannoli Brothers – sweet and savoury cannoli

Capital Woodfired Pizza

Pure Gelato

Aussie BBQ (Australia Day only)

VOLUNTEERS WANTED FOR SUMMER SOUNDS : SEE PAGE 19

EXHIBITIONS

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

21 November – 8 December: TREASURES

Friends' Photographic Group annual exhibition.

14 December – 12 January: NATIVE WILDLIFE

Stunning artworks by the Friends Botanic Art Groups of native fauna including birds, marsupials, insects and marine life.

17 January – 1 March: PROMISCUOUS PROVENANCE

An exhibition by artist Anna Glynn exploring a new world of flora and fauna while re-interpreting images of Australian colonial painters.

5 March – 12 April: SEEDS IN THE BANK

A glimpse into the collection of the National Seed Bank and the seeds collected to support the conservation of our native flora.

Grow this in Canberra for Summer

Friends 30th Anniversary event

12 January, 10.00 am

Take a walk with experienced Growing Friends guides to find summer-flow-ering or fruiting plants in the ANBG that are suitable for Canberra gardens.

Free, bookings essential – see Friends website.

SPECIAL EDITION ANNIVERSARY GIN

Get a taste of the Australian National Botanic Gardens with a special gin developed by Underground Spirits using botanical ingredients from our very own Gardens.

What's on (contd.)

Snakes Alive!

13 – 19 January: Crosbie Morrison Building

Get a feel for real-life snakes, lizards, turtles, frogs and more. Hosted by the ACT Herpetological Society.

NatureArt January School Holiday Program

28 – 31 January, 10:00 - 2:00 pm, \$70

Explore and learn about our local flora and fauna with Nature Art Lab's unique art and science School Holiday Program!

Children will venture into the gardens and explore local wildlife with a range of science topics and creative art and craft activities. Our program also includes nature journaling for children to promote observation and creative thinking skills.

Book online on ANBG website

Bees, Birds and Butterflies - Listening and Learning Workshop

22 February, 9:00 am - 1:00 pm, Free

Find out what you can do to support pollinators in your suburb and what plants provide food and habitat.

Book online on ANBG website

NaturExplorers: Flowers

1 March, 10:00 am - 12:00 noon, \$40

NatureArt Lab is proud to launch NaturExplorers! Our new Nature Journaling club for families. Grab your nature journal and spend quality time with the family exploring Canberra's natural environments. Suitable for the whole family! Adult attendance is free and required for children aged under 15, under five attend free with a paying older sibling.

Book online on ANBG website

Bonsai Exhibition

28 February – 1 March: Crosbie Morrison Building

See a diverse selection of bonsai Australian plants.

Enlighten Festival: Luminous Botanicus V

March: The Gardens will come alive at night as part of Canberra's Enlighten Festival.

THE FRIENDS THURSDAY TALKS WILL SUPPORT THE ANBG'S 50TH ANNIVERSARY CELEBRATIONS IN 2020 BY SHOWCASING THE ANBG'S SCIENCE AND CONSERVATION PROGRAMS.

The ANBG, as we know, is one of the best places in the country for Australians to appreciate, enjoy and learn about Australia's flora but it is also an internationally recognised scientific data and research institution. Thursday Talks in 2020 will feature some of the great science, data and conservation projects and partnerships that the ANBG and Biodiversity Science sections are directly involved in.

For example, on 5 March we have invited an international speaker from the Catalogue of Life Global Team. The Team, which will hold its annual meeting next year at the ANBG, leads

progress on developing the world's most comprehensive and authoritative index of known living species. An April Talk will showcase the ANBG's *Banksia* conservation work to coincide with the opening of the new Banksia Garden. In May, taxonomy will be showcased through the work of one of our in-house taxonomists, Haylee Weaver from the Australian Biological Resources Study, and in June, Dr Chris Cargill, from the Cryptogam Herbarium at the Australian National Herbarium, will open the door into the fascinating world of cryptogam research.

Thursday Talks Committee

Grow this in Canberra for Autumn

Friends 30th Anniversary event

15 March, 10.00 am

Take a walk with experienced Growing Friends guides to find autumn-flowering or fruiting plants in the ANBG that are suitable for Canberra gardens.

Free, bookings essential – see Friends website

Australian Native Plant Society, Autumn Plant Sale

21 March: 8.30 am Southern carpark

Select from a range of local species.

National Eucalypt Day

23 Mar: Enjoy walks and workshops

Growing Friends Plant Sale

28 March, 8.30, Crosbie Morrison Carpark

Plants propagated from Gardens' stock.

Telling the Time by the Sun

Friday 3 April

Friends 30th Anniversary event

Information, p 19

Time and cost to be advised

Bookings open early February. Details will be on the Friends website.

Bubbles and Banksias, Banksia Garden

28 April 5.00 pm – 7.00 pm

Friends members 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.

WORKSHOP: INTRODUCTION TO DIGITAL PHOTOGRAPHY

Sunday 5 April 9.00 am – 4.00 pm; \$170; Crosbie Morrison building

This photographic workshop is available to all Friends. If you would like to understand your digital camera settings and improve your photography techniques, this may well be for you. The Friends of the ANBG Photographic Group are running the workshop as a fund-raising event.

The full day course will be conducted in two sessions - theory and practical. Places are limited so register your interest early.

Contact photo@friendsanbg.org.au.

Registration forms are also available at the ANBG visitor centre.

THURSDAY TALKS: FEBRUARY — APRIL 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

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

FEBRUARY

Thursday 6 February

Professor Peter Kanowski 'Forests Near and Far: Issues in a Warming World'

Peter, Professor of Forestry, ANU, will talk about the world's forests which are under pressure from deforestation and degradation and increasingly from climate change. Australian forests, including those locally that make Canberra liveable, are also threatened. Peter will review the situation, and our options and priorities in responding to these challenges.

Thursday 13 February

Dr Todd McLay 'Phylogenomics and Taxonomy of Native Hibiscus'

Todd, from CSIRO, will talk about his work on Hibisceae species which occur in Australia, and are common in rainforests, monsoon tropics, and the arid zone. Many of the taxa associated with the drier parts of Australia have not had a taxonomic treatment since their original description in the mid-1800's. Todd's research shows the power of collections-based research to combine new molecular methods with traditional taxonomy for species discovery and broad-ranging insights on the evolution of the Australian flora.

Thursday 20 February

Dr Jason Sharples 'Understanding Extreme Bushfire Development'

Jason, from the University of New South Wales, will highlight the role that dynamic fire propagation plays in driving 'deep flaming' events, which appear to be critical in triggering the

'violent pyroconvection' characteristic of extreme bushfires, as well as recent work aimed at predicting extreme bushfire occurrences.

Thursday 27 February

David Newby and Graham Fletcher 'The Australian School of Gardening – What is it, and why do we need it?'

David, a former lawyer and business man, and Graham, a former academic, will discuss the aims of The Australian School of Gardening, including career paths through continuing education, opportunities for professional gardeners, and inspiration and education for non-professional gardeners through a range of events.

MARCH

Thursday 5 March

Dr Peter Schalk 'Biodiversity Science in the Future. Creating Order in the Acronym Soup of Organisations'

Peter is Deputy Director, Naturalis Biodiversity Center, The Netherlands and the Executive Secretary of Species 2000. He will discuss the Catalogue of Life, the world's most comprehensive and authoritative index of known animals, plants, fungi and micro-organisms, created in 2001 as a partnership between the Global Species 2000 and the American Integrated Taxonomic Information System. This global index of species names and synonyms, now counting 1.9 million valid species, will further science and promote sensible measures in the context of climate change and biodiversity loss.

Thursday 12 March

Dr Rosemary Purdie 'Simpson Desert Revisited – More Than Plants!'

In July 2019 Rosemary, a plant ecologist, spent two weeks botanising on a camel-supported walk in Munga-Thirri National Park in the eastern Simpson Desert. She will talk about the landforms and



March 12, Dr Rosemary Purdie 'Simpson Desert Revisited – More Than Plants!'

ROSEMARY PURDIE

associated plants and animals seen during the dry conditions, cultural artefacts in the area traversed, and what happens when you “just add water”.

Thursday 19 March

Dr Linda Broadhurst ‘Connecting Indigenous and Scientific Plant Names’

Linda, from CSIRO, will discuss a proposal to co-develop processes and practices with Indigenous communities to connect Indigenous and scientific plant names to improve the conservation and management of our Australian flora. The current approach to naming plants does not recognise Indigenous plant names and concepts, and fails to acknowledge the deep understanding of our biodiversity held by Indigenous Australians.

Thursday 26 March

Professor Adrian Gibbs ‘The History of the Potato and its Viruses’

Adrian is a virologist. Potatoes were part of the trans-Atlantic Columbian Exchange of the 16-17th centuries. The details of the origin of the European potato have provided lively debates, however molecular palaeontology is now sorting out possibilities, not only for the potato, but also its pathogens, especially potato virus Y. Adrian will discuss the latest findings.

APRIL

Thursday 2 April

Dr Si-Chong Chen ‘Latitudinal Gradients in Seed Predation, Seed Defence and Seed Dispersal’

Si-Chong is an ecologist working on the macroecological patterns in seed ecology at the Millennium Seed Bank, Royal Botanic Gardens, Kew, United Kingdom. Dr Chen’s research tests the hypothesis that seed predation and seed defence are more intense at lower latitudes, finding that both pre-dispersal seed defences and predation are more significant in more tropical climates at higher latitudes than previously expected.

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.

FRIENDS BENEFITS

As a Friend you are entitled to:

Three issues of *Fronde* 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.

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