

Fronds

Friends of the Australian National Botanic Gardens
Number 79 April 2015





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Email or post material to the *Fronds* Committee at the above addresses 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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Friends turn 25



(From L to R) Former Patron of the Friends, David Young; Anne Joyce, staff member responsible for getting the Friends up and running, and a Life Member of the Friends; current President, Lesley Jackman, and Vice President Jan Finley.

We are 25! Yes, it is the Friends' Silver Anniversary this year. We kicked off the celebrations with a Silver Anniversary Dinner at Floresco in the Gardens on 19 February. More than 80 guests enjoyed the evening, and the talk by guest speaker Don Beer who spoke about the lead up to the formation of the Friends. Our quiz once again tested the not so general knowledge of diners, this time focusing on events in 1990. Who knew our memories were so short?

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Cover: A Stegosaurus, loaned by National Dinosaur Museum, peering out from a familiar Araucaria at an unfamiliar world. Photo: Anne Rawson.

A trip to *Luminous Botanicus*

Anne Rawson

HM Rawson

When we arrived at the Gardens on the second night of *Luminous Botanicus*, there was a crowd milling about, waiting for dark. The Rainforest was certainly dark, the mist adding to the mystery and the challenge of staying between the lights marking the edges of the boardwalk. Green fronds loomed out of the dark; mushrooms of light glowed in the under storey; mirror-raindrops turned slowly above our heads. And then we heard the music of flute and tuba seeping through the rainforest.

We went from there to the Gymnosperm forest, illuminated with strange white bulbous hanging lights. And hiding in these ancient trees were some ancient creatures, three full sized dinosaurs, small, medium and large, loaned by the National Dinosaur Museum. The smallest was Minmi, a cute little dinosaur which once lived by an inland sea near Roma. Next we spotted the red armour plating of Stegosaurus who lived in the Jurassic and wandered about near Broome. The Austroraptor peering out at us looked distinctly fierce and we moved on quickly.

Then past the waterfall and a couple of water dragons, under illuminated gums, to the Asteraceae Garden. We couldn't see the real daisies but there were numerous bushes of daisy lights and the Mandolin Orchestra played softly in the background. On the Rock Garden lawn to our left was a



Geoff Puleston



Graham Brown



Richard Arculus



Andrew Tathell

big red sign saying 'enlighten'. It was made of hundreds of Correa lights, acquired by the Gardens at the time of Canberra's Centenary when a Correa 'Canberra Bells' was the centenary floral emblem. Somehow hundreds of correa lights had been twisted and compressed to make this sign. I discovered later that each of the correas had been individually tied to the frame

Up the hill to the Red Centre Garden, under stars hanging from the Eucalypts. All the gums around the western boundary of the Red Centre were illuminated. The beat of the drums could be heard all the way up the path. There were three drummers and two fire gymnasts, all seeming very at home in the desert. The straggling crowd bunched up on the pavement and along the paths to enjoy this entertainment. At the end we enjoyed bubbly and chocolates from the Friends and wandered back down the hill.

Jennifer Salkeld, Public Programs & Visitor Services officer, deserves congratulations cubed for all the inspiration, ideas and work that went into this amazing event. And the Friends volunteers deserve thanks for all their work making the lanterns that line the pathways and their work on the night; particularly the lighting of all the tea candles inside the lanterns and then extinguishing them at the end (helped by the Rangers).



Years ago I was at the tiny town of Irvinebank, 30 kilometres west of Herberton, inland from Innisfail. This rugged country was the centre of the tin mining industry in the late 19C and early 20C. In the museum at Irvinebank I was intrigued by a letter written in 1908 by F. Manson Bailey to Dr Thomas Bancroft of Stannary Hills, thanking the latter for his specimens and requesting more pods of the Purple Acacia, *Acacia purpureopetala*, that was described by Bailey in 1904. (The species name has sometimes been incorrectly spelled with an 'a' instead of the 'o'.) This letter was the trigger that kindled my obsession to see this unique purple-flowered acacia in its restricted location in the Irvinebank district in north Queensland.

My quest began before the advent of the Atlas of Australia and any detailed surveys of its occurrence. It was before its description on the Commonwealth Government's Species Profile and Threats Database (SPRAT) which now lists 10 populations of this critically endangered species. The only information I had was of a roadside site a few kilometres east of Irvinebank near Jumna Creek. I visited this spot for several years during July and August

between 2006 and 2013 not knowing exactly what I was looking for although Don and Betty Wood had found the plant there in 1999. While I did find the rare Irvinebank *Grevillea* there, *Grevillea glossodenia*, a parent of the cultivar, 'Orange Marmalade', there was no sign of the Purple Acacia. It now appears probable that roadworks have destroyed this population.

Last chance

I decided that 2014 was going to be my last attempt at finding this acacia so I contacted Keith Townsend from SGAP Townsville and co-author of *Plants of the Dry Tropics* for information on its whereabouts. He provided me with a possible site on a hill above Irvinebank accessed by a road to its water tanks. In August, my partner and I and two botanist friends, ascended the road and as we rounded a bend along a roadside cutting we immediately saw the curving prostrate branches of several low acacias growing in loose crumbly rock in eucalypt woodland. It required a close look to see the purple flowers as they do not stand out like the familiar yellows of most other acacias. It soon became obvious that the Purple Acacia is the dominant ground cover on the east side of this knoll and that there must be many hundreds of plants there.

What is also interesting is that many healthy plants have colonised the loose rock on the south side of the newly constructed mining road on the south side of the knoll, confirming its preference for disturbed ground. The SPRAT site lists 10 populations in the area and a total population figure of only 500 individuals with no more than 100 individuals at any one site. This site is not listed but it would appear to contain the largest populations so far discovered. Future mining operations could be a threat to this population as there is at least one abandoned mine shaft on the knoll. Interestingly the Minister responsible has rejected a recovery plan for this species stating, 'the approved conservation advice for the species provides sufficient direction to implement priority actions and mitigate against key threats'; a very optimistic conclusion given the extent of current bulldozed trails in the region.



Discovering *A. purpureopetala* in a roadside cutting near Irvinebank.



Office of Colonial Botanist
Brisbane October 2nd 1908

Dear Doctor Bancroft

I am really very much obliged for the specimens you sent they are most interesting and much better to work up than the majority of what I receive from correspondents, of several I had no representatives in the Herbarium. I should be glad of fruiting and male specimens of the *Cycas* which I think may be *C. Normanbyana* and an entire leaf. If you find more pods of *Acacia purpureopetala* I should be glad of them for in the two you have sent there were but single seeds and the pods were previously unknown.

With kind regards to Mrs. Bancroft and family

I remain (?) and yours very truly
F Manson Bailey

Dr Thos L. Bancroft
Stannary Hills
North Queensland

The inspirational letter and a transcript. Frederick Manson Bailey (1827-1915) was the Queensland Government Botanist and well known authority on acacias and eucalypts, among others, and he named many plant species as well as compiling the six volume *Flora of Queensland*. Dr Thomas Bancroft (1860-1933) was a doctor in north Queensland, an expert on mosquito-borne diseases who discovered the vector of dengue, the mosquito *Aedes aegyptii*. He was also a competent botanist, collecting plant specimens for Bailey.



A. purpureopetala growing as understorey in eucalypt woodland, and the low stems of the prostrate plant. All photos illustrating this story are by the author.

Bogs and fens in the high country

Bogs and Fens: Artists in Residence Exhibitions

Craft ACT: Craft + Design Centre Gallery: 9 April - 16 May
ANBG Visitor Centre: 24 April - 24 May

Two exhibitions showcasing the creative journeys of three artists participating in CraftACT's 2014 Artists in Residence program in partnership with the ANBG.

Japanese international wood artist **Satoshi Fujinuma**
Melbourne weaver **Annee Miron**
Canberra based textile artist **Sally Blake**

In 2014, Craft ACT was delighted to partner with the Australian National Botanic Gardens to facilitate a formal research period for its annual international Artist-in-Residence program. This program draws together craft and design, science and the environment, to promote and showcase Canberra's distinct natural and cultural landscape.

The program theme was *The Environmental Protection of Bogs and Fens*. Craft ACT hosted three artists: Satoshi Fujinuma, Annee Miron and Sally Blake. The program included a research period, residency, forum, workshops, artist talks and open days. Each artist spent time living in Namadgi National Park or Tidbinbilla Nature Reserve.

The exhibitions will give a rare opportunity to see the visual thought process of each artist, providing a window into the mind of the artist from conception to realisation.

The Artist-in-Residence program is presented in partnership with ACT Parks & Conservation Service, supported by artsACT through its Arts Residencies ACT initiative.



Trees tell a story of climate change

Ted Edwards

Left: Casuarinas at the Uriarra Reserve. Right: A beech forest (*Nothofagus* spp.) at Haasts Pass, to the south of the main New Zealand Alps. Both photos by the author.



When I am asked about climate change while guiding visitors in the ANBG I prefer to tell them about what happened environmentally after the last ice age. While acknowledging the human impact on current climate change, I am happier talking about what has occurred rather than speculating about what might happen.

A story close to home involves the River Oak (*Casuarina cunninghamiana*) which is plentiful along the Murrumbidgee, Molonglo and Paddy's Rivers in the ACT but only downstream from Lake Burley Griffin and Point Hut Crossing. Why is it not found further upstream? Well it is probable that it nears its climatic limit in the ACT and grows in the rocky gorges but not on the frosty open flood plains like those at Duntroon, Lambrigg and Lanyon. However, it is naturally absent from Molonglo Gorge and the gorges up-river from Tharwa. The reason seems to be that it has simply not yet moved upstream as far as Molonglo Gorge as it has slowly colonised up-river after the last ice-age.

Also telling is the tree's absence from coastal NSW south of Bega and its complete absence from Victoria. If the tree can survive a sheltered Canberra winter then nothing on the far south coast or along the lower Snowy River should trouble it. The answer seems to be that it has not reached these areas following the last ice-age. *C. cunninghamiana* has small seeds which disperse rapidly downstream but very slowly upstream. Moving from one catchment to another is even more difficult for the tree. I see the River Oak's absence from parts of the lower south coast and eastern Victoria as a climate change effect still persisting after the approximately 15, 000 years since the end of the last ice-age.

For connoisseurs there is a well-known example across the Tasman called the 'Beech Gap'. Very broadly speaking

New Zealand has two major forest types: the beech forests dominated by several species of *Nothofagus* and the podocarp and broadleaved forest with its wide range of conifers (Podocarpaceae) and flowering plants. The beeches have small poorly dispersed seeds and are dependent on a mycorrhizal root-fungus association and, consequently, the forest spreads very slowly. The podocarp-broadleaved forests by contrast usually have edible fruit and are spread rapidly by the New Zealand Pigeon and prehistorically by moas and even the charismatic kakapo.

Imagine the South Island of New Zealand about 20,000 years ago at the height of the last glaciation when temperatures were about 5°C lower than they are today. The sea level was between 125 m and 130 m lower than it is today but even so the west coast plain was not greatly wider than it is today. Visualise the glaciers gliding westwards from the peaks of the Southern Alps, Mounts Cook and Tasman, extending as a solid ice-sheet out to sea. And so for a distance of about 180 km from the Taramakau River near Hokitika south to the Paringa River no forests remained, only ice and grasslands.

Beech forests survived to the north of this strip and to the south. With rapid warming about 15,000 years ago the ice sheet melted, the glaciers retreated as they are today, and the western coastal strip became suitable for forests again. The rapidly dispersing podocarp-broadleaved forests colonised quickly while the slow-moving beech forests did not. Hence today the 'Beech Gap' is a 180 km strip along the western coast of the South Island fully colonised by podocarps and broadleaves but from which beech forests are still absent. Read more about this and other beech gaps, in *New Zealand's Native Trees* by J. Dawson and R. Lucas published in 2011.

Summer Sounds by The Central

Lesley Jackman



Liz Kay

Sunny days...

One of the enduring pleasures of summer in Canberra is sitting on the Eucalypt Lawn of the Botanic Gardens enjoying a glass of champagne and listening to favourite Canberra bands. In 2013 the summer concerts were listed as one of the 100 best things to like about Canberra.

The 2015 concert series, Summer Sounds by The Central, on Saturday and Sunday evenings in January, had rather more rain than we would have expected, which dampened the ardour of some. But true to past form the Eucalypt Lawn was packed on fine evenings; well over 8,000 people attended the concerts, a mix of all ages, reflecting the family-friendly ethos.

This year saw an increase in the variety of food stalls; steak and sausage sandwiches, pizzas, pulled pork rolls, ice cream, and coffee and cake. The Friends refreshment stall also offered wine, cider, and soft drinks for sale.

The audience survey on-line showed that people continue to enjoy the concerts:

We stopped by accidentally. For us as Germans this event was great. Great flair in a nice location as well as well organized. Thoroughly enjoyed it despite the heavy rain and hail earlier in the afternoon.

We're from Sydney & have nothing like this in close proximity so we really enjoyed it! Thank you!

These days the concerts are increasingly expensive to put on and the Friends are most grateful to our sponsors for their support. Naming rights for 2015 were secured by The Central by Goodwin, known for its high quality apartments and townhouses in the heart of Crace.



Ann Eldridge

...and rainy days.

We were delighted to again have the support of ACTEW Water, now called Icon Water, who focused on entertaining children, with entrancing face painting, and delicious snow cones.

The introduction of a \$5 entry fee (\$2 concession, children free) raised enough (with sponsor support) to cover the costs of the concerts comfortably.

We thank all our volunteers for their hard work, and we acknowledge the enormous contribution made by staff of the Australian National Botanic Gardens.

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Photography Group

Graham Brown

Graham Brown



Circuma australasica, the first thing Graham saw in the Display Glass-house on 18 February.

The past year has seen a steady increase in active members, perhaps in response to the diversity of topics presented by both invited speakers and members with special interests at our monthly meetings.

The November meeting, our last for the year, was an extended 'Show and Tell' session at which many beautiful images were presented by members, revealing their special interests and photographic skills. The meeting was followed by the Annual Group Luncheon at Floresco as a members' get-together. Other activities by members include taking photos at Gardens and Friends events. Most recently some members took photos for Fronds of the crowd and performers at the Summer Concerts.

Planning has begun for the Photography Group Exhibition in the Visitors Centre in June. The Committee is looking forward to an increase this year in the number of members contributing images. We also intend to have the photographs on show, or prints, available for sale during the exhibition as well as other items such as postcards and bookmarks featuring exhibited images.



Botanic art

Helen Jensma



This year's Botanic Art Groups Art in the Gardens with Friends is now open in the Visitor Centre giving you the opportunity to purchase a painting for your collection. There are cards and bookmarks on sale too and a raffle that will all help to raise funds for the Gardens.

Over 50 paintings have been selected for display in the exhibition, together with over 30 other paintings by many of the artists in the Groups as their 'Artist's Choice'. We encourage you to call in at the Visitor Centre and support the work of the artists and their contribution as Friends.

The exhibition was opened by well known local artist Helen Fitzgerald on 20 March and it will run until Sunday 19 April. It will be open all through Easter.

Members of the Friends Botanic Art Groups will be in attendance at the exhibition and will be able to answer your questions and encourage anyone interested to join the Group.

Growing Friends

Yvonne Robinson



Many people like to plant in spring but to avoid the hot summer weather it sometimes makes better sense to plant in autumn. You might not see the instant results you'd normally get, but while your plants may look like they're not doing very much over autumn and winter, what's happening under the surface is important. Their roots are establishing a great root system and that will increase their chances of survival.

Included in this year's autumn plant sale will be a selection of *Correas*, including 'Ivory Bells', 'Marian's Marvel' and 'Bett's Red'. Many of the *Correas* flower over the winter months and their flowers can provide an important source of nectar to birds at this time. Another hardy species for sale are *Croweas* and include 'Cooper's Hybrid', 'Southern Stars' and 'Pink Blush'.

Among the other species on offer are the following:

Aotus ericoides (below left) grows up to two metres in height and one metre or more across. It bears yellow and red pea flowers in terminal heads in spring. Plant in well-drained, sandy, soil and full sun. Frost hardy.



M.Fagg ©ANBG

M.Fagg ©ANBG

Bossiaea cinerea (above right) is a spreading ornamental shrub with yellow and brown flowers in winter-spring. It tolerates drought, shade and coastal exposure and requires good drainage. It can tolerate fairly hard pruning once established and can be used as an informal hedge or low screen.

Feel welcome to join our normal monthly meetings held on the first Saturday of each month at 9.00 am during spring and summer and 9.30 am in autumn and winter in the Joseph Banks Building. We also have a working bee on the third Tuesday of each month.

The visitors we guide

Christianna Cobbold



Christianna Cobbold

Guides at their February briefing session in the luminous rainforest

Guides have been busy over the summer leading regular walks and Flora Explorer tours for the many interstate, international and local visitors to the Gardens. During 2014 there were 2462 walkers on our regular 11 am and 2 pm walks with 31 percent from overseas and another 43 percent from interstate. Local Canberra visitors make up around a quarter of all visitors who take a free guided walk as part of their visit to the ANBG.

During the year there were 839 passengers on Flora and booked Flora tours have become popular. The popularity of booked walks has continued to grow. In January we were very pleased to host a walk by members of the Estonian Women's Choir during their visit to Canberra. They were fascinated by the plants and plant communities from all over Australia they were shown during their visit.

Many guides volunteered to assist with the Summer Sounds Concerts as collectors, assistant vehicle drivers and on the Friends cold bar. The next major event on the calendar, *Luminous Botanicus*, involved the guides in interacting with the public in the Rainforest, Rock Garden and Red Centre sections of the experience. Everyone was delighted by the creative and unexpected experience of the Gardens at night.



Graham Brown



Toby collecting seed of Ooline, *Cadellia pentastylis* at the Black Jack Colliery; *Eremophila mitchellii*; Toby and Julie and Brent Braddick at Tondoon Botanic Garden; Wild Orange

Going bush for the Rainforest: collecting

Toby Golson, Senior

At the crack of dawn on 28 September last year I set out with Nursery horticulturalist Julie Percival to travel north to Queensland to secure nationally threatened rainforest taxa currently un- or under-represented in our living collection. Our plan was to go via Gunnedah and Narrabri to Tondoon Botanic Garden in Gladstone, then come south via Boonah in the scenic rim area of south eastern Queensland to Lismore and Coffs Harbour, a journey of some 4,000 km in 12 days. The collections would assist in the long-term conservation of these taxa by 'spreading the risk' through additional *ex-situ* holdings and would also be used for horticultural and educational display.

The ANBG already had in place agreements with both Tondoon Botanic Garden and Lismore Regional Botanic Garden to facilitate such activities but only through a visit to obtain genetic material could these partnerships realise their potential. The difficulties of obtaining collecting permits for and gaining access to populations of listed species makes invaluable the opportunity to exchange material with those regional botanic gardens. They specialise in collections of their locally endemic endangered species from wild populations linked to herbarium vouchers.

Into the vine thickets

By mid-afternoon on that first day we had left the verdant canola swaying fields of the central-west slopes and were motoring through the dry and already hot Liverpool Plains. Gunnedah marks the southern limit of distribution

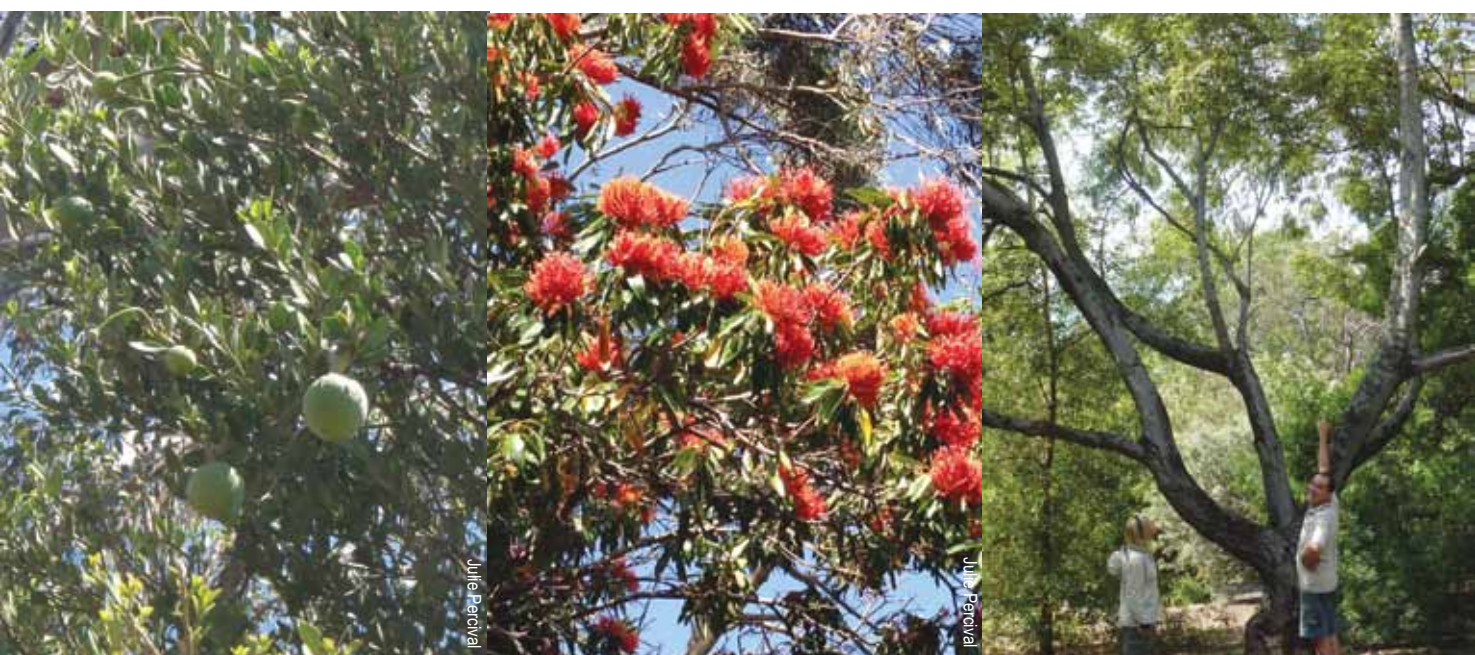
of a bastardised form of depauperate rainforest known as vine thickets. These persist in a few favourable locations protected from land clearing and fire on fertile soils with an average rainfall similar to Canberra's. Often associated with vine thickets is the nationally threatened rainforest tree *Cadellia pentastylis* (Ooline) of the Surianaceae family which unusually contains only five monospecific genera. Visitors to the ANBG can see a 30-year-old specimen still only six metres high in section 7.

On the Ooline trail

Early on Monday morning we headed a few kilometres to the west of Gunnedah to the decommissioned Black Jack Colliery spending the morning collecting cuttings of Ooline and several associated vine thicket species on a warm, dry and stony northeast facing slope. Even here in their natural surroundings, the trees were no taller than eight metres, the oldest supporting tough, hardened clumps of the epiphytic orchid *Cymbidium canaliculatum*.

Also notable were the gnarly forms of *Eremophila mitchellii* (Buda) in full flower, and the prickly sprawling stems of the Wild Orange, *Capparis mitchellii*. Additionally of interest were the stunted shrub size specimens of *Alphitonia excelsa* here at its western limit but found commonly in coastal rainforest, growing occasionally to 35 metres. There is a large but decaying 60-year-old specimen in section 2, remarkable for the putrid richness of its flowers.

On Tuesday we continued collecting Ooline under the shadow of Mt Kaputar in the Deriah Aboriginal Area to



Orange, *Capparis mitchellii*; *Alloxylon flammeum*; Toby and Julie examining the *Alphitonia excelsa* in flower in section 2 in the ANBG.

Collecting plants and making friends

ior Horticulturist

the west of Narrabri. The population here was often the dominant tree in the environment with some individuals reaching around 15 metres. The species' genetics are poorly understood and its suckering habit, poor recruitment and irregular and rare flowering point to limited variation. By sampling discrete 'populations' we hope to conserve some of what little genetic diversity may exist across the species' range. We took the opportunity again to collect seed and cuttings from the surrounding vegetation bringing our total collections over the two days to 19, material that was dispatched by overnight courier to the ANBG nursery for immediate processing.

To Gladstone

Wednesday was a long drive from Narrabri through Goondiwindi and Banana to Gladstone. The unremittingly parched country was alleviated by vast roadside stretches of *Acacia harpophylla* (Brigalow), *A. pendula* (Weeping Myall) and *Casuarina cristata* (Belah) often surrealistically interwoven with the aetiolated stems of noxious *Opuntia* cacti. The higher country to the east of Expedition National Park brought the equally impressive sight of *Brachychiton rupestris* (Queensland Bottle Tree), some ancient beings standing like Easter Island monoliths in their paddocks and putting into proper perspective our own front entrance specimen that was dug up and transported to the ANBG from this area in 2004.

Thanks to the generous hospitality of our host, Tondoon curator Brent Braddick, we spent the next three days

processing seed, cuttings and potted plants of 23 species from within the Garden, all originally wild-sourced from the Port Curtis pastoral district which constitutes their collecting limit. Of these, 18 are new introductions to the ANBG Living Collection, 15 being listed threatened species. Brent also took us to a dry rainforest patch at Four Mile Scrub in the Boyne Valley where we collected fresh seed of both *Harpullia hillii* and *H. pendula* and familiarised ourselves with the characteristics of this distinctive rainforest type many of whose constituent species perform well (if slow growing) in Canberra. Of particular interest were the outstanding mature specimens of *Pleiogynium timorense*, the bush tucker food tree Burdekin Plum, two small plants of which can be seen in section 309 growing against the wall at the northern end of the Banks Building. Brent and his crew are doing a magnificent job at Tondoon highlighting the tremendous diversity of their region's flora in what is now a mature garden (even though only 26 years old) and I highly recommend a visit if you are fortunate enough to be in the area, or see www.gladstone.qld.gov.au/tondoo-botanic.

Heading south

On Sunday we made the eight hour trip south to Boonah in the belly of the scenic rim to be hosted by friends of our curator, David Taylor. We spent Monday being shown around the high country at the head of the Condamine River where, even in this prematurely hot spring, the pasture was still green and the complex warm temperate



Harpulia pendula Red Cliff Botanic Garden Brisbane, Queensland; *Pleogynium timorense* in John Wrigley's garden at Coffs Harbour; Toby and Julie relaxing under *Giejera parviflora* in the ANBG.

rainforest simply breathtaking. We made nine seed collections including our first wild accession of *Syzygium crebrinerve* and a new addition, the Mt Maroon form of *Pandorea pandorana*. In the late afternoon we headed across the Macpherson Range into NSW and south to Lismore.

Lismore Rainforest Botanic Garden, opened in 2013, is an entirely volunteer run and council supported garden, based on the immensely diverse rainforest flora immediately around the town. We were kindly chaperoned by Peter Gould taking cuttings of eight listed threatened species. Of these, one is a new species addition to our collection, three are the first wild provenance collections for the species and the other four new clones to add to the genetic diversity of our existing limited holdings. The warm subtropical climate has seen this Garden grow rapidly and it is a credit to the tenacity and industriousness of the Friends group that runs it. For further information, see: www.friendslrbg.com.au.

After a quick stop to send cuttings to Canberra, we headed south to Coffs Harbour and the first wet and cool weather of our trip. We spent all Wednesday, having been warmly welcomed by North Coast Regional BG Curator Ian Corbett, collecting cuttings of some 21 species of which 15 are listed as threatened; one is a new species addition to the ANBG collection, five are the first wild provenance collections for the species and eight are new clones to add to our collection's genetic diversity.

The Coffs Harbour Garden shares a strong historical link with us through the ANBG's first curator, John Wrigley, who played a large role in its establishment after moving north. Its North Queensland Proteaceae collection is particularly stunning. Unlike Lismore and Tondoon, this

Garden is a mixture of native and exotic as well as having a combined workforce of council employees and a large number of volunteers. Its position near the sea in the town centre ensures a particularly benign climate. See more at: www.ncrbg.com.au.

Back at the ANBG

After another long drive home on Thursday, we went to work on Friday to process all our 92 collections. Under the Commonwealth *Environmental Protection and Biodiversity Conservation Act* threatened species are listed on the 'Species Profile and Threats Database' or SPRAT. Twenty-seven of our 92 are SPRAT listed (seven new to our collection, 11 first wild provenance collections and nine additional wild provenance clones). In addition, 12 other collections are listed either under the Queensland or New South Wales Nature Conservation Acts; all these are new to our collection. Amongst the remainder, ten are new species additions and three are first wild collections.

Over the next several years, I hope to be planting material from these collections both into the rainforest area proper as well as in the rainforest verge/dry rainforest/Brigalow and vine thicket sections (216-220) on the northeast facing slope to the south of the gully. Though I suspect I will be humus long before most reaches maturity, I look forward to nurturing their growth as well as being able to take groups of Friends through the area on guided walks.

I thank Julie for her tireless efforts and support; the Friends for contributing half the costs of the trip and for all their work for the ANBG; and I thank and commend all those involved with the Gardens we visited. Such endeavours not only bond and invigorate local communities but become vital cogs in the safeguarding of our nation's floral heritage.

Garden Shorts

From the Executive Director

As summer draws to an end we reflect on another successful summer of public events in the Gardens. The Friends have contributed to the success of these events not only through volunteering in diverse roles ranging from collecting admission fees, manning information tents and refreshment stalls, to providing guided walks, and also in their enthusiasm to support our public programs and promote these amongst their family, friends and networks. I would like to thank all the volunteers for their involvement and support of Gardens' public programs and events.

The development of the Masterplan is well progressed and on track to be available in June 2015. The outcomes from this process will drive the future infrastructure developments in the Gardens.

We welcome Jindii Eco Spa to the Gardens, now operating in the Franklin Building. It is wonderful that such a well respected local business, with a philosophy of sustainability and wellbeing, was awarded a five year agreement to operate within the Gardens.

Last April I reported on a Summer Scholar research project investigating the genetic basis and provenance of threatened species in the Garden's Living Collection. The results of this initial work, undertaken by Lottie Boardman, indicated it was worthy of further investigation. The Gardens has received funding, as part of the Government's \$2 million commitment to boosting recovery of threatened species in our national parks, to continue this

research. Our research aims to identify genetic gaps in the threatened plant collections safeguarded by the ANBG and extending to the Royal Botanic Gardens Sydney and Melbourne. These findings will inform future collections to support national plant recovery efforts.

Judy West

Plants in pipes



Living Collections continue to rollout large concrete pots across the Gardens to showcase the more difficult to grow species, and species that display 'weird and wonderful' features. Did you see the spectacular banksias flowering in pipes along the concourse and back of Administration building? The specially developed potting mix used in the pipes allows the display of WA banksia species that would struggle to grow in the garden beds. Well done Living Collection team!



Friends volunteers at one of the lantern making workshops for *Luminous Botanicus*

Seed research



Peter Tedder

Barbara Podger and Tom North collecting grassy woodland species.

In recent years, with the help of the seedy vols, our seed collecting trips have targeted species from three endangered communities: alpine sphagnum bogs and associated fens; natural temperate grasslands of the southern tablelands; and Yellow Box, White Box and Blakley's Red Gum woodlands and derived native grasslands.

From December 2014 to February 2015, CSIRO summer scholar Kathryn McGilp undertook an analysis of seed bank collections to see whether our collecting methodology might need to be modified when targeting whole plant communities. Kathryn's work involved generating lists of species that occur in the plant communities (almost 600 species) to assess how many of them are currently represented in our conservation collections and whether our seed collectors show any bias toward species with particular plant or seed traits.

The results showed that approximately 50% of the species from each community are represented in the seed bank. However, there was a tendency to collect taller plants, and plants with larger seed. Awareness of these biases will help shape the target lists currently in preparation for next summer. These critical analyses of our conservation collections will ensure that we continue to achieve good conservation outcomes for endangered communities.

Green seed pods of *Bossiaea grayi*

Seed collecting

It has been a successful season for seed collecting trips. One plant of particular interest was an endangered species, Murrumbidgee *Bossiaea* (*Bossiaea grayi*), found only in the ACT and only at ten sites along the Murrumbidgee, Paddy's and Cotter Rivers.

Planning collecting trips for *B. grayi* is difficult as seeds are released explosively from the capsules, often within hours of ripening. By working with ACT Government staff and monitoring living plants in the Gardens we were able to keep a watchful eye on seed development. With support of the seed bank volunteers, who made mesh bags, and seedy volunteers who assisted with deploying and retrieving the mesh bags from plants in the field, we were able to capture ripe seeds from 120 plants. These are now being processed and their germination tested.

Botanical interns



This summer the Centre for Australian National Biodiversity Research again hosted 10 student interns. A highlight was the 4-day field trip to the ANU's Kioloa Campus where they collected new specimens for the Herbarium. They were so enthusiastic about identifying their finds we had to virtually drag them out of the lab at 7 pm!

Friends Briefs

Volunteering Opportunity

As the position of Treasurer has become increasingly onerous over recent years, Council has decided to create the position of Assistant Treasurer to take responsibility for the various Friends events throughout the year, principally recording and banking the income from all events. If you have experience with spreadsheets and are accurate with figures this is the ideal volunteering opportunity. We are keen to fill this position as soon as possible to provide valuable assistance to the Treasurer. If you would like more information, or know of anyone who might be suitable for this role, we'd love to hear from you by email: treasurer@friendsanbg.org.au

History at anniversary dinner



Alan Munns

Historian Don Beer, a guide at the Gardens, has been researching the history of the Gardens and the Friends. We were lucky to have him as our guest speaker at the 25th Anniversary Dinner of the Friends in February.

According to Don, the 1980s saw a growing movement in Australia towards community involvement in museums, botanic gardens and similar institutions. In 1987, the Gardens Interpreta-

tion Officer, Rod Harvey, drew up a paper proposing that the ANBG establish a volunteer program. There was, however, significant staff opposition to this move, and it did not proceed.

By 1989, however, the new Gardens Director, Dr Roger Hnatiuk, made the formation of a Friends group a priority, and his Minister, Senator Graham Richardson, declared in October 1989 that the project would be 'a particular focus for effort by the ANBG...'. A new staff position of Public Relations Officer was formed, and Anne Joyce was appointed, to assist in setting up a process which led to the formation of the Friends.

A steering committee was set up, a constitution written, a public meeting held, and on 14 October 1990 Lindsay Pryor, the founder of the Gardens, launched the Friends organisation at a ceremony in the Nancy Burbidge Amphitheatre. It was almost exactly 20 years after the official opening of the Gardens on 20 October 1970.

The Social Events Committee is planning an event to celebrate our 25th birthday in October.

[The full text of Don's speech, is on the Friends website.]

Book donation



On Black Saturday in 2009 the garden at Tambreet in the Strezleckis burnt. This is the story of the creation, the terrible burning and the surprising regrowth and replanting of that garden. It is a big book with heaps of pictures. It was donated to the Friends by the owner and author Esther Leahy. Many thanks, Esther. It is now in the Friends lounge.

Artful works in the Gardens

What form should an artwork take in a botanic garden? Should the Friends be funding public art? These are questions that have recently been under intense discussion by the Friends Public Art Steering Committee.

Last year the Friends Council agreed to fund a consultancy by Pamille Berg, public art consultant, to prepare a feasibility study in consultation with a Friends Public Art Steering Committee and with Gardens management and staff, on the Friends funding an artwork in the Gardens.

This followed the release in 2013 by the ANBG of a revised Public Art Policy and Master Plan.

The purpose of public art commissioned for the ANBG is to add layers of meaning, content, and resonance to the Gardens' spaces, aiding in the process of inspiring, informing, and connecting people to the Australian flora.

(ANBG Public Art Policy and Master Plan 2013-2022, p.17. The ANBG Public Art Policy and Master Plan is on the ANBG website (from the Home page, go to Visiting/Exploring/Public Art.)

In meetings of the Friends Public Art Steering Committee and Ms Berg in November, January, and February, the ideas of what kind of site-specific work by an artist, craftsman, or designer/maker might be appropriate for the Gardens were explored. Possible sites in the Gardens, consistent with the sites already identified in the Gardens' Public Art Master Plan, were explored.



Peter Byron

One possible location, Melaleuca Swamp

On 9 February 2015, Ms Berg gave a presentation at the ANBG to staff and Friends. The presentation was based on the draft feasibility study report which included a project plan, a detailed budget for a proposed artwork, an artist's design brief, and a proposed time program. Ms Berg showed a number of images of public art installations in Canberra, Sydney and overseas, in particular focusing on the possibility of the Friends commissioning an artist to design and install an imaginative and delightful tree house/elevated gazebo structure for a particular location in the Gardens.



Peter Byron

A second possible location, Melaleuca Swamp

Designed to enhance and interpret its special site, the 'work' would become a destination in its own right and possibly attract visitors to an area of the Gardens not at present heavily used. It would entice younger visitors into a part of the Gardens where they and their parents and grandparents would be able to experience more of the Gardens and its ideas. In its interpretation it would open scope for various 'levels' of discussion about the particular Australian flora in its selected location. Overseas experience and the National Arboretum show how powerful a special focus for children to explore can be in attracting visitors of all ages.

The artwork would be self-supporting (not attached to a tree), ...a unique, magical, whimsical, site-specific 'gazebo among the trees'... elevated within the vegetation or tree canopy level. The Gardens' intent in engaging an artist to design, develop, and fabricate the proposed treehouse/ gazebo is to allow a highly original, sculptural, or singular approach to the gazebo's form and character. (draft Artist's Brief)

The proposed site for the structure is the Melaleuca (or Paperbark) Swamp in Section 13. Its location could reference many broad cultural, historical, and scientific associations of the Melaleuca.

Knowing the possible constraints on available funding from the Friends, the consultant indicated that a Project Budget of \$150,000 ex GST could probably be sufficient for a simple but successful project, including the employment of an experienced commission coordinator, necessary government fees and charges, ensuring it meets safety and building code requirements, design fees, artist's fees, and fabricating, interpretation, and landscaping costs. However, she indicated that a Project Budget of at least \$200,000 ex GST would allow the artist to make the treehouse gazebo more special, with more sculptural handwork possible.

In the light of comments received at the presentation to Friends and staff, and from the comments by members of the ANBG Public Art Advisory Committee, Ms Berg will now finalise and submit her Feasibility Report to the Friends for further discussion and assessment.

Friends Council is considering options regarding the funding of such an artwork in the Gardens.

If you would like to contribute comments or ideas on the Friends funding of public art in the Gardens, please send these to:

newsletter@friendsanbg.org.au.

*Barbara Podger
(Friends Public Art Steering
Committee member)*



Anne Rawson

The existing teepee by the Paperbark lawn.

from the Bookshop

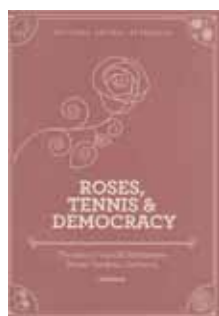
with Bookshop staff



Pip Australian Permaculture Magazine
\$9.95

Published independently three times a year and edited by Robyn Rosenfeldt

Pip is a relatively new magazine (we are about to receive issue 3) exploring permaculture in Australia. The magazine aims to help readers integrate permaculture and sustainability into their lives through informative articles, suggested projects, and profiling of people, gardens, farms, houses and businesses. Also featured are recipes, 'how to' guides, reviews, classifieds, and a directory of permaculture related businesses, courses and people. *Pip* is printed on 100% recycled paper, features beautiful colour photographs and is definitely worth keeping as a continual reference. We will be a regular stockist of *Pip*.



Roses, Tennis & Democracy: The Story of the Old Parliament House Gardens, Canberra

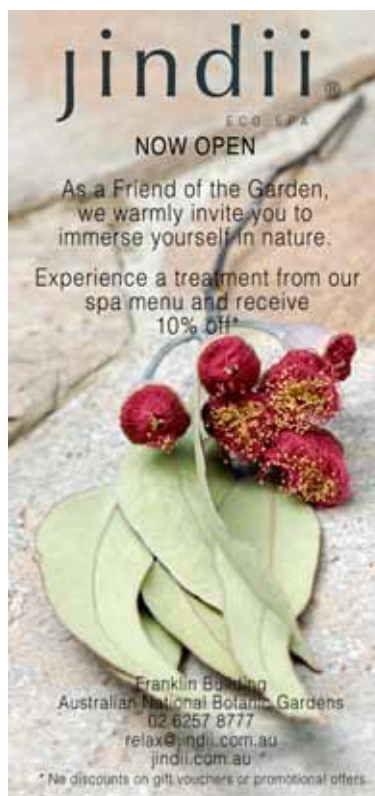
Dr John Gray, OAM

National Capital Authority, 2014

Paperback, 109 pages, colour photographs

\$17.50

This book was published to mark the 10th anniversary of the reconstruction of Old Parliament House Gardens as public gardens. Today, these 87 year-old gardens rank amongst the most outstanding public gardens in Australia. Between 1927 and 1988 the Old Parliament House Gardens served 900 parliamentarians and acted as a valuable retreat from the pressures of working in Parliament. In this book author John Gray examines the story of these gardens; why they were created, how they were used, how they have been converted to public gardens and how they reflect the principles of Australian democracy. An interesting read for any Canberran, garden or history enthusiast, this book is beautifully presented and features many photographs of the Gardens and the people who used them. It allows readers to experience the Old Parliament House Gardens in a deeper way and to reflect on the wider history of Old Parliament House and its surroundings. John Gray is a retired landscape architect who has spent much of his professional career working in Canberra.



Eco Spa in the Gardens

Officially opened on 13 February, Jindii Eco Spa is located in the Franklin Building, below the Tasmanian rainforest garden. In a lovely setting, Jindii

offers a range of treatments using Australian organic spa products, and also runs lifestyle classes including yoga and mindfulness practices. The team would love you to come and see the Franklin building in its new guise – it is now gray outside and inside it is a light, airy space. The hand-made reception desk is worth a visit on its own!

Gardens' staff have been working to create a special garden experience at the entrance to the building, and will be planting more natives used in the production of the Australian range of Li'tya products used in the spa, such as Lemon Myrtle, Pepperberry, Lillipilli, Mintbush, Acacias, Rosella, Macadamia and Desert Lime.

Jindii is offering members of the Friends a 10% discount on treatments at the spa. Phone 6257 8777 for an appointment.



Barbara Podger

Jindii EcoSpa owner, Bianca Pritchard, at the launch

What's on at the Gardens

April – August

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 on the Gardens' site at: www.anbg.gov.au or in the local press.

The Friends of the ANBG thank the many speakers who volunteer their time and talents to further the knowledge of all who attend the events in the Gardens. The Friends use the 'gold' coin donations received at each activity to support Gardens' programs and development. The Friends thank all those who have donated.

Please note: unless otherwise indicated, talks are in the ANBG Theatre.

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.

Until Sunday 19 April

9.30 am to 4.30 pm

**Art in the Gardens with Friends
Visitor Centre Gallery**



A collection of botanical paintings and drawings by the Friends' Botanic Art Groups. Artworks for sale. See page 8 for details.



*Bush
Magic
Story
Time*

**Friday 3 April 10–11 am
and first Friday every month**

Enjoy stories and craft activities in the Gardens. \$5 per child. Suitable for pre-schoolers. Follow the signs from the Cafe bridge.

April – Bilby stories

May – Mothers' day stories

June – Bird stories

July – Doona stories

afterDARK Scavenger Hunt



Friday 3 April at 7 pm

Easter theme Scavenger Hunt

\$30 adult, \$25 child/conc

Fridays 10, 17 & 24 April

School Holiday Hunts

\$27 adult, \$23 child/conc

Not suitable for children under five years. New tours and challenges! Gather your family, bring a torch, follow the clues and discover the fascinating plant, insect and animal life in the Gardens at night. Finish your evening with supper and toasting marshmallows over the open-air fire.

**Saturday 11 April 8.30 to 11.00
or until sold out**

**Growing Friends Plant Sale
and book sale**

Crosbie Morrison Carpark

Plants \$3 & \$5. Don't miss your chance to purchase a selection of native plants at this boutique plant sale. Plants propagated by Growing Friends from material from the Gardens. List of plants on website a week before sale. Also a sale of books from donations and library surplus. Check website for a list of the books available.

Sunday 12 April 8 am

**Members walk with the Birds
Meet at Visitor Centre**

Friends are invited to join experienced guides on an early morning walk in the Gardens with an emphasis on bird watching. The walk will last approx 1½ hours. Gates will be open from 7.45. Some binoculars will be provided but please bring your own if you have them. Bookings essential – by email to: memberswalk@friendsanbg.org.au Please provide your name and membership number as this walk is open to Friends only at no charge.



**Thursday 16 April 12.30 pm
Matthew Higgins 'Burrmys:
Possums with Altitude'**

Matthew, a professional historian, will talk about this iconic and endangered mammal.

What's on

Thursday 23 April 12.30 pm Dr Judy West and Dr Zoe Knapp 'The Role of the ANBG in Contributing to the Global Strategy for Plant Conservation'

Judy, Director ANBG, and Zoe, Parks Australia, will provide an overview of the Global Strategy for Plant Conservation.

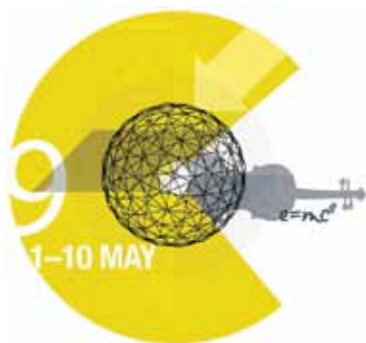
Friday 24 April to Monday 24 May 9.30 am – 4.30 pm Craft ACT Artist-in-Residence 'Their Story' Exhibition ANBG Visitor Centre Gallery

The story of three artists' interpretation of bogs and fens as part of the 2014 Craft ACT Artists-in-Residence program. Also see their final artwork at the Craft ACT Gallery from 9 April to 16 May. More details page 5.

Thursday 30 April 12.30 pm Kevin Thiele 'Species, taxonomy, genomics and you: a guide for the perplexed'

Kevin, Head of the W.A. Herbarium, will talk about defining species in the age of new genome sciences.

Thursday 7 May 12 pm to 1.30pm (no Thursday Talk in Theatre) Dr Judy West 'Forest music'



The 2015 Canberra International Music Festival will host a program in the ANBG called 'A musical walk through a green labyrinth: the ultimate ecological experience'. Various ticket options. See: www.cimf.org.au.

Thursday 14 May 12.30 pm Dr Michael Mulvaney 'Red Hill Regenerators'



Michael, an advisor to government on protecting wildlife, will talk about the natural history of Red Hill.

Sunday 18 May 9.30am – 4.30pm Fascination of Plants Day

Discover Australian eucalypt stories on a self-guided eucalypt trail or take a free guided walk to celebrate *Fascination of Plants Day*. Pick up your Eucalypt trail brochure from the Visitor Centre. Free guided walks depart 11.00 am and 2.00 pm daily

Thursday 21 May 12.30 pm Professor Richard Duncan 'The impact of humans: patterns of bird extinction in remote Pacific Islands'

Richard, Centenary Professor of Conservation Ecology at the University of Canberra, will outline new approaches which can help us to understand the massive extinctions caused by humans in the Pacific Islands.

Wednesday 27 May – Sunday 28 June, 9.30 am – 4.30 pm Friends Photographic Exhibition Visitor Centre Gallery

The second annual exhibition and sale of works by members of the Friends Photography Group.

Thursday 28 May 12.30 pm Dr Dianne Gleeson 'Wildlife detection using environmental DNA'

Dianne, researcher in the Institute for Applied Ecology, University of Canberra, will present an overview of DNA detection in the context of wildlife management.

Thursday 4 June 12.30 pm Dr Martin Fortescue 'Booderee National Park: the Jewel of Jervis Bay'



Martin, Booderee National Park Resource Manager, will discuss a new book on Booderee NP written in collaboration between ANU and Booderee researchers and talk about some of the benefits of the enduring research partnership.



Saturday 6 June, Saturday 4 July and Saturday 1 August 6.30 pm afterDARK Lantern Tours

Participate in a lantern making workshop then embark on a fascinating night tour of the Gardens with your own ranger guide. \$25 adult, \$20 child/ conc. Not suitable for children under five years

What's on

Thursday 11 June 12.30 pm Dr Karen Viggers 'Science + Fiction ≠ Science Fiction'

Karen, a best-selling author and veterinarian, will speak about using fiction to bring readers closer to wild places and environmental issues.



Karen Viggers in a wild place. From her website: www.karenviggers.com

Wednesday 17 June 1.00 pm, 2.00 pm or 3.00 pm Viewing Botanical Art at National Library of Australia

(Friends only event)

Friends are offered an exclusive opportunity to attend a viewing of original botanical illustrations and watercolours by the artists Robert David Fitzgerald (1830-1892), Adam Forster (1848-1928) and Ida McComish (1885-1978). The viewing sessions will commence with a brief introductory talk. Choose between three sessions: 1.00 pm, 2.00 pm and 3.00 pm. Each viewing will be one hour. Meet in the foyer of the Library 15 minutes ahead of the session starting time. The Library has digitised some of the works by these artists and further information on them is available via the Library's website and online catalogue. Numbers are limited and bookings are essential by phone 62887829, or email artatnla@friendsanbg.org.au, indicating name/s, phone number and time preferred.

Thursday 18 June 12.30 pm Dr Tony Orchard 'Allan Cunningham: King's collector for Kew'

Tony, former Australian Botanical Liaison Officer at Kew, will talk about one of the most successful explorers and botanical collectors in the first half of the 19th century, Allan Cunningham.



Allan Cunningham's collection sites. From ANBG website.

Thursday 25 June 12.30 pm Sherry McArdle-English 'Truffles in the ACT region'

Sherry, successful Canberra truffle grower, will describe her delightful journey with Snuffles, the truffle dog.



Thursday 2 July 12.30 pm Vicki Still 'Creating easy care and sustainable outdoor spaces'

Vicki, a former Australian and ACT Horticulturalist of the Year, established Easycare Garden Designs Pty Ltd in ACT in 1999; she will discuss how to create an easy care and sustainable garden.

4 – 12 July 9.30 am – 4.30 pm Yangupala Tjuta Waakarinyi: Ceramics from Ernabella Australia

Visitor Centre Gallery

In conjunction with the 14th Australian Ceramics Triennale 'Stepping Up' this unique exhibition will present new ceramic works from a select group of award winning and emerging Ernabella artists.



Ernabella Ceramics, Tjimpuna Williams at work in the Ernabella Arts ceramic studio, 2013

Wednesday 8 July 1.00 – 3.00pm Artist floor talk Dickson Room

Ernabella Artist and 2014 Indigenous Ceramic Art Award Finalist Milyika Carroll will discuss the exhibition and the importance of art centres to the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands. In 2003, the ceramic studio was established specifically for Pukatja Community's yangupala – young people. Anne Thompson, also a 2014 Indigenous Ceramic Art Award Finalist will translate. Anne is a qualified translator as well as an artist, and at age 27 is part of the next generation of Ernabella Artists. Artist Tjimpuna Williams and staff member Ruth McMillan will also be in attendance.

What's on

Thursday 9 July 12.30 pm Ben Wallace 'Plant hunting in Yunnan'

Ben, former horticultural botanist at Sydney Royal Botanic Gardens, will describe his recent eco-tour to Yunnan Province in China.

Thursday 16 July 12.30 pm Dr Elizabeth Dennis 'How plants flower at the right time'

Liz, a CSIRO Fellow and joint winner of the Prime Minister's Prize for Science, will enquire into the environmental and genetic cues that induce plants to flower.

Thursday 23 July 12.30 pm Michael Doherty 'How plants respond to fire'

Michael, a plant ecologist with CSIRO, will describe the response of plants to fire, with a focus on examples from the ACT following the 2003 fires.

Thursday 30 July 12.30 pm Dr John Turnbull 'Bunya pine and other Araucarias'



D. Greig © ANBG

John, former CSIRO scientist and currently an ANBG guide, will discuss the lifestyles of these iconic trees and their impact on our lives.

Thursday 6 August 12.30 pm Chris Davey & Kathy Eyles 'The Gang-gang special survey'

Chris and Kathy from the Canberra Ornithologists Group will tell us what has been learned from the 2014 Gang-gang cockatoo survey.



Ann Eldridge

Thursday 13 August 12.30 pm Dr Lori Gould 'Re-greening the Capital Region'

Lori, scientist with Greening Australia, will talk about community and land-holder engagement in Boorowa River recovery and Canberra's recovery from bush-fire.



where
friends
meet to eat

**Open every day (except Christmas)
8.30 am-4.30 pm**

*Friends receive a 10% discount
(on production of membership card or name tag)*

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Friends' Benefits

As a Friend you are entitled to:

Three issues of *Fronds* a year
Three hour free parking pass
Botanical Bookshop – a discount on most items
Discount at Floresco cafe
Discount at Jindii EcoSpa
You also get:

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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www.botanicalbookshop.com.au

always welcomes Friends!
with a 10% discount:

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- on purchase of gift vouchers
- on production of your membership card
- to the person whose name is on this card

(no discount on redemption of gift voucher)