



Fronas

*Newsletter of the Friends of the Australian National Botanic Gardens
Number 70 April 2012*

*See inside for your
Special Preview Invitation to
Art in the Gardens*



Friends of the
Australian National
Botanic Gardens

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The Friends newsletter, *Fronds*, is published three times a year. We welcome your articles for inclusion in the next issue. Material should be forwarded to the *Fronds* Committee by 1 February for the April issue; 1 June for the August issue; 1 October for the December issue.

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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Cover: *Eucalyptus forrestiana* by Eva Henry.
One of over 60 paintings on show at the Botanical Art Exhibition, 13 April to 13 May.



**THE
YEAR
OF
THE
WATER
DRAGON**

2012 is the Chinese Year of the Water Dragon. The Dragon is the mightiest and luckiest of the Chinese Zodiac signs symbolising character traits of dominance, ambition, vigour and passion, but also arrogance and intolerance. The water element calms the Dragon's fire and allows it to see other points of view.

The Water Dragon only makes an appearance every 60 years in the Chinese Zodiac. Happily our water dragons appear every year to delight visitors to the Gardens.

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Myriads of Moths: the nightlife of the ANBG

Ted Edwards*

Visitors reluctantly leave; the sun sets and the Gardens come to life. Make no mistake, the Gardens have a vibrant night-life and among the revellers are the moths, maybe nearly a thousand species of them. The mega-diverse Orders of insects exert massive control on our plant communities. Leaf eating, leaf eroding, leaf mining, stem boring, wood boring, bark boring, bud worming, flower chewing, litter feeding, root grazing, root tunneling; anything you can imagine and much you have never imagined are daily and nightly activities in the moth-world.

At the same time the parasitic flies must be fooled, the wasps must be hoodwinked, the bats foiled, the birds confused, the lizards educated with a lousy taste in their mouths, and also the flowers pollinated, females found and eggs laid. The caterpillars do not confine their interest to flowering plants but also help themselves to lichens, fungi, ferns, cycads, gymnosperms, and a very few are carnivorous on scale insects or ant larvae. It is full-on war in chaotic confusion and staggering complexity. They are well hidden during the day, amazingly so considering the bewildering variety of colours, patterns and shapes that moths adopt and by no means are they all dull and grey. Altogether there are very approximately about the same number of moth species as flowering plants in Australia; somewhere between 20,000 and 30,000.

Yet gardens survive, and do so luxuriantly, a tribute to the hundred million years they have developed together. Sometimes moths conflict with the interests of man. Just one type of moth stymies red-cedar forestry. But the vast majority feed away entirely unnoticed by the average person. Occasionally a few get out of line and then the more casual observer notices them. In the Gardens we will look at a few of these because the damage they do is visible to Friends, staff and visitors and we will look at a few noteworthy in other ways.

First is the white cedar moth, *Leptocneria reducta*, which feeds on a range of Meliaceae but its favourite is white cedar. In autumn in most years you will see the trees defoliated by the moth's caterpillars. White cedars do lose their leaves during the monsoonal dry season but this is an early and drastic defoliation which the white cedars can well withstand. Search the lower trunk of the tree, crevices, crotches and you will find the very hairy dark grey caterpillars in clusters. Beware; do not touch them as the hairs can cause unpleasant skin irritation (urtication)



From the bottom upwards:
Leptocneria reducta adult moth. Paul Zborowski
L. reducta cluster of larvae. Ted Edwards
Damage to white cedar by *L. reducta*. Ted Edwards

Ted Edwards will be giving further insights into the fascinating world of moths at a Thursday Talk on 26 April – see 'What's On' for details.

*Co-author, with Paul Zborowski of *A Guide to Australian Moths*



Dichocrocis clytusalis adult moth. CSIRO Ecosystem Sciences



D. clytusalis webbed bag. Ted Edwards.



Calicotis crucifera adult moth. CSIRO Ecosystem Sciences

in humans. The white cedar moth is not a natural inhabitant of the Canberra area but was found naturally where white cedars grow nearby in places like Bungonia Gorge and the Araluen Valley. In the early 1990s the moths first made it to Canberra, whether assisted or on their own we do not know, and are now firmly established in Canberra gardens. The large grey brown moths are about 40 mm across, and the larger females emerge heavy with eggs ready to lay because the moths themselves cannot feed.

Another moth that may be found in the Gardens in some years in late autumn is the kurrajong leaf-tier, *Dichocrocis clytusalis*, a pretty yellow moth, about 18 mm across, which does exactly as its name suggests. The caterpillars live communally and tie a cluster of leaves together with silk into a bag, which is usually small in Canberra but may be as large as a lady's handbag further north. In the protected inside of the bag the caterpillars feed freely on the leaves. This moth is right at the southern end of its natural range in Canberra and in most years is absent but sometimes it reaches the Gardens and feasts on the trees. But usually you need to go to Sydney or Cowra to see them. It will eat other species of *Brachychiton* and in the Gardens is usually on kurrajong and the bottle tree but it will also feast on the Illawarra flame tree.

There is a tiny pale moth, only about 8 mm across, which rests in a most peculiar manner. It folds its wings tightly about its body and then sticks its hairy hind legs out at right angles to the body forming a cross shape and hence its name *Calicotis crucifera* (Latin; cross bearing) and being small and inconspicuous has no common name. Its caterpillar feeding marks are there for all to see however and if you examine the fronds of an elkhorn the older ones towards the tip have died off and twisted. This is caused by the caterpillars which feed on the sporangia (the fertile bit on the underside the frond where the spores are produced) near the tips of the fronds. There was a big introduction of epiphytic ferns and orchids to the Gardens in about 2005 and the moths came with the ferns. The moth, although very small, is wonderfully mobile and can travel long distances on air currents, and was first discovered in New Zealand to which it must have travelled from Australia as its near relatives are Australian. Canberra is a very marginal environment for it and a succession of cold winters may see them eliminated. I have a very large elkhorn in my garden and when I brought it from Sydney on my mother's death in 1988 the moths came too but soon died out.

There is a most interesting stand of *Commersonia bartramia* in the Gardens and all the leaves have small cuts in them or small patches where the leaf surface has been eroded. It is the work of an even smaller moth, about 7 mm across, in the genus *Bucculatrix*, the caterpillar of which first mines in the leaf and then erodes

the leaf surface. They are interesting because they are the Northern Hemisphere branch (which also spreads into the Southern Hemisphere) of the group of moths to which the scribbly gum moths belong. The iconic scribbly gum moths are well known on the *Eucalyptus rossii* in the Gardens where research has recently been undertaken to elucidate their biology. Another and much closer relative of the scribbly gum moths is *Tritymba* which are rather larger than the scribbly gum moths (about 20 mm compared to 8 mm) and the caterpillars feed not in the cork cambium just beneath the bark like the scribbly gum moths, but in the vascular cambium on the interface between bark and wood. Look closely at the trunks of *Eucalyptus mannifera* in the Gardens and you will see these much larger scars which are similar in shape to the scribbles but more ghostly. We call them ghost scribbles.

A moth flying in late spring and summer is *Phalaenoides tristifca*, which also has no common name but is very like the grape vine moth, and which is easily seen because it is one of the few day flying moths. It is quite large, about 45 mm across and black with cream patches. The banded caterpillars feed on plants of willow herb (*Epilobium*) which often grow in moist and more open areas of the Gardens particularly near the waterfall in the rock garden.

Moths have specialised in using chemical scents disseminated on the night breeze to aid the males find the females. This system works because reduced visibility at night makes the visual means used by butterflies less effective and at night air flow is more horizontal unlike the daytime swirl of thermals taking scents up and out of circulation. But there are always exceptions to any rule and one notable one is the whistling moth, *Hecatesia fenestrata*, which is a smallish moth about 25 mm across. It is a moth of Black Mountain and is found in the natural parts of the Gardens where the banded caterpillars feed on dodder laurel, *Cassytha* spp. The males of this moth fly at dusk while there is still plenty of light in the sky and select a small open glade where they fly at about a metre above the vegetation in a figure-of-eight course emitting a soft tss . tss . tss . tss ... sound which I used to be able to hear but can no longer because of its high pitch. The sound is caused by large, strengthened knobs on the leading edge of the wings striking together above the moth in flight which flexes a ribbed scaleless membrane in the wing. The females find the males at dusk but after mating lay their eggs at night. The moths use scent, and after landing tactile stimuli, to identify the right food plant to lay their eggs on.

We have glanced at seven species, less than 1 percent of the moth-life of the Gardens and learning about them is the challenge of several life-times. Their study is badly neglected by biologists. Too-hard basket?



Bucculatrix sp. adult moth. CSIRO Ecosystem Sciences



Phalaenoides tristifca adult moth. CSIRO Ecosystem Sciences



Hecatesia fenestrata adult moth. CSIRO Ecosystem Sciences

Summer seeds

Margaret Clarke



Laura Schweickle happy to find a sea of *Themeda australis* with seed ripe for collection. Photo by Annette Harry.



Well-oiled team on Mt Majura at 8.47 am. Photo by Barbara Podger



Pelargonium australe, seeds and herbarium specimen were collected from Mt Taylor. Photo by Barbara Podger

This summer, fourteen ‘Seedy Vols’ (mostly Friends) were enlisted to help with the collection of seeds from local flora to form part of the large and ever increasing conservation collection of Australian native seeds at the ANBG. As one of its key seed related projects, the ANBG is working with the ACT Government to have seed from all local species safely stored in its seed bank ready for use for research about the seed biology of these species. The knowledge created from this research will help inform and guide various restoration activities. To complete the collection, the ACT Government has identified 207 target species.

In addition, the Gardens is always on the lookout for species that can be grown-on in the Grassy Woodland garden at the entrance. From twelve collecting areas ranging from the Gardens’ backyard on Black Mountain to Namadgi National Park and private properties at Wamboin and Sutton, 74 different species were collected by staff and the Seedy Vols over the seventeen week program. Of these 41 were listed on the ACT species of interest.

You know it’s been a strange year around Canberra when there’s hardly a *Bulbine bulbosa* flower to be seen; common grasses like *Joycea pallida* aren’t setting seed; and many of the pea species are flowering twice in climatic confusion. On the flip-side other species are flowering prolifically—the tiny mauve flowers of *Vittadinia sp.* were a common sight and the huge pink and white patch of *Lotus australis*, a herbaceous legume at the top of Black Mountain next to the car park, was a novel experience. Whether it was the cool, wet summer or the very dry period in July and August, or something else entirely, it’s a sign of the variability of nature and a demonstration that seeds are simply not available on demand when expected.

Our Seedy Vols proved a reliable lot with not one of the

seventeen field trips missed due to weather or illness (that is except for the roster manager who forgot to turn up for one of his own rostered trips!) Many of the Vols were already knowledgeable and experienced seed collectors. Whatever their experience level, all were keen to learn and search out the rare and unexpected. One intriguing specimen looking like an alien fungus was picked up out of curiosity and hawked around to as many experts as could be found for identification. All were stumped until a Parks ranger ID-ed it as a ‘lump of silicon’ probably from a car, dashing hopes of a weird and wonderful new species discovery.

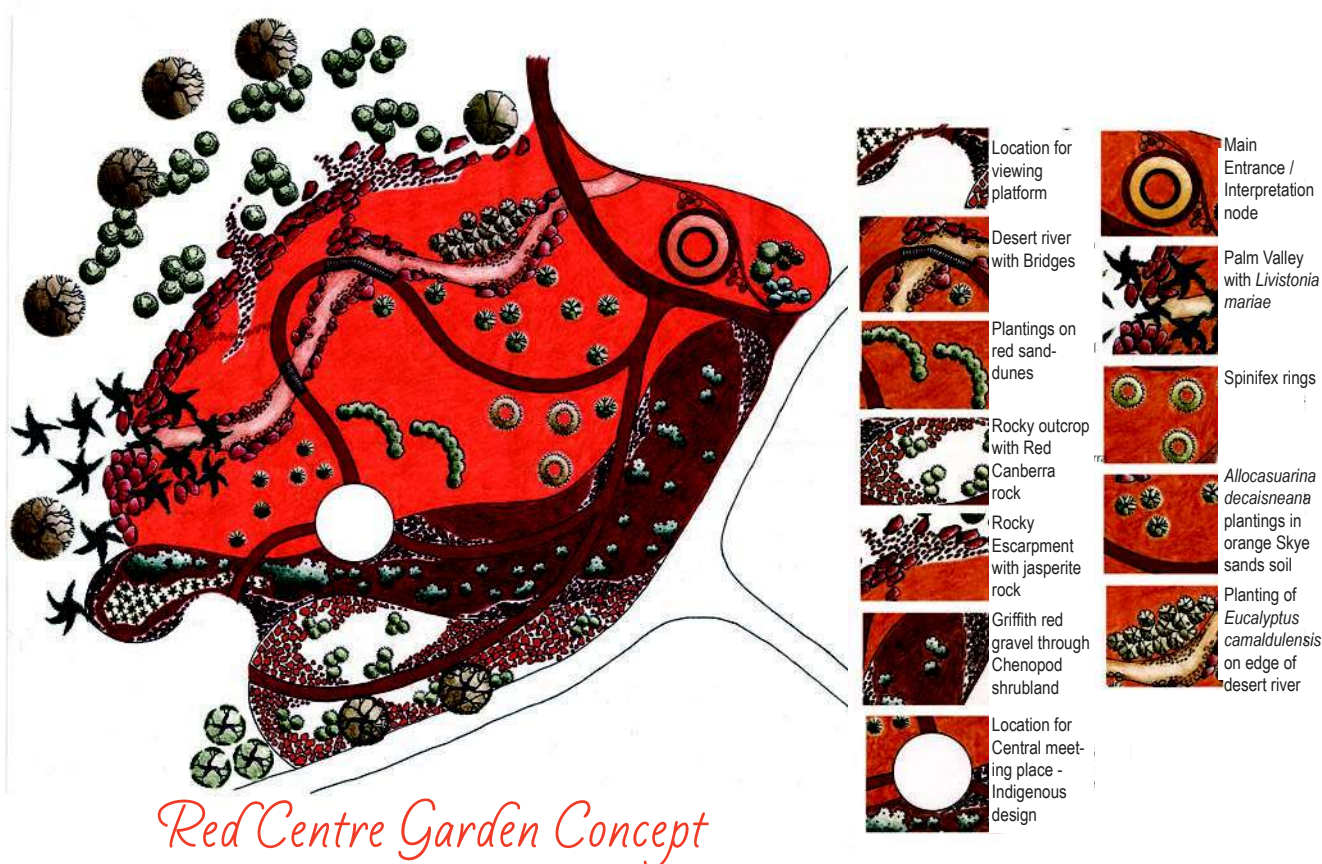
Teams of four were led by Gardens’ experts, Seed Bank Manager Sarah Fethers, or Custodian of the Grassy Woodland Garden, Laura Schweickle. For some of the rarer plants like the tiny *Swainsona recta*, populations had already been identified when flowering and marked with pegs for return visits to collect the seed. But for most species collected, it was a matter of a keen eye coupled with local knowledge and the experience of Sarah, Laura and other enthusiasts.

When a likely group of plants is spotted, the first task is to identify if the seed is ripe. That takes an expert eye usually helped by a hand lens and a good ‘feel’ as to the hardness of the seed. As well as the obvious details of identity and location, information on the aspect, soil, habitat and plants close by is all recorded. A herbarium specimen is taken, labelled and given a unique number to which all the seed from the collection and their progeny will be linked. Photographs are taken to complement the recordings.

Program organiser (and National Coordinator for the Australian Seed Bank Partnership), Dr Lucy Sutherland hopes the program will be repeated next summer. There will be no shortage of returning volunteers keen to track down the remaining 166 species of interest on the list.

Shaping the Red Centre

Craig Cosgrove and Sabrina Sonntag



The transformation of our future Red Centre Garden site at the top of the Gardens is fully underway. The construction works to remove unsuitable soil and the installation of a new drainage system will provide the best opportunity to successfully grow arid plant species.

The next step will involve the selection of the most appropriate soil types to meet this objective. A viewing platform at the southern end of the site will be built this year giving visitors an elevated view of the site developments. The colour landscape design pictured above, gives a birds-eye view of the garden, the interpretation of the colours

of the materials to be used in the garden provide a striking glimpse of what the garden will look like when complete. ANBG nursery staff are already growing plants from the Red Centre for the display, which will be opened in late 2013.

The landscape design is still to unveil the detail for the central meeting place and the viewing platform. The design for the central meeting place will be developed through commissioning an Aboriginal artist from central Australia; this design will encapsulate elements of the principles and vision for the Red Centre Garden.



Happy retirement Sarah

Seed Supremo, Sarah Fethers, has retired after 17 years at the ANBG, firstly as a horticulturist and then as Manager of the Seed Bank. Sarah brought seed banking to a frontline role in the Gardens and was always keen to engage Friends in her work and to share her knowledge of seeds. Her patience and methodical approach uncovered the germination secrets of many species and her enthusiasm and love of Australian plants was an inspiration to all who worked with her. We wish Sarah every happiness in her many and varied new endeavours in retirement.

Soils ain't Soils: temperature matters too

Gemma Hoyle

Climate models for the Australian Alps predict average temperatures of between 0.6 and 2.9°C warmer than today by 2050. As part of the ANU-ANBG Alpine Seed and Seedling Ecology Project, we investigated what impact soil warming will have on seed germination.

Soil was collected above the treeline in Kosciuszko National Park in New South Wales. (Lesson 1: Carrying almost 200 kg of soil over uneven terrain on a hot summer's day is exhausting!) Temperature-controlled glasshouses at ANU were then used to investigate the effect of warm temperatures (between 20 and 30°C) on germination, compared to temperatures designed to mimic today's alpine growing season (between 10 and 20°C).

Over the course of 30 weeks, approximately 7,200 seeds of more than 40 different species germinated from the soil. (Lesson 2: Identifying thousands of alpine seedlings requires an ANBG specialist!)

Results suggest that we can expect to see a trade off under a warmer climate, with fewer seeds germinating from the soil seed bank, but greater species diversity (Figure 1).

Species that presumably recruit via their soil seed bank under today's climate, such as *Rytidosperma nudiflorum* (Poaceae), look likely to be reduced and replaced by species such as *Carex breviculmis* (Cyperaceae) and *Luzula*

novae-cambriae (Juncaceae), as well as some exotic weed species, that appear to favour warmer temperatures for germination.

Application of the growth hormone GA₃, used to induce germination of dormant seeds, resulted in increased species diversity in both the warm and cool environments. This would suggest that dormancy mechanisms help the seeds of some species to postpone germination and persistence in alpine soil. Any reduction in overall germination following application of GA₃ may be due to a toxic effect of repeated application of the hormone.

In conclusion, despite continued recruitment from the soil seed bank into the future, we may see changes in biodiversity and community composition as a result of altered germination cues and dormancy alleviation. To further investigate the importance of soil seed banks in the Australian Alps, more specific work on alpine seed longevity is now required.

This work was carried out with the help of Joe McAuliffe and Roger Good (ANBG), Adrienne Nicotra, Emlyn Williams and Helen Luan (ANU), Susanna Venn (NSW National Parks and Wildlife Service), and Kathryn Steadman (UQ). We gratefully acknowledge the financial support of the ARC and the Friends of the ANBG.



Thousands of seedlings. Photo by Gemma Hoyle

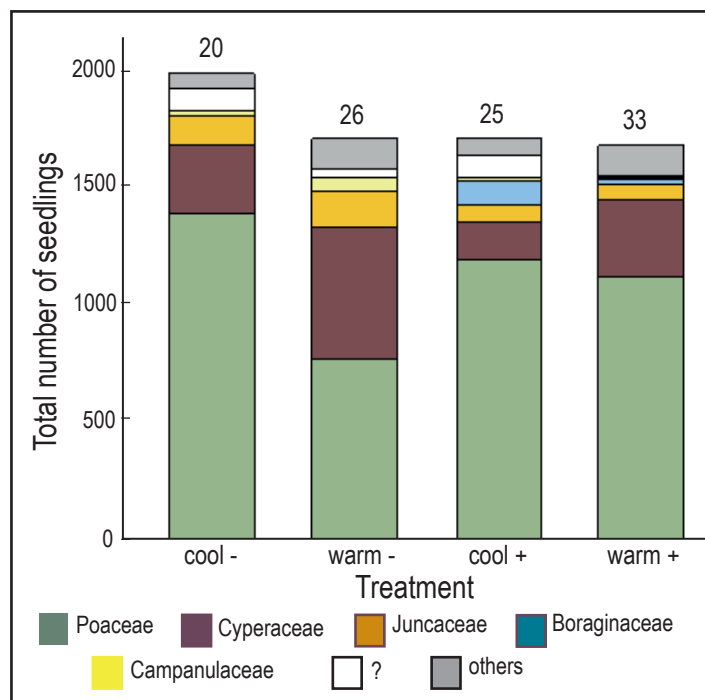


Figure 1: The effect of temperature (cool/warm), and GA₃ (+/-) on total germination from alpine soil. Unidentified species are indicated with white and species belonging to other families are grouped together in grey. The total number of species to germinate within each treatment (i.e. the biodiversity), is indicated across the top.



One seedling. Photo by Gemma Hoyle

Learning from Nature

Margaret Clarke



School children collecting from pond. Photo by Anne Rawson

If you're someone who gives busloads of school children a wide berth you may be surprised to know that 10,659 students enjoyed a visit to the Gardens last year to participate in one of the programs run by the Education Unit. The students are usually either in the Education Centre (aka the Banks Building) or somewhere out in the 40 hectare 'living' classroom. Either way, it's all about the plants, with a hands-on approach and inquiry-based exploration the key to making learning fun.

When one of the rooms in the Education Centre is dubbed the 'Mess Space' you know it's going to be a winner with the pre-school to Grade 2 set. The Early Learning program lets students collect their own 'pond dipplings' and then put them under the lens to investigate the life cycle of the pond. Hands get even dirtier outside in the Potting Space where seedlings of local plants supplied by Greening Australia are potted-up. Students each take a potted plant back to the school or home to be planted out and (hopefully) nurtured.

The Manager, Education and Public Programs, Helen McHugh, manages the development of the schools education program in the Gardens. She is assisted by Education Officer, Amanda Coleman. Together they are planning a wider reach for the program with perhaps a few tasty add-ons like a *Lunch and Learn* or *Dine and Discover* option. The program operates on a cost recovery basis with charges of \$5 per student for a daytime program and \$8 at night, so the more participants there are, the better resourced the program can be.

Already there are over 25 different programs for school groups to choose from. All have been developed by the

Gardens and many have accompanying resources that can be freely downloaded from the web. One of the most popular is *Around Oz in an Hour* for Years 4-12 which takes advantage of the varied ecosystem plantings along the Main Path. *Aussie, Aussie, Aussie, Wattle, Wattle, Wattle*, a discovery of Australia's floral emblems and icons, is also popular.

There is definite potential to substantially increase numbers given the 150,000 students from Years 4-12, coming to Canberra each year from all around Australia. After a full day inside national institutions in the parliamentary triangle, the Gardens offers these out-of-towners a refreshing change. The evening program, *Twilight – An Adventure*, is the most popular experience for interstate schools and is expected to increase in popularity with the new rainforest lights (jointly funded by the Friends). The groups have the Gardens to themselves but usually find they are not alone. Possums, bats, moths and sleeping birds bring delight. The Rangers' stories of the plants and their adaptations amaze. Just being outside after dark seems to excite and if it rains, so much the better!

The fifteen Education Rangers who currently guide and deliver all the schools' programs are casual employees and come from a wide range of backgrounds, including retired teachers, university students and daytime Guides. Whatever their background they share a passion for the Gardens and love to tell the 'story' of the plants and their interactions with their environment. If you think you might like to become an Education Ranger contact the Visitor Information Centre for an application form.

Growing Friends and plants for sale

Yvonne Robinson

Throughout the year Growing friends are busy propagating plants that are then offered for sale to the public usually in Spring and Autumn. Plants are propagated from material sourced from the Australian National Botanic Gardens giving people the opportunity to acquire plants, many of which are not commercially available.

As well as raising funds for the Gardens as the end result of our propagation, these sessions are an opportunity for people to learn more about our native plants. We are trying to improve our database, and our success rate, by recording such information as hormones used, tip or lateral growth (where both are used), terminal and 1-node cuttings (*Telopea*) when doing the cuttings and at potting up. The various techniques we try include root cuttings (*Pelargonium rodneyanum*) and using the tips, with little plantlets, of *Polystichum proliferum*.

Whatever we do, the weather is a significant factor in our success. Some plant material is in much better condition after the good rain but the cooler summer doesn't encourage rooted cuttings to grow fast.

We are also building up our photo library so that we can show images at sales of most species to accompany the description sheets—'a picture paints a thousand words'.

Feel welcome to join our monthly meeting held on the first Saturday of each month at 9.00 am (9.30 am in winter) in the Joseph Banks Building; or come to a working bee in the greenhouse igloo on the third Tuesday of each month.

Plants for sale on 14 April include:

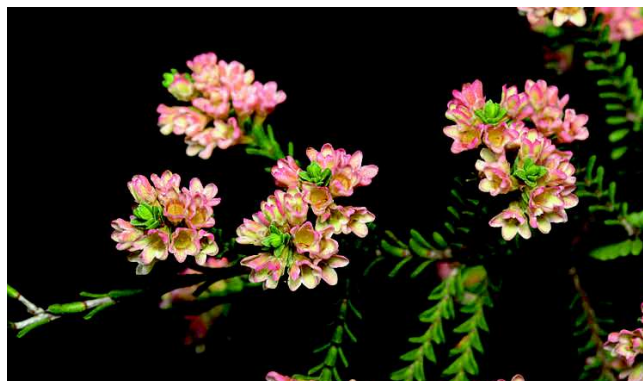


Homoranthus papillatus. Photo by Murray Fagg

Homoranthus papillatus is a compact shrub with unusual foliage and habit. It grows to two metres high with horizontal branches with linear leaves. The flowers are yellowish borne in the upper leaf axils in spring. It is hardy in most soils and aspects except for very wet and heavily

shaded garden conditions. The flowers attract nectar-eating birds.

Micromyrtus ciliata (upright and prostrate), the best known member of the genus, is widely cultivated and as a result of its fairly wide range, it is a variable species in habit, ranging from a semi-prostrate plant to a



Micromyrtus ciliata. Photo by Murray Fagg

small shrub up to about 1.5 metres high. The flowers are profuse, occur in the leaf axils and are white or pale pink. In some forms the flowers age to a darker pink and these are the most common in cultivation. It prefers moist, well drained soils in a sunny or lightly shaded position and is tolerant of at least moderate frosts.

PLANT SALE

SATURDAY 14 APRIL 8.30 – 11.30
behind Crosbie Morrison Building



Walking in the rain

In late February and early March 2012 a very slow moving Low pressure brought more rain than usual to Canberra; indeed by 6 March records showed that it had already been the wettest March for about 103 years. As I was walking in the rain on the afternoon of Thursday

1 March 2012, preparing my next guided walk, I was amazed to see that the Rainforest Gully had more water flow than I had ever seen. In the upper part of the gully a waterfall was cascading below the bridge, while further down, the lower boardwalk was closed because water was lapping over it. There is always something exciting in the Gardens to show to our visitors.

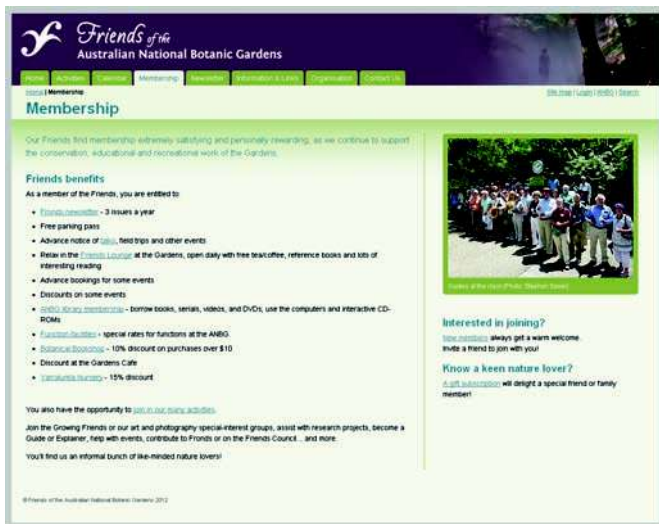
Linda Beveridge

Friends in Style

Helping the Gardens Grow

The Friends have just received a new style guide from Siobhan Duffy, CSIRO graphic artist. We have three new fonts, Fontin Sans, Lucida Sans and *SilverScript Flourishes*. We have a range of new colours, some of which you will see in this issue of *Fronde*. A revised website has been designed, details of which are below. And we have three new banners which have already been used at the Summer Sounds concerts. We hope you like this new look!

New website



The Friends' website is getting a new look, thanks to the efforts of a working group led by Alan Munns and David More. David is a website consultant who has volunteered his time and expertise to the Friends, for which our thanks. David and Alan met with or consulted all our many interest groups, Guides, Fronde, artists, growers, etc.

Graphic artist, Siobhan Duffy at CSIRO, designed and set up the site and has also advised the Friends committee on aligning Fronde look with the web, hence teal titles and purple What's on.

The web address will still be www.friendsanbg.org.au. Please try it out. Feedback to website@friendsanbg.org.au would be most welcome. Council is very appreciative of the work done by Shirley McKeown over 15 years or more in developing and maintaining the Friends' original website.



Photo by Barbara Poogler

Eucalypts in the ANBG

John Turnbull

'The special character and uniqueness of the Australian flora is mainly due to the omnipresence of the genus Eucalyptus. No other comparable land area in the world is so completely characterised by a single genus as Australia is by its gum trees.'

Since Mary White wrote these words in *'The Greening of Gondwana'* (1986) botanists have placed the 'gum trees' in three closely related genera: *Eucalyptus*, *Corymbia* and *Angophora*. Collectively they are referred to as 'eucalypts'.

The fact that Australians embrace eucalypts as part of our culture is evident if one delves into the excellent *'Eucalypts: a Celebration'* (2010) by John Wrigley and Murray Fagg. So it is appropriate that the Australian National Botanic Gardens (ANBG) has a large and representative collection of these species. This collection is now being reviewed critically by the Eucalypt Horticultural Working Group in ANBG and some of the missing iconic species will soon appear. For example, the new Red Centre development will feature ghost gums.

Some eucalypts in the ANBG were growing naturally on the site before planting began in the late 1940s. These local species are *Eucalyptus bridgesiana*, *E. dives*, *E. macrorhyncha*, *E. mannifera* ssp. *maculosa*, *E. melliodora* and *E. rossii*. The most prominent is the graceful *E. mannifera* ssp. *maculosa* (brittle gum), with a smooth white-cream trunk and drooping foliage. The 'Pryor Tree' is a remarkable example of this species. Very similar in appearance is *E. rossii* (scribbly gum) but characteristic 'scribbles', caused by larvae of the moth *Ogmograptis* species, and wrinkly bark where the branches join the trunk help in distinguishing it. Also common is *E. macrorhyncha* (red stringybark) whose botanical name refers to its large, beak-like operculum (bud cap). A very large specimen of *E. melliodora* (yellow box) grows on the edge of the Education Lawn close to the Crosby Morrison building. Its botanical name alludes to its honey and the sweet smell of its nectar. Huge trees of *E. bridgesiana* (apple box) are found adjacent to ANBG on the Australian National University campus. *E. polyanthemus* (red box) has distinctive bluish green round leaves and the leaves of *E. dives* (broadleaved peppermint) are a rich source of eucalyptus oil, once exploited at Tidbinbilla.

The official opening of the ANBG in 1949 by Prime Minister Ben Chifley and Sir Edward Salisbury, Director of the Royal Botanic Gardens at Kew, was marked by planting a brittle gum near the main entrance. Since then, of the currently recognised 860 eucalypt species, about half have been established in ANBG. There are some 100 species of eucalypts on the Eucalypt Lawn (Sections 34, 35, 41 and 300) comprising about 90 species of *Eucalyptus*, eight species of *Corymbia* and two species of *Angophora*. They show great diversity of tree size and form, leaves and bark types, and some species provide important timber and non-wood products (such as essential oils). Some species have an extensive geographical distribution, others are extremely restricted and need conservation.

A few eucalypts have iconic status in that they are readily recognised, have great cultural significance or are important to a particular group of people or in a particular place. Some of these iconic eucalypts are found in ANBG, others have yet to be established. There is the Tasmanian blue gum (*E. globulus*), an important commercial timber species with extensive plantations in Australia and elsewhere. Its significance in Tasmania was recognised in 1962 when it was proclaimed the State's floral emblem. It has also featured on Australian postage stamps, coins and bank notes.

Eucalyptus regnans, in the Tasmanian rainforest gully ANBG. Photo by HM Rawson



Eucalyptus pulverulenta (M.Fagg);
E.rossii (G.Brown);
Corymbia watsoniana (M.Fagg);
E. saligna (HM Rawson);
Angophora costata (M.Fagg).





There is a large mountain ash or swamp gum (*E. regnans*) growing near a tall specimen of *E. globulus* on the edge of the Tasmanian Rainforest gully adjacent to the pond. Unlike *E. globulus* it is not an emigrant eucalypt and is rarely seen outside Australia but it has the distinction of being the tallest flowering plant and the tallest hardwood tree species in the world. The 'Centurion' tree growing in Tasmania's Tahune State Forest is 101 metres tall, only marginally less than the Californian redwoods (conifers).

Some iconic eucalypts are planted on the Eucalypt Lawn. River red gum (*E. camaldulensis*) was named in 1832 by Frederick Dehnhardt, Gardener to the Count of Camalduli near Naples, from specimens in his gardens. It has the widest distribution of all eucalypts, mainly fringing rivers in every state except Tasmania. It is one of the most important eucalypts in overseas plantations, and who has not admired Hans Heysen's magnificent paintings of this species?

Lemon-scented gum (*Corymbia citriodora*) is a tall tree with beautiful white bark, from Queensland. It is easily recognised by the lemon-scented leaves (citronellal). Widely planted throughout the tropics, it was until recently one of the most important eucalypts grown in China. Then there is the shady coolabah or coolibah (*E. coolabah*) in Banjo Paterson's well-known 'Waltzing Matilda' song. Snow gum (*E. pauciflora* ssp. *niphophila*), from the highest altitudes of the Australian Alps where it experiences the most severe climate of any eucalypt in Australia, is a newcomer on the Eucalypt Lawn and on the Rockery.

There are some iconic eucalypts not currently in the ANBG collection. *E. obliqua* (brown or messmate stringybark), named by the French botanist, Charles-Louis L'Héritier de Brutelles, was the first named eucalypt (in 1792), and is one of the most important hardwood timbers in Australia (see *Fronde* 68 August 2011). The white-trunked ghost gum (*C. aparrerinja*) of Central Australia was made famous through the watercolours of Albert Namatjira and has featured on Australian postage stamps.

In another initiative to highlight eucalypts the Friends of ANBG have obtained funds from the Bjarne K. Dahl Trust to develop a Eucalypt Discovery Walk. This will be a self-guided trail featuring selected mature eucalypts and interpretive signage. The aim is to enable visitors to acquire a greater understanding of eucalypts and their role in Australian natural history. The Eucalypt Discovery Walk should be completed by the end of 2012.



Angophora costata subsp. *costata*. Photo by Murray Fagg



Corymbia ficifolia. Photo by Murray Fagg



Eucalyptus petiolaris. Photo by Murray Fagg

How do *Corymbia* and *Angophora* differ from *Eucalyptus*?

Corymbia has a combination of characters (shared in some cases with *Eucalyptus* species) such as the terminal panicles of flowers and urn-shaped fruits, wide-angled leaf venation, and rough, flaky bark. But not all species have all these characteristics. *Angophora* has opposite mature leaves, no operculum (flower bud cap), small greenish sepals, and distinctly ribbed fruits.

Botanical Art Exhibition

13 April – 13 May

Gillian Bellas

The Friends' Botanical Art Groups
Annual exhibition

You're invited to a special
Friends' Preview
Wed 11 April, 2.00 - 4.30pm



Grevillea rhyolitica 'Deua' - Marjorie Roche

Featuring paintings of 'Bush Tucker' plants
13 April - 13 May 2012, Visitor Centre
art in the gardens with friends

Included in this issue of *Fronde* is a beautiful book mark—a gift to all Friends as a reminder to visit the Botanical Art Groups' annual exhibition from 13 April to 13 May. The Botanical Art Groups are generously supported by the Friends and as a 'Thank you' we invite you all to:

A special Friends' Preview

on Wednesday 11 April between 2.00 and 4.30 pm

prior to the official opening on Thursday 12 April. Paintings may be purchased at this preview. Twenty percent of all sales from the Exhibition are returned to the Friends to support the Gardens.

Around 60 works displaying the richness of the Australian flora will be exhibited. Most are available for purchase and all are beautiful. Artists have been invited to enter one work of their choice and all subsequent works entered have been scrutinised for botanical accuracy and artistic merit by our judging panel. A number of the works are inspired by our theme of Bush Tucker.

The exhibition will conclude on Mothers' Day weekend, 12-13 May. Additional works will be brought into

continued →

Volunteer Guides

Glenys Bishop



The new and the old Guides' Convenors: Glenys Bishop and Don Beer. Photo by Maureen Connolly at Guides' Christmas party.

At the December meeting of the volunteer guides, Don Beer stepped down as Convenor of the guides, a position he has held for five years. Don shaped the role of Convenor, expanding it from chairing monthly guides' meetings, to becoming the contact person for the guides, and making major contributions to the selection, training and professional development of volunteer guides. While Convenor, Don organised and conducted two Guides' training courses (with substantial input from Maureen Connolly). He also formalised professional development for the guides and built a cooperative and professional relationship with ANBG staff. Don still continues as a Guide and a presence in the Gardens. As the new Convenor of the guides, I have very big shoes to fill.

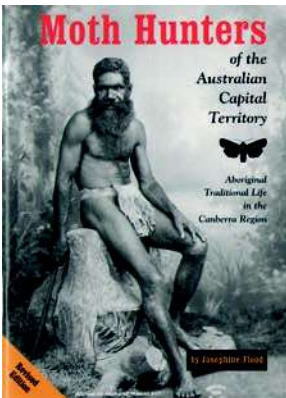
Booked walks

Did you know the volunteer Guides provide special Booked Walks? Your own guide for your group, at a time to suit you—even a special walk to suit your interests? Cost is \$5 per person (minimum \$30) which goes to the Friends for donating to Gardens projects. Maybe have morning tea or lunch afterwards in the Cafe? Phone Visitor Centre for details. Enquiries, bookings to: bookedwalks@friendsanbg.org.au.

Botanical Art continued

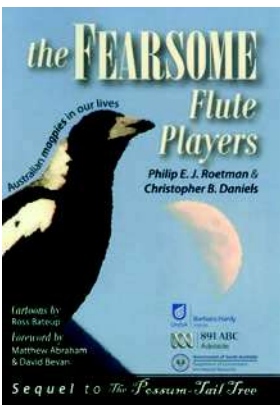
the exhibition with a maximum price tag of \$200. These works will all be botanical although they may not necessarily depict native plants. We also plan to have some artistic and botanical children's activities. So even if you have already been to the exhibition, come back and join in the fun, and buy Mum a bouquet that will last a life time.

From the Bookshop
with Tom Butt, Shop Manager



Moth Hunters of the Australian Capital Territory
Dr Josephine Flood
Paperback, 43 pages
Revised Edition 2010
RRP: \$14.95

Moth Hunters of the ACT is a fascinating account of Aboriginal traditional life in the Canberra region. This very readable book takes us on a fascinating tour of Aboriginal sites around Canberra, showing a vanished way of life of our Aboriginal predecessors, and allowing us to see our surroundings through new eyes. The title refers to the annual feasting on Bogong moths which took place in the mountains every summer. The area covered includes not only the ACT but also the Southern uplands of New South Wales and Victoria. While the book is written for the general reader, it is also of significance for the specialist, as a valuable summary of recent archaeological and ethnographic work with full references for further reading.



The Fearsome Flute Players
Philip Roetman & Christopher Daniels
Paperback (A5), 140 pages,
cartoons by Ross Bateup
April 2011
RRP: \$27.50

A very enjoyable book to read. Made up of many anecdotes from ABC South Australia listeners who have sent in their personal anecdotes relating to magpies. But it is much more than that, with very interesting information at the beginning of each chapter such as: An Introduction to the Australian Magpie; An introduction to Birdwatching; To Feed or Not to Feed; What's in a Song? and more. While the anecdotes originate from South Australia, it is certain that 'our' magpies come from the same gene pool—they have all the same characteristics, and characters! And great cartoons, too.

Photographic Group

Lesley Jackman



Group members hard at work. Photo by Pam Rooney.

If you enjoy taking photographs and are a Friend of the ANBG, you might like to join the Friends' newest special interest group.

The Photographic Group was established in 2011. Its objectives are to bring together people interested in photography of natural phenomena, to share their experiences, to contribute to the ANBG's stock of photographs, to provide training, to improve community awareness of native flora and to help raise money for the Friends for the ANBG. Given the newness of the group, it may take some time before all of these objectives are fully realised but the organising committee is starting to plan a photographic exhibition as part of the ANBG's celebration of Canberra's centenary in 2013.

The Group meets on the last Friday of the month at the ANBG (10.30 am in the Theatre unless otherwise advised). Meetings usually involve at least one presentation on an aspect of photography plus some other discussions, and also a session in the Gardens with cameras at the ready. Speakers may come from within the Group or externally. The members have a range of skill-sets and their cameras also range from digital 'point and click' cameras to more complex SLRs.

All members of the Friends are welcome to come along. If you would like to attend, just turn up or contact: photo@friendsanbg.org.au



Pond in Tasmanian section. Photo by Lesley Jackman

Garden Shorts

From the Executive Director

Thank you to everyone who provided feedback on the 2011 – 2021 Draft Management Plan. Once the comments are reviewed and considered, the plan will be approved by the Minister and tabled in Parliament as our final 2011 – 2021 Management Plan which will direct our work over the next ten years.

I also want to acknowledge the significant support from the Friends in funding new visitor experiences such as the Rainforest lighting and the people mover.

The Red Centre Garden, one of our largest projects since the development of the rainforest, is progressing well with extensive drainage and earthworks being completed, a wide range of arid plants growing in the nursery and a viewing platform to be constructed in the coming months.

The Gardens is continuing to strengthen our focus on conservation and research. Staff have been working closely with partners in developing collaborative projects such as proposals for seed orchards and seed production techniques for native grasses to contribute to native grassland restoration.

The Australian Seed Bank Partnership, coordinated by the Gardens, is working with the Atlas of Living Australia on a virtual seed bank that will help guide national collaborations with collecting and seed banking.

I am pleased to welcome Lydia Guja, who commenced employment at the Gardens in March as a seed conservation biologist bringing specialist knowledge and expertise in seed research to our team.

Judy West

Rainforest in a new light

The Rainforest Gully has a new dramatic lighting display that will be available to school groups, tour groups and the general public during special events.

With 125 LED spotlights illuminating selected trees, boardwalk markers and a lighted handrail, the display allows visitors to immerse themselves in a unique after-dark experience of the Gully's rich diversity of plants. The lighting project was jointly funded by the Gardens and the Friends using the latest technology in LED lighting. The first public event featuring the display was an exclusive night adventure during Canberra's Enlighten Festival in early March. Stay tuned for your chance to experience the Gardens in a whole new light.



Photo by Helen McHugh

New Cafe Operator!

A new Cafe Operator has been selected - the Hellenic Club of Canberra will operate the Cafe with its own distinct identity. The Cafe will have an exciting and affordable menu with bush tucker themes. The Cafe will be renovated and new furniture installed during the first two weeks of May and limited services will be available during this period. The Cafe will open with full services on the 12 May. The Friends will receive a 10% discount. Hudson's will continue to operate the Cafe until the 29 April. Our thanks to Wendy Hudson and her staff for their commitment to the Gardens over a long period. We wish them well in their new endeavours.

Collecting trips

Gardens staff brought back over 100 collections of plants and herbarium specimens from six one-day expeditions targeting plant material for the recently redeveloped Sydney Region Flora Garden. The list includes approximately 20 threatened species and many plants new to the Gardens' living collection. Staff involved participated in a diverse exchange of ideas, expertise and collections, strengthening partnerships with other institutions including Booderee Botanic Gardens, Eurobodalla Regional Botanic Gardens and the Threatened Species Unit of the NSW Department of Climate Change.



Gardens Executive Director, Judy West with staff members Rosella Hampshire and Dan Marges collecting an un-named species of *Calandrinia*, a plant Judy is yet to formally name.

Gardens visitor survey

Results of a Service Quality survey undertaken late last year show the Gardens has improved our service quality delivery since the previous survey in 2007. The survey looked at over 20 service quality attributes in areas of staff and safety, sensory aesthetics, services and engagement and asked visitors to rate their importance to them and the performance of the Gardens in each area.

The Gardens rated positively in areas of staff being friendly and responsive, staff and volunteers being experienced and knowledgeable, Gardens being a safe place to visit, Gardens presenting well as a tourist attraction and the Gardens offering a broad range of experiences to the visitors.

The survey also provided an insight into the pattern of use and profile of visitors. Not surprisingly the main activities undertaken by participants in the survey were viewing the plants, walking/exercising and visiting the cafe. The age profile of visitors to the Gardens has not changed from the 2007 survey with 64 percent of visitors being aged 50 or over. Where are all the young people?

Tribute to commitment

A crowd of dedicated Gardens' volunteers attended a ceremony acknowledging their work and contributions on International Volunteer Day, 5 December 2011. Guest speaker, Dr Andrew Leigh MP, gave a special thank you to the volunteers and noted the Gardens' many long-serving volunteers—25 who have dedicated 10 years or more to volunteering at the Gardens, and over 20 more devoting over 15 years.



Warwick Wright and Shirley McKeown show their certificates recognising 15 years of commitment to the Gardens.

Where bryophytes grow

A new study using specimens from the Gardens' Cryptogam herbarium and data from Australia's virtual herbarium has shed some light on the evolutionary relationships of bryophytes and where they occur. Professor Brent Mishler (University of California Berkeley, a visiting researcher at the Centre for Australian National Biodiversity Research) analysed all genera of mosses, liverworts and hornworts found in Australia, and created a phylogenetic tree showing the relationships within those groups. His results

give researchers new information on whether endemic groups are relicts from the past or whether they have recently colonised their habitat. The outcomes also enable scientists to determine why certain groups occur where they do and make predictions in the absence of field studies on where particular species or genera may be found.

Brand new look



Rangers in new gear holding cup cakes decorated with Gardens' logo.

Rangers show off their new uniforms as part of the Gardens' new look. The Gardens' unveiled its new brand, new look and new logo to coincide with the release of the 2011-2021 Draft Management Plan in November. The new brand reflects the Gardens' status as a national institution, while still keeping the visual connection to Australian flora.

People mover

The Friends have funded the purchase of a 14-seater electric passenger bus that will provide a new and exciting way for visitors to experience the Gardens. A targeted marketing program will focus on attracting family, mobility restricted and international visitors to enjoy this new tour product. There will be: paid *Ride, Stop and Talk Tours* showing Gardens' highlights in just under an hour; a free shuttle bus for events; and paid booked bus guided tours. The Gardens will be training volunteer drivers in April and May with the bus operating from May on weekends at 3 pm. Consider being a volunteer driver guide—contact helen.mchugh@environment.gov.au for more details.

*Gardens shorts contributions by
Sabrina Sonntag*

Botanical Interns



Ten students from around the country have spent their summer holidays work experiencing at the Centre for Australian National Biodiversity Research as part of the 2012 Student's Volunteer Botanical Internship Program. Interns from as far away as Cairns and Perth participated in seminars and workshops, received training in the care of the National Herbarium collection and provided much welcome assistance to Centre researchers. The interns enjoyed a field trip to Booderee National Park where they learnt about park management and honed their field collecting skills. They also went to Harden to assess Landcare's revegetation sites established as part of the Greening the Grainbelt project and they worked with ANBG horticultural staff to research plants with potential for use in home gardens.

On behalf of the 2012 interns I would like to thank the Friends of the ANBG for their ongoing support of the program with a special thanks to Jane Keogh and Margaret Webber for once again taking the interns on an introductory tour of the Gardens at the beginning of the Program.

*Bronwyn Collins
Student's Volunteer Botanical Internship
Program Coordinator
Centre for Australian National Biodiversity
Research*



Interns working in the Herbarium. Photo by Murray Fagg.

Friends Briefs

Friends comments on the draft Management Plan

After a long gestation period—longer than any of us would have liked to see—a draft of the new Management Plan for ANBG appeared late in 2011 for public comment. The new Plan will cover the period 2011 to 2021. Public comments closed on 31 January and some key points made by the Friends were as follows.

- The Gardens should be an ever growing world class living collection of Australian plants and should play a central role in coordinating the efforts of botanic gardens and researchers in Australia and overseas.
- Areas of the Gardens that are not well developed should be developed in line with the objectives of the Plan.
- New major infrastructure projects are vital, including: a new Visitor Centre in a more accessible location; new display glasshouse facilities, especially for the orchid collection; an alpine centre to carry forward the work of the alpine seed project; a world class seed bank for native species; a childrens' garden; an area dedicated to plants of the southern tablelands; and an area dedicated to information and research on the potential for native plants for food, medicine and other uses.
- The decision making basis for the Gardens must be broadened, initially with the establishment of a body such as an Advisory Council.
- An effective process to access additional funding from outside government must be established in

order to deliver the key priorities.

- The Friends should be recognised as a vital part of the future of the Gardens.
- A key priority should be to increase the number of visitors to the Gardens and ensure they are made aware of the importance of native plants. This can involve activities such as the summer concerts, more guided walks and, especially, greater engagement with younger people through education and other relevant activities.
- Further increase in the research activities at the Gardens, which should be supported directly by the Friends as far as possible.
- Re-establishment of a Public Art program at the Gardens.
- A significant increase in the interpretive signage and other methods of making information available to visitors.
- Staff numbers need to be increased.

In the main the actions and goals of the plan are worthy and the Friends support virtually all of them. The real test will be to prepare and act on an effective implementation plan. It is recognised that some serious and difficult prioritisation will need to be part of that. However, it is vital that the government, in adopting the Plan, recognises that it is also committing to doing everything possible to see the key objectives are fulfilled over the Plan period.

David Coutts



Photo by Carol Summerhayes, a member of the Photographic Group

A picnic celebration



Picnic Week 2: Michaela Woodcock

Summer Sounds at the Australian National Botanic Gardens has always been a picnic mecca and a popular outdoor dining event. Lavish picnics, picnics for two, family picnics and social picnics—you'll see them all laid out on the concert lawn.

It's become such a tradition, that this year the Australian National Botanic Gardens celebrated the effort people went to creating their culinary feasts by giving away each week a lunch for two at Hudsons Cafe in the Gardens. All they had to do was upload a photo of their picnic spread onto the Gardens' Facebook page for a chance to win.

The weekly winners for the lunch giveaway were: Leonora Nico, Michaela Woodcock, Jemma Costa and Chris Franson.

Twilight Dinner

A treat was in store for members who attended the Friends Twilight Dinner in February. The installation of the new rainforest lighting was not finished as we had hoped, but Peter Byron, the Gardens General Manager, turned up to dine with us and was not about to disappoint. He had arranged for a preview – with many of the path and stair lights installed, as well as a couple of spotlights. The rain let up, the torches were distributed, and off we went to be the first to admire this fantastic new addition to the Gardens. Thank you to Peter and the lighting crew!

Another first for diners was the introduction of a short trivia quiz,

with prizes for the winning tables (our thanks once again to the Growing Friends for providing some lovely plants). A limerick competition – each had to include the word ‘rainforest’ – elicited some winning rhymes which we share with you.

And a last: this was the final Twilight Dinner with Hudsons as Wendy will be leaving the Gardens in April. Our thanks to Hudsons for all the wonderful meals they have provided to the Friends over many years. We wish Wendy and her team all the best at their new location.

As promised at the Dinner, the Friends have now organised both a special **Rainforest Walk After Dark** for the evening of 28 April, and a **Right Royal Trivia Night** on 26 May. See *What's On at the Gardens* for booking details.



Calothamnus quadrifidus by Graham Brown, Convenor of the Photographic Group

Rainforest limericks

The rainforest has plenty of trees
 Much loved by the birds and the bees
 But the Wallaby said
 ‘Pollen goes to my head’
 And so saying he gave a big sneeze.

A rainforest walk in the night
 Needs a Byron to turn on the light
 If we're left in the lurch
 Peter's still got a torch
 He says on the night 'she'll be right'

There once was a backpacker from Basel
 Who heard of the Rainforest dazzle
 He went on the Walk
 But missed most of the Talk
 Busy tweeting 'They MUST get this lighting in Brazil'



The biennial conference of the Association of Friends of Botanic Gardens, on the theme ‘Mangroves, Myalls and More’, will be held in Port Augusta at the Arid Lands Botanic Garden on 18-19 August. There are pre- and post-conference tours, including a five-day Flinders Ranges tour. Early bird registration costs \$175 (before end of April). To read more about the conference go to www.friendsbotanicgardens.org. Friends of ANBG will contribute to your costs, up to \$175, in return for an article, a talk, or a report. Contact: info@friendsanbg.org.au.

Social events

We need your support! And your participation!

The Social Events Committee welcomes new committee members and support at social events.

The Committee organises a variety of social events throughout the year.

The events are provided for the benefit of the Friends and the community. They aim to provide a pleasant forum for Friends to socialise and to further promote community awareness and the advantages of the ANBG.

Events include: theme evenings, twilight dinners, breakfast with the birds, visits to various ANBG ‘hot spots’ and visits outside the Gardens to places with interesting plants or habitats. The Friends actively support the very popular Summer Concerts held in January each year.

If you are interested in supporting Friends activities or participating on the Committee, contact: jfinley@webone.com.au



Texture by Pam Rooney, a member of the Photographic Group.

Vale

Janet Twigg-Patterson

We were saddened to learn that Janet Twigg-Patterson passed away early in March. Janet was a member of the Friends and an enthusiastic volunteer guide at the Gardens. She later joined the staff and worked in the Visitor Centre for a number of years. Janet was a wonderful artist and expert teacher of the art of Chinese brush painting. Her friends and family celebrated Janet's life with a memorial ceremony on the Eucalypt Lawn at the Gardens.

Watercolour Tawny Frogmouth by Janet Twigg-Patterson



What's on at the Gardens

April – August

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, and all those who will.

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

When bookings are required, phone the Visitor Centre on 02 6250 9540. Members who make bookings for events are requested, as a courtesy to their fellows, to notify the Visitor Centre if they are unable to attend.

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.

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.

April School Holidays and Easter Program

Friday 30 March to Tuesday 9 April



Easter Bilby in the Gardens – Schools' Bilby Exhibition

Featuring colourful displays from schools within the ACT, this exhibition will reflect the fascinating lifestyle of the endangered native species, the Bilby.

Visitor Centre Gallery

Bilby Workshops

Enjoy Easter and the April school holidays with a series of workshops designed to bring out your child's inner artist and help them explore the fascinating world of the endangered native Bilby. Bookings essential at Visitor Centre 62509540.

Create a Bilby Collage Canvas | \$12 per person

Friday 6 April | 11.00 am - 12.30 pm | 5 – 8 yrs

Friday 6 April | 1.30 pm – 3.00 pm | 9 – 12yrs

Make a Bilby Notebook with Personalised Cover | \$12 per person

Saturday 7 April | 11.00 am - 12.30 pm | 5 – 8 yrs

Saturday 7 April | 1.30 pm – 3.00 pm | 9 – 12 yrs

Paint your own Bilby Library Bag or Pillowcase | \$12 per person

Monday 16 & 23 April | 11.00 am - 12.30 pm | 5 – 8 yrs

Monday 16 & 23 April | 1.30 pm – 3.00 pm | 9 – 12yrs

Sew a Felt Bilby | \$12 per person

Wednesday 18 & 25 April | 11.00 am - 12.30 pm | 5 – 8 yrs

Wednesday 18 & 25 April | 1.30 pm – 3.00 pm | 9 – 12 yrs

Collect your free self-guided Bilby Children's Trail from the Visitor Centre and discover more about the lives of Bilbies.



Bush Magic Story Time

Friday 6 April 10:00 am

Friday 4 May 10:00 am

Friday 1 June 10:00 am

Friday 6 July 10:00 am

Suitable for pre-schoolers. \$2 per child.
No booking required.

Gardens after Dark



Enjoy a twilight tour of the Gardens and experience the rainforest lighting

Saturday 7 April 7.30 – 8.30 pm

Saturday 5 May 7.30 – 8.30 pm

Saturday 2 June 7.30 – 8.30 pm

Saturday 7 July 7.30 – 8.30 pm

Ring 62509540 for bookings, payment.

APRIL

Thursday 5 April 12.30 pm Rosemary Purdie 'Wildflowers and vegetation of Kamchatka, Far East Russia'

Plant ecologist Rosemary Purdie recently visited Kamchatka, Russia's land of ice and fire—because of its long, extreme winters and many volcanoes. These elements contribute to a varied and beautiful floral display over spring and summer. Rosemary will introduce lowland forest, tundra, lava flow and alpine vegetation and plants she saw, and show a colourful relationship between some local plants and brown bears!

Thursday 12 April 12.30 pm Andrew Thornhill 'Pollen: nothing to sneeze at'

To most people pollen is a yellow dust that causes hay fever; but if you look a little closer, pollen comes in a multitude of shapes and sizes. Research scientist Andrew Thornhill will present pollen images belonging to Australian plants and describe the many ways that pollen can be used in scientific research.



Botanical Art Workshop

Workshops presented by the Canberra Institute of Botanical Art at the ANBG

14-15 April 9.00 am to 4.00 pm

2-3 June 9.00 am to 4.00 pm

7-8 July 9.00 am to 4.00 pm

See: www.bibart.com.au/ciba
for details, bookings, cost.

Saturday 14 April 8.30 to 11 am Friends Plant Sale

Carpark behind Crosbie Morrison Building. See page 10 for details

Thursday 19 April 12.30 pm Kim Pullen 'A short walk in the Pyrenees'

Kim Pullen, a CSIRO entomologist, recently visited the Valle d'Aran in the Pyrenees, with his wife, to walk through alpine meadows and lush forests. Kim will talk about this part of Spain, and share some pictures of the rich alpine flora and stunning scenery.

Thursday 26 April 12.30 pm Ted Edwards 'Glimpses into the world of Australian moths'

Ted Edwards, co-author with Paul Zborowski of *A Guide to Australian Moths*, will provide an introduction to the biology of moths, the 'ugly' cousins of butterflies. However, they can be just as remarkable and their biology and lifestyles are often far more diverse.

13 April – 13 May 2012 Art in the Gardens with Friends Visitor Centre Gallery



Presented by the Friends Botanic Art Groups. A collection of paintings and drawings of Australian native plants. See bookmark and page 14 for details.

Floodlit Forest for Friends



Photo by Helen McHugh

Saturday 28 April, 5.30pm Special Members Event

BOOK NOW!

Members are invited to experience a magical walk in the newly lit rainforest on Saturday 28 April at 5.30pm. You will be taken on a guided tour to experience the newly installed mood lighting (funded by the Friends) in the rainforest gully. Please wear suitable footwear. Cost: \$10 per person includes wine/soft drink and canapes on arrival. Members may invite one guest.

Enquiries and credit card bookings to: Marion Jones on 6282 7991 or Barbara Podger on 6247 7188.

Email enquiries send to rainforestwalk@friendsanbg.org.au and include your name, email address, number of people. Once your booking is confirmed pay via direct credit to the Friends bank account (BSB 082902; A/c # 176544896, A/c Name: Friends of the ANBG) including your name and "RFwalk" to identify your payment (please do not send credit card bookings via email).

Mail bookings (with cheque or credit card details) to: Rainforest Walk, Friends of the ANBG, GPO Box 1777, Canberra ACT 2601. Or drop in the Friends mail box in the Visitors Centre at the Gardens.

All bookings must be received and paid for by cob Monday 23 April 2012.

MAY

Thursday 3 May 12.30 pm
Dr Trevor Booth 'Are Emigrant Australian Trees Invasive Aliens?'

Australian tree species have been widely planted around the world, but some have proved invasive in particular environments. CSIRO scientist Dr Trevor Booth will identify the characteristics that have made some Australian species relatively ineffective as invasive species, while others have become noxious weeds.

Thursday 10 May 12.30 pm
Dr Cristopher Brack 'Sustaining Canberra's Urban Forest'

Canberra's urban forest is a globally-unique legacy of those who envisaged, designed and created our city and its form. Lindsay Pryor consolidated and extended what the Griffins and Charles Weston began before him, creating much of the urban forest we enjoy today. Dr Cristopher Brack of ANU, possibly with Professor Peter Kanowski, will reflect on the lessons of decades of experimentation and innovation, and how we might approach sustaining and renewing Canberra's urban and peri-urban forests.



Wednesday 16 May – Thursday 28 June
Illustrating Australian nature: illuminating The Scrolls
Visitor Centre Gallery

A selection of sketches and watercolours that are reproduced in Fiona Pfennigwerth's recently published book *The Scrolls Illuminated: an illuminating presentation of Solomon's Song of Songs, Ruth, Lamentations, Ecclesiastes and Esther from the Bible*. Many of the paintings include flora that Fiona sketched in the ANBG, in other Botanic Gardens and National Parks, and other beautiful places.



Right Royal Trivia Night

Saturday 26 May, 7.30 pm
Crosbie Morrison Building, ANBG

Whether you are a Republican or a Royalist the Coronation was a significant event. Come and celebrate the coronation anniversary with a Right Royal Trivia Night at the Gardens.

Book a table (8 people per table) for your friends, neighbours and family, or come on your own, or with a partner. Wear your regal rags, decorate your table, enjoy the fun. Each table will be supplied with a cheese and fruit platter but bring whatever other nibbles you would like. Wine and juice will be available for purchase on the night.

Cost is \$20 per person. Enquiries and credit card bookings to: Fran Johnson on 6288 6865 or Jan Finley on 6255 8441

Email bookings may be sent to royaltrivia@friendsanbg.org.au and should include your name, email address and number of people. Once your booking is confirmed, pay via direct credit to the Friends bank account (BSB 082902; A/c # 176544896, A/c Name: Friends of the ANBG) including your name and "TRIVIA" to identify your payment (please do not send credit card bookings via email).

Mail bookings (with cheque or credit card details) to: Right Royal Trivia Night, Friends of the ANBG, GPO Box 1777, Canberra ACT 2601. Or drop in the Friends mail box in the Visitors Centre at the Gardens.

All bookings must be received and paid for by cob Wednesday 23 May 2012.

Thursday 17 May 12.30 pm

Fiona Pennigwerth will talk about the paintings in her exhibition and her course in Natural History Illustration at University of Newcastle. (See below)

Thursday 24 May 12.30 pm

Ann Mont 'Australia is not all eucalypts – living in a native pine forest'

Ann Mont is a farmer's daughter and retired public servant who grew up on a farm in a Riverina Murray pine forest characterised by flat land, no streams, no rocks, and hardly a eucalypt in sight. How could this be? On an ANU geography field trip to this area she realised that social history, geomorphology, and factors such as irrigation and rising salt are interconnected and affect the vegetation. The talk will discuss her observations.

Thursday 31 May 12. 30 pm
Dr Theresa Knopp 'Conservation Genetics of the Pink-tailed Worm Lizard in the ACT'



Subtitled 'What can population genetics tell us about habitat fragmentation and prioritising of areas for conservation in and near Canberra?'. UC's Theresa Knopp will discuss this small and cryptic legless lizard largely confined to the ACT where urban development has caused concern about its long-term survival and an urgent need for a comprehensive management plan. Population genetic methods have been combined with GIS mapping to identify the regionally most important populations and the main barriers and corridors for dispersal in this species. The talk will explain the methods used and results gained thus far.

JUNE

Thursday 7 June 12.30 pm
Dr Wenju Cai 'Warming in the Tasman Sea, a global warming hotspot'

CSIRO climate scientist Dr Wenju Cai will discuss research into a series of ocean hotspots around the world, including a finding of accelerated warming in the Tasman Sea. Subsequent research looks at changes along other oceanic currents, and finds a synchronised enhanced warming signal, strengthening the argument for a greenhouse warming role in driving these oceanic hot spots

Thursday 14 June 12. 30–2 pm
(please note the extended session)
David Taylor 'Pruning Australian native plants'

The ANBG's Curator of Living Collections, David Taylor, will demonstrate pruning native plants with assistance from his staff. The session will begin in the Theatre with an introduction to pruning at the ANBG, followed by some hands-on pruning using a selection of techniques from mild to wild!

Thursday 21 June 12.30 pm
Dr Judy West, Executive Director ANBG 'The new ANBG Management Plan'

Every ten years the ANBG must develop a detailed plan to guide its management and development for the next decade; the latest such Plan is expected to be finalised by mid-2012. Dr West, Executive Director since 2009, will discuss the new Plan's vision for the future of the Gardens.

Thursday 28 June 12.30 pm
Ian Lawrence 'The place of home gardens in a sustainable world'

Ian has worked on managing water in urban areas, with emphasis on the detention, harvesting and management of rainwater and the need to move away from pipe-based drainage systems. This led Ian and his wife to re-develop their garden to be more sustainable, and to contribute to a set of 'waterwise' gardens, to raise awareness regarding sustainability and alternative landscaping.

JULY

Sunday 1 - Sunday 15 July
Exhibition: Working on Country Visitor Centre Gallery

A photographic exhibition displaying works of Aboriginal and Torres Strait Islander people as they capture and convey the spirit and feel of their country.

Thursday 5 July 12.30 pm
Dr Roslyn Russell 'Travel writers, botanic gardens and the nineteenth century British empire in Australia'

Over a hundred years of European settlement a network of botanic gardens, part of an empire-wide system under the direction of the Royal Botanic Gardens at Kew, was created in Australia. Dr Roslyn Russell contends that 19th-century travellers' accounts informed their home audiences about these gardens, but also constituted a 'report card' on the progress of the imperial civilising mission.

ST KILDA BOTANICAL GARDENS



Thursday 12 July 12.30 pm
Dr Murray Evans 'Saving the Northern Corroboree Frog in the ACT'

Dr Murray Evans, an ACT Government ecologist responsible for conservation of all threatened fauna in the ACT, is particularly passionate about the corroboree frog. He will talk about the ACT Government's Action Plan and progress on protecting and conserving the Northern Corroboree Frog, which has Special Protection status in the ACT.

Sunday 17 July – tuesday 28 August

Exhibition: Reflections of Country Visitor Centre Gallery

A special exhibition by Duncan Smith, recipient of the 2003 Aboriginal and Torres Strait Islander Artist of the Year Award.

**Thursday 19 July 12.30 pm
Stephen Midgely 'Global uses
of Australian acacias – recent
trends and future prospects'**

Recently, there has been wide-scale commercial planting of Australian acacias in Asia and elsewhere. Stephen Midgely, a forester and development specialist who runs a consulting business, Salwood Asia Pacific Pty Ltd, will describe current uses, the scale of these plantings and their social and economic benefits. He will also consider future trends in the use of acacias and potential problems.

**Thursday 26 July: 12.30 pm
David Coutts 'Where are we
going? Future directions for the
Gardens and the Friends in the
light of the new Management
Plan'**

As President of the Friends, David Coutts has been closely involved in delivering the new ANBG Management Plan. David will provide his view of the opportunities and challenges for the next few years—for the Gardens and for the part the Friends might play. David is an agricultural scientist, who has worked for the Australian Government, the OECD and FAO.

AUGUST

**Thursday 2 August 12.30 pm
Emeritus Professor Ken
Campbell 'Wee Jasper Surprise:
where were the world's first
forest plants?'**

ANU Emeritus Professor Ken Campbell traces the early history of plants on earth—with interesting modern Australian associations. He cites recent evidence of the first forest plants and their massive root systems coming from right on our doorstep: at Wee Jasper.

**Thursday 9 August 12.30 pm
Alison Russell-French
'Shakespeare, the Tale of Genji
and Migratory Shorebirds—
what's the connection?'**

How is decision-making about the conservation of our landscape influenced and, in particular, that relating to birds—especially migratory shorebirds and their habitat? Alison, Past President of Birds Australia, asks 'how can we make a contribution?'

**Thursday 16 August 12.30 pm
Bernard Fennessy Memorial
Lecture: Dr Peter Kerr 'Rabbit
control: past, present and future'**



Australia has been blighted by rabbits ever since their introduction. Dr Peter Kerr of CSIRO, follower in the work of Bernard Fennessy, discusses past control research and methods, concerns about the current resurgence as the pest develops immunity to the calicivirus, and what the future holds.



The late Bernard Fennessy

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Free parking pass

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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

Assist with Gardens research projects

Become a Guide or an Education Ranger

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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