



NEWSLETTER Issue 51 June 2021

Welcome to winter! And it's been a very busy Autumn at the Arboretum! Record numbers of visitors, huge Harvest stalls, several Hero tree dedications to well known and deserving Australians and a spectacular Autumn colour show across our forests and gardens.

The National Arboretum hosted the Events ACT celebrations on 31 May for Reconciliation Day with a wide range of activities at different locations across the Arboretum, including tours of the Bush Tucker Garden in Forest 20 STEP! Around 8,000 attendees – who gathered in a COVID safe way – participated in activities such as a panel discussion, basket weaving and yarning circles. There were also musical and cultural performances, language workshops and bush tucker walks.



Reconciliation Day Monday 31 May 2021



Visitors enjoying a tour of the Bush Tucker Garden!



And there were displays at the Clearing

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Chair's Report

Dear Friends

As you will know by now our AGM was held on Tuesday 11 May in the Margaret Whitlam Pavilion. I am very pleased indeed to have been re-elected Chair and consider this to be a great honour. Below is your 2021/2022 Council.

Chair	Trish Keller OAM
Deputy Chair	Mike Woolley
Treasurer	Lynley Rees
Secretary	Del Da Costa
Publications Editor	Nicole Pietrucha
Social Media Manager	Cherie Whan
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STEP Member	Cathy Ikin
National Bonsai and Penjing Collection of Australia Member	Mike Woolley
Ordinary Members (up to 5 Members)	Hans van Haalen Helen Hemphill Fran Hinton Ian Chambers Maggie Hawes

As part of the AGM, I was able to pay a small tribute to our recently retired Guides Coordinator Sandra Linsley. A framed certificate of thanks has been presented to her in recognition of her huge contribution to the Friends. Sandy established the Guide-secure Resources website, a one-stop shop for all Guides resources; she liaised with Guide trainers; managed monthly Guide meetings; managed orientation training; developed resources for the Guides Forest Walks and Bus Tour Groups and she developed an Online Training Survey. Her Lunch & Learn sessions were very popular because they were Guide-specific. They were a Guides' Forum to discuss, learn and contribute to Guide specific issues. And she originated Ongoing Learning Sessions, and so much more.... Sandra will be sorely missed.

Following the AGM our guest speaker was fellow Friend, Max Bourke AM who presented a lively journey on the "Trees of North Africa and Spain - Wandering in the Modern Almohad Caliphate". Thanks Max... a thoroughly enjoyable presentation! Marrakesh has been added to my travel plan when we are able to leave the country!

Our membership has trended down over the past Covid year. I encourage you to check your membership and renew. In the meantime Council and NAC are in the process of working together to develop a marketing plan to encourage and boost Friends membership. Watch this space!!

We are looking forward to the launch of the new revised version of The Arboretum Book later in the year and ready in time for Christmas sales. This huge task was undertaken by Jocelyn Plovits with a team of expert researchers to help achieve it. The original Arboretum Book is now on sale at the Curatoreum at a very good price (\$20). You could have the matching set!

Market Stalls are a hugely successful Friends' activity. Colette Mackay OAM and her team who prepare the enormous amounts of produce from the Discovery Garden and the fig forests are a remarkably talented and committed group. We thank them very much for their efforts on behalf of the Friends. Recent Market Stalls have made a significant profit. Thanks Colette, to you and your team.

Thanks again to our 2020 Volunteer of the Year, Ange McNeilly who continues to manage the Discovery Garden as well as the Wollemi Project with a natural confidence and expertise. Her relishes, pestos, preserves, dried herbs and seeds, sprayed artichoke flowers, pumpkins, decoy butterflies and various plants for sale ... all harvested from the Garden sell like hot cakes every market stall.

Friends undertook to support the very first (of 12) Gazebos - which will be strategically located with magnificent views to the lake, Government House and around the city - by signing an MOU between the Friends' Chair (myself) and Scott Saddler AM in 2020.

This month on Tuesday 8 June the Friends are holding our very first fundraising dinner at the Arboretum. You will have already seen the invitation on our website and I look forward to seeing you there. This will be a very 'relaxing evening with Friends of like mind.' Our special guests are His Excellency General the Honourable David Hurley AC DSC (Retd), Governor -General and Mrs Hurley.

The funds raised from the dinner will go directly to the Friends' to assist with the Friends' Mission to provide the National Arboretum Canberra with funds to *enhance and develop the Arboretum*, including on projects like the Gazebos, and to help the public to engage with the establishment and growth of the Arboretum.



David Williamson and I get to enjoy some sun on my garden seat after his recent Hero Tree Dedication ceremony.

Another **opportunity to be involved... ..an oral history project** at the Arboretum. It was drawn to our attention in 2020 that considerable time has now elapsed since the commencement of the Arboretum. Accordingly, a recording of the development of the Arboretum should be undertaken as soon as possible, before all our significant history is lost. The Arboretum project was initiated in 2003 which makes 2023 the 20th anniversary, and 2024 the NACs 21st anniversary. Already it's a work in progress. We at the Arboretum are charged with representing the history of this magnificent place. If you have ideas or

stories – that you know and we don't – people you know that should be part of this storyline, let us know so all can be included in the history. A podcast, an oral history, however it will be done, it's under construction.

See you at the Arboretum!
Trish Keller OAM
Chaiir

Discovery Kitchen Garden & Harvest Group Update

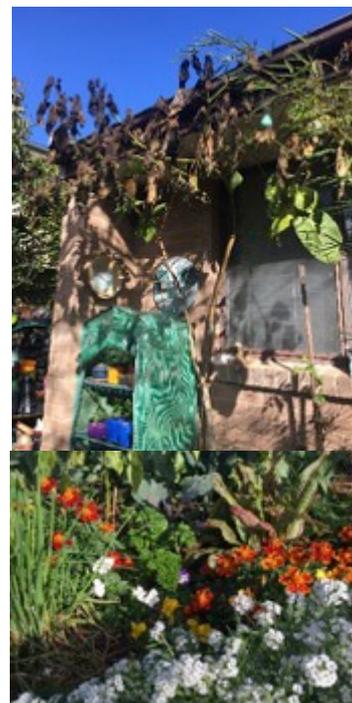
(Article and photos by Ange McNeilly)



What a difference a week makes! For the week commencing Monday, 10 March, I went to the south coast for a relaxing break following a very successful market stall held the previous Saturday during which the Friends' Harvest Group generated a gross total of \$3889.50 in sales. The weather at the coast was warm and pleasant and I spent many days collecting beautiful shells dumped by the ocean on Long Beach's shoreline, reading the book *The Survivors* by Jane Harper, and eating well.



So it was a shock getting back to Canberra on Sunday, 16 May, as it was freezing cold and I discovered my tamarillo had been damaged by the overnite minus 5.2 degree frost where unprotected by eaves and the persimmon was denuded with only fruit hanging pendulously on branches.



And as for the Discovery Kitchen Garden, when last seen there were flowers on the chillies, eggplants, French Marigolds and nasturtiums. Quite a different story on Monday 17th though! Most of the eggplants, chillies, basil and some nasturtiums were frost damaged so the plants were removed and leaves cut back. Sugar snap pea seedlings were planted in gaps and the spent flowers of French Marigolds were collected for drying and packaging for sale.

Incidentally, I want to thank Sue Egan, who has resigned from the Kitchen Garden maintenance team, for all her much appreciated work and companionship in the time she was with us and wish her the best for the future.

Another big thank you goes to Micah Stevenson, who has been managing the FNAC Wollemi Pine Propagation Project at the Yarralumla Nursery and who has now resigned to move on to another interesting job with the ANU. Micah demonstrated a high level of care and commitment towards the project with very good success in propagating the tricky Wollemi seed. Recently, the 30 largest plants were repotted into 200mm pots where they are growing well and have another year to grow on before being prepared for sale to the public.



The project will now be taken over and managed by Yarralumla Nursery horticulturalist staff member, Tracy Boole, whom you may already know through her periodic gardening column in the Canberra Weekly Magazine.



I wish Micah the very best in his new job for the future and hope he is able to buy one of the special plants that he grew from seed. I also look forward to working with Tracy to progress this exciting project towards finalisation on behalf of the Friends

I have already mentioned the first market stall held in early May. Well, the Harvest Group excelled itself by holding another market stall just two weeks after the first and this time netting \$2,292 in sales. So for the month of May, the Harvest Group made a profit of over \$5,000 for the Friends and the Arboretum. Congratulations and thanks to all involved. A special mention goes to Colette for her untiring coordination to get these events happening, including media advertising, whilst juggling apartment renovations and carer responsibilities. What a superwoman!

Many thanks also to the Friends' Treasurer, Lynley Rees, for arranging a cashless sales machine which will be used at all future market stalls. In a Covid environment, people are greatly relieved to find they can pay with card.



For the second market stall, Colette had found a recipe on the internet for pesto using Aussie ingredients such as Warrigal Greens, macadamia nuts, macadamia oil and finger limes. So twenty seven jars of



pesto were made as a trial all of which sold out. Our finger lime trees in the Daleks are not producing fruit as yet so Tahitian lime juice was used instead and the finger lime pearls from the single fruit produced on my plant at home. If there are people who have finger limes to spare and would like to donate them to the Harvest Group for making this pesto, it would be greatly appreciated.

Also for sale at the market stalls for the first time were Maidenhair Creepers (topiarised), *meuhlenbekia complexa*, (the plant that covers the west wall of the



Sensory Garden) in the shape of hearts and circles (which are going to be reincarnated as peace signs) so look out for these in the future. The ever popular Jack Be Little mini pumpkins and their seeds continue to be sold out even with the supplementation from Trish Keller's fabulous little treasures! Many more will have to be planted in spring to keep up with the high demand.



I cannot forget to mention the fabulous "Figgers" who picked approximately 360 kilos of figs and cooked numerous variations of fig products for sale including dried figs, figs in syrup, figs in prosecco, fig chutney, fig and onion relish, fig and ginger jam, fig marmalade etc. etc. etc! Well done all and we cannot get enough of figs! There is a snap of these mighty Figgers over the page!



Of course, all these figs need to be preserved in jars which is one of the biggest expense for the Harvest Group and Arboretum Executive Branch Manager, Scott Saddler, has kindly offered to buy the jars through the Arboretum going forward. Thank you so much for your generosity, Scott!





Figgers: Maggie Hawes, Danielle Hyndes, Sue Egan, Nikki Lucas, Janet Kay and Margie Bourke. Photo by Colette Mackay

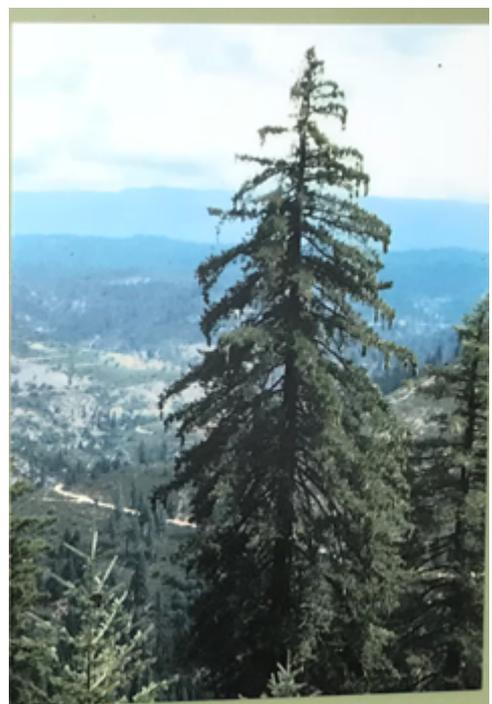
I am currently growing seedlings of poppies and cornflowers to brighten the Kitchen Garden in spring and the team will be maintaining the garden over winter with a reduced watering regime and just general tidying up and interacting with visitors. Happy gardening!

Sugar Pines to join the Giant Sequoias

Family Pinaceae

Article prepared by Helen Hemphill, with assistance from Owen Bolitho

Left photo is from the Information Board at Bendora and taken by John Turnbull.



This photo (irght) of cones is from the American Conifer Society website.



The National Arboretum is planting a number of Sugar Pines in the current Giant Sequoia forest (Forest 33) down near the dam at the entrance of the Arboretum.

These trees are native to coastal areas and mountains inland in Oregon and California on the Pacific coast of the USA, as well as Baja California in NW Mexico. They were discovered in 1827 by the British botanist David Douglas, who named them *lambertiana*, after another British botanist Aylmer Bourke-Lambert (1761-1842), one of the first fellows of the Linnean Society. The common name of Sugar Pine comes from the sugary edible resin that forms around the edges of tree wounds, such as from fire scars. The Sugar Pine is amongst the tallest and most massive pine in North America. They normally grow from 40-60m high, with a trunk diameter from 1.5-2.5m. Large trees, occasionally older than 500 years have reached 80m in height. The tallest specimen that has been recorded is 83.45m found in Yosemite National Park in 2015. The trees have the longest cones of any conifer, 20-50cm long; occasionally 80cm long. Its edible seeds are 10-12mm long with a 2-3cm long wing for wind dispersal. The needles form in bundles (fascicles) of 5, with a deciduous sheath and are 6-11cm long.

Native Americans ate the sweetish seeds from the cone and drank the sweet sap, from the trunk, but in small quantities because of the sap's laxative properties. Sugar pine trees are now in slow decline because of threats they face, including white pine blister rust, mountain pine beetles and climate change.

The odorless wood is used for packing fruit, as well as storing drugs and other goods. Its straight grain makes it useful for organ pipes, piano keys as well as window and door frames. Sugar pine always grows in a mixed forest and are shade tolerant when young. Sugar Pines can be seen in the Bendora Arboretum, just off the Mt. Franklin Rd where they were planted in 1940.

Bibliography.

The Information Board at Bendora Arboretum
American Conifer Society
USDA Forest Service
Wikipedia

Hero Tree Dedications



We have been lucky enough to have recent Hero tree dedications, two of those that we can now share are the Tree Dedications by Professor Fiona Wood and playwright David Williamson. On 1 June His Excellency General the Honourable David Hurley AC DSC (Retd), Governor-General and Mrs Linda Hurley also planted a tree (photos to come later).



On 11 March, Professor Fiona Wood AM FRACS, Australian plastic and reconstructive surgeon, researcher and co-founder of the Fiona Wood Foundation visited and planted a 13th hoop pine in Central Valley. Professor Wood treated burns victims of the 2002 Bali bombing and led a team working to save 28 patients suffering from body burns, deadly infections and delayed shock.

She was named a Member of the Order of Australia (AM) in 2003 and Australian of the Year for 2005. In March 2007, following an air disaster, Professor Wood travelled to Yogyakarta, to assist in the emergency medical response for burn victims.

Central Valley is now home to 61 ceremonial trees planted from international and national Heads of State. Central Valley is bordered by majestic Hoop Pine trees, which form the Australian Hero tree dedications. This resilient Hoop Pine trees can live up to 450 years and grow to 60 metres high and are the perfect Australian tree to represent recipients of the Australian heroes!

On 27 May, the famous Australian, David Williamson AO, a National Living Treasure, who has become Australia's best known and most successful dramatist and playwright, planted the 14th Hero Hoop pine. Ms Tara Cheyne MLA represented the ACT Government and Mr Scott Saddler officiated on behalf of the Arboretum. The Friends' Chair Ms Trish Keller OAM also attended the ceremony.

Internationally acclaimed, with 54 plays, 12 screenplays, and 5 mini-series, Mr Williamson's prolific output over the past 50 years far exceeds that of any other contemporary Australian dramatist.

Mr Williamson's early playwriting career rose to prominence with theatre and Mr



Williamson was originally best known for *Don's Party* based on the 1969 Australian Federal election, and the *Removalists* centred around the abuse of power and authority including domestic violence.

In the 1980s Mr Williamson collaborated on screenplays for *Gallipoli*, *Pharlap*, and *the Year of Living Dangerously*, while his major stage works included *The Club*, *The Department*, *Travelling North*, *The Perfectionist*, *Emerald City*, *Money and Friends* and *Brilliant Lies*. In 2005 he announced his retirement from main-stage productions, and more recently was instrumental in the founding of the Noosa Long Weekend Festival.

Ginkgo Seeds at the Arboretum

Forest Notes, April 2021 By Roger Hnatiuk

The ginkgo's (*Ginkgo biloba*) at the Arboretum, Forest 27, were first planted in March 2008, when the two lines on the south upper side of the Forest were planted. These were already 'tall' trees, being about 2m, so were at least 5 years old then. There have been about 4 more plantings to fill the whole of the Forest design area.

Ginkgos are reported to start producing seeds when they are about 20 years old. None of ours are at this age yet (maybe wait another 5 years or so). However, in early April 2020,



a ginkgo seed was found under one of the later plantings, on the lower southern margin, near the Ginkgo Dam (Fig 1).

Figure 1. First seed of Ginkgo biloba in Forest 27, April 2020.

The tree it was under would be about 10 years old, a long way from expected first maturity. It had the characteristic shape of stalk and fruit, and the also characteristic smell, sometime described as putrid, though there were also sweet, fruity odours as well. In April 2021, nearly the entire Forest was surveyed, tree by tree, checking for evidence of seeds. Only the very youngest planting, between Forest Drive and the Tuggeranong Parkway, were not individually checked. No seeds were found. This leaves us with two hypotheses: Either the individual tree was very precocious, producing a seed. Not impossible, but of low probability, based on sparse records of first seeding. It also was under a young tree. Or the seed was placed there by a person, for reasons unknown (e.g. a prank, brought from elsewhere in Canberra where abundant seeds are produced). Why, having gone to such effort, it would be deposited in a place most unlikely for anyone to see, lessens the likelihood of a prank. It would be good if the survey of all trees could be continued annually until seed production is recorded again, and then for some years later as it would be helpful to map where the female trees are. This will be useful for seed collection, as well as checking to see the proportion of male and female trees in the Forest. If there is interest, I'll see what can be organised for late March – early April 2022.

Keeping in STEP

Autumn has seen considerable activity at Forest 20. We have had to remove 5 or 6 trees (mostly *Eucalyptus macrorhyncha*) which were unable to survive the excessive inundation of the upper part of the block. Unfortunately, there are some of our precious *Acacia pycnantha* which are also suffering from the same problem. The cut timber has been recycled in the Central Garden beds as edging or scrambling support for various creepers such as *Clematis*, *Comespermum* and *Billardiera*.

Following the water damage to the new entrance gathering space, considerable work has gone into creating a rock wall as a sturdy edge to support the crushed granite. The result is a very professional example of landscaping – many thanks to the hard work of Bill, Chris, Mike, Ray, Terry and Digby.



We have also been very fortunate to have assistance every Thursday from Horticulture staff: Pete, Elliott and Chris. They have added “weight” to heavy work such as moving and packing crushed granite, digging holes for more plantings of *Brachychiton* (some in the Bush Tucker Garden and some around the Kurrajong Rest Area) transplanting Kangaroo grass and removing dead bushes.

To recognise their assistance, we arranged for Pete and Elliott to plant three replacement *Eucalyptus melliodora* close to The Clearing



The wet conditions in March and again in May have increased the number of macrofungi species observed, including the very peculiar Basket Fungi (*Ileodictyon gracile*)





These are indicative of the health of the ecosystem we have created.

We have been busy preparing Forest 20 for Reconciliation Day (31 May) when several thousand visitors are expected at the Arboretum, many of whom we hope will come for a guided tour of Forest 20. Friends of the Arboretum have also volunteered to help us with

tours on the day, and David Shorthouse has run two guiding/orientation to Forest 20 mornings to ensure we are thoroughly prepared for this significant event.



Best wishes to you all. Come and visit us at Forest 20.

Regards
Judy Smith
President STEP

Have you seen the Myxos here?

By Roger Hnatiuk and Peter Wellman



Figure 1. *Comatricha laxa*. [photo: The Eumycetozoan Project/ Discover Life.]

Have you seen the Myxos at the Arboretum? The what? We hear you ask. The myxos, the myxomycetes. Also called the slime moulds – a bit unfairly because of the negative connotations that go with the word ‘slime’, unless you are a child, of course. But stay with us.

These visually stunning and ecologically vital groups of organisms occur all over the world, on all seven continents. They are important microorganisms in both dead organic matter and soils. The myxos occur at the Arboretum. Many right under your feet, as you walk through the Forests.

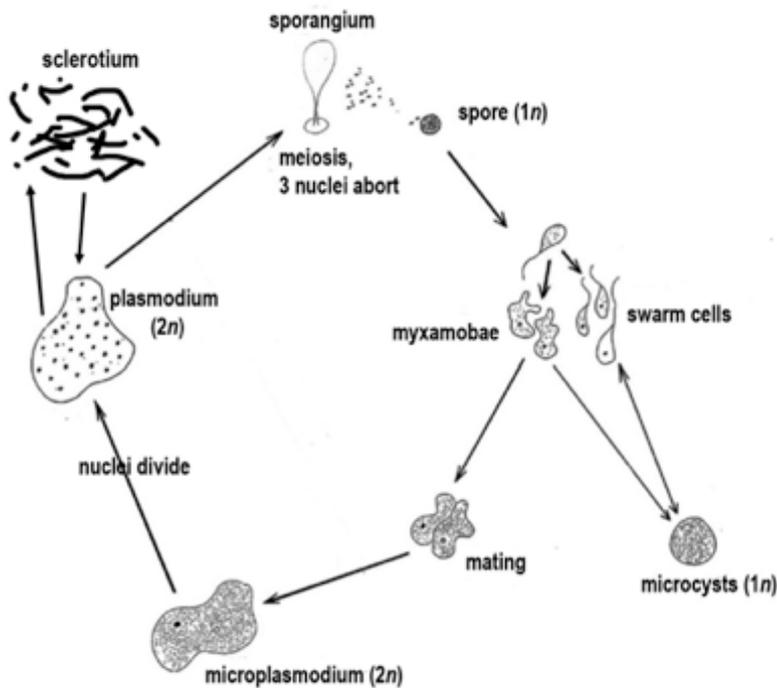
The myxos used to be grouped in the tree-of-life along with the fungi, but recent studies of genes and detailed structures has shown that they don’t belong there. They are now placed in the informal group variously known as the ‘Protists’ (see Leontyev et al. 2019), which is a group containing a number of really not closely related organisms. We just don’t know enough about Protists to fully understand how they are related, but they occur all around us and probably make up most of the organic matter on the earth. A bit like the biological equivalent of astronomical ‘dark matter’: occurs everywhere, influencing nearly everything, but not easily seen. The ‘myxos’ are just one ‘flavour’ of protist; they are in a group that includes the amoebas.

Here at the Arboretum, myxos have been seen off and on for several years. The largest have even been displayed under glass at the desk in the Visitors Centre under the unbecoming name of ‘dog’s vomit’ (*Fuligo septica*). In total, we know that there are at least 17 species here, 13 collected by Peter, and three by Roger. Peter identified a particularly interesting find by Roger in early 2019 as *Badhamia capsulif* (refer Figure 7)– interesting because it appears to be only the second record for the whole continent of Australia. The other record comes from Perth. There may be only 4 records for the southern hemisphere (GBIF, 2020), so finding it here at the Arboretum makes quite a contribution to world knowledge of this species.

Amongst many things, one of the most fascinating about myxos is their life cycle. They exist in several very different phases (Figure 2):

- out of water they occur as free living single cells that look like amoebae and move around to find and capture/eat things like bacteria; something fungi never do;
- in water they occur as ‘swarm cells’, similar to amoebae in water, with two flagellas, one long and one short – for locomotion;
- as dormant stages as dry pad-like structures called sclerotia, looking a bit like the dried trail of a slug or snail; or
- as microcysts that are also a means of surviving unfavourable dry periods;

- as streaming plasmodia (slime-like) networks of strands and larger masses, often brightly-coloured (Figure 4, Figure) that form by the aggregation of the single cells all working together to form the spore producing structures. The plasmodium may also feed by engulfing bacteria. This stage may be large and easily seen.



- as capsules, the spore-producing structures (Figure and others below). It is these latter stages that we can see with the naked eye, but also delightful to view with the aid of magnification like a hand lens or dissecting microscope. The structures are so complex and aesthetically beautiful, with added

Figure 2: Generalized slime mould life cycle. From Glime, 2019 (Figure 24).

spectacular colour.

Forest 1, the cork oaks, has proven to be a very good place to look for myxos. We have done this and found 17 species (Table 1).

Table 1. Species of myxomycetes recorded for the Arboretum.

<i>Arcyria affinis</i>	<i>Arcyria incarnata</i>
<i>Badhamia cupulifera</i>	<i>Comatricha laxa</i>
<i>Didymium nigripes</i>	<i>Didymium squamulosum</i>
<i>Fuligo septica</i>	<i>Leocarpus fragilis</i>
<i>Physarum bivalve</i>	<i>Physarum compressum</i>
<i>Physarum polycephalum</i>	<i>Physarum venum</i>
<i>Reticularia lycoperdon</i>	<i>Stemonitis fusca</i>
<i>Trichia contorta</i>	<i>Trichia varia</i>
<i>Willkommlangea reticulate</i>	

Cork oak forests are important to Australian biology because they are one of the few places where one can easily collect the fruit of slime mould species important to leaf litter decay. Wood and leaf material is initially broken down by bacteria, and later by fungi. The fungi grow rather slowly so their control is not generally a problem, however bacteria grow exponentially if there is adequate food. They are limited by food supply and by themselves being eaten. Controlling an exponential process is a good idea. The bacterial population in the dead organic matter are eaten and hence controlled by slime moulds. We normally do not see evidence of the interaction between slime moulds and

bacteria, because in an Australian forest floor the fruiting bodies of the slime moulds are hidden in the leaf litter. However cork oak forests are unusual because cork bark lasts long after the wood and leaves are broken down. The slime moulds like forming fruiting bodies (with spores) on a stable surface, so we can collect the fruit of the slime moulds that live in the litter by looking on the cork bark fragments on the ground. The three cork oak plantations in Canberra (Arboretum, Scrivener Dam, Curtin) are important in showing that the Australian leaf litter slime moulds have a similar species association to that overseas in countries with a roughly similar climate -e.g. Britain and Spain. As well as living in above-ground organic matter, slime moulds form a large proportion of the microbes in soil. However in soils they are difficult to study.

We've included a sample of pictures of slime moulds. These are pictures of the species found here, but there are many hundreds of species worldwide. If you are intrigued and want further information, one great source is a series of very easy to read documents by Janet Glime (2019) that primarily are about mosses, but these chapters focus on slime moulds, especially those that have been found fruiting on mosses and liverworts. To find myxos, you may need to get down on hands and knees, unless your eyes are very good at spotting tiny things. The fruiting bodies can be seen on many types of materials, as the plasmodium stage simply moves up and onto almost anything that is above the ground, to a place where it can form the capsules and then dry off. The capsules might be on fallen leaves, living leaves, pieces of bark or branch lying on the forest floor or on stumps. You might first see the life stages that are brightly coloured, but it is the capsule stage that is required for clear identification of the species. A few days after rain, when the air has just dried out, are often the right time to go looking. Remember they are usually tiny and delicate. A hand lens is a useful piece of equipment for enjoying the delicate beauty of the capsules.



Figure 3. *Leocarpus fragilis*, in Forest 1, Cork Oaks. [Photo by Heather Tregonnng, July 2013].

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Glime, J. M. 2019. *Slime Molds: Biology and Diversity*. Chapt. 3-1. In: Glime, J. M. *Bryophyte Ecology*. Volume 2. *Bryological Interaction*. Ebook sponsored by Michigan Technological University and the International Association of Bryologists. Last updated 30 November

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Leontyev, D. V., Schnittler, M., Stephenson, S. L., Novozhilov, Y. K., and Shchepin, O. N. 2019. Towards a phylogenetic classification of the Myxomycetes. *Phytotaxa* 399: 209-238



Figure 4 (left. Early stage of sporangium formation, probably of *Leocarpus fragilis*, Forest 1, Cork Oaks [photo Heather Tregonning, July 2013]. Figure 5. (right) Sporangia of? *Physarum* sp, Forest 3, January 2011.



Figure 6. *Physarum* sp, Forest 3, January 2011 [photo R Hnatiuk

Figure 7. : *Badhamia capsulifera*, Forest 3 on cork oak bark on forest floor (photo R Hnatiuk Mar 2020).



A late note, just before this was sent to the Editor: A new book, the first time in Australia, that all the species found on the continent and some off shore islands, has been included in a publication of the Australian Biological Resources Study. It is very well written, covers the classification, history in Australia, life cycle, structure of the fruiting body, collecting and studying Myxomycetes and much more. Each species is described and its geographic range listed. It is a rather pricey volume, as so many of the titles from publisher, CSIRO, but it is a must have or see volume for anyone who is interested in the beautiful and fascinating creatures.

Steven L. Stephenson, *Secretive Slime Moulds. Myxomycetes of Australia*. ABRS, Canberra; CSIRO Publishing, Melbourne (2021).



Figure 8. Left: *Fuligo septica plasmodium*, Forest 3 cork oak [photo R Hnatiuk Mar 2020].



Figure 9 Right. *Badhamia capsulifera*, Forest 3 on cork oak bark on forest floor (photo R Hnatiuk Mar 2020).

Bonsai Re-shaped

26 – 28 March, 2021

Leigh Taafe, Curator – National Bonsai and Penjing Collection

What a great success Bonsai Re-shaped 2021 was. Over 26-28 March the National Bonsai & Penjing Collection of Australia (NBPCA) hosted a range of activities at the Arboretum with a focus on using Australian native materials with traditional Asian arts.

Due to the restrictions around international travel, our usual plans for Bonsai Week needed to be revised. Sam Thompson and I thought this would be a great opportunity to showcase the talent we have in Australia using plants and materials indigenous to our country.

On the Saturday morning we had a busy schedule of activities including simultaneous demonstrations of kusamono & ikebana by Sam Thompson & Sachie Terasaki respectively, penjing by Khanh Linh, natural styled bonsai by Jarryd Bailey & traditional bonsai by Scott Martin. The stage was full of action as all artists busily turned Australian native material into wonderful creations as shown in the pictures below.

Sam used a native Chocolate lily atop some cork oak bark to create a stunning kusamono while Sachie created 3 very special ikebana arrangements using a variety of native materials. It was great to see such diversity on stage, certainly very entertaining for both our live audience and those watching from home on our live stream.



Sam and Sachie: kusamono and ikebana

Next up was our simultaneous demonstrations of three different styles – penjing, traditional, and natural. On the left, Khanh Linh created an Australian landscape that depicted a close view of Coastal tea trees growing on the side of a cliff with *Baeckia* growing alongside a winding river with a mountain range in the distance. The perspective is composed in a left to right fashion rather than completely front on, which proves to be an interesting and effective alternative to the way we are accustomed to viewing traditional bonsai. Scott Martin worked his way through a collected *Kunzea*. Rather than opting for the obvious cascade style for this tree, Scott used traditional styling methods to create a very lovely and elegant literati styled bonsai. On the right, Jarryd Bailey masterly transformed a collected *Nothofagus* to create a composition that depicts a very natural tree clinging to the side of an alpine region cliff, Jarryd mentions that he was inspired by the rugged Tasmanian landscape that these trees are native to.



Khanh, Leigh, Scott, Jarryd and Sam: simultaneous demonstrations



Khanh with completed penjing

After a break for lunch and the opportunity for the audience to view the Pot Acquisition Prize entries on display at the Collection, or visit our Market Day stall holders who were trading “all-things” bonsai related, the schedule resumed with Tracey Francis delivering a very informative and entertaining presentation on the art of hand-made bonsai pottery.

Tracey’s presentation was followed by our panel discussion. Scott, Jarryd, Tracey, Sam and myself answered questions from the audience and discussed what inspires us when creating bonsai, penjing, ceramics or kusamono. It was a good opportunity to dispel some of the myths about having to stick to rules when creating bonsai and to illustrate

that the trees in the Collection are being maintained sympathetically to the intent of the original artist.



Market Day: Bonsai for sale



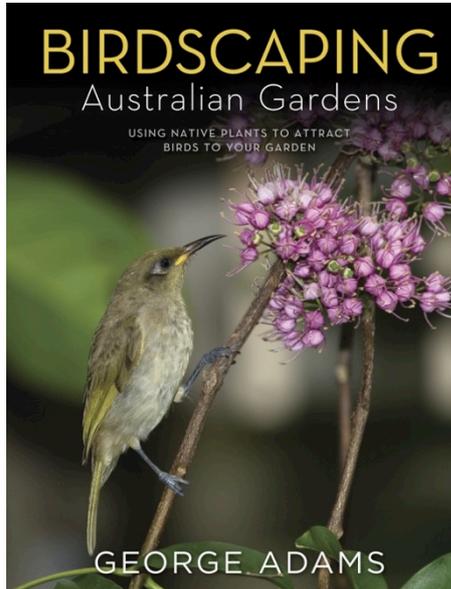
Market Day: Pots for sale

Last item on the schedule was the live auction and announcement of the silent auction winners. A great opportunity for those in the audience to bid for the items created throughout the day. Sam did a great job with auctioneering and the winning bidders all went away with big smiles.

It's time to talk about the Birds and the Bees

Contributed by Melanie O'Hanlon at The Curatoreum

Apart from the sheer joy of being up close and personal with our beautiful wildlife, attracting birds and bees into your garden has the added benefits of pest control and pollination. We have a number of books on how to improve your backyard environment to encourage wildlife, DIY manuals for the home beekeeper, as well as field guides to help you work out who your friendly visitors are. Here are some of our favourites currently available instore and online. *Don't forget to show your membership for 10% off.*



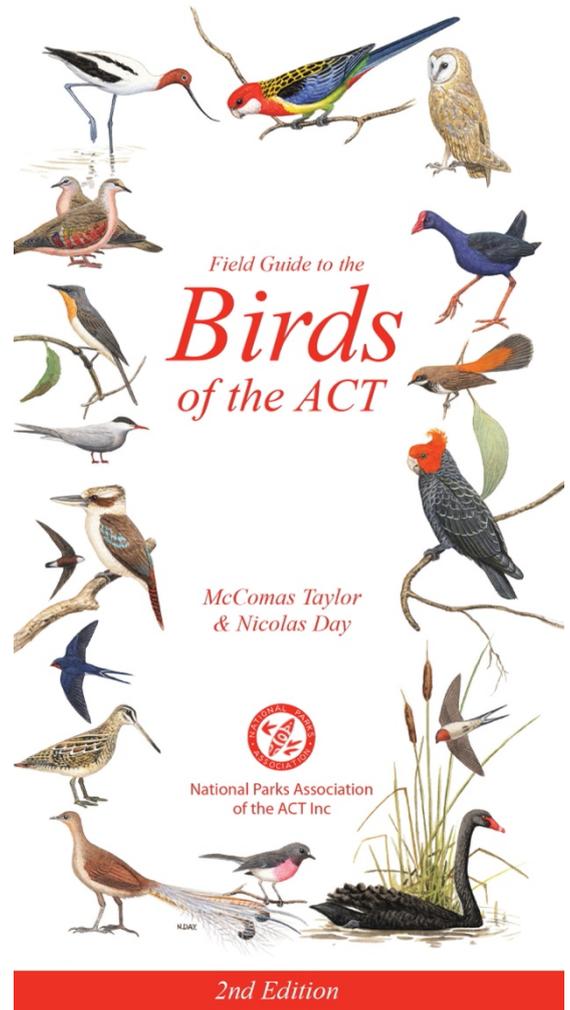
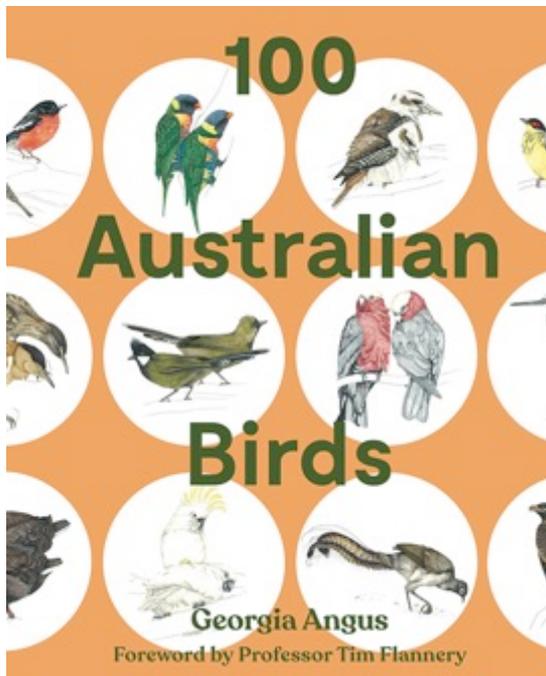
Birdscaping by George Adams

Featuring plant and bird directories illustrated with superb colour photographs and line drawings, as well as comprehensive planting tables and expert advice, this book has all you need to create a refuge for birds – and so preserve Australia's amazing natural heritage and biodiversity.

Field Guide to the Birds of the ACT by McComas

Taylor & Nicolas Day. This revised second edition of the popular Field Guide to the Birds of the ACT illustrates in colour all the birds likely to

be seen in and near the ACT. It has easy-to-follow descriptions in a compact format. Only local birds are shown making this Field Guide much simpler to use than comprehensive national guides.



100 Australian Birds by Georgia Angus

100 Australian Birds is a beginner's guide to the world of birdwatching. From the outside, this strange hobby of birdwatching appears to consist of sizeable camera lenses, khaki pants that are pulled up too high, and gruelling treks in pursuit of rare bird species. But for those who haven't been scared off by jumbo field guides and excessive terminology, this book is for you.

Carefully tailored to guide birdwatchers anywhere in Australia, this book reveals insights into one hundred key native species with lush illustrations and accessible descriptions. As well as the author's original illustrations, there are distribution maps, identification methods, behavioral information and contributions from First Nations people on Taungurung, Gumbaynggirr and Wiradjuri names for particular birds.

A Guide to Native Bees of Australia by Terry Houston

An illustrated introduction to the estimated 2000 species of Australian bees. Bees are often thought of as yellow and black striped insects that live in hives and produce honey. However, Australia's abundant native bees are incredibly diverse in their appearance and habits. Some are yellow and black but others have blue stripes, are iridescent green or wasp-like. Some are social but most are solitary. Some do build nests with wax but others use silk or plant material, burrow in soil or use holes in wood and even gumnuts!

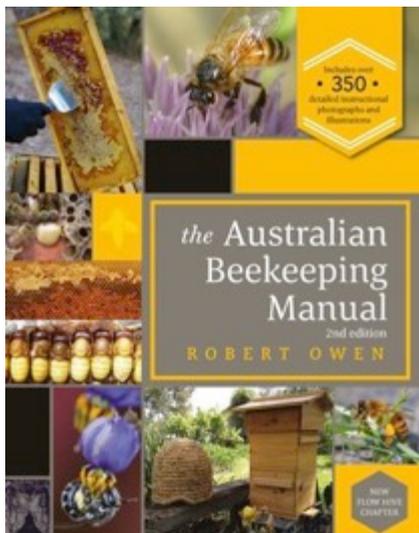
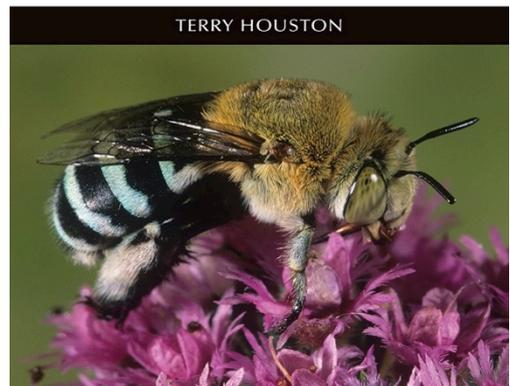
Illustrated with stunning photographs, it describes the form and function of bees, their life-cycle stages, nest architecture, sociality and relationships with plants. It also contains systematic accounts of the five families and 58 genera of Australian bees. Photomicrographs of morphological characters and identification keys allow identification of bees to genus level.

Recipient, 2019 Whitey Awards Certificate of Commendation: Guide



A GUIDE TO
NATIVE BEES
OF AUSTRALIA

TERRY HOUSTON



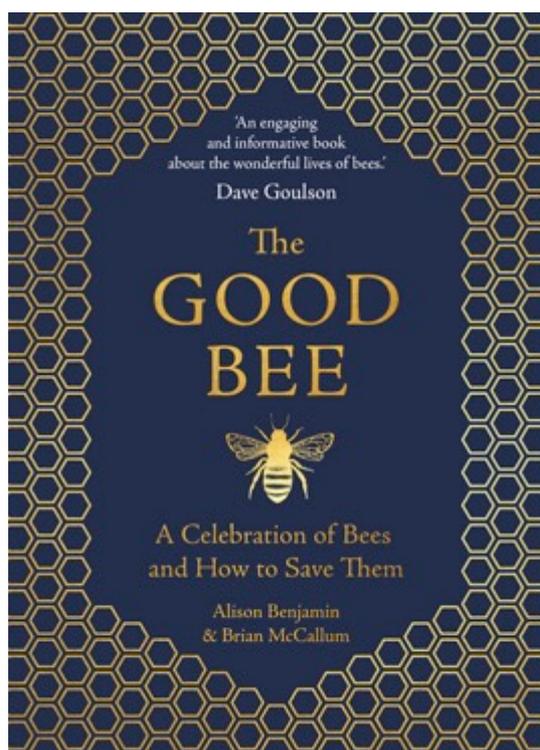
The Australian Beekeeping Manual (2nd Edition) by Robert Owen

Aimed at both the novice and experienced beekeeper, and supported by over 350 photographs and drawings, this is the ultimate guide to Australian beekeeping. Chapters cover equipment, including the Flow Hive; colony management; pests and diseases; extracting honey; the bee-friendly garden; entering honey in competitions; and native bees. The Australian Beekeeping Manual is the most comprehensive reference for both novice and experienced beekeepers in Australia. The accessible

yet detailed text, supported by over 350 full-colour photographs and illustrations, covers all the key areas, including the beekeeping equipment needed, how to obtain bees, where to locate them in the garden, and the basics of colony management. There are also in-depth chapters on the lifecycle of the honey bee, extracting honey, creating a bee-friendly garden, entering honey in competitions, pests and diseases, native bees, and rearing queens. A feature of this 2nd edition is the addition of a new chapter on the Flow Hive. The result is an invaluable beekeeping resource that will be referred to time and again, and which can be taken out to the hive for use as an immediate step-by-step guide or read at leisure.

The Good Bee by Alison Benjamin

Bees are our most loyal ally. These fascinating, enigmatic creatures are a key lynchpin in the working of our planet. Without them the landscape, as well as every aisle in our supermarkets would look radically different

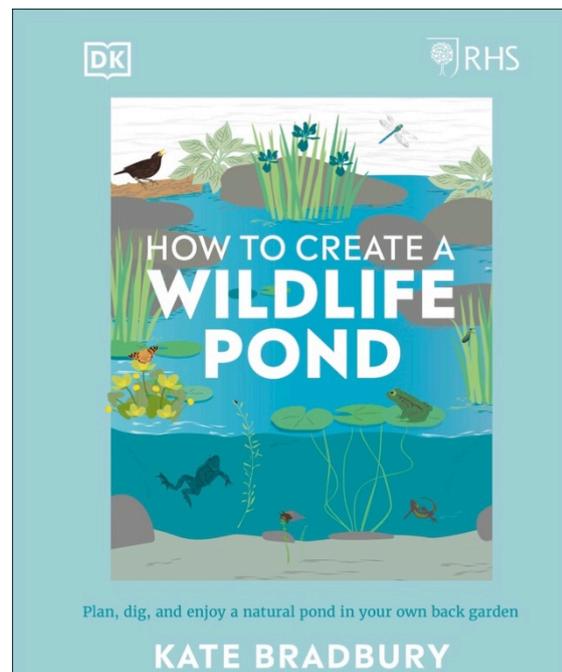


And we're not just talking about honey bees. There are more than 20,000 species of bee worldwide and only a handful make honey. Some live in colonies and others are solitary. We can all help protect them – and they desperately need protecting – but you can't save what you don't love. And you can't love what you don't know.

The Good Bee is a celebration of this most vital and mysterious of nature's wizards. Here you'll discover the complexities of bee behaviour – as well as the bits that still baffle us – the part they play in the natural world, their relationship with us throughout history, how they are coming under threat and what we can all do about it. Beautifully produced, with hand-made illustrations throughout, it is a story for our times and book to treasure.

RHS How to Create a Wildlife Pond by Kate Bradbury

The best way to attract wildlife to your garden is to build a pond. If you want to do your bit to support local biodiversity, pick up a spade and start digging. RHS How to Create a Wildlife Pond makes it easy to attract and support a huge array of species, with fully illustrated step-by-steps showing you how to plan, dig, line, and fill a simple wildlife pond, alongside alternatives including container ponds and more formal designs. Discover the best mix of plants you'll need to keep your pond thriving, how to make sure that creatures can enter and exit the water safely, and the little extra touches that can attract and support all kinds of wildlife.



Thank you to all our Sponsors and Contributors:

If you have ideas for articles, or items that might be of interest to the Friends such as stories or photos from the Arboretum or further afield, please contact me Nicole Pietrucha on: pietruchanac1@gmail.com

Many thanks to the people who have contributed articles and photos for this and previous issues of the Newsletter, and given generously of your time to write, read and proofread. I could not do it without your help.



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How to join the Friends

Visit arboretumcanberra.org.au to join online or to find out more about the benefits of being a member

OR

Email your details to: contact@arboretumcanberra.org.au and pay by funds transfer or cheque

OR

Complete the Application Form and mail it to:

The Secretary, Friends of the National Arboretum Canberra,
PO Box 48, Campbell, ACT 2612, and pay by funds transfer or cheque.

- Bank details for funds transfer:**
Westpac, Petrie Plaza, Canberra, ACT: BSB 032 719.
Account: 375379 – please include surname in description.
- Cheques payable to:** Friends of the National Arboretum Canberra Inc.

Membership type	1 year	2 years
<input type="checkbox"/> Individual	\$45	\$80
<input type="checkbox"/> Household	\$55	\$100
<input type="checkbox"/> Concession*	\$25	\$40
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<input type="checkbox"/> Business**	\$500	\$900

*Pensioners, health card holders & students
**See website for details



Membership Application Form

Membership type:

Title: First name:

Last name:

OR

Club/Association/Business name:

Address:

..... State: P/code:

Email address for newsletter and updates:

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Number of parking passes:

Total amount payable (include membership/s and parking pass amounts): \$

Signature:

Date:

Parking Pass 1 year

- Friends' Annual Parking Pass \$35 per vehicle

For a parking pass, please include your vehicle's registration number.

Note: An Individual Member is entitled to apply for one Parking Pass at the Friends' rate and a Household Member is entitled to apply for two Parking Passes at the Friends' rate.

Parking passes are issued for one year from the date of purchase.