

OBJECT: To foster an interest in nature

June 2019

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GPO BOX 249
CANBERRA ACT 2601

FIELD NATURALISTS' ASSOCIATION OF CANBERRA INC.

FIELD NATTER

MEETING—Thursday 6 June 2019

7:30 pm Australian National University
Jan Anderson Seminar Room, R. N. Robertson Building, Biology Place, ANU, ACT
details back page

Manipulation of host plants by herbivorous insects

Speaker: James Nicholls

James works at the Australian National Insect Collection at CSIRO, and will talk about how parasitic Oak Gall Wasps manipulate their host plants to produce unusual structures and compounds to gain higher quality nutrition and increased protection from predatory wasps.



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Time for a Planetary Diet

Civilisation is in crisis. We can no longer feed our population a healthy diet while balancing planetary resources. If we can eat in a way that works for our planet as well as our bodies, the natural balance will be restored.

- Richard Horton and Tamara Lucas

Editorial in *The Lancet* on the Planetary Diet

As I write this it is the day before Anzac Day – the day we traditionally have to hold out until before we can turn on the heating. But for the last week my windows have been open at night to cool the house. Since December 2018 we have experienced the hottest months on record in Australia. But we know that – we don't need to know what the Bureau of Meteorology has just confirmed. We all saw the BOM maps that made Australia look like one giant burning fire as the colour coded heat maps showed the temperatures across the country. And we all sweltered through it.

Scientists are warning that both the pace of global warming and its effects may have been underestimated. A piece published in the journal *Nature* states there is a 'good chance' that a temperature rise of 1.5 °C above preindustrial levels could arrive by 2030 – in 11 years – if emissions continue unchecked. And that means those drought and heatwave conditions we have just been through will become the good old days.

But there is an amazingly simple thing we can do to reverse global warming and you know what – we can do it right now and we don't need any government action at all. And best of all it's cheap, it's easy and it's great, not only for the planet's health, but for our own as well.

The EAT-Lancet Commission brought together 37 leading experts in nutrition, agriculture, ecology, political sciences and environmental sustainability, from 16 countries. Over two years they mapped the links between food, health and the environment and formulated global targets for

healthy diets and sustainable food production and in so doing developed a 'planetary health diet'.

It is globally applicable – irrespective of geographic, economic or cultural background – and locally adaptable. The diet is a 'flexitarian' approach to eating. It's largely composed of vegetables and fruits, whole grains, legumes, nuts and unsaturated oils. It does include the option of high-quality meat, dairy and sugar, but in quantities far lower than are consumed in many wealthier societies, including Australia at the moment.

The planetary health diet consists of:

- vegetables and fruit (550 grams per day per day)
- whole grains (230 grams per day)
- protein sourced from plants, such as lentils, peas, nuts and soy foods (100 grams per day)
- dairy products such as milk and cheese (250 grams per day)
- small quantities of fish (28 grams per day), chicken (25 grams per day) and red meat (14 grams per day)
- eggs (1.5 per week)
- small quantities of fats (50 grams per day) and sugar (30 grams per day).

Did you know we lose or throw away around one-third of all food produced each year? That's enough to feed the world's hungry four times over, every year. Did you also know one-third of the greenhouse gas emissions that drive global warming come from food production? Our global food system leads to extensive deforestation and species extinc-



tion, while depleting our oceans, and fresh water resources.

Clearing of forests and bushland for animal industries results in habitat loss, which is the major cause of wildlife species becoming threatened, endangered and extinct both in Australia and elsewhere. In Australia, nearly 60% of the continent is grazed by animals raised for human consumption. And this doesn't include the land that is cleared and used for the production of hay and other food for animals.

The water impacts are staggering. It takes between 50,000 and 100,000 litres of water to produce 1 kilogram of beef, compared with only 2,500 litres to produce 1 kilogram of white rice, and much less for most fruit and vegetables.

Despite the damage our current food system inflicts on the environment at the moment 800 million people go hungry every day. Two billion are malnourished and further two billion people are overweight or obese. According to the scientists who did the research the food system is broken. And with 10 billion people expected to live on Earth by 2050, a continuation of today's unsustainable diets would inevitably mean even greater health problems and severe global warming.

Unhealthy diets are the leading cause of ill health worldwide and many species teeter on the edge of extinction because of the relentless pace of land clearing for industrial agriculture, which is devastating the environment, as forests are razed and billions of cattle emit climate-warming methane.

If we are serious about addressing climate change and protecting biodiversity we need to look at the single biggest impact we have everyday – the food we eat.

The planetary diet is a win-win. It's pretty simple really we just need to eat a lot more fruit and vegetables and whole grains and pretty much no meat or dairy. Going fully plant based means

you are picking up the slack for those who at this point are too selfish to take action or just happy for someone else to take responsibility.

Another really simple thing we can all do is to always ask that any event we attend is catered according to the Planetary Health Guidelines and if that is too complicated ask that the catering be fully plant based.

Yeah I know this diet is asking you to make some big changes. But if we do make these changes, our children and our grandchildren and all the creatures with whom we share our environment will still have a habitable planet.

So let's do the world and our health a favour and adopt the

planetary diet and here's to saving the world by eating our vegetables!

For more info on the Planetary Diet – you can read the report at <https://www.thelancet.com/commissions/EAT>

Rhiân Williams

PS As someone who has been consuming a plant based diet for over 30 years and who started because of compassion for animals it is such a bonus to know of the planetary benefits as well.

By the way do you think you could adopt the Planetary Diet and do you think it is something that FNAC could take a role in promoting? Let's start a conversation for change!

Who doesn't love frogs?

Every year in the third week in October – also known as National Water Week – over 250 Frogwatch participants monitor frog populations at approximately 140 sites around the ACT and region. While you can listen out for frogs all year round October is the best time to spot them actively calling and looking for a mate.

Frogs are very sensitive to pollutants—canaries in the wetlands if you will—which means they are widely recognised as indicators of environmental health.

Having frogs around indicates the water quality is good and the habitat is healthy. Just as the absence or decline of frog popula-

tions can indicate unhealthy or degraded catchments.



Southern Bell frog: Litoria raniformis
This used to be common until the 1970s but is rare or locally extinct now. Photo Margaret Kalms

Frogwatch volunteers have been conducting the census since 2002, providing long-term data, which has been included in scientific publications on climate change and helps to advise the government on the health of local wetlands.

Last year Frogwatch had a major cut in its government grant but it remains determined to conduct the census in 2019.

FNAC is pleased to make a donation of \$500 to support the wonderful work of Frogwatch.



Spotted grass frog: - Limnodynastes tasmaniensis This is still common. This particular one was rescued from a swimming pool, hence the swollen belly. Photo Margaret Kalms

To find out more about Frogwatch including how to volunteer please visit:

<https://ginninderralandcare.org.au/frogwatch-census/>

Rhian Williams

Editor's note: Frogwatch is a great example of citizen science because although the major survey is conducted in October, the volunteers survey throughout the year.



Whistling tree frog: Photo Rhian Williams

The Grass-carrying Wasp: *Isodontia* sp. (genus)

Michael Bedingfield

In December last year while walking on the Urambi Hills, I came across an ancient fallen tree trunk that had hundreds of small borer holes in it. I noticed a few of them had the seed-head tips of grass stems poking out of them. While I was checking out these interesting holes a black wasp landed close to one of them carrying a short section of a grass blade. It crawled into the hole, dragging the grass with it. After some time it emerged and flew off. The large tree trunk, formerly a Red Box, *Eucalyptus polyanthemos*, was survived by regrowth from the roots that had supported it in younger days. I walked around it, and counted at least 60 holes with bits of grass stuffed into them. The chosen grass was *Bothriochloa macra*, Red Grass, which grows abundantly on the Urambi Hills. I watched and waited and after I while I saw another wasp carrying a piece of grass to a different hole. There were several wasps flying around this tree trunk with its generous supply of cavities, investigating them or carrying pieces of grass to one of them.

The industrious insects were native Grass-carrying Wasps, with the scientific name of *Isodontia*. Only a little is known about this genus of wasp in Australia. When a sighting of one of these wasps was first reported on Canberra Nature Map in 2017 there was great interest as the name *Isodontia* was not familiar to FOG's experienced entomologists Kim Pullen and Roger Farrow.

There is hardly any literature available on the Internet about the *Isodontia* genus in Australia. But it does occur in other countries and there are more than 60 species worldwide. There is some information about species from the USA.

The female wasps use pre-existing holes as nests for their young. At first they line the cavities with blades of grass or grass stems. After the nursery is prepared they hunt for small tree crickets or less often grasshoppers, locusts or other crickets. They capture and paralyse the prey with their sting, then carry the immobile insects through the air to the nest. Eggs are laid on the prey. There may be several eggs laid in a communal or partitioned nest. The entrance to the hole is sealed by packing it tightly with more grass stems. This protects the young from predators and parasitic wasps. The grass stems protrude from the hole making a very visible statement. When the eggs have hatched, the larvae feed on the inert but alive crickets. When they have finished the provisioned food they spin a papery cocoon inside the chamber where they undergo metamorphosis and later emerge as adults. More than one generation may occur in a given year. During the difficult

cold winters the juveniles survive protected in their chambers. They remain dormant as pupae in their cocoons and complete the transformation to adults when the weather is warm enough.

The adults feed on nectar and have a role as pollinators. Social wasps, such as the European Wasp, *Vespula germanica*, are quite aggressive and will defend their nests vigorously. But the Grass-carrying Wasps are solitary and not aggressive and don't defend their nests. They will sting only if seriously threatened. This genus belongs to the family Sphecidae, which are known as Thread-waisted Wasps. Their abdomen is connected to the thorax by a very narrow 'waist' known as a petiole. The ones I saw were 18–20 mm in body length. Species in the genus are hard to distinguish from one another and generally have mostly black colouring.



Old dead trees with hollows often provide dwellings for nesting birds and arboreal mammals and are recognised as an important part of the ecology. Similarly, a large hardwood fallen tree will take decades to rot away completely and during that time it can provide refuge for a multitude of insects, such as beetles, cockroaches, termites and ants. The fallen remains of the ancient Red Box on Urambi Hills provide the Grass-carrying Wasps with many hollows for nesting. They should enjoy its protection for many generations to come.



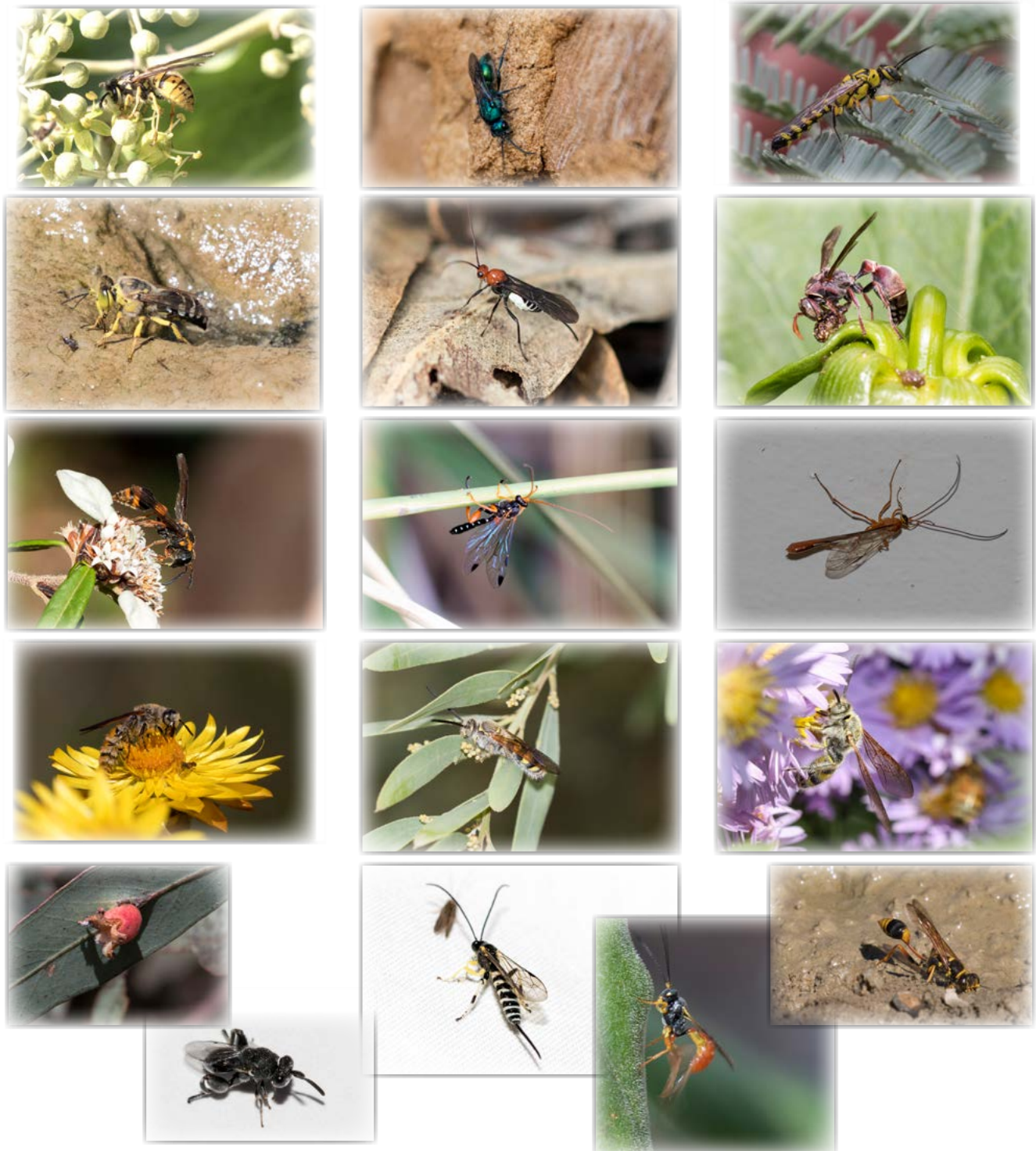
Editor: As you may recall, I transformed an old wooden letterbox into a (proposed) native bee hive. In 2017 it became home to three Grass-carrying Wasp nests. This season, this has increased to six. I also found numerous nests in an old dead tree at the Pinnacle Nature Reserve last year.

Wasps

Most people are probably only aware of a small number of wasps, notably the European Wasp and the fairly common, paper wasp. Perhaps they would be surprised to discover that there are over 80 species in the ACT region alone. The previous article talks about the interesting Grass-carrying Wasp. Parasitic Wasps lay their eggs on caterpillars so that when they pupate the wasp eggs mature and eat the pupae before emerging. I have raised a couple of caterpillars only to have a wasp emerge rather than the expected moth or butterfly, but often while we might see the wasps themselves, we might not realise that the growths and formations we see on plants are the result of wasp activity. These may be the constructs of varying Gall Wasps and James Nicholls will be talking to us about these at the next meeting.

Over the past few years, I myself have photographed a large variety of wasps including the Grass-carry Wasp, sand wasps and gall wasps. Some of these are included below.

Alison Milton



Four things you didn't know about Aussie magpies

Angela Heathcote | 30 April 2019

Magpies basically have their own judicial system.

Australian magpies are Aussie icons, but there's probably a lot you don't know about these incredible birds.

What you do know is probably negative: they swoop, they're territorial, they don't like people or they're overly aggressive. But they're also incredibly intelligent and successful as a species.

Legendary ornithologist Gisela Kaplan has released the second edition of her book *Australian Magpie*, which details the unique behaviours Australians are less familiar with.

Here are four that took us by surprise.

They love sunny days just as much as any Australian

Have you ever seen a magpie in the middle of your lawn, sometimes with their wings spanned and their feathers fluffed?

Well, they're actually sunbathing, which is one of the birds' favourite leisure activities.

And it has health benefits.

The reason they attempt to spread their feathers is so the sun hits their skin and disturbs any parasites living underneath.

Magpies are known for being very, very clean. When they're not sunning themselves, they're happy to play in water and spend their day preening themselves. So next time you see an injured-looking magpie lying despondent on your lawn, enjoying the sun, let them be.

They can 'hold court'

One of the most bizarre behaviours detailed in Gisela's book is

observations from one man living in Canberra who witnessed what he described as magpies 'holding court'.

Basically, he saw 10–20 magpies standing in a circle, while one magpie stood in the centre. The magpie looked scared, but didn't fly away.

Individually, each magpie would step forward to peck the magpie in the centre of the circle. After that, the magpies flew away leaving the defeated magpie behind.

Admittedly, this is a rare event (Gisela's only seen it once in 20 years). But it may be evidence of the first "rational deliberate act" by an animal.

Gisela equates the behaviour to how our judicial system operates. "They were orderly and coherent," she says.

They have close mother–daughter relationships

Magpies are known to form close friendship groups, typically for the purpose of maintaining territory (as we all know).

But in some cases, mother magpies form particularly strong bonds with their daughters.

The female of one breeding pair observed by Gisela, formed a close relationship with her daughter, despite in the past having made sure all her offspring had left the nest before the breeding season began.

Gisela says they seemed almost inseparable, spending most days together well beyond the breeding season.

Overall, the mother allowed the daughter to stay within her birth territory for two years, which Gisela says, would have given

her a significant head start in life.

Motherly love!

They have incredible memory

Ever thought about being mean to a magpie? Well, you should reconsider because they won't forget.

Magpies recognise faces.

Yep, you read correctly.

And they can remember an individual's face for years, recalling whether that person was good or bad.

This behaviour ultimately comes down to risk assessment, identifying their enemies and making sure that person stays far away from their breeding territory.

But don't be scared, because if you're nice, they remember that too.

If you avoid contact, help them when they're in need, keep your dog away from them or slip them some food, it's unlikely they'll ever attack.

Some Australians have formed such good relationships with their backyard magpie that the magpie will actually show off their young to (nice) people.

No warning swoops necessary here.

***Editor's note:** I have Gisela's first edition of this book and noted the many things not known about magpies, but I have experienced some the behaviours described in this article and written about them in earlier issues of the Natter. I went from hating them (as they had always swooped me) to loving them as a favourite bird. I will look up a copy of Gisela's second edition to see how much she has learned since her first book.*

Enclosed yabby traps update

Correspondence from Mick Gentleman

Dear Ms Bastecky

Thank you for writing to me on the issue of enclosed yabby traps and the impact they have on our native wildlife.

I am writing to you now to provide an update on the work we are doing to address this issue. I will shortly be introducing legislation to extend the current ban on enclosed yabby traps to all waters across the ACT, both public and private. As part of this process, the ACT Government will work with retailers and the community to facilitate the change and raise community awareness about the need to ban the traps, and about the alternatives to their use.

I have been advised that banning the sale of the traps would require agreement from all other jurisdictions in order to proceed. This is because of mutual recognition principles that provide for the sale of goods in a state or territory if the goods can be sold lawfully in another State or Territory. I have written to all my state and territory counterparts asking them to work together towards banning the sale on enclosed yabby traps nationally.

Thank you again for raising your concerns with me. I will endeavour to keep you informed of any further progress on this issue.

Yours sincerely

Mick Gentleman MLA

Minister for the Environment and Heritage

ACT

Endangered wildlife funding offer

Inspired by the progress of Australian Wildlife Conservancy's ground-breaking conservation projects across the country, The JAAM Foundation and The Martin Copley Will Trust have joined forces to match dollar-for-dollar eligible donations up to a total of \$2 million.

This generous offer comes just days after the United Nations Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES) released its review on the state of nature across the planet, citing a global extinction crisis.

With 1,800 Australian species currently at risk of being added to Australia's appalling extinction record, it's more important than ever for AWC to accelerate its efforts to deliver effective conservation across the country.

Tax-deductible donations made to the \$2 million challenge will be matched as follows:

New donors: donations of \$500 or more will be matched.

Donate \$500, we receive \$1,000.

Donate \$5,000, we receive \$10,000.

Existing donors: additional donations of 10% or more above your total 2018 gift to AWC will be matched.

Donate \$1,100, we receive \$1,200 (total donated in 2018 \$1,000).

Donate \$5,500 we receive \$6,000 (total donated in 2018 \$5,000).

Existing regular donors: the additional 10% on your monthly gift will be matched.

Increase your \$50 per month donation to \$55 per month – AWC receives \$60 per month.

Increase your \$100 per month donation to \$110 per month – AWC receives \$120 per month.

Your support, therefore, makes a direct, positive impact at the front-line of conservation and, as the end of financial year approaches, you can double the return on your investment.

More details of this offer can be found on the [AWC web site](#).

Editor: Sarah McKenna of the AWC was the guest speaker at the November 2018 meeting.

Snake mistake

CSIRO says it's a myth that Australia is home to world's deadliest species

Australian Associated Press: Sun 26 May 2019

The popular suggestion that Australia is home to the world's deadliest snakes is largely a myth, with the risk of bites and death far greater across Asia, Africa and South America, the nation's science agency has said.

Herpetologist Ruchira Somaweera from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) said the myth was born a few decades ago and came out of a study of the relatively high toxicity levels found in Australian species, such as brown snakes.

But Somaweera said the study did not include many well-known highly dangerous snakes from other continents and, even more importantly, had little relevance to humans.

"If you look at the amount of people who actually die (in Australia) from snakes each year, it's practically nothing, the encounter rates are so low in comparison with other parts of the world," he said.

"Factors such as the quality of antivenom, our paramedical services and knowledge of first aid is really good here in Australia, which contributes to the negligible number of human deaths."

By comparison, in parts of Asia, Africa and South America there are a group of snakes called vipers that are large, aggressive and common.

Worse still, encounter rates and bites are high in agricultural lands due to limited preventative knowledge such as appropriate footwear and little first aid training.

Somaweera said there was an estimated 1 million venomous snake bites globally every year. In India alone, about 10,000 people die each year.

"In the neighbouring island of Sri Lanka, an estimated 80,000 people get bitten by snakes annually, of which about 400 lose their lives," he said. "It's clearly a massive issue and a real threat in other parts of the world, especially Asia, compared to Australia."

To present a more realistic picture, scientists have come up with a more relevant concept of dangerous snakes in Australia, which is based on the actual threat posed on human lives.

Species such as brown snakes and tiger snakes top the list as they are relatively common in urban areas and can be aggressive if confronted.

Brown snakes are also considered potentially more dangerous because they are daytime active so encounter rates are higher.

Editor's note: *I think what this article is saying is that there is a difference between snakes with the most toxic venom and the number of deaths caused by snakes (even with a less toxic venom) thus 'most deadly'. It is true that Australia is home to the most venomous snake in the world, 'the Inland Taipan' and is home to six of the top 10 most venomous snakes. However, we have relatively few deaths from snake bites.*

In 2008, the Canberra Bushwalking Club published an article in their newsletter on this topic, describing the toxicity of Australia's most venomous snakes and the fact that while their venom may be the more toxic than another, the size of their fangs may mean they inject a minimal amount of venom in comparison, and therefore be less likely to result in death.

As Editor for the bushwalking club at the time, I can provide a copy of this article to anyone who is interested.

Australia's First Naturalists: lecture and book launch

Indigenous Peoples' Contribution to Early Zoology

By Penny Olsen and Lynette Russell

This book gathers together Aboriginal peoples' contributions to early European explorers, collectors and illustrators to demonstrate the crucial role they played in early Australian zoology. Aboriginal Australians gave Europeans their first views of iconic animals, such as the Koala and Superb Lyrebird, and helped unravel the mystery of egg-laying mammals: the Echidna and Platypus.

Join authors Penny Olsen and Lynette Russell as they discuss this fascinating and largely untold aspect of Australia's history.

Tuesday 11 June | 6 pm–7:30 pm

National Library of Australia

Conference Room Level 4 | free (includes refreshments)

Book [online](https://www.nla.gov.au/event/lecturelaunch-australias-first-naturalists) (https://www.nla.gov.au/event/lecturelaunch-australias-first-naturalists) or 6262 1424

Book signing to follow

2040: A Handbook for the Regeneration

Actor Damon Gameau wants to paint a hopeful picture for the planet and how it could look two decades from now.

Inspired by his daughter, the creator of *That Sugar Film* in 2014, Gameau is on a mission to reshape the debate on climate change. His new documentary is *2040* and is accompanied by *2040: A Handbook for the Regeneration*.

The documentary *2040* is in cinemas from 23 May and while it may no longer be showing at the time this newsletter reaches you, the book is still available.

What is lurking in your green bin?

Like many Canberrans I greatly welcomed the ACT introduction of Green bins: a long overdue initiative. However, I have an unexpected recommendation for all you keen gardeners when pruning your shrubs etc and putting the prunings in your green bin.

It was after I had my bin for a few weeks and had been filling it for each collection day (though mostly catching up on prunings I had kept awaiting the bin) when I noticed seven large katydids on a salvia bush. I had just heavily pruned it and put the prunings in the green bin so thought perhaps I should check it. Just as well as I found another Katydid sitting on top of the prunings in the bin. I returned it to the salvia bush.

A week or two later I'd done some more pruning and on opening the lid of the bin to add more I noticed a largish spider web in one corner and after prodding the contents to find the spider, saw a fleeting movement of probably an orb weaver, but about the size of a small to medium huntsman.

Yesterday I pruned some correa bushes and as I put the prunings in the green bin not only did I find some interesting creatures that I wouldn't have seen otherwise, a number of jumping spiders crawled up out of the clippings, as well as a moth, a praying mantis and other small spiders. Also, numerous small creatures could be seen skittering around among the foliage. Today I opened the bin lid to find a myriad of fine spider web. More out of interest than anything else, with camera in hand, I took the clippings out then shook them a few at a time, over the lid of the bin. Besides

the hundreds of skittering creatures aforementioned, some having grown wings, I found:

- several lady beetle larvae;
- a few nymph leafhoppers;
- two cockroaches;
- an earwig;
- a very tiny pinprick sized black beetle;
- an unidentified bug (on its back and blown away by the wind before I could turn it over);
- five caterpillars, a couple of which were very tiny;
- a small huntsman;
- two small jumping spiders
- three small orb weavers, and
- about 20 very tiny spiders that were probably mostly flower spiders, and some dark ones that may be the babies of the bird dropping spider that has been guarding her eggs under the bush for about three months, after the branch containing the eggs was knocked down from a nearby tree.

Therefore I think that while green bins are a great option, perhaps we nature lovers should consider leaving the bin lid open overnight after you have done your pruning (if it is not going to rain) so that any creatures inadvertently consigned to the bin have a chance to 'escape' and not be consigned to being transported to a new home or potentially being mulched.

Alison Milton

This beautiful Vine Hawk Moth caterpillar could also have easily ended up in a green bin. Instead my neighbour, Vanessa, found it on ornamental grape vine clippings she had taken to the CIT to use for her horticulture class. She found it crawling on her as she took the clippings out of her car so took it back home for her two young sons and the next day (photo 2) it was ready to start its pupation. It is now a cocoon awaiting Spring to emerge as a beautiful moth. What a shame it would have been if it had ended up as mulch.





Field Naturalists' Association of Canberra Inc.

Who are the Field Naturalists?

The Field Naturalists' Association of Canberra (FNAC) was formed in 1981. Our aim is to foster interest in natural history by means of meetings and regular field outings. Meetings are usually held on the first Thursday of each month. Outings range from weekend rambles to long weekends away. Activities are advertised in our monthly newsletter. We emphasise informality and the enjoyment of nature. New members are always welcome. If you wish to join FNAC, please fill in the member application below and send it in with your subscription to the FNAC Treasurer at the address below.

President: Rosemary Blemings, et al

president@fieldnatsact.com

Email: secretary@fieldnatsact.com

Website: www.fieldnatsact.com

Treasurer: treasurer@fieldnatsact.com

Membership: membership@fieldnatsact.com

Newsletter Editor: editor@fieldnatsact.com



Monthly meeting venue: Jan Anderson Seminar Room, R. N. Robertson Building, Biology Place, Australian National University

**Field Naturalists' Association of Canberra
GPO Box 249
Canberra ACT 2601**



MEMBERSHIP APPLICATION OR RENEWAL

Family name: First name:

If a family membership, please include the first names of other members of the family:

.....

Postal address:

Suburb: State: Postcode: Home phone:

Work phone: Email address:

Subscription enclosed: \$.....(Single/Family \$25) Donation: \$.....

How did you hear about FNAC? Please circle: FRIEND? OTHER? Please specify: