



May 2023

Alice Springs Field Naturalists Club Newsletter



We sat under these trees a few weeks ago as we watched the sun set over the mud flats. The remnant rain of cyclone Ilsa has replenished the water in the Ilparpa Clay pans, hopefully giving the next generation of Shield Shrimps life.

Meetings are held on the second Wednesday of the month
(except December and January) at 7:00pm
at the Olive Pink Botanic Garden.

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Follow us on Facebook!

The next newsletter will be published on 1 June 2023.
We appreciate all contributions, articles and photos both local and elsewhere.
Please have them to Marg Friedel, capparis@iinet.net.au by 23 May 2023.

ALICE SPRINGS FIELD NATURALISTS CLUB

Wednesday 10 May 7pm Speaker night at OPBG. Peter McDonald and Alistair Stewart - 'The enigmatic central rock-rat: past, present and future'. One of Australia's most enigmatic rodents, the central rock-rat was feared extinct until its rediscovery in 1996 and again in 2010. Since that time significant progress has been made, in understanding the species' refuge habitat requirements and the key threats it faces. Peter and Alistair will provide a brief history of the species, its conservation biology and management actions being undertaken to secure its future. Visitors are welcome.

Saturday 27 May trip to Serpentine Gorge. Meet at Flynn's Grave at 7.30am – home by lunchtime. Leader: **Neil Woolcock**.

Wednesday 14 June 7pm Speaker night at OPBG. An expert from Newhaven sanctuary will be talking about the reintroduction of locally extinct native animals into the large enclosures there.

AUSTRALIAN PLANTS SOCIETY - ALICE SPRINGS

apsalicesprings@yahoo.com.au

Wednesday 3 May 7pm at OPBG. Suzanne Lollback — Seducers and Fraudsters - the secret life of terrestrial orchids and the hunt for a new record.

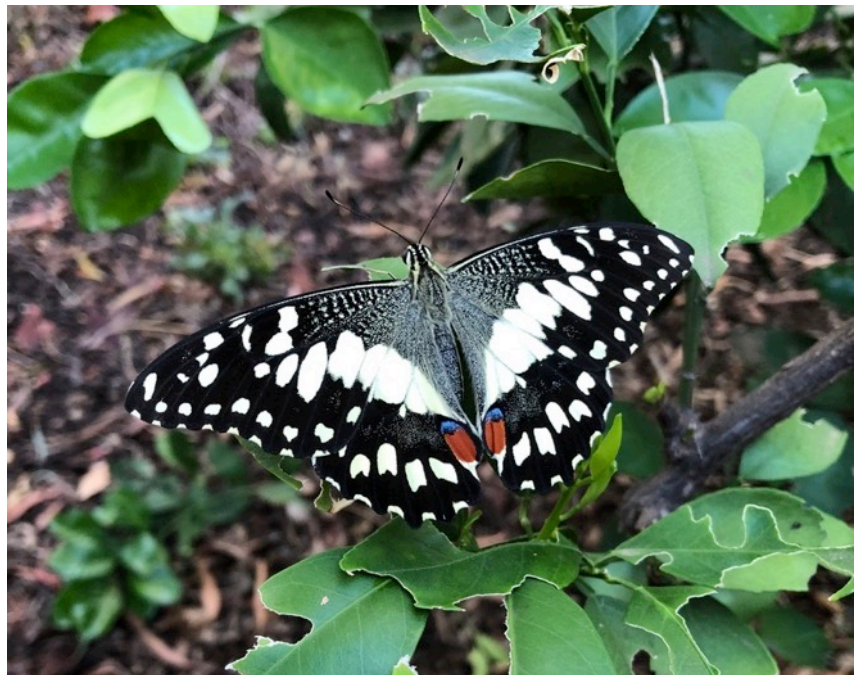
Wednesday 7 June 7pm at OPBG. Alex Nelson — The restoration of Pitchi Richi grounds.

A Welcomed Visitor

By Connie Spencer

In mid April I was pruning some of the more severely chewed leaves from an orange tree in my garden when a Chequered Swallowtail (my favourite local butterfly) paid my tree a visit. She landed on one of the leaves and there she sat with wings open. Of course, I didn't have my phone with me, so off I went to get it, fully expecting her to be gone when I got back. But no, she was still there, so was duly photographed. It has been suggested she might have been laying eggs.

I know the common names of a few of the local butterflies but little else. So, off to my *Field Guide to Australian Butterflies* by Robert Fisher where I have flagged all the pages with local species. The scientific name for the Chequered Swallowtail is *Papilio demoleus sthenelus* and it is found throughout Australia. The blue ends to the red markings on the hindwing indicate a female. This is the first time I've noticed them on citrus as I usually associate them with *Eremophila maculata* in my garden.



Alice Springs Field Naturalists Club

Committee Members

President	Marg Friedel	0417 849 743
Vice-President	to be appointed	
Secretary	Suzanne Bitar	0419 897 735
Treasurer	Neil Woolcock	0428 521 598
Property Officer	Claire Norman	0448 341 795

General Members	Jan Black	0400 303 123
	Wendy Mactaggart	0434 495 903

Public Officer	Anne Pye	0438 388 012
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Other Club Responsibilities:

Newsletter – Marg Friedel / Barb Gilfedder

Facebook Organiser – Meg Mooney moon3@iinet.net.au

Website controller – position vacant

Bees and Beekeeping around Alice Springs

Peter Yates and Pamela Bladen talked to the ASFNC on Wednesday 12 April 2023, summarised here by Jan Black.

Peter and Pamela gave us a very interesting and informative talk on Bees and Beekeeping.

We learnt you can even get a PhD in beekeeping (who knew).

Peter keeps bees and has done for a very long time. Makes honey to sell and give away.

Honey is great for medicinal purposes, hay fever etc.

Honeybees — introduced in 1800's by early settlers.

They are used for pollinating crops and of course making honey.

We have many other pollinators, e.g., wasps, native bees, butterflies and moths.

There are around 30,000 registered beekeepers in Australia, around 100 of them are in NT. Most in Alice are hobbyists.

The hives need to be managed well, it's crucial for beekeepers to control disease.

Supply fresh water so as not to annoy neighbours.

Hives in NT should be registered with Dept Industry, Tourism and Trade...even one hive.

There is so much information about bees from this Dept, it's essential to join.

Interesting facts

On average one bee will produce about 1/12 of a teaspoon of honey or 0.35 gram in her lifetime.

A 500 gram jar holds the life work of more than 1400 bees.

A honeybee hive can have anything from 10,000 to 60,000 bees.

Australian honeybee industry produces between 20,000 and 30,000 tonnes of honey per year.

Australia exports about 10% of its honey production.

65% of horticultural and agricultural crops require honeybees for pollination.

Honeybee products include beeswax, queen bees, packaged bee sales, pollen, propolis* as well as paid pollination services.

Industry as a whole is worth about \$14 billion annually.

* Wikipedia says **propolis** or **bee glue** is a resinous mixture that

honeybees produce by mixing saliva and beeswax with exudate gathered from tree buds, sap flows, or other botanical sources. It is used as a sealant for unwanted open spaces in the beehive. It has been used as a traditional medicine, and as a varnish ingredient.

Top - shows a typical bee hive.

The bees on the outside are 'bearding'. This may be due to high temperatures, high humidity, overcrowding or a combination of those things. It stops the brood comb from becoming overheated, if too many bee bodies are covering the brood on a hot day, fanning may not be sufficient to keep it cool.

Middle – Inside a typical hive showing the top of the rectangular combs.

Bottom: The work of many bees - A 500 gram jar holds the life work of more than 1400 bees.





A true matriarchy

The queen has a very important role. The workers make the queen by feeding the bee larvae special food. If the old queen is not laying enough eggs to maintain hive strength, she may be disposed of. After the first new queen hatches, she will kill any other new queens that emerge. She leaves the hive only once to mate and then she is fertile for the rest of her life, laying more than 1000 eggs per day. She can live for up to 5 years.

Photo left shows the queen in the centre being attended by workers.



Worker bees

These progress through a series of jobs. First job is cleaner.

Then nurse bee, feeding the brood.

At 12 days old they are able to produce wax flakes for building cells.

House bees clean other bees, collecting and storing pollen and nectar.

Fanners are responsible for temperature control.

In their last role before leaving the hive to begin foraging, worker bees become guard bees.

The hives are run like a well-oiled machine.

Photo above shows a diseased hive.

Pests and diseases

Compared to other regions in Australia, Alice Springs is relatively free of bee pests and diseases.

Biggest concern is *Varroa destructor*, a parasitic mite of honeybees that causes death of infected hives. Australia was free of the mite until 2022, when it was detected in NSW.

There is a national bee biosecurity program that includes pre-border and biosecurity at the border, pest surveillance and emergency pests or disease incursions.

The honeybee industry and individual beekeepers are responsible for managing established pests.

The beekeeping industry has developed a Biosecurity Code of Practice which applies to European honeybees only.

Some useful websites

[Planthealthaustralia.com.au/national-programs/national-bee-biosecurity-program/](https://planthealthaustralia.com.au/national-programs/national-bee-biosecurity-program/)

Beeaware.org.au

Nt.gov.au/industry/agriculture/livestock/honey-bees-and-beekeeping

Aussiebee.com.au

Ausemade.com.au/flora-fauna/fauna/insects/bees/



An Alice Springs beekeeper removing extra combs the bees have built inside a hive lid.

More bees – this time burrowing bees

Marg Friedel

Somewhere north of Well 15 on the Canning Stock Route, the sharp-eyed lead driver of our group spotted something unusual. We all piled out of our vehicles and were intrigued to see numerous burrows of burrowing bees (*Amegilla* [sub-genus *Asaropoda*] *calva*) in the roadside sand.

The bees entered or exited their burrows in a split second, so that they were almost impossible to photograph. Ken Johnson took up the challenge and lay down on the track with camera ready. After some time he had captured several photos, in some of which the fast-moving wings were only the faintest blur.



*The roadside burrows of burrowing bees (Amegilla calva).
Photo Ken Johnson*



Ken gets close to his target bees. Photo Marg Friedel

Describing another species of *Amegilla* in the sub-genus *Asaropoda*, occurring in more temperate country, Westcott says: "At the bottom of the burrow, they build a series of brood cells, which they stock with nectar and pollen and deposit their eggs. The larvae eat, grow and develop into young adults which dig their way to the surface to begin a new cycle the following spring." It's possible that, in the arid zone, there are different triggers such as rainfall to stimulate the emergence of the new adults.

The general distribution patterns of individual species of *Asaropoda* in Australia are roughly east and west coastal, northern tropical, southern temperate and arid inland. Species with a central arid distribution are *A. calva* (the species we observed), *A. scoparia*, and *A. albigenella*. Activity patterns seem to be determined by the climatic variation in the flowering time of food plants. Species with an inland distribution are active during the cooler months, May-November (we were travelling in June)².

Many thanks to Ken Johnson and Colin Leel for their contributions.



*Burrowing bee approaching its turreted burrow.
Photo Ken Johnson*

¹ Vanessa Westcott <https://www.bushheritage.org.au/blog/burrowing-bees>

² Remko Leijes, James Dorey and Katja Hogendoorn (2020) The genus *Amegilla* (Hymenoptera, Apidae, Anthophorini) in Australia: a revision of the subgenus *Asaropoda*. ZooKeys 908: 45–122.

...and a sand wasp. Barb Gilfedder

Seeing Marg Friedel's photos of Burrowing bees, reminded me of some similar insects we saw at Rainbow Valley in 2013.

There were many small holes in a sand bank on the edge of the big salt lake. Many flying insects were moving incredibly fast over them, occasionally landing and scurrying into the holes or doing further excavating. They were so fast, my photos were completely inadequate. I located a couple of the photos and asked Colin Leel about them.



Colin replied –

*"Wow... I saw and documented these in the sand country at the desert park last year... the closest confirmed ID I got was the genus *Bembix*, with possibly it being *Bembix palmata*. I wrote about them here:*

subfamily Bembicinae <https://ausemade.com.au/flora-fauna/fauna/insects/wasps/bembicinae/>
genus *Bembix* / *Bembix palmata* <https://ausemade.com.au/flora-fauna/fauna/insects/wasps/bembix/>

Hope that helps".

Thanks Colin, it does!

There are also good photos of the species on Atlas of Living Australia website.

So they are a burrowing wasp rather than burrowing bees, which led me to wondering what the scientific difference was between bees and wasps.

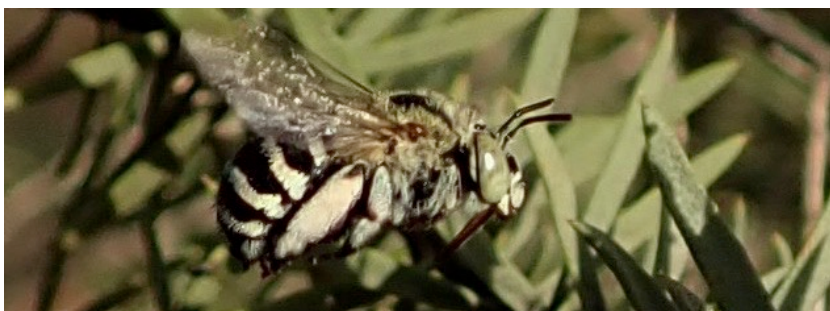
I found this website, which I think explains things well.

https://www.beesbusiness.com.au/articles/5_differences_between_bees_and_wasps_revised_jan_2017.pdf

Five Differences Between Australian Native Bees and Wasps

Both wasps and bees have narrow waists and membrane-like wings. Females of both groups have modified ovipositors which enable them to sting. Both solitary wasps and solitary bees are not aggressive and are unlikely to sting you.

- 1. Bees feed their offspring pollen. Wasps feed their offspring meat such as caterpillars and grasshoppers.*
- 2. Bees usually have thick, branched hairs which attract large amounts of pollen to their bodies. Wasps are usually hairless or have simple, non-branched hairs.*
- 3. Bees have modified hair structures (scopa) to carry pollen loads back to the nest. Wasps don't carry pollen.*
- 4. Bees have a broadened basitarsus (first segment of the 'foot') on the hind leg. Wasps have a narrow basitarsus.*
- 5. Bees have uniform shaped, compound eyes. Some wasps can have uniform compound eyes but some (paper and flower wasps) have "emarginate" eyes, which wrap around the antennae.*



Blue-banded Bee, *Amegilla* sp., a pollen collector.



Cuckoo Wasp, *Chrysis lincea*, a predator.



The Paradox of the Processionary Caterpillars

In late March Marg Friedel found a trail of processionary caterpillars, or itchy grubs, crossing her back yard (right), and located the now-empty nest under a Senna. **Fiona Walsh** has long been interested in these caterpillars. She outlines their life cycle and shares some fascinating details given by her Arrernte friend Veronica Perrurle Dobson.



Photos above and left by Marg Friedel.

Life cycle

1. Caterpillars nest at the base of different *Senna* or *Acacia* species (left). They feed on the foliage and grow through early larval stages in their 'tent'.

2. Then the caterpillars migrate in procession. The leaders lay silk threads and other caterpillars follow each other. They travel in search of another host tree for the next stage of development. In central Australia, common host tree species include *Ltyentye* (*Grevillea striata*, beefwood) or *Ankerre* (*Eucalyptus intertexta*, rough bark coolabah). Caterpillars feed at night on the host's leaves and weave a silk bag as a communal shelter.

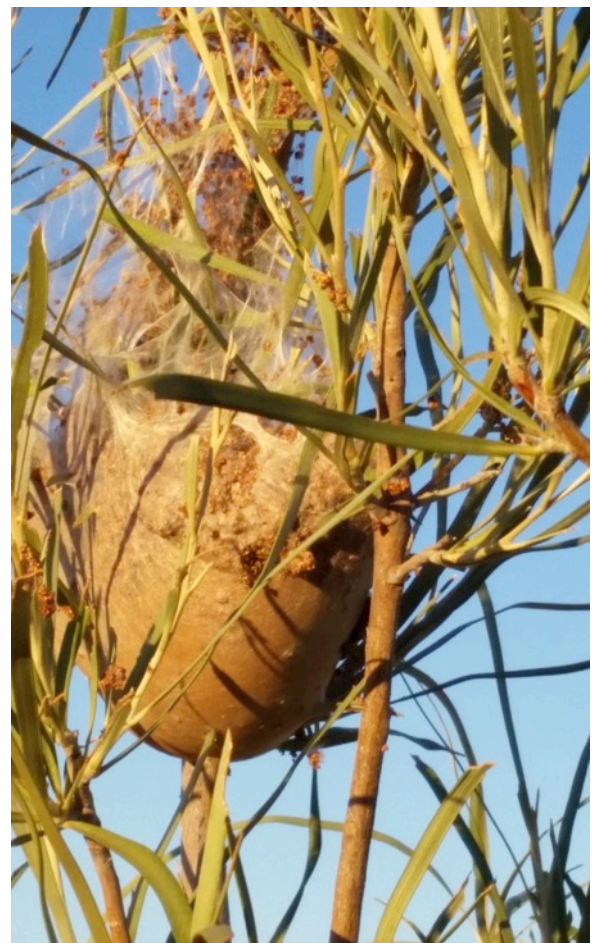
Photo on right of a silk bag in a *Grevillea striata* is by Connie Spencer.

3. In the bag-shelter the caterpillars grow, pupate then emerge as moths (*Ochrogaster lunifer* complex).

The caterpillars shed irritant hairs that are barbed with toxins. The hairs are shed anywhere the caterpillars have been, leaving risks to humans and some other animals. Pregnant mares are reported to abort due to grazing where caterpillars have passed. Step 1 with the instar tent and step 3 with the communal bag up in a tree are to be avoided. The silk threads of the procession can cause bad reactions too. Hence a particular risk to babies crawling and toddlers.

One of the paradoxes about this creature lies in the caterpillar's silk bag which is both very dangerous but can help in healing too. Arrernte and other desert people once carefully removed the bag called *Iwepe* and cleaned it to make a poultice or wound dressing for burns and deep wounds. You can watch Veronica Perrurle Dobson showing how to make the poultice in this video <https://www.youtube.com/watch?v=11MmjPjZcUc&t=544s> which Dave Richards and I made in 2013.

The moths are named as in the *Ochrogaster lunifer* complex. Veronica insisted that the local moth was different to those we could find in online photos. So, I was thrilled to meet a moth I recognised as *O. lunifer* in my backyard last September.





I had further insights into Arrernte knowledge last year. The processions of caterpillars are commonly seen at the end of the hot season about March – April. Veronica and other Arrernte knowledge holders say that the length of caterpillar lines foretells the coldness of the forthcoming cool season. She has indicated to me lines that are more than 50 metres long. A long line indicates many days of cool weather.

The scientist in me has been seeking a science logic behind this cultural indicator. In 2022, I had some insight into the truth that might lie within the indicator. The two threads of logic go like this: Caterpillar instars feed nightly from their basal tent on the fresh growing tips of specific shrubs. If there has been a decent hot season rain then there is more plant growth so either more caterpillars or bigger caterpillars. Thus, longer lines in the procession when caterpillars search for the tree in which to make their silken bag. In parallel logic, we know from weather data analysis that decent hot season rains and soaked soils followed by a cool season with clear not cloudy skies have colder days and more frosts as there is more soil moisture. In 2022 in my bush garden, plants were stripped by caterpillars, there were relatively long processions and many frost days. So indeed, perhaps there is a science logic within the Arrernte cultural indicator logic of longer caterpillar lines and colder days. What does the length of recent caterpillar lines indicate to us about the forthcoming cool season?



There's lots more to learn about these caterpillars and moths on topics like nutrient cycling, predators, antidotes to the toxins, the nature of the toxins, the incredible silk bags and more. So, be careful of caterpillars but also admire them for a unique role on this country.

Top and bottom photos of adult Ochrogaster lunifer moth by Fiona Walsh.

Middle photo, showing a different colour form by Barb Gilfedder.

[Ed: For more information see <http://lepidoptera.butterflyhouse.com.au/noto/lunifer.html>]





What great timing!

Text and photos by Linda McLean

Peter and I are new to Mparntwe / Alice Springs, arriving in January to start a new role as Operations Manager at Indigenous Community TV. We spent 2022 living in Footscray in inner Melbourne, which followed almost 20 years living in Bathurst, Central West NSW. All this to say, the contrast between Bathurst, then Footscray and on to Alice has been extraordinary. Joining the Plant Society - and now the Field Nats - has been part of our mantra to just say yes to all opportunities.

We're proud to call Alice our home and were thrilled that our oldest child, Leah, who lives in London, planned a quick trip back to Australia to visit us. We spent weeks planning day trips, bushwalks and even a weekend at Uluru, very keen to show off our new hometown. The invitation for an evening at the Clay pans couldn't have been better timed, and after sending Leah the flyer, she was very much looking forward to it too.

Joining the convoy - thanks Neil - along the rutted road, led us to an amazing site for a wonderful evening. Relaxing company, beautifully patterned mud flats, stunning sunset and amazing banana cake - all in the shade of coolibahs and ghost gums. Mozzies were few, but laughs and conversation were plenty. We are not expert at identifying plants, insects or geology, but are certainly expert at spotting great company.



We couldn't have wished for a more stunning, truly magnificent central Australia experience for both for us, as new Alice residents, and our daughter. Thanks to everyone for making us feel so welcome. Looking forward to more great events and learning more about the landscape, and its inhabitants.



More clay pans photos

Text and photos by Suzanne Bitar

Visiting the clay pans is always a treat, especially at sunset and with like-minded people (and perhaps a bottle or two of wine). Just such an excursion took place on March 22nd, clear skies and good people. I was surprised by how much water had evaporated bearing in mind that we had had rain not that long before.



Less water of course just gives us a different view of the clay pans and we all had a social and interesting evening. I'm generally a bird photographer and was a bit disappointed that there wasn't a variety of birds, I think perhaps we were a bit late in the day, we sighted and heard a small flock of cockatiels but didn't manage a worthwhile photo. The black kites don't feel very special as they appear in large numbers and are slow and easy to see but looked a bit special silhouetted against the beautiful golden light.

