



Understanding
Our Natural World
Est. 1880

Field Nats News No 353



Newsletter of the Field Naturalists Club of Victoria Inc.
Telephone 03 9877 9860

1 Gardenia St. Blackburn 3130 www.fncv.org.au

Newsletter email: joan.broadberry@gmail.com

(Office email: admin@fncv.org.au)

Editor: Joan Broadberry 03 9846 1218
Founding editor: Dr Noel Schleiger

Reg. No. A0033611X

Office Hours: Monday and Tuesday 10 am - 4 pm

July 2024

From the President

fully increase our knowledge of the fungal biodiversity of the site. Some rain has fallen at Mali Dunes so there is every chance of success. The unusually high precipitation in recent years has stimulated a great deal of fungal activity along with a great display of cryptogamic plants. Fungi and cryptogamic plants are major components of the biodiversity at Mali Dunes and worthy of more detailed investigation. The Mallee region has around 75 species of moss. It is the smaller organisms, often out of sight and mind that drive our ecosystems.

Welcome to the July FNN. In the spirit of understanding our natural world, the Fungi Group will be visiting Mali Dunes to hope-

The due date for FNN 354 will be, as always, 10 am on the first Tuesday of the month, July 2nd. Please use:

joan.broadberry@gmail.com



Mosses at Mali Dunes

Coming to a realistic and tenable understanding of our natural world is proving to be more and more difficult as researchers probe the complexities of the critical inter-relationships between organisms. Mammalian milk is an area of study that has dramatically demonstrated that complexity in terms of biochemical composition, its microbiome and its specificity.



Freshly revived mosses at Mali Dunes



The cryptogamic crust revitalised by ample rain at Mali Dunes

strated the presence of Firmicutes (i.e., Streptococcus, Staphylococcus), Proteobacteria (i.e., Serratia, Pseudomonas, Ralstonia, Sphingomonas, Bradyrhizobium), and Actinobacteria (i.e., Propionibacterium, Corynebacterium) in milk. Milk composition varies widely across mammals and has arisen as a result the selection pressures associated with environment, diet

Milk is the collective name for the secretion provided by all mammals for their young and is unique for each species. There are over 4,200 species of mammals and recent studies have shown that, along with nutrients, milk has a microbiome comprising bacteria, viruses and fungi. Previous studies demon-

Index	Page
From the President	1,4
Calendar of events—July	2
Members' news; extracts from SIG reports given to Council	3
Day Group News: Along Capricorn	5-7
SEANA—Speakers	7
Fungi Group News: Microscopy Session	8
Invertebrates Study Group News: Members' night	9-11
Coates Wildlife Tours (Adv.)	12

(Continued on page 4)



CALENDAR OF EVENTS

All meetings are held at the FNCV Hall, 1 Gardenia St. Blackburn at 8 pm., unless otherwise indicated. On days of extreme weather conditions, excursions may be cancelled. Please check with leader.

July 2024

Monday 1st - Fungi Group Meeting: *Fungi Microscopy Session.* See the amazing world of fungi in detail. Contact: Tobi May tobi.fungi@gmail.com

Tuesday 2nd - Fauna Survey Group Meeting: *Are pollutants and emerging diseases endangering a global migratory flyway for shorebirds?* Speaker: Dr Toby Ross, Associate Research Fellow, Deakin University
Contact: David De Angelis d.deangelis@latrobe.edu.au 0409 519 829

Saturday 6th – Fauna Survey Group *Equipment day* 10 am – 3 pm in the FNCV Hall. Join members of the FSG to help repair and label equipment. Drop in for an hour or stay for the day. BYO lunch.
Contact: Ray Gibson rgibson@melbpc.org.au 0417 861 651

Sunday 7th – Fungi Group Foray: *The Gurdies*, foray starts at 10:30 am. Register for details. Contact: Hamish Beshara, hmb.fungi@fastmail.com.au or 0428 219 273.

Sunday 7th July - Juniors Group 10.30 am Royal Park - *bird watching and nature walk.* RSVP to adamhosken@gmail.com

Wednesday 17th - Invertebrates Study Group Meeting: *Introduction to Arthropod Anatomy.* Speaker: Max Campbell. Contact: Wendy Clark inverts@fncv.org.au

Thursday 18th – Botany Group Meeting: *Raising Rarity: Creating meaningful and sustainable conservation outcomes through community-based outreach.* Speaker: Russell Larke, Senior Curator Horticulture, Royal Botanic Gardens Victoria, Cranbourne Gardens. Contact: Sue Bendel botany@fncv.org.au

Sunday 21st – Fungi Group Foray: *Starlings Gap.* Foray starting at 10.30 am. Register for details. Contact: Hamish Beshara, hmb.fungi@fastmail.com.au or 0428 219 273.

Monday 22nd—FNCV Council meeting. 7.30 pm. Apologies and agenda items to Wendy Gare admin@fncv.org.au

Tuesday 23rd – Day Group Meeting: 10.30 am coffee and a chat, speaker at 11 am.
Royal Botanical Gardens Cranbourne tour of far north Queensland 2022. Speaker: Nicky Zanen, Australian Plant Society and FNCV member. Contact: Joan Broadberry joan.broadberry@gmail.com

Wednesday 24th – Geology Group. Meeting: *Cape Liptrap: structure and tectonics.* Speaker: Dr Kevin Hill, University of Melbourne. Contact: Ken Griffiths geology@fncv.org.au

Friday 26th – Juniors Group 6.45 pm Meeting: *To be advised.* Contact: Adam Hosken adamhosken@gmail.com



The policy of the FNCV is that non-members pay \$5 per excursion and \$3 per meeting, to contribute towards Club overheads. Junior non-member families, \$4 per excursion and \$2 per meeting.

Thank you to all those who helped produce

Joan Broadberry, Wendy Gare and Sally Bewsher

IMPORTANT

Those wanting to attend any FNCV excursion or camp **MUST** register with the leader at **least two full days** before the date of the activity. Some leaders may ask for registration to be even earlier. After registering they will receive details of exact locations, meeting places and times.

There are several reasons for this. Attendees can be contacted if the activity is cancelled or arrangements change. It is also essential for insurance purposes.

Non-members are welcome to register and attend FNCV excursions. Club policy is that non-members pay \$5 per excursion.

bookshop@fncv.org.au

for any orders or bookshop queries.

If you don't have access to email, the FNCV office will pass on your message. Kathy will then be in contact with you.

Members' news, photos & observations

We always have space for member photos and natural history observations. Please share with us what you have noted in your daily life, travels or garden. Email: joan.broadberry@gmail.com by the first Monday in the month.

Welcome
Welcome

Warmest greetings to these new members who were welcomed into our club at the last Council meeting:

Harrison Senior, Anthony Senior, Michael Senior, Andrea Dennis, Phil Mitchell, Leo Prezant, Wendy Herbert, Amy Baratta and Michelle Lowe.

Vale Ian Endersby

18th April 1941 –19th April 2024

We were saddened to learn of the death, on 19th April 2024, of Ian Endersby, life member and former President of the Entomological Society of Victoria. Ian joined the Field Naturalists Club of Victoria in 1987. His passion for entomology was evident to all who knew him. During his long association with the FNCV Ian contributed in many areas. A detailed tribute will appear in the next issue of *The Victorian Naturalist*.

The FNCV extends its condolences to Ian's family and many friends.

Extracts from SIG reports given at the last FNCV Council Meeting

Botany Group:

Meeting Thursday 16th May Report: Sue Bendel spoke about the habitats of Victoria's faunal emblems: the Helmeted Honeyeater and Leadbeater's Possum. Sue had numerous plants displayed in small pots on the front table to illustrate the wet forest habitats. You can find a long report of her talk to the Day Group, in FNN 352 (June) p13. Attendance was 10.

Ken Griffiths

Geology Group:

Wednesday 22nd May Report: Ken Griffiths presented: *Phillip Island - aspects of geology and geomorphology*. A report by Edwards in 1945 was the starting point. He observed alternate beds of lava and tuff at the Nobbies, which he named Pyroclastic. Ken cited the Tongariro complex in New Zealand as an example of still active volcanics of the same kind. Mt Ngauruhoe has alternating lava and ash layers to its cone. We expect viscous, felsic lava flow and explosive ash. After 50 million years at Phillip Island, eruption vents are typically well eroded.

Five different lava flows were apparent (even without isotopic dating in the 1940s). Edwards reported that Mines Department drill cores showed both Jurassic (actually Cretaceous) and Paleozoic (likely Silurian) sediments. We noted that Geology maps omitted the island's older sediments - due no doubt to their broad cover by much younger volcanics.

We used the hand-drawn map by Henry and Birch (1992) to identify in photos some Cambrian aged rocks outcropping. This Greenstone is interpreted as part of the large Selwyn Block, deep underneath the extensive Palaeozoic sediments of the Melbourne Zone. A sand sample from Woolamai surf beach under our FNCV microscope confirmed the predominance of quartz grains. In contrast, the nearby dune, and beaches west, eg Pt Nepean, are calcareous - predominantly shell fragments, from the continental shelf transported by wave action. Attendance was 23.

Ken Griffiths

Invertebrates Study Group:

Field Trips—None held this month. Next one is scheduled in September

Zoom discussion meetings— We have decided not to hold the zoom discussion meetings that we have been holding every 2nd month until springtime, when the invertebrates start emerging again.

In-hall meetings—We will still hold the normal in-hall meetings that are held every 2nd month on the third Wednesday, the next one being on **Wednesday 17th July Introduction to Arthropod Anatomy**. Speaker: Max Campbell.

Wendy Clark

The views and opinions expressed in this publication are those of the authors and do not necessarily reflect those of the FNCV.

(Continued from page 1)



Lichen on fence posts at Mali Dunes



Amanita sp., at Mali Dunes, probably a member of the *A. ochrophylla* complex. Amanitas are mycorrhizal with eucalypts.

and life history for each species. In mammals, nutrient allocation and microbiome development during lactation are critical components of maternal care and are essential for neonate growth and survival.

There is enormous variation in nutritional content of milk across species. The fat and protein composition of the milk of various mammals is quite different depending on the needs of the species. Milk of the highest fat content is needed for species which have young that need to produce a thick coat of blubber very quickly to protect them from the cold. Gray Seals have 59.8% fat and Blue Whales have 40.9% fat in their milk. The milk of all species of mammals has a unique, species specific, microbiome and other nutritional components. Sphingolipids such as sphingomyelins, are important for neural tissue development which is critical for complex neural systems. Sphingomyelin is also an important constituent of the eye lens membrane. The relative proportions of various nutrients and the rate and timing of their delivery (lactation) is related to the life style and ecology of each species. The habitat and location can also impact the nutritional and microbiomal properties of milk within a species. Mammals that have high protein content usually have young with very rapid growth, quickly attaining maturity. Mice, for example, have 12.9% protein compared to humans at 0.9%.

In many species, milk often changes rapidly throughout the lactation period to meet the needs of the developing gut of the neonate. The manner in which various mammalian species care for their young has also influenced both the composition and feeding rate. Mammals can be grouped in terms of the maternal relationship with their young.

Cache mammals: The young are quite mature at birth and are hidden in safe places, fed highly nutritious milk perhaps twice a day. The high levels of protein and lipids keep the young quiet so they don't attract predators.

Nest mammals: Juveniles are less mature at birth and often born in litters. They need the warmth of the nest and other young. They are fed milk with lower protein and fat every two to four hours.

Follow mammals: The young are very mature at birth and can follow their mothers soon after birth. They stay close and feed frequently around the clock. The milk is considerably lower in fat and protein than that of cache or nest mammals.

Carry mammals: The young are the most immature at birth and are carried constantly by the mother for an extended period of time and they are fed low protein/low fat milk frequently around the clock.

Traditionally milk was regarded as a more or less "sterile" substance but it has proven to be anything but sterile. It carries the essential organisms needed to develop a healthy gut microbiome in the developing neonatal mammal. The evolution of the mammalian milk microbiome for each species has been driven by many factors: maternal, neonatal and, environmental. Establishment of the gut microbiome during early life is a complex process with lasting implications for health and future survival of offspring. The composition of the microbiome and nutrients also changes throughout developmental stages from neonatal to weaning so, in addition to the variation in milk composition across species, there can also be substantial variation in composition across lactation stages. (colostrum, transitional and mature milk).

Just for Fun JB



Contrary to belief, Wikipedia actually has less factual errors than traditional printed encyclopedias.*

Text on a cold winter evening.

"Windows is frozen, what should I do?"

Answer: "Try warm water."

What is the best place to hide something?

Answer: Page two of Google.

*Source, Wikipedia

Modern research has, I believe, demonstrated that many of our preconceived ideas about the natural world have been very oversimplified. There is nothing simple about biodiversity overall and the nature of the inter-relationships of the operational taxonomic units that comprise the holobiont are extraordinarily complex. Most bacteria, fungi, protists and viruses are not life-threatening. Many thousands of them are required to keep us alive and are part of our own, normal holobiont. We are misunderstanding the natural world at a fundamental level; the essential, critical symbiotic relationships between life forms that has driven evolution and affected survival from the outset.

Max Campbell
All photos M. Campbell



Day Group Along Capricorn: *Speaker: Anne Morton*



Spire, Rockhampton

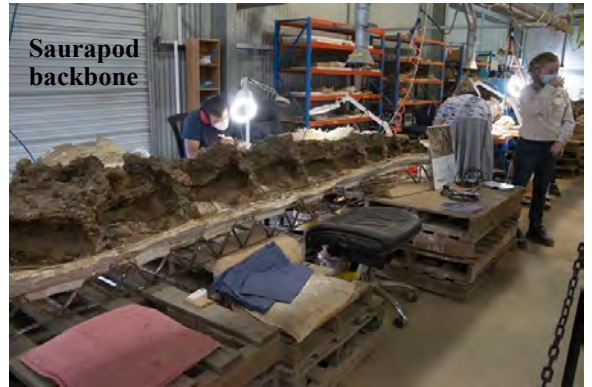
In July 2022 Anne and John Morton set out on an epic trip, crossing Australia from east to west, following the Tropic of Capricorn as closely as possible. Permits were necessary to visit some aboriginal communities. Access to fuel was an important consideration

The summary below touches lightly on some of the highlights of Anne's detailed presentation. Each part of the journey was brought to life through her carefully selected images.

John and Anne's starting point was Rockhampton. A handsome spire marks the Tropic of Capricorn, the most southerly point at which the sun is directly overhead. This occurs on December 21st and is known as the summer solstice. After dipping their fingers into the Pacific Ocean, the Mortons headed into Queensland following the Capricorn Highway.



thundereggs



Saurapod backbone

At Mt Hay, just 36 kilometres west of Rockhampton John and Anne fossicked successfully for volcanic thunder eggs - beautiful when they are cut open. A 'dig' tree carved by Ludwig Leichhardt is found in the small town of Comet. Emerald, known as the gateway to the gem fields, displays a fossilised tree trunk estimated to be 250 million years old. Rubyvale is a great place to fossick for sapphires.

The Worker's Heritage Centre at historic Barcaldine tells the story of the shearer's strike of the 1890s. The trunk of the Ghost Gum, known as the Tree of Knowledge, famous as the founding site of the Australian Labor Party, now shelters under a memorial canopy. Longreach is situated right on the tropic, its streets all named after birds. The Australian Stockman's Hall of Fame and the Qantas Founders Museum are two of its major tourist attractions.

Winton is famous for the discovery of many species of dinosaurs in the surrounding area. Anne and John were able to view sauropod bones being freed from the rock encasing them.

They detoured to Lark Quarry the site of a dinosaur stampede. Thousands of footprints were fossilised in a lake bed when smaller dinosaurs were chased by a larger species. They also visited Scrammy's Lookout and Gorge in Bladensburg National

(Continued on page 6)



(Continued from page 5)

Park south of Winton.

Middleton is roughly half way between Winton and Boulia. Its one hotel was once a Cobb and Co coach depot. Fifty-one kilometres west, Cawnpore Lookout offers panoramic views of what was once the Eromanga Sea. Boulia on the Burke River is known for the mysterious Min Min light. Its heritage centre is home to many fossils of marine reptiles.

Crossing the Queensland/Northern Territory border Anne and John followed the Plenty Highway, camping at Jervois Station.

The many attractions in Alice Springs will be well known to most. These include: the view from Anzac Hill, Desert Park, Telegraph Station, Olive Pink Botanic Gardens, Pioneer Women's Hall of Fame and, new for Anne and John, a visit to the Reptile Park.

West of Alice Springs tyre pressures were lowered for the long desert drive via the remote Gary Junction Road. Papunya and Kintore, also known as Walungurra, are small aboriginal settlements on the route. Mt Leisler is the highest point in the Kintore Range. Wildflowers and sunrises were spectacular.

Crossing into Western Australia, good water was found at Jupiter Well. The Mortons then turned south onto the Gary Highway, pushing through overgrown vegetation, to the Tropic of Capricorn and Windy Corner. They then headed west on the Talawana Track. The number of burnt-out cars seen beside the track were witness to the damage done by spinifex catching fire under vehicles. The next landmark was Georgia Bore on the Canning Stock Route.

Newman, the location of the BHP mine Mt. Whaleback, is just north of the tropic and marked the end of the 'desert adventure'. Karajini National Park with its dramatic gorges, magnificent wildflowers, flying foxes, reptiles and butterflies was another highlight.

Many hundreds of kilometres still lay between the mining town of Tom Price and the Western Australian coastal town of Exmouth. Exmouth is a very popular tourist destination with many attractions including: Yardie Creek, Ningaloo Reef, Cape Range, Shothole Canyon, the wreck of the SS Mildura and abundant bird life.

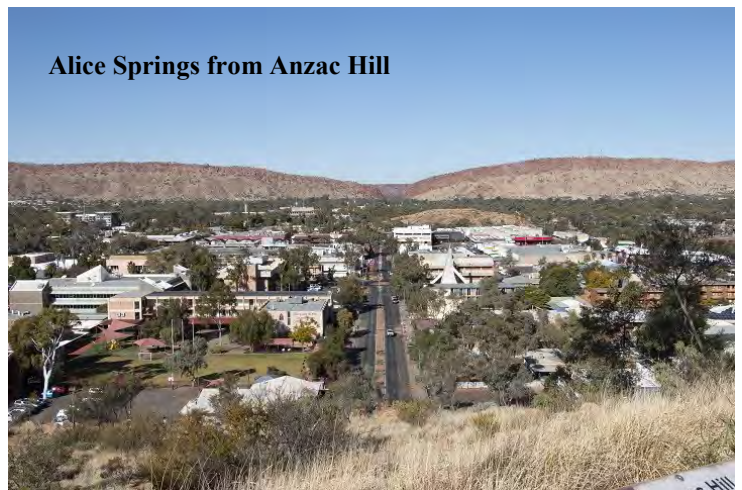
A quick dip in the Indian Ocean at Coral Bay, near the Tropic of Capricorn marked the completion of Anne and John's marathon crossing. However, their journey was not finished until they had made the long drive home to Melbourne.



Dinosaur tracks Lark Quarry



Scrammy Lookout



Alice Springs from Anzac Hill



Georgia Bore



Hamersley Gorge

(Continued on page 7)



On behalf of everyone I would once again like to thank Anne for the work she put into recreating 'Along Capricorn' for the Day Group. The photographs and maps used to illustrate every aspect of her talk allowed the audience to almost be part of the crossing. These included many stunning images of wildflowers and birds encountered along the way.

Joan Broadberry



SEANA Camp Phillip Island, April 19 to 21, 2024*

Phillip Island is an excellent location for a weekend of activities for field naturalists. Based on the popular Penguin Parade, nature tourism thrives here, with the splendid coastline, many nature reserves covering a range of habitat and numerous excellent walking trails. Everything is close-by, well-maintained, with good infrastructure.

The weekend was ably hosted by the Field Naturalists Club of Victoria, from Melbourne, using a number of their own experts with members of local clubs and conservation organisations. About a dozen Ballarat members attended.

Evenings were spent together, with meals followed by **Keynote Speakers:**

1. Gerry Drew and Ed Thexton: *Save the Western Port Woodlands Group*

With very little original vegetation surviving, this group has been campaigning for some years for the retention and protection of valuable remnants. Settlement and long term farming involved the clearing of forests, and this pressure remains. The largest surviving forest is part of the former GMH Proving Ground, adjoining roadways used for testing Holden cars. Since its closure, ownership has changed and the forest area is now again up for sale. The group is lobbying the State Government to purchase this important remnant. Another threat comes from the proximity of sand mining, with some forest surviving only in reserve for this future development. The group's campaign has included activities and events which show the public the beauty and diversity of these forests, as did the impressive range of images accompanying the talk. Our support was sought in contacting the Victorian Environment Minister, Steve Dimopoulos.

2. Leon Altoff: *Marine Invertebrates of Phillip Island*

For decades, Leon and his wife Audrey, have been involved in detailed specialist study and academic publication of Victorian species, within the FNCV Marine Study Group. Its regular group visits to the intertidal zones cover 362 locations, which enabled 53,447 observations, with many still to be identified or, often, named.

Leon presented a truly remarkable slide show of the numerous species found around the island and in nearby San Remo. It was a feast of colour and shape, with some intricate and unusual physical characteristics clearly explained. Some may be seen easily in a rock pool, while others are just a mm. in size. Some involved the combination of one organism with another invertebrate "passenger" or even parasite.

Around 900 local finds included: sponges, ascidians, anemones, crabs, crustaceans and a plethora of worms. Such abundance indicates the importance of invertebrates, essential to the wider web of life – and too often over-looked.

3. Graham Patterson: *Coastal Guide to Nature and History, vol. 2*

This recent publication covers Phillip Island and adjoining areas, part of Graham's 30 year project (completed in 2018) to walk the entire Victorian coast. He began with the difficulties of such a project (including swamps, mangroves, private property, tides and crossing rivers as they widen and enter the sea), often overcome with the assistance of others (notably, his brother).

After outlining the overall geology of the area, he took us along the coast; so many places, so much to tell. We heard intriguing historical details, saw remarkable old photos and reports and came to appreciate the precious ecological heritage.

Shirley Faull

* Thank you to the Field Naturalists' Club of Ballarat

This section is reprinted from a more detailed report published in volume 24 No.05 June 2024 *The Ballarat Naturalist* p 9 -10.



Fungi Group

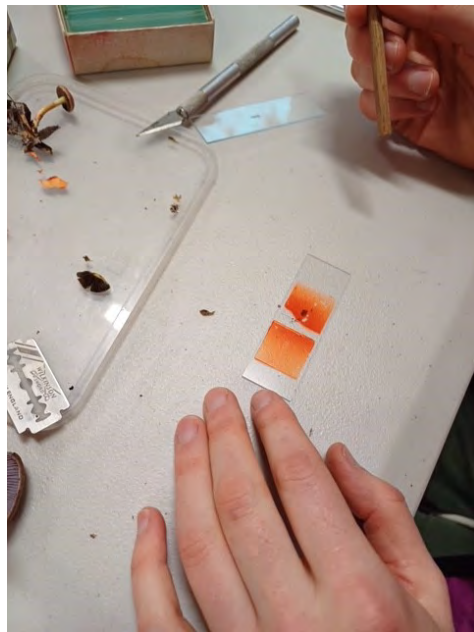
Fungi Microscopy Session 3/6/24



At his month's fungi group meeting we had a go at using microscopes to look a little closer at different types of fungi.

Some of us brought specimens from home to look at under various microscopes. Pat brought a very interesting wombat scat that had a fungi on it that we are still to identify and also some other critters!

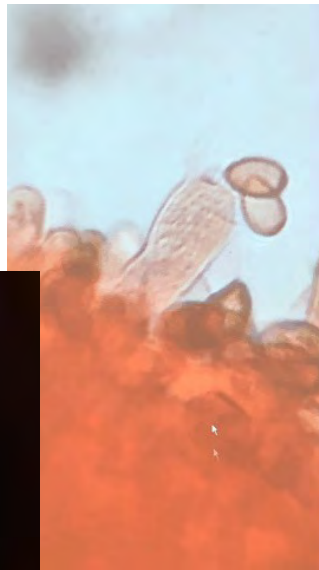
We were lucky enough to have a really close look through Max's rebuilt microscope. This was projected for all of us to see.



In particular we had a close look at some lamellae of a variety of *Cortinarius* (most likely *archeri*), where we could see spores and other structures. We also had a close look at the hyphae. We determined that the hyphal cells were septate, which was really interesting to see.

Thank you to everyone who brought specimens and shared their knowledge. The turn out was great and we got some terrific images.

Georgia Beasley





Invertebrates Study Group

Members' Night Meeting Report – May 15th 2024

A small group of people braved the cold weather for an interesting meeting. It was a Members' Night and people discussed their observations with some showing photos.

Discussion of what was found at the last two trips – Eden Park and Toorong Falls was interesting. We viewed the images on our Project Page on iNaturalist and topped it up with additional photos. This also prompted discussions of what was observed.

For the full species list and photos see the links below.

<https://inaturalist.ala.org.au/projects/fncv-2024-tig-toorong-falls?tab=observations>

<https://inaturalist.ala.org.au/projects/fncv-2024-eden-park?tab=observers>

We discussed what lenses were the most appropriate for use to get the best results and concluded that one needed both a macro lens for small or tiny subjects that didn't move fast, and a telephoto lens preferably with close focus ability or an additional macro filter, to cater for fast moving flying subjects or subjects higher up a tree for example. Hybrid cameras that have long zooms and include macro capability are also useful, but often struggle with the very tiny subjects.

We have decided not to hold the zoom discussion meetings that we hold every 2nd month until springtime when the invertebrates start emerging again. We will still hold the normal in-hall meetings that every 2nd month on the third Wednesday, the next one being in July.

Several excerpts from discussions at the meeting:



A. To find out what moth hatched out of this case, I kept and fed it on algae and lichen and waited.

Eventually it hatched and as I suspected a blue and orange *Cebysa leucotelus* hatched out. It was a flightless female and fast moving! Some males hatched out of the other cases I had. They look very different and can fly. They find the female when she emits a pheromone.

Photo 1. Bag Moth pupa in case *Cebysa leucotelus*.

Photo 2. Bag Moth pupa hatched.

Photo 3. *Cebysa leucotelus*, female running fast.



Photo 4. A tiny bedraggled male *Cebysa leucotelus* fished out of water.





Plusiine Looper Moth larva



Pupation



Bristle Fly, family Tachinidae

The same technique was used on this green caterpillar, but there was a big surprise on hatching. It pupated normally, then a blow-fly with a white rear end hatched out!

The egg would have been laid on the caterpillar before I found it, but only started developing during pupation.

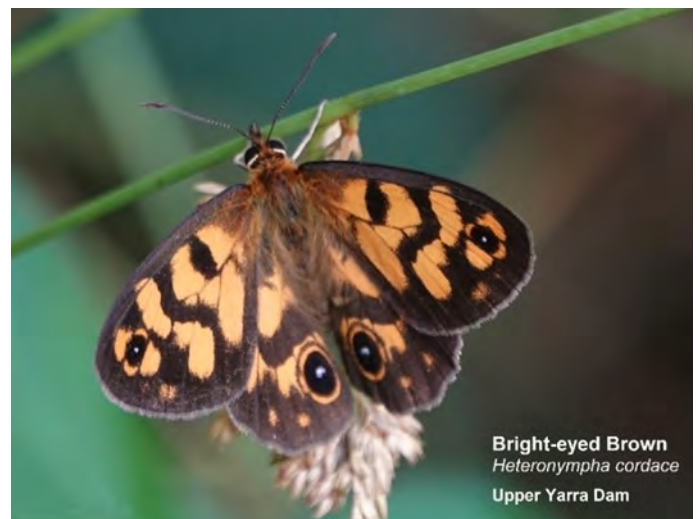
B. Variety of Brown Butterflies found at our Eden Park Survey by Andrew McCutcheon

Four species of butterflies were observed during the day, all of which belong to the Subfamily Satyrinae better known to many as 'Browns' in the family Nymphalidae. They are Ringed Xenica *Geitoneura acantha*, Marbled Xenica *Geitoneura klugii*, Common Brown *Heteronympha merope* and Shouldered Brown *Heteronympha penelope*. (See photos below)

Three of these butterfly species rely entirely on indigenous grass species (*Microlaena*, *Poa*, *Austroanthonia*, *Themeda*) as their larval food plants. As all three were present in good numbers on this property, they are good indicators that the natural habitat and plant diversity are still intact and not over-run by exotic weed species.

Only the Common Brown has adapted to feeding on weed grasses such as *Ehrharta erecta*, which is highly invasive and smothers out most native grasses. This is the reason why the Common Brown is the only 'Brown' species that has adapted well in the suburbs of Melbourne and its parks and gardens.

Other Brown Butterflies were found at both Upper Yarra Dam and Toorong Falls



Below: Dragonflies taken by Andrew McCutcheon



Fiery Skimmer
Orthetrum villosovittatum
Upper Yarra Dam



Royal Tigertail
Parasynthemis regina
Eden Park

C. Photos below taken by David Davies



This spider looks like it could be a St Andrews Cross Spider, however, the colour is wrong or absent and the cross that is usually seen in the web is erratic and circular.

Suggestions were that it could have been infected with a parasite. Another spider like this was seen in the vicinity.

Cuckoo wasps are very hard to get a good photo of as they are fast flyers and always on the move. If they stop for a moment, you need to have the camera ready.

The Malachite Beetle is also known as a Soft-winged Flower Beetle.



Genus *Primeucroeus* Cuckoo Wasp



Gasteruption brachyurum Gasteruptiid wasp



Carphurus cyanopterus Malachite Beetle

The Gasterupid wasp is another species that is rarely seen sitting still. It is usually seen hovering and searching in mid air and looks like a thin twig with back legs dangling!

The Jumping Spider crept very slowly towards the

Two Tailed Spider. When it got

close enough it gave a final jump. The Tamopsis or Two Tailed Spiders are extremely reactive and move like greased lightning. The Jumping Spider landed on bark with no prey



Simaetha Jumping Spider hunting

Reports from the meeting compiled by Wendy Clark



Coates Wildlife Tours

Specialists in Nature Tours since 1986

- Informative naturalist guides • Small groups (6 – 12 participants) • Private charters available
- Fully accommodated, assisted camping, and remote camping tours

Western Explorer Expedition

**12-Day Easy Camping Tour – Departs Broome 17 July 2024
- Max 12 participants**

On this tour we travel from Broome to Perth through Western Australia's outback country. Rugged ancient landscapes including Karijini National Park, Mt Augustus and the Kennedy Ranges are not easy locations to get to, but are well worth the journey. This 12-day tour is an ideal way to explore all three in one go, and to top it off, the trip has been timed to coincide with WA's spectacular northern wildflower season. Also enjoy the ease and relaxed pace of *Easy Camping* – no more setting up tents at the end of the day, instead they will be ready and waiting so all you have to do is relax, explore or freshen up!



Borneo Wildlife Adventure

**14-Day Accommodated Tour – Departs Kuching 15
October 2024 - Max 12 participants**

On our jungle adventure, we travel to the Malay Archipelago in Southeast Asia to the world's third-largest island, Borneo, where jungles and rainforests dominate the landscape and life flourishes beneath the forest canopy. This rugged island is extremely rich in biodiversity; some 222 mammals, 420 birds, 150 reptiles, 100 amphibians and over 15,000 plants call the island home. Bird watchers, botany enthusiasts and general wildlife viewers alike will be delighted by the sheer variety of fauna and flora. We hope you will join us as we explore the wildlife of Borneo!



South West National Parks

**13-Day Accommodated Tour – Departs Perth 12 October
2024 - Max 12 participants**

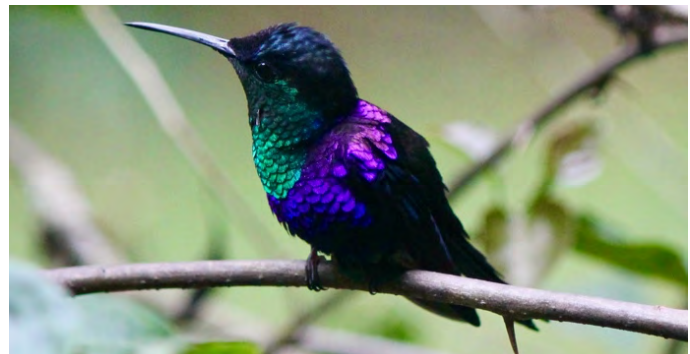
Western Australia's beautiful South West region is one of the world's 34 recognised biodiversity hotspots. Nearly 80% of the plant species in the SW are not found anywhere else on earth, making the area extremely unique. Our visit is also during the southern wildflower season - come and experience the colourful varieties for yourself! Tour highlights include National Parks (Dryandra Woodland, Fitzgerald River, Stirling Range, Cape Le Grande and Waychinicup), and other natural wonders like Wave Rock, Woody Island, Pink Lake and the Valley of the Giants' Tree Top Walk.



Costa Rica Wildlife Safari

**17-Day Accommodated Tour – Departs San Jose 25
October 2024 - Maximum of 12 participants**

Costa Rica is world-renowned for its biodiversity and exotic wildlife, from sloths and jaguars to toucans and hummingbirds. On this 17-day tour we will explore mangroves, riverways and rainforests, starting in the tropical coastal lowlands. Moving further inland, the landscape becomes more temperate with different birds, plants and other wildlife. We then visit Costa Rica's volcanic highlands and experience the country's spectacular cloud forests. With over 500,000 species of flora and fauna, this small country counts for 4% of all species on Earth.



Contact us for further information on these tours and for details of our full natural history expedition program.

Ph: 1800 676 016 or 08 9330 6066 - Web: www.coateswildlifetours.com.au - Email: info@coateswildlifetours.com.au