Field Nats News No 348

Newsletter of the Field Naturalists Club of Victoria Inc.
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Understanding Our Natural World
Est. 1880

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Reg. No. A0033611X

Office Hours: Monday and Tuesday 10 am - 4 pm

February 2024

From the President

Welcome back to the FNN for 2024. I hope you all had a relaxing and enjoyable break. We will be organising plenty of activities, excursions and presentations during 2024 and I hope to catch up with many of you during the year. Details will be available on the FNCV website, calendar of events and via the FNN as per usual.

The due date for FNN 349 will be, as always, 10 am on the first Tuesday in the month, **February 6th 2024**. Please use

joan.broadberry@gmail.com

Over many years it has become clearer to me that the complexities of invertebrate life (in fact, all life) increase enormously as we subject them to closer scrutiny. Ants are a perfect example of this. In Victoria, NSW and South Australia, I have noticed the interesting relationships between sugar ants, meat ants and various homopterans including leaf hoppers, lerps and coccids.

In drier areas such northern Victoria, Mali Dunes, Suggan Buggan, Goulburn, NSW and SA I have noticed that, during the day, meat ants *(Iridiomymex spp*) protect and take honeydew from leafhoppers but, during the night, sugar ants assume the same role. In many cases these interactions are attended by machilid or free-loader flies. (Photos 1-8)

(Continued on page 4)

Photo 1. (above) *Iridiomyrmex feeding from a Lerp. Mali Dunes*

Photo 2. *Iridiomyrmex feeding from leaf hoppers during the day. Mali Dunes*

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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.

February 2024

Attendees are requested to register for excursions so that they can be contacted if there is a change in arrangements.

Registering also means that the leader is better able to plan activities.

Monday 5th - Fungi Group Meeting: For more details contact: Melvin Xu: fungifncv@gmail.com 0410 522 533

Tuesday 6th - Fauna Survey Group Meeting: *Rediscovery and recovery of the Southern Purple Spotted Gudgeon in Victoria.* Speaker: Dr Peter Rose, freshwater ecologist and project manager, North Central Catchment Management Authority.
Contact: David De Angelis: d.deangelis@latrobe.edu.au 0409 519 829

Thursday 8th to Sunday 11th - Fauna Survey Group Survey Powlett River: *Surveying for small mammals, reptiles, bats, and shore birds*. Prior bookings essential.
Contact: Andrew Constantinou andrewconstantinou8@gmail.com 0425 752 016

Sunday 11th - Terrestrial Invertebrates Group Excursion: Pr*ivate property in Eden Park near Whittlesea.*
Registration essential. For more details contact: Wendy Clark wendy.empathy@optusnet.com.au

Wednesday 14th - Terrestri**al Invertebrates Group Zoom Meeting**: *Informal discussion of invertebrates seen or in photos presented by members*. Contact: Wendy Clark wendy.empathy@optusnet.com.au

Thursday 15th – Botany Group Meeting: *The Kimberley.* Speaker: FNCV member Geoff Lay.
Contact: Ken Griffiths botany@fncv.org.au

Thursday 15th – Sunday 18th - Marine Research Group Field Work: *Rye, Cape Shank, Flinders area.* There is improved access to locations that have been hard to reach in the past. Meet at 6.40 am. Locations to be decided while on site, due to some sites being affected by wind direction. Register for more details. Contact: Leon Altoff 0428 669 773: 9530 4180 AH

Wednesday 21st - Microscopy Group Practical Meeting: Compound, dissecting and amp; digital microscopes set up for members' use. Full instruction provided, workshops on slide preparation and toolmaking, freshwater pond samples containing abundant organisms, videos of live micro-organisms. Hundreds of prepared slides and specimens for viewing. BYO specimens with ID assistance. Contact: Philippa Burgess 0409 866 389

Friday 23rd – Juniors Group Meeting 6.45 pm: For more details contact: Adam Hosken adamhosken@gmail.com

Monday 26th - FNCV Council meeting. Apologies and agenda items to Wendy Gare admin@fncv.org.au

Tuesday 27th – Day Group Meeting: 10.30 am coffee and a chat, speaker 11 am. *Exploring the more remote areas around Mali Dunes with a focus on the many species of Australian native orchids found in the Mallee.* Speaker: Bill Kosky, FNCV member and member of the Australian Native Orchid Society (ANOS).
Contact: Joan Broadberry joan.broadberry@gmail.com

Wednesday 28th – Geology Group Meeting: *New data and a new model for the Stavely Arc and Grampians.*
Speaker: Ross Cayley of Geological Survey of Victoria, by video presentation in the hall.
Contact: Ken Griffiths geology@fncv.org.au

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.

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:

Scar O'Choi, Jacinta O'Choi, Rudi Michelson, Jennifer Michelson, Fiona Shackleton, April Newton, Christina Rasmussen (Miss), Christina Rasmussen (Mrs), Dayna O'Shannessy, Leah Keating, Gillian Clarke, Jethro Cassar and Shelley McFarlane.

Australian Natural History Medallion
Monday 20th November 2023

Congratulations to Maureen Christie who was awarded the 2023 Australian Natural History Medallion for her contribution to the Conservation of Shorebirds, *photo left.*

Her presentation was titled "*Beach-cast Marine Algae Fishery*".

A detailed report will be published in the February edition of *The Victorian Naturalist.*

Photo: Maryse Hermence

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

Thank you to all those who helped produce FNN 348
Joan Broadberry, Wendy Gare, Sally Bewsher & Sheina Nicholls.

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.

FNCV Facebook report: followers 37,233

The FNCV facebook page is moderated by:

Andrej Hohmann, Asha Billing, George Paras, John Harris, Bruce Edley, Claire Ferguson, Wally Harrisson and Wendy Gare

(Continued from page 1)
Where *Iridiomymex* and *Camponotus* occur together they tend to restrict each other's foraging period by direct interference. *Iridiomymrmex* may close the nest openings of *Camponotus* with pebbles in the morning and *Campanotus* workers gather to guard the openings of *Iridiomymex* during the evening to prevent their competitors from leaving the nest. It is known that where the species occur alone, they have extended foraging periods due to reduced interference.

Other ants also have relationships with homopterans, including Dolly Ants *Dolichoderus doriae* with Eurymela sp. Leaf Hoppers (photo 9.) Similar forms of resource partitioning amongst ants have been demonstrated around the world. It is an area of natural history that begs further investigation.

(Continued on page 5)

Photo 3. *Iridiomyrmex feeding from leaf hoppers during the day while tiny machilid flies await an opportunity to snatch honeydew from the ants' mouths. Goulburn, NSW*

Photo 4. (left) *Iridiomyrmex tending leaf hoppers during the day. Mali Dunes*

Photo 5. (below) *Iridiomymrmex worker tending newly hatched leafhoppers. Mali Dunes*

Photo 6. (left) *Camponotus worker at Mali Dunes*

Photo 7. *Camponotus tending nymphs of various stages at night. Mali Dunes*

(Continued from page 4)

All Photos: Max Campbell except photo 9 by Wendy Clark

Further reading:

Holldobler B and Wilson E.O. (1990) The Ants. Springer-Verlag, USA

Max Campbell

Photo 9. Dolly Ants *Dolichoderus doriae with Eurymela sp Leaf Hoppers. Near Gembrook, Vic.*

Photo 8. Eurymela sp. Clayton

SEANA South East Australian Naturalists Association—

the umbrella body of Field Naturalists Clubs

SEANA holds two get-togethers a year, autumn and spring. As you will be aware, FNCV is hosting the autumn 2024 get-together to be held on Phillip Island from Friday 19th to Monday 22nd April 2024.

Planning is well underway with what is known as *the first circular* going out on 27th November to all member field nats clubs, fncv members and recent SEANA attendees. This gives an overview of arrangements, see link below

http://www.fncv.org.au/wp-content/uploads/publications/seana-1.pdf

The second circular, which includes more details and a registration form should be available in about two weeks.

Many thanks to the FNCV members who have volunteered to lead and assist with walks, book sales and more. However, this is a whole club activity and we will need more helpers. Contact Philippa Burgess 0409 866 389 or the FNCV office and volunteer your talents—skilled or unskilled, all welcome.

Extracts from SIG reports given at the last FNCV Council Meeting

Day Group: Meeting 24th October 2023

Terry Hart, who worked with the Melbourne Bureau of Meteorology for over 40 years, gave an excellent presentation titled, *Climate, Climate Change and Weather. What affects Australia's Climate?* Extracts from Terry's presentation can be found on pages 13 and 14 of FNN 347 and on pages 9 and 10 of this edition.

Meeting 28th November 2023

Joan Broadberry and Max Campbell gave a joint presentation based on recent visits to Mali Dunes. A short report appears on page 6.

Joan Broadberry

Fauna Survey Group: Meeting 14th November 2023

Andrej Hohmann reported on our efforts at Bael Bael Grasslands Nature Conservation Reserve, *Plain-speaking: Seven Years of Surveying Bael Bael for Plains Wanderers and other Grassland Critters.*

Surveys: 3-7th November 2023 Fauna survey at Mali Dunes. We established pit lines at four localities and surveyed them over three days. No native mammals were caught but a number of reptiles were. The pits were left in place and closed for future use. Twenty remote wildlife cameras were deployed and these were collected on 28th November. Reports of this survey are being prepared. Although there were very few mammals in the traps, some had been caught on camera.

Ray Gibson

Geology Group: Joint meeting with Botany Group on Wednesday 22nd November:

'Cretaceous floras of Gondwana: Past climates' was presented by Anne-Marie Tosolini and Vera Korasidis, University of Melbourne.

Anne-Marie explained that though Australia was closer to the South Pole, there was no polar ice-cap 132 million years ago.. Land bridges remained in Gondwana. Deposition occurred in a rift valley, resulting in Victoria in the Eumeralla Formation (uplifted only later). Sites in the Otways and also Gippsland have been studied. Koonwarra, for example. The palaeoflora has been reconstructed from the forest floor to the mid-storey and canopy:

Lycopod spores are the size of a sand grain. Trees were Araucariaceae or Podocarpaceae, (found today in Tasmania or New Zealand). Just when and which flowering plant arrived in Australia is still undetermined. Today they are 70%. Angiosperms would have developed in dark billabongs, perhaps looking like a Magnolia. Long term in the Phanerozoic, at least four icehouse/greenhouse cycles have occurred on Earth.

Vera described field work in Wyoming, USA. Pollen (including spores from monocots) can be incorporated into rocks. A wind pollinated plant produces much more than say a Proteaceae species. A 4 - 8° temperature rise taking place over 5000 years, 56 million years ago, led to some species migrations: temperate -> tropical -> temperate. This resilience may not always apply! We think of the global warming trend of today for possible parallels. 30 attended.

Ken Griffiths

Terrestrial Invertebrates Group: Excursion on Saturday 25th November to see Imperial Blue Butterflies at Blackburn Creeklands

was very well attended and went extremely well. Many Imperial Blue butterflies were seen, along with dragonflies, craneflies and Grass Blue Butterflies (photo right) . Everyone was very keen and enjoyed themselves. The weather was just right.

A more detailed report with photographs appears on page 11.

Wendy Clark


Photo: J. Broadberry

Marine Research Group

Annual Member's Night,
Monday 11th December 2023

The meeting was held both in the hall and via the internet. A number of MRG members contributed. 18 attended

- John Eichler gave a short presentation titled, *A new species of Hermit Crab for Australia*. Barbara Hall followed up with a series of images taken under a microscope of specimens that had been collected from Mallacoota. Museum Victoria is currently examining the evidence provided by John and Barbara. Barbara has since obtained a copy of the 1885 paper describing *Pagurus traversi* and, after examining the relevant diagnostic characters, is convinced it is this species.

Pagurus traversi, a new hermit crab record for Australia. Image Mallacoota November 2023. Australian observations by others date back to March 2021

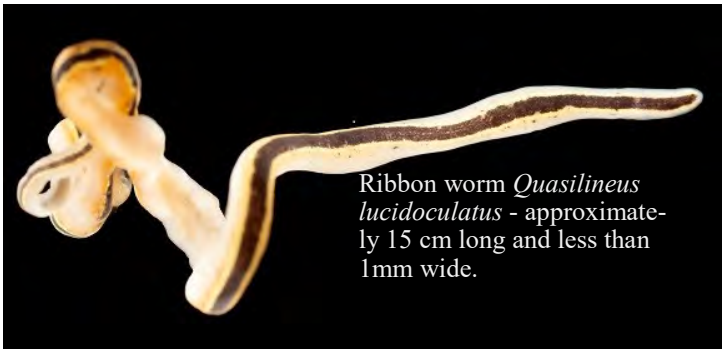
- Carol Bathie spoke on *Beguiling Bothryllids* . Using a number of images, Carol pointed out some of more important identifying features, (*photos below and below right*).

Botrylloides JP2 has crowded circular systems.

Botrylloides JP6 has tightly packed ampullae between crowded elongated systems and no clear test

- Janet Pett's presentation included reference to the conference, *Ascidian Taxonomy,* she and Carol Bathie attended at Soka University of America in California. She then showed a number of images of ascidians taken during the MRG 2023 field work, the greatest variety of species being found on McHaffities Reef, Phillip Island.
- Leon Altoff and Audrey Falconer's talk was titled *A bucket from a Boat Ramp.* During the pandemic lockdown, being allowed to travel up to 10 km from their home, Leon and Audrey visited Black Rock and, under permit, collected a bucket of material from the boat ramp. Many marine invertebrates emerged including pycnogonids, bivalves, anemones, chitons and worms. Leon went on to show images of a variety of species of Nemerteans or Ribbon Worms. *Photos below.*
- A new Pictorial Guide updated, and printed by Leon and Audrey, containing images of over 500 species of intertidal invertebrates was made available.

Joan Broadberry



Ribbon worm *Quasilineus lucidoculatus* - approximately 15 cm long and less than 1mm wide.

Tanaid shrimp in berry (with eggs) - 6mm.

Day Group

On November 28th Joan Broadberry and Max Campbell gave a joint presentation based on recent visits to Mali Dunes

Joan reported on some of the work being done at Mali Dunes Fieldwork Station in three areas: conservation, education and research.

Conservation includes: Malleefowl and other birds, (with the National Mallee Fowl Recovery Group Inc); mammals such as Hopping Mouse, Western Pygmy Possum, Fat-tailed Dunnart and Southern Ningaui; a large variety of reptiles and invertebrates and plants such as Jumping Jack Wattle, *Acacia enterocarpa.*

Education: The FNCV Juniors Group camped at Mali Dunes over Easter 2022 and 2023. Activities included guided day and night walks focusing on Malleefowl, spiders and other invertebrates and, under supervision of members of the FSG, learning to set up pit traps.

Research: The FNCV FSG are undertaking ongoing surveys of reptiles, mammals and birds. During Cup weekend 2023, led by Andrej Hohmann, this was done mainly in the Southern Section of the property using cameras and pit traps. A detailed report from Andrej will available in a subsequent issue of FNN. **JB**

Max presented an overview of life at Mali Dunes including vegetation, invertebrates, fungi, protists and animals. The animals included myriapods, arachnids, insects, amphibians, reptiles, birds and mammals. The presentation was highlighted by both macro and micro photographs plus video. Max emphasised the importance of the cryptogamic crust which revitalised during the recent wet periods at Mali Dunes. The mosses in particular flourished under the moist conditions and were populated by numerous protists (algae and protozoans), small mites, nematodes, tardigrades and rotifers. These were supported by micro video and photomicrographs. Fungi also appeared in large numbers over the past 18 months due to the unusually high rainfall.

Max then focused on the importance of small invertebrates such as termites, ants, arachnids and tenebrionid beetles as major food resources for larger animals.

We have barely scratched the surface in understanding the complex interactions between the life forms at Mali Dunes and the wider Mallee. There are many research studies that could be undertaken at Mali Dunes. Max's photos are from the November 2023 FSG camp. **MC**

Celosoma shayeri, an aggressive, predatory carab beetle.

Many species of moss flourished during the wet period

Wolf Spider

Fat-tailed Dunnart, *Sminthopsis crassicaudata* at Mali Dunes.

Echidna searching for termites.

Day Group

Terry Hart, meteorologist, spoke to the FNCV Day Group on 24th October 2023. Graphics from the first section of his presentation were published on pages13 –14, FNN 347. Below is a further extract from his presentation

El Nino—Southern Oscillation ENSO.

El Niño – Southern Oscillation - ENSO

Charles Todd (meteorology and telegraphs - South Australia).
1888 - suggested droughts in India and Australia tended to occur together.

Sir Gilbert Walker (1868-1958)
1904 - Sir Gilbert Walker, a British mathematician entered the British Colonial Service as Director General of the Indian Meteorological Observatory after failure of the monsoon and disastrous droughts in 1877 and 1899.

The observatory was founded to explore whether future famines could be prevented.

Analyzing weather data from India and lands beyond, over the next fifteen years he published the first descriptions of the **great seesaw oscillation of atmospheric pressure between the Indian and Pacific Ocean**, and its correlation to temperature and rainfall patterns across much of the Earth's tropical regions, including India. It was called the **Southern Oscillation.**

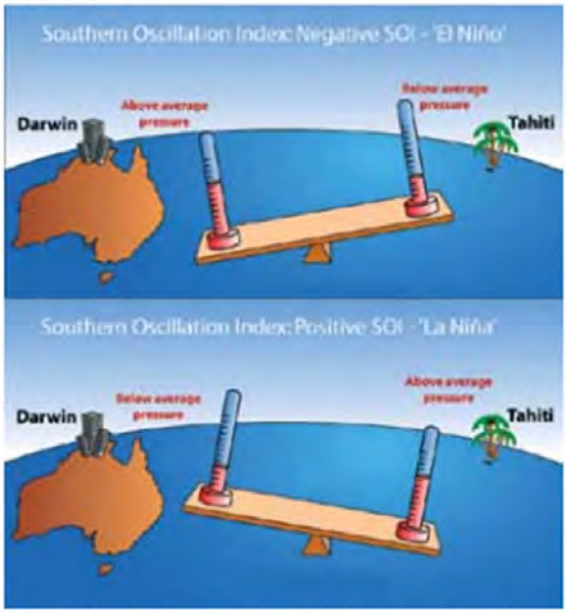


Figure 3.1. The Southern Oscillation is a see-saw of atmospheric pressure between the Indonesian region and the east equatorial Pacific.

El Niño – Southern Oscillation - ENSO

Normally, **sea level pressure (SLP)** is relatively high in the south central Pacific (e.g. Tahiti) and relatively low over the Indian Ocean and Northern Australia (e.g. Darwin), with a net transport of air at low latitude from east to west (the easterly trade winds).

Every few years the SLP difference between east and west weakens, the trade winds relax and there is often drought in India and Australia.

The **Southern Oscillation Index (SOI)** is given by:

SLP at Tahiti - SLP at Darwin.

Barometric records at those stations go back to the 1880's proved to be paramount in Walker's discovery.

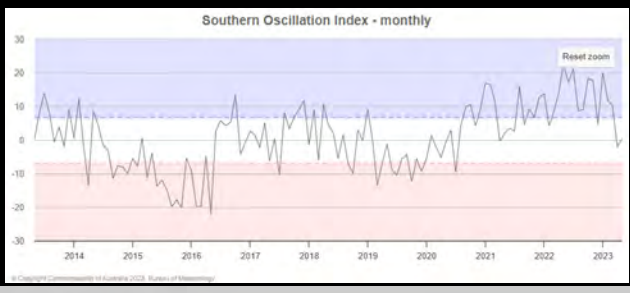
The concept of a **zonal circulation** along the equatorial regions became known as the **Walker Circulation**. (The Hadley circulation is a meridional circulation).

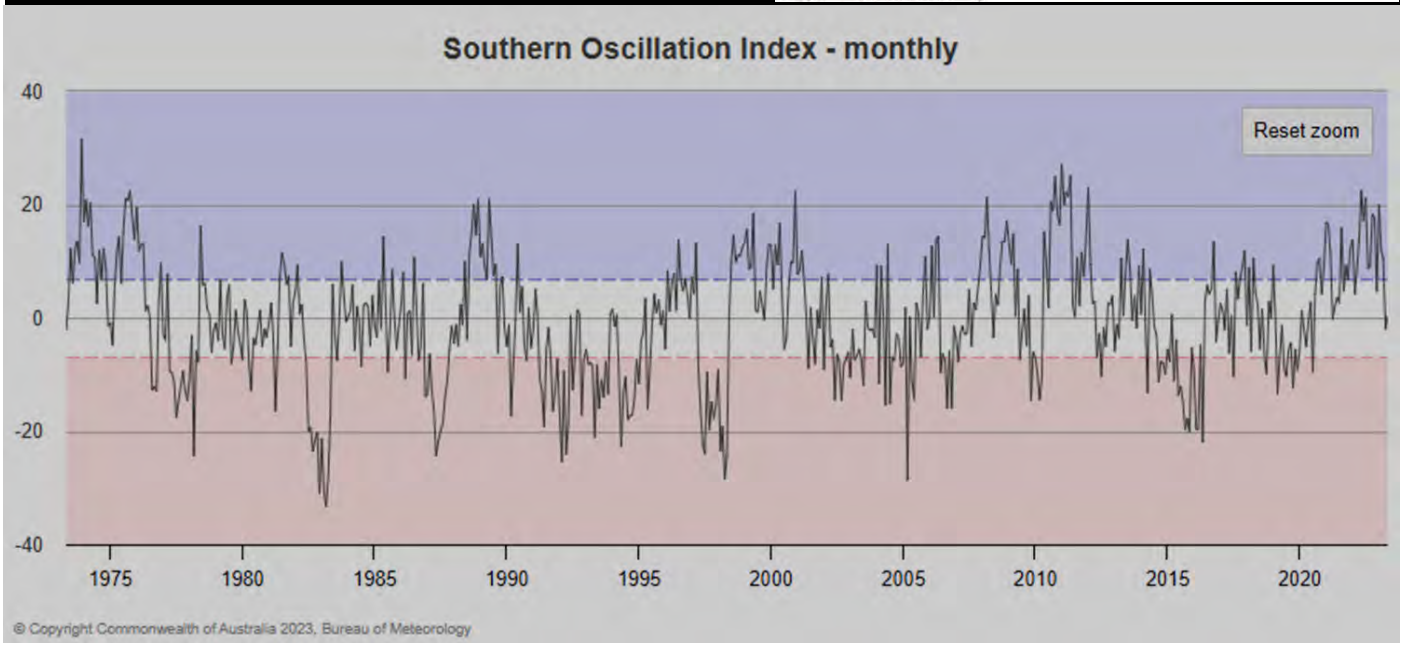
http://www.bom.gov.au/climate/influences/timeline/

The Southern Oscillation Index (SOI) is given by the difference in sea level pressure (SLP) between Tahiti and Darwin:

SLP at Tahiti - SLP at Darwin.

Barometric records at those stations go back to the 1880's.





El Niño – Southern Oscillation - ENSO

Meanwhile there was research into the **Pacific Ocean**, particularly into reports about a warm current along the Peruvian coast that fishermen said occasionally ruined anchovy catches around Christmas time. The current was given the nick-name ***El Niño*** (the boy child).

In 1969 **Jacob Bjerknes** (1897-1975) proposed that the atmospheric cycle and ocean temperatures and currents in the Pacific were connected leading to the hybrid term El Niño – Southern Oscillation (ENSO).

He suggested that an anomalously warm spot in the eastern Pacific can weaken the east-west temperature difference, disrupting the trade winds, which push warm water to the west. The result is increasingly warm water toward the east.

El Niño – Southern Oscillation – ENSO

The Oceanographers' contribution

1985 – George Philander and Mark Cane (USA) described how tropical winds and currents could lead to the opposite effect – with warm temperatures in the western Pacific called *La Niña.*

Cane and Stephen Zebiak developed a forecast model coupling the oceanic and atmospheric data, that successfully predicted the emergence of an El Niño episode in 1986-7.

This really established the science of ENSO.

FNCV Christmas Party

Once again FNCV members came together to celebrate another year of discovery, research, conservation and friendship. The Christmas party is a welcome opportunity for those from all the special interest groups to meet. Thanks go to Max and Ray Gibson for their BBQing skills, to Faye Campbell for decorating the hall, to Gary Presland for putting together a presentation showcasing FNCV activities and especially to everyone who provided a most delicious array of salads and sweets.

It has become an FNCV tradition to hold a Christmas raffle with donated prizes. The prizes were extra-special, as can be seen in the photo and great fun was had by all. $128.30 was raised for club funds

Thanks also to the many hands who washed dishes and made clearing up so easy. **JB**

Terrestrial Invertebrates Group

Imperial Blue Butterflies —Blackburn Creeklands 25/11/23

Leader: Wendy Clark


1.

The weather was sunny and still. A number of wattles played host to all stages in the lives of Imperial Blue Butterflies. Wendy gave a short talk and showed a copy of her book, *The Imperial Blue Butterfly, (*photo 1.)


2.

Read more about the life cycle of Imperial Blue Butterflies in Wendy's article *Fascinating Stories of the Creatures of the Blackburn Creeklands,* (FNN 336 page 7, February 2022)

.

Photo 2, top right, gives a glimpse of the blue upper-surface of the butterfly's wing. Photo 3, centre right shows Imperial Blue Butterfly larva attended by Tyrant Ants, *Iridomyrex sp*. which protect the caterpillars in return for a sugar reward rich in amino acids as the caterpillars are feeding on acacia. The other creatures that look like mini-trilobites are juvenile Acacia Horned Tree Hoppers. Photo 4 is a close up of a larger caterpillar and photo 5 is of Imperial Blue Butterfly pupa cases.

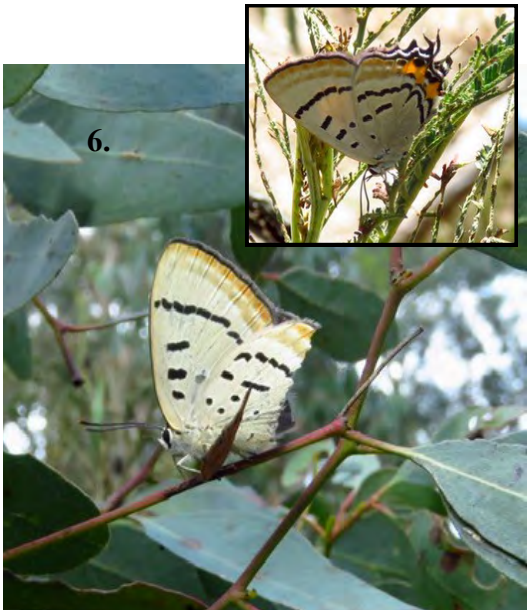

3.

Photo 6, below left, shows a butterfly with a large piece of its hind wing missing, almost certainly pecked by a bird. The inset photo above shows the orange and black 'tail' or rather false head that Imperial Blues have as a decoy for predators.

W. Clark/J. Broadberry
Photos: J. Broadberry


4.


5.


6.

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South Australian Lake Eyre & Flinders Range Tour

10-Day Camping/Accommodated Tour - Departs Alice Springs 14 May 2024 - Max 10 participants (6 in lead vehicles & 4 tag-alongs)

This adventure is a must for all who long to experience the Australian outback. From the massive expanse of Lake Eyre to the striking landscape and impressive ruins of early European settlement in the Flinders Range. We will travel on the Oodnadatta Track, steeped in history, natural wonders and rich cultural heritage. We will also visit some of South Australia's iconic outback towns including Coober Pedy, the opal capital of Australia, if not the world. This adventure showcases South Australia's spectacular outback scenery and unique wildlife.

Western Wanderer Expedition

15-Day Easy Camping Tour (assisted camping) - Departs Perth 15 May 2024 - Max of 12 participants

Head north of Perth for seabirds, marine-life, coral reefs and ancient gorges. Tour highlights include a flight over the Abrolhos Islands with time for a short nature walk and snorkel, exploration of the Shark Bay World Heritage area including a visit to Monkey Mia, free time in Coral Bay to discover Ningaloo Reef (including time for an optional add-on Whale Shark Cruise & Swim), camping at 80-mile beach, Marble Bar ('the hottest town in Australia'), and two days exploring the wonders of Karijini National Park. Tents and camp beds are put up and taken down for you on this trip by the Easy Camp Support Crew.

Kimberley Wonders

13-Day Easy Camping Tour (assisted camping) – Departs Broome 6 June 2024 - Max of 12 participants

Join us in the Kimberley region of Western Australia; one of the most remote and unspoiled wilderness areas in the world. We explore Purnululu National Park (Bungle Bungles), the Gibb River Road and its many spectacular waterfalls and gorges, Parry Lagoons (great for wetland birds), Drysdale River Station, Windjana Gorge and Silent Grove. You will also take an 18-minute helicopter flight over the Bungle Bungles, and there is an optional (*at extra cost*) full-day visit to the Mitchell Plateau to view Mitchell Falls, an incredible four-tiered waterfall.

Tanami Desert Expedition

14-Day Camping Tour – Departs Alice Springs 22 June 2024 - Max 10 participants (6 in lead vehicles & 4 tag-alongs)

On this expedition we will explore some of the most isolated areas in northern Western Australia and the Northern Territory, including Newhaven Station, the Tanami Desert, Paruku, Wolfe Creek Crater and Keep River National Park. We hope to see a variety of arid zone plants and wildlife, as well as freshwater species including Black Necked Storks, Brolgas, Black Swans, and Spoonbills, in the Indigenous protected area of Paruku (Lake Gregory and Lake Stretch). Join us for ancient landscapes, scenic gorges, extensive dunes, inland lakes & wetlands, and clear starry night skies.

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