Field Nats News No 351

Understanding Our Natural World
Est. 1880

Newsletter of the Field Naturalists Club of Victoria Inc. **Editor: Joan Broadberry 03 9846 1218**
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Office Hours: Monday and Tuesday 10 am - 4 pm

May 2024

From the President

At the March Council meeting, the name of the Terrestrial Invertebrate Group (TIG) was changed to the Invertebrates Study Group (ISG) to better represent the actual range of activities of the group including fresh water invertebrates and micro invertebrates.

I have had an orb weaving spider, *Eriophora sp,* living in a small *Pelargonium* pot plant for some months. She has relatively short legs and a particularly plump abdomen. The plant was partly crushed by a large tree branch during the February 13th storm but, several days later, the spider appeared once again and, each night, continued to set up her unusually modest orb web close to the ground. She also has a debris pile in her relatively untidy web. She has avoided predation so far and is happily sitting in her retreat as I write.

Constructing her nightly web.

On March 15th, Dr Matt Dell ran an excellent and informative moss class at FNCV. We hope to run more educational and training sessions over the coming year to improve our understanding of the natural world. Of the many quotations attributed to Aldo Leopold, the following two, to my way of thinking, are possibly the most poignant in terms of increasing education and understanding.

"One of the penalties of an ecological education is that one lives alone in a world of wounds. Much of the damage inflicted on land is quite invisible to laymen. An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor

(Continued on page 4)

The due date for FNN 352 will be, as always, 10 am on the first Tuesday of the month, May 7th 2024
Please use: joan.broadberry@gmail.com

Eriophora sp in its *Pelargonium* leaf retreat.

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.

MAY 2024

Sunday 5th – Annual General Meeting 2 pm: Join in this important event in the life of our club and congratulate our new Long Term (40 year) members. Guest speaker, Dr Tom May, mycologist at the national Herbarium of Victoria, originator of Fungimap and past winner of the Australian Natural History Medallion. Invitation page 4.
Contact FNCV Office: admin@fncv.org.au

Monday 6th – Fungi Group Meeting*: Fungal disease*. Speaker Martin Mebalds Senior Officer, Agriculture Victoria.
Contact: Melvin Xu fungifncv@gmail.com 0410 522 533

Tuesday 7th - Fauna Survey Group Meeting: ***Predators in the mallee: assessing the impacts of dingoes, foxes and cats, and their management, in a semi-arid ecosystem***
Speaker: Rachel Mason, PhD student with the Applied Ecology and Conservation Research Group, Deakin University.
Contact: Ray Gibson 0417 861 651 rgibson@melbpc.org.au

Saturday 11th – Fungi Group Foray: *Sanatorium Lake, Mount Macedon.*
Meet at 10.30 am. **Registration essential.**
Contact Hamish Beshara: hamishbeshara96@gmail.com 0428 219 273

Monday 13th – Marine Research Group Meeting: *Field trip roundup.* Join us as we review where we have been and what we have seen over our field work season.
Contact: Leon Altoff 0428 669 773

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. Atendees 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.

Wednesday 15th - Invertebrates Study Group Meeting: *Members' night.* Discussion of results of the last few field trips
Contact Wendy Clark: wendy.empathy@optusnet.com.au

Thursday 16th – Botany Group Meeting: *To be advised.* Contact: Ken Griffiths botany@fncv.org.au

Friday 17th to Sunday 19th – Fauna Survey Group Survey: *Grampians/Heatherlie fauna survey.* **Prior bookings essential**
Contact Ray Gibson: rgibson@melbpc.org.au 0417 861 651

Wednesday 22nd – Geology Group Meeting: *To be advised.* Contact: Ken Griffiths geology@fncv.org.au

Sunday 26th – Fungi Group Foray: *Silvan Reservoir Park.* Meet at 10:30 am. **Registration essential.**
Contact Hamish Beshara: hamishbeshara96@gmail.com 0428 219 273

Monday 27th—FNCV Council meeting 7.30 pm. Likely to be held face-to -ace in the hall. Apologies and agenda items to Wendy Gare admin@fncv.org.au

Tuesday 28th – Day Group Meeting: 10.30 coffee and a chat. Speaker 11 am. ***Crossing Australia along the Tropic of Capricorn.*** Speakers: Anne and John Morton, FNCV members. All welcome. Contact: Joan Broadberry joan.broadberry@gmail.com

Friday 31st /Sunday 2nd June - Juniors Group: Friday evening meeting 6.45 pm or Sunday excursion. *Details to be announced.* Contact: Adam Hosken at 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.

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:

Denton Thomas, Steve Short, Cora Short, Fearne Short, Archer Wallis, Hugo Wallis, Elizabeth Wallis, Dr Helen Lester, Flynn Williamson, Billie Williamson, Rachael Thompson, Jeremy Hegge, Yu Hung Lam, Georgia Beasley, Leigh Kett, Jaymie-Lee Hunt, Tara Lewis, June Ding, Shelby Jones and Baeckea Driscoll

FNCV AGM

Sunday 5th May 2024 at 2 pm

You are invited to attend
The Field Naturalists Club of Victoria Inc
Annual General Meeting

to be held at the FNCV Hall, 1 Gardenia Street, Blackburn.

Agenda: *Minutes of previous AGM; Annual Report; Financial Statements; Election of Council; Environment Fund; Other Business*

Guest Speaker: Dr. Tom May, mycologist at the National Herbarium of Victoria, originator of Fungimap & past winner of the Australian Natural History Medallion.
Topic: *Four decades of fungus hunting - from hand lens to smart foray*

Afternoon tea will be served. ***All welcome***

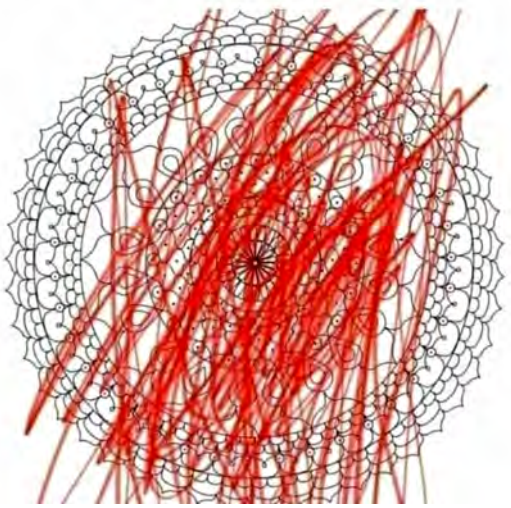
Nominations for Council must reach the registered office of the Club no later than 48 hours before the AGM, i.e. Friday 3rd May 2024, by 2 pm

Facebook
41,913 followers.

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.

I have started coloring to manage my stress and anxiety.



Thank you to those who helped produce FNN 351
Joan Broadberry, Wendy Gare and Sheina Nicholls.

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) **From the President**

who sees the marks of death in a community that believes itself well and does not want to be told otherwise." (Not edited – read he, she, they)

"All conservation of wildness is self-defeating, for to cherish we must see and fondle, and when enough have seen and fondled, there is no wilderness left to cherish."

As a naturalist I find the last quotation particularly confronting and cause for considerable reflection on my part. The question that haunts me is, "Am I part of the solution or part of the problem?"

Maxwell Campbell, *All photos M. Campbell*

Participants at the Moss Class run by Dr Matt Dell on March 15th.

The Moss class run by Dr Matt Dell

Botany Group

Wetland Plant Identification:
Speaker Graeme Lorimer

Graeme Lorimer addressed: *Wetlands Plant Identification.* He commented that wetland plants were less studied than other plants due to the deterrent of the requirement to wear gum boots and the frequent occurrence of snakes. They are also more difficult to identify than many other plants. Graeme explained that there are many words and concepts that need to be understood in order to identify these plants. He facilitated our understanding of these by passing around sample plants such as Slender Knotweed. Graeme explained that the knotweed, *Persicaria,* can be distinguished by its ocrea, a fully circular sheath enclosing part of the stem. This ochrea may have distinguishing hairs or bristles. By stepping through a simplified key, he showed us how to find key features and proceed to an identification.

Along the way, he pointed out adaptations in the plants to varying water levels. For example, many wetland plants have rhizomes or stolons that grow down the slope of the wetlands to enable plants to grow in their required depth of water. Many wetland plants do not have coloured or scented flowers as they have other structures to enable them to be wind pollinated. The seeds of many wetland plants have adaptations like bristles that allow the seeds to become attached to birds, who transport the seeds to other wetlands.

We proceeded to use the Club's stereo microscopes to locate plant features, including leaf arrangement and seed appearance.

Graeme Lorimer teaching wetland plant identification to the Botany Group.
Photo: Sue Bendel

Many thanks to Graeme for sharing his time, knowledge and wetland keys that he has developed with the members of the botany group. For those people who are keen to learn more about wetland plants, Graeme runs paid identification workshops at certain times of the year. Many positive comments were made on the form and content of this month's Botany presentation.

Ken Griffiths and Sue Bendel

TAKING STOCK OF BALLARAT'S 'OTTERS'

Platypus News & Views is published by the Australian Platypus Conservancy (APC) (ABN 64 255 612 676) This article appears in issue 94—February 2024 pages 3—4. **APC allows reproduction of articles for non-profit, education purposes, subject to acknowledgement of the APC as the source.**

It's been a little over a year since community-based Rakali monitoring kicked off at Lake Wendouree at Ballarat in central Victoria. (see PN&V no.90)

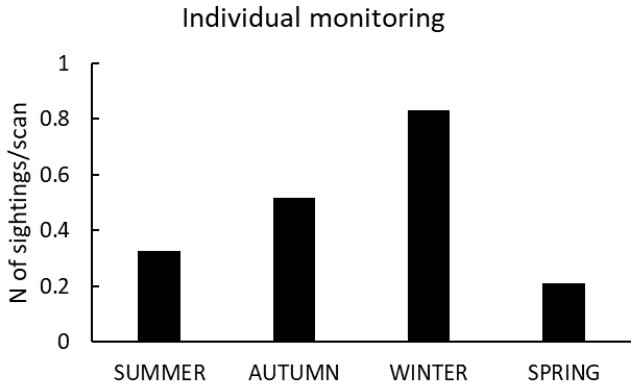
Working in co-operation with the Conservancy, volunteers are using two complementary methods to track Rakali sightings: five-minute scans conducted by individuals throughout the year at times of their own choosing, and quarterly Rakali Group Watches (in which a number of volunteers record how many animals are seen in a given one-hour period). In both cases, information is being collected at 12 sites distributed around the entire lake, as shown at right.

More than 2000 five-minute scans were completed in 2023, with an average 0.45 Rakali sightings recorded per scan (in other words, a Rakali was spotted in just under half of all scans). Although animals were seen at all 12 sites, the highest average frequency of sightings (0.69) was recorded at site A ('Fairyland'). This is located on a sheltered and relatively shallow stretch of water with nearby picnic grounds that undoubtedly provide some scavenging opportunities.

Unsurprisingly, more Rakali sightings were generally recorded at a given site during one-hour Group Watch sessions as compared to scans lasting just five minutes. For example, Group Watch sessions at Fairyland yielded an average 1.6 sightings per session across the year.

If you're thinking of travelling to Lake Wendouree to look for Rakali, it's worth noting that the frequency of sightings varies seasonally, with spring yielding many fewer sightings as compared to autumn and (particularly) winter. The same pattern is evident in the results of both individual and Group Watch monitoring (as shown in the charts below), and likely reflects the fact that numerous juveniles are weaned in this population from late spring into autumn, then mostly disperse to bring numbers back into balance before breeding resumes in spring.

Enough monitoring information has been gained through individual scans to also support an analysis of how Rakali activity differs between morning and afternoon/evening. As shown in the chart at right, the likelihood of seeing a Rakali at Lake Wendouree is consistently somewhat lower in the morning as compared to later in the day.



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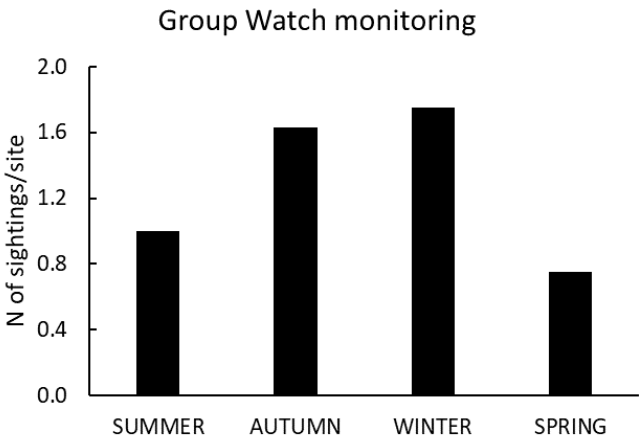

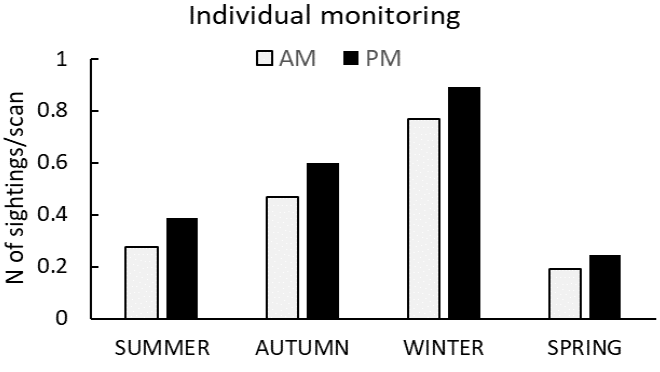

TAKING STOCK OF BALLARAT'S 'OTTERS'

(continued from p6)

Photo: Lissa Ryan

The Rakali visual survey program has demonstrated conclusively that Lake Wendouree is a really excellent location – possibly the best in Victoria – to observe this fascinating animal. In particular, the results confirm that even a modest amount of time spent watching for Rakali is likely to provide at least one sighting through much of the year. Along with mapping the extent of Rakali activity around the lake, the first year of monitoring has also established a quantitative baseline against which future fluctuations in the Rakali population can be reliably assessed.

The findings also highlight that a proper consideration of Rakali conservation should be an essential facet of all aspects of Lake Wendouree's future management or development.

The project's outstanding success reflects truly dedicated and inspired work by Lissa Ryan, the unpaid co-ordinator for the entire Lake Wendouree Rakali monitoring program.

Along with paying tribute to Lissa's organisational skills and enthusiasm, sincere thanks are owed to the many persons (too numerous to list here individually) who have contributed their time to Group Watch sessions and/or as individual Rakali-spotters.

Photo: Simon Roberts

PLATYPUS CAMERA MONITORING STUDY –FINDINGS NOW AVAILABLE

In *PN&V* no. 93, we described results from a 12-month field study that investigated the use of time-lapse cameras to monitor platypus activity along a Tasmanian creek.

Along with demonstrating how monitoring results can be affected by camera attributes and spatial and temporal variation, new information is presented about when animals breed and how often they leave the water while foraging.

The paper has now been published online by *Australian Mammalogy*.

https://www.publish.csiro.au/AM/AM23045

Tiny Bug Captured Laying her Eggs in a Ghania Leaf

By *Wendy Clark*—*All images W Clark*

Whilst walking in the early morning in late March at Blackburn Lake, lamenting the drop off in numbers of invertebrates most likely due to the dry weather, I spied a yellowy coloured blob on a leaf. On closer inspection, it wasn't some animal dropping or other object – it had legs visible underneath it!
The strange thing was that it didn't move as I bent the leaf of Ghania over so I could have a closer look. Fortunately, I always take my camera with a Macro lens with me on my morning walks, so I promptly proceeded to photograph the insect.

Adult Tube Spittlebug laying eggs.

It was dull light, which meant a very high ISO rating on the camera as I needed to have a high f-stop to get a large Depth of Field (more in focus). I also needed to have a highish shutter speed, so I didn't get camera shake. This high ISO meant the photo looked a bit grainy. So, I relented and used my pop-up flash on the camera. The image looked much sharper and showed plenty of detail, though I am not a fan of the high contrast shiny effect it gives. A diffuser over the flash to soften its effect would have helped, but I didn't have one.

This is what an adult Tube Spittlebug looks like in the nymph stage. The Nymph is in the tube immersed in a clear fluid that it has produced. You can see the fluid at the top of the tube. This is on a Gum Tree, so the tube of the Spittlebug on the Ghania might look different.

When I got home and viewed the photos on my computer, I found that the bug was laying eggs into a furrow on the Ghania Leaf. You can see the ovipositor which sliced into the valleys on the leaf. This is a great find as it documents the host plant for this species.

The bug was in the Tribe Enderleiniini, which is a member of Tube Spittlebugs. It is in the family Machaerotidae. They are called tube-forming spittlebugs as the nymphs form a calcareous tube within which they live. These are xylem-sap feeders. The nymph extracts calcium from the xylem fluid and constructs a calcareous tube from Malphigian gland secretions.

They typically feed on woody dicots – in Australia, it is very often Eucalypts – and immerse themselves in a rather clear fluid ecretion inside the tube. The tubes strongly resemble the shells of certain Serpulid sea worms or Helicoid land snails and contain no less than 75% calcium carbonate. This habit is quite uncommon in the class Insecta and markedly different from that of typical spittlebugs, which make and live in a froth mass. Machaerotids (tube spittlebugs) produce foam only when they emerge from the tube to moult. There are about 115 species in 31 genera placed in 4 tribes.

The majority of species are found in Southeast Asia with a small number in Africa and some in Australia as well. This one above is in one of the subfamilies Enderleiniini.

One question that comes to mind is does the Spittlebug form a tube on the Ghania, or does the nymph make its way up into a gum tree? I will have to look into that.

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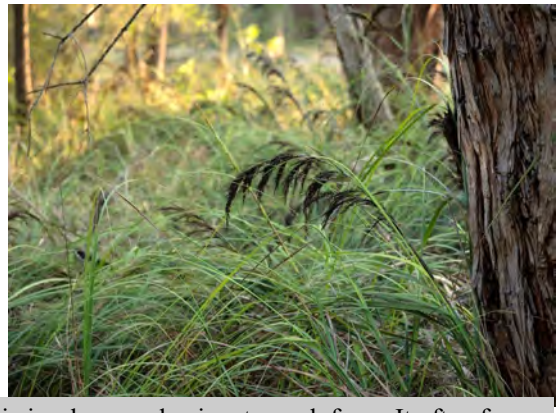
Ghania is a sedge with long arching leaves. The leaves have little directional serrations on them, so they feel rough in one direction.



Ghania is a large sedge in a tussock form. It often forms the understory in Eucalypt woodlands

Fauna Survey Group

The capture and handling of all animals on FNCV field trips is done strictly in accordance with the Club's research permits.

Surveys:

Powlett River, 8-11 February 2024

This survey was well attended and included trapping and camera survey techniques. A trapping highlight was Swamp Antechinus. Results from the cameras are still being processed.

Bael Bael Nature Conservation Reserve, 8-12 March 2024

This was the eighth in this series of surveys and we were again based at Quambatook and eighteen members attended this time. There were lots of Stubble Quail but most of the other grassland species we usually see were in low numbers. One highlight was seeing a Hooded Scaly-foot, the first seen in this series of surveys. The reserve had a lot of rain in December and January.

Meetings:

Meeting, 6 February 2024 "Rediscovery and recovery of the Purple-spotted Gudgeon in Victoria". Dr Peter Rose, freshwater ecologist and project manager, North Central CMA.

In the waterways of Gunbower and lower Lodden River, only 13 of 22 native fish species are still present. Many factors have led to this terrible state of affairs. The rivers have suffered critical alteration from dams and weir, irrigation channels, pumping and general loss of river connectivity. Natural seasonal stream flows have been altered. In stream habitat and water quality has been altered and degraded by de-snagging, removal of riverbank vegetation, increased nutrient flow into rivers, siltation, and removal of aquatic plants particularly by carp. Among the small fish that have declined is the Southern Purple-spotted Gudgeon, a small attractive fish of the rivers, creeks and billabongs. It is a victim of altered streams, and also introduced species like redfin, trout and eastern gambusia. It was listed as critically endangered by the FFG and considered extinct in Victoria for over 20 years until a tiny population was discovered in the Third Reedy Lake near Kerang. Fish were salvaged when the lake was drawn down for works, and moved into a captive breeding program for later release into suitable habitat. Other populations were found in neighbouring lakes and special protection measures were implemented to protect the wild populations, especially the aquatic vegetation on which it depends. Fish resulting from the breeding program were released into suitable localities such as billabongs and farm dams with the correct habitat qualities.

Meeting, 6 March 2024 Noodles in a Haystack: "Conservation of threatened and data deficient Lerista Skinks." presented by Luke Bonifacio, PhD student at Monash University. Lerista is a large family of over 100 skinks in Australia. Regarding formal classification of conservation status, many of them are data deficient.

Fieldwork was conducted on *Lerista viduata* near Ravensthorpe in WA, where its known occurrence is a small area of about 24 sq. km. The habitat is Mallet woodlands and the lizard lives in the leaf litter and was found only in low numbers. Because of the low numbers in a small area this species is considered appropriate for critically endangered listing.

Lerista lineata, the 'Perth Slider' is confined to Perth and for about 30 km further south and is possibly threatened. There is another recorded locality at Woodleigh, north of Perth, which was investigated and none were found. Museum specimens which were investigated suggested the possibility of a locality mislabelling.

Raymond Gibson

Day Group

Members' Morning, 26th March 2024

The format for a Day Group *members' morning* was suggested by Nicky Zanen. Thank you Nicky. Participants were asked to bring up to six images of something from the natural history world that has interested, surprised or intrigued them. They were encouraged to think outside the box, not just stopping at images. For example one member brought a feather. The aim was to introduce the images and objects to fellow naturalists, to ask questions, perhaps get identification and share knowledge.

Silvia Zele originally from Slovenia told us a little of her family history. After World War 2, her maternal grandfather, a veteran partisan, held a job as a game warden protecting the precious village livestock from predators such as wolves and foxes. In 1952 when Silvia was only 12, he poisoned a fox and its carefully prepared pelt eventually came with the family to Australia. (Photo right.)

At the end of the breeding season, Red Deer shed their antlers. Sylvia's parents split a large pair of antlers into two and brought the pieces to Australia, one in each suitcase. (Photo left.)

Silvia also showed images of her garden chestnut tree, the roasted fruit which are prized in Slovenia and her cymbidium orchids. Silvia noted the fruit of her Feijoa tree was being attacked by a small insect Max identified as a type of fruit fly.

Sheina Nicholls passed around a beautiful but tiny feather. The group brainstormed as to which bird it might have come from, with no definite answer. She also described a birdcall she hears late at night, which went with the sound of wings. This eliminated it being a Barn Owl, whose flight is wholly silent. An interesting discussion took place.

Ray Gibson showed a number of images of mammals and reptiles taken at the Mali Dunes Fauna Survey Group camp over the Cup Day weekend 2023. He also projected some spectacular images of the property after very heavy rain. Ray went on to show still images and video footage from cameras set up at various fauna survey activities. A highlight was a beautiful video of the seldom seen Squirrel Glider filmed in 2023.

Knud Hansen brought in three framed photographs. The subjects were, ferns, eucalypts from the Baw Baw national park and an arresting image of rock platform taken somewhere on the Eyre Peninsular in South Australia.

Joan Broadberry described her love of beach-walking and beach-combing. Her first set of images were taken during the spring SEANA get-together held in 2023 at Traralgon. During that time she accessed McLoughlins beach, (photo above), part of the 90 mile beach and, amongst many other finds, photographed a dead mammal (photo left). Ray Gibson and Max Campbell identified it as a macropod, probably a wallaby.

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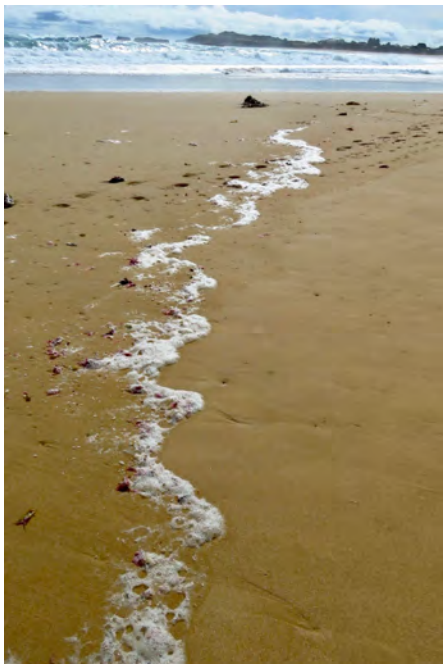
Joan also shared images taken at the ocean beach near Peterborough (photo left). Something that had always intrigued her (photo below right), were beautiful, transparent 'necklaces' adorning the tide-line. Recently she identified them as pelagic animals known as Siphonopores (photo below left). They have stinging cells and are a type of Hydroid.

The beautifully decorated tide-line at Peterborough also contained many transparent By The Wind Sailors *(Vella Vella)* which had lost their blue colour.



Although attendance was a little down, the members' morning was a very enjoyable session. In particular it was able to be run informally enabling members to get to know each other more than a formal Day Group presentation allows.

Thank you to those who participated and made our first members' show and tell a success. The variety of your contributions was amazing. It was also great to hear more about your particular interests and indeed your lives. We will hold more members' mornings throughout the year. Once again my thanks to Max for his help with all things technical.

Joan Broadberry

Extracts from SIG reports given at the last FNCV Council Meeting

Geology Group: *Meeting. Wednesday 28 February 2024*

The Geology Group watched a video of a talk by Ross Cayley which he titled *Scissor detachments and oroclinal warps*. The Stavely terrane underneath the Grampians range had been problematic to explain for some years. Although remnants of an ancient mountain building volcanic arc had been identified and indeed matched to magnetic and gravity data from aerial surveys, there was no simple North – South basement range, but rather a shape like an open pair of scissors. Seismic survey data had been interpreted such that in the Cambrian, Tasmania had collided with proto-Victoria. The Selwyn Block as deep basement was pushed from Melbourne to where the Murray River now is, and the straight mountain range north of Hamilton was knocked out of shape on a huge scale. Ross demonstrated with 3-D software how the geo physics data could model both a deep depth dimension, and a dynamic explanation for all today's Victorian geology. 24 attended.

Ken Griffiths

Terrestrial Invertebrates Group: *March Excursion:* The March trip to Cambarville was cancelled due to insufficient people booking. Reasons were possibly potential fire risk due to very dry conditions, potential lack of insects due to the dry and/or too many clashes or other activities in March.

March Meeting The March meeting was well attended with Dr Rob Walsh talking about Fresh Water Micro Invertebrates. Rob gave us a fascinating insight into the micro invertebrates that inhabit our ponds, puddles and other water bodies. These are the creatures that are less than 2mm in size including creatures like Rotifers, Austricods, Copepods and more. They are the link connecting all parts of the water system together. They consume algae, bacteria, other micro invertebrates, small newly hatched carp fish fry and more. They in turn are eaten by macro invertebrates and other animals. They help control algal blooms and keep the water fresh. They are essential components of the water system.
This was a very well delivered, interesting and informative talk with excellent photographs of the creatures.

Full report p11-12

Wendy Clark

Invertebrate Study Group* Meeting Report, March 2024

We were privileged to have Dr Rob Walsh from Australian Waterlife, talking about Fresh Water Micro Invertebrates. His talk was based on his experiences working in 3 states over the past 25 years and across all tiers of government and private practice. Rob gave us a fascinating insight into the Micro Invertebrates that inhabit our ponds, puddles, and other water bodies. These are the creatures that are less than 2mm in size.

The Microfauna are the "link" connecting all parts of the freshwater ecosystem together.
Rob explained that most assessments of the health of waterways are done using macroinvertebrates, ie those greater than 2mm in size. However, it is the microinvertebrates, that are the most crucial components of these systems.

- Aquatic microfauna are the link between bacteria / algae and higher organisms
- Aquatic microfauna play a pivotal role in trophic pathways
- Aquatic microfauna consume vast amounts of organic material, and by reducing the amount of algae and bacteria, are important in maintaining water health within inland waters

Without the microfauna, there would be NO macroinvertebrates or even fish in many wetlands.
Because of their often-large numbers, aquatic microfauna (microcrustaceans / rotifers) consume vast amounts of organic and detritus material, and by reducing the amount of phytoplankton, are important in maintaining water clarity in many inland waters. For example, a single large *Daphnia* may remove up to 1000 algal cells per hour.

Wetlands may be of any size, shape and depth.
They may contain aquatic or terrestrial plants, or just be depressions in the surface of the land. Typically, they are relatively shallow which dry out during the warmer summer months and fill during wetter parts of the year. These wetlands may be of short duration - ie 1-4 weeks. The Macroinvertebrates have much longer life cycles of up to 10-12 months. Therefore, they may not be able to complete their life cycles and as such, are scarce in these habitats. The Microfauna however, with their short life cycles, do well in these environments.

Below are images of the main groups of aquatic Microfauna with a brief description of their habits.

The Aquatic Microfauna are typically comprised of two groups of animals.

- The Phylum Rotifera (or Rotifers)
- The Phylum Arthropoda:

The subphylum Crustacea has approx. ten Classes of which three are commonly called the microcrustacea because of their small size. They are Cladocera, Copepoda and Ostracoda.

The Phylum Rotifera



Rotifers are 0.05 -0.2mm in size. Their life cycle is typically 1-4 days. Eggs may be produced in as little as 1 day after the parent itself hatched. Rotifers are important in freshwater environments as they have one of the highest reproductive rates of the microfauna. Rotifer densities are often 1-2000 individuals per litre of water and can remove up to 72% of the daily production of algae and protozoan biomass.

(*Continued p12)*

***At the last FNCV Council meeting a motion, proposed by Wendy Clark and seconded by Barbara Burns, was passed to change the name of the Terrestrial Invertebrates Group (TIG) to \Invertebrates Study Group (ISG). See also From the President page 1. The new email for ISG is:** inverts@fncv.org.au

The Phylum Arthropoda: THE MICROCRUSTACEA – Copepods
Copepods occur virtually everywhere there is water. They reach sexual maturity in approx 14-21 days, live for approx 40-60 days and produce two sorts of eggs. There are normal sexual eggs from which offspring hatch, and resting eggs, which lie dormant until conditions are suitable for hatching. Environmental cues stimulate the females to produce these resting eggs. These resting eggs may lie in the dried sediment of temporary wetlands, ponds, dams, rivers for 10 or more years.

Cyclopoid—Copepod

Harpacticoid—Copepod

Calanoida—Copepod

Class: Branchiopoda (Cladocera) "Waterfleas"
They are the largest of the Microcrustacea and are significant grasiers of bacteria and algae. They are prey for juvenile and adult fish taxa. The Cladocera generally are found in the vegetated littoral shallows of wetlands. Cladocera are important in consuming algae and detritus. They aid in preventing algal blooms that form within inland waters. Algal blooms often result in anaerobic conditions within the water column, resulting in fish kills.

Class: Ostracoda: Ostracods have a calcareous bivalved shell. They range in size from 0.5mm-6mm.

Several different types of Cladocera

Ostracod

Freshwater Ostracods are generally associated with vegetated or benthic (bottom of the water) habitats in wetlands. Salt tolerant forms are frequently the only plankton recorded from saline, temporary wetlands and ponds of central Australia. They possess a range of feeding types from herbivory to predatory animals. Such predators are known to consume Rotifers, some will consume amphibian eggs, others attack early-stage tadpoles.

Without the Microfauna, there would be NO macroinvertebrates or even fish in many wetlands. **Wendy Clark**

(*Continued from p13)*

The group thanks Leon Altoff and Audrey Falconer who arrange the field trips, provide identification aids, document our finds and much more.

John Eichler

Facelina newcombi, Walkerville North

Hymenosoma hodgkini Shallow Inlet

Marine Research Group

The Marine Research Group's second extended field trip for the season was to the Walkerville area of South Gippsland in mid-March. This is an area the MRG hasn't visited for over 20 years. We had remarkably good weather for the four days of inter-tidal surveys at Walkerville North, Shallow Inlet, Bear Gully and Walkerville South.

Each survey lasted about four hours (two hours either side of low tide) followed by a meeting, where a list of species seen and their abundance was compiled. Our regular group of about 10 people was joined by Magda and Emma, international researchers who are investigatingTanaid shrimp in the Bass Strait region.

At Shallow Inlet the substrate was soft sediment while elsewhere it was rock (mudstone, greenstone and limestone). The number of species seen varied from 58 at Shallow Inlet to 164 at Walkerville North. Species abundance at Shallow Inlet was lower than on previous visits.

From my perspective highlights of the trip include the following:

At Walkerville North:

- A sea slug, *Facelina newcombi, (*image 5 p12)
- An uncommon chiton, *Callochiton crocinus* (image 4)
- Several distinctive, unnamed Lamellarias
- A recently introduced Hermit Crab, *Pagurus traversi*, not previously recorded west of Cape Conran
- Several unusually large Blue-ringed Octopus, *Hapalochaena maculosa* (One also seen at Bear Gully)

At Shallow Inlet:

- Three species of ghost (Callianassid) shrimps (image 2)
- A specimen of he Eastern King Prawn, Penaeus plebejus
- An unusually large number of mostly juvenile bubble shells, *Bulla quoyii*, which are usually active at night.
- A small, rarely seen crab, *Hymenosoma hodgkini* (image 6 p12)

At Bear Gully:

- A slit limpet, *Amblychilepas oblonga* (image 1)

5.

IMAGES

1. ***Amblychilepas oblonga*** **Bear Gully**
2. ***Arenallianassa arenosa Shallow*** **Inlet**
3. ***Cabestana spengleri*** **Walkerville South**
4. ***Callochiton crocinus*** **Walkerville South**
5. ***Facelina newcombi*** **Walkerville North** ***(see p12)***
6. *Hymenosoma hodgkini* **Shallow Inlet** ***(see p12)***

At Walkerville South:

- Several specimens of the introduced Porcelain crab, *Petrolisthes elongates*
- A large specimen of the Sand Octopus, *Octopus kaurna*
- large numbers of the stalked sea-squirt, *Pyura praeputialis/dopplegangera* which were being eaten by the large sea snail, *Cabestana spengleri* (image 3)
- An infrequently seen sea-squirt, *Pyura irregularis*

(*Continued p12*)

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Kimberley Wonders Expedition

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, known for its spectacular waterfalls and gorges. On this trip we will explore Purnululu National Park (the Bungle Bungles), the Gibb River Road, 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 considered to be one of the most spectacular in Australia.

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 you will explore the most isolated areas between 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, especially at Lake Gregory and Lake Stretch, as well as freshwater species including Black Necked Storks, Brolgas, Black Swans and Spoonbills. Join us on this tour for ancient desert landscapes, inland lakes, scenic gorges and starry night skies.

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 typical 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. Finally, 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 for you!

WA Outback Expedition

15-Day Camping Tour – Departs Perth 11 September 2024 - Maximum of 6 participants

This outback expedition follows two tracks built by Len Beadell, considered by many to be the 'last real Australian Explorer'. His outback 'highways', the Connie Sue and Anne Beadell, pass through remote areas along the western side of the Great Victoria Desert, and provide opportunities to discover unique arid zone plants, wildlife, and landscapes. Additionally, two days will be spent at the Eyre Bird Observatory, a favourite amongst bird watchers, and two days following the Granite Woodlands Trail, which passes through one of the most extensive temperate woodlands left in the world.

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