



Understanding
Our Natural World

Field Nats News No.289

Newsletter of the Field Naturalists Club of Victoria Inc.

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September 2018

From the President

Don't forget the FNCV Symposium on 25th August and the Gathering at Maranoa Gardens on Sunday 26th

The first day of spring is only a few weeks away and it is encouraging to see some warmer weather and pleasant sunshine. There should be increased opportunities for insect photography in the coming weeks so watch out for upcoming TIG excursions. There are already plenty of plants in flower including banksias, hardenbergas, eucalypts, acacias and any number of weeds. Bees are visiting many of them. I have sunflowers that are still flowering from last December and self-sown tomatoes from last year have already flowered and set fruit. Our climate seems to have changed noticeably.

I recently collected some desiccated moss samples by a roadside near Gembrook to further pursue my interest in the biodiversity of bryophytes and other cryptogamic plant communities; particularly their associated infusoria*. Not much is moving until the dried moss is rehydrated in clean water. For this purpose, I use triple distilled water. Tap water contains chlorine, fluorine, metal ions and other toxins that may kill microscopic organisms. Rain water from tanks may contain environmental toxins and often contains its own microscopic life which will contaminate the samples being studied. I usually leave the moss in water for at least 30 minutes before examining it under the microscope. Some organisms are almost immediately active while others may wait for a few days to activate. Perhaps it is insurance that the drought has actually ended and there will be enough water to permit survival and reproduction. Anabiosis (suspended animation) permits organisms to survive for many years without water. There are often many encysted, desiccated and quiescent organisms and eggs in the moss samples which are simply awaiting hydration. It is a reminder that microscopic life on earth is diverse, resilient, persistent and ubiquitous. Amongst the collembolans, nematodes, annelids, planarians, gastrotrichs, protozoans, tardigrades and other minute arthropods found in mosses there are always numerous rotifers. Rotifers or "wheel animalcules" (Photo 1) often occur in immeasurable numbers and have an enormous variety of forms (photos 1 to 6). Some rotifers in particular activate quickly, start to "twitch" and stretch out aggressively and quickly move about and commence feeding (Photos 4 & 5). The flickering of flame cells may be the first sign of activity as water enters the rotifer's body. Most of the moss rotifers are creeping bdelloids which require little free water since they do not need to swim to move about.

Photo 1. A typical bdelloid rotifer with "wheels" in full throttle.

Photo 2. *Testudinella* sp resting. Pond water

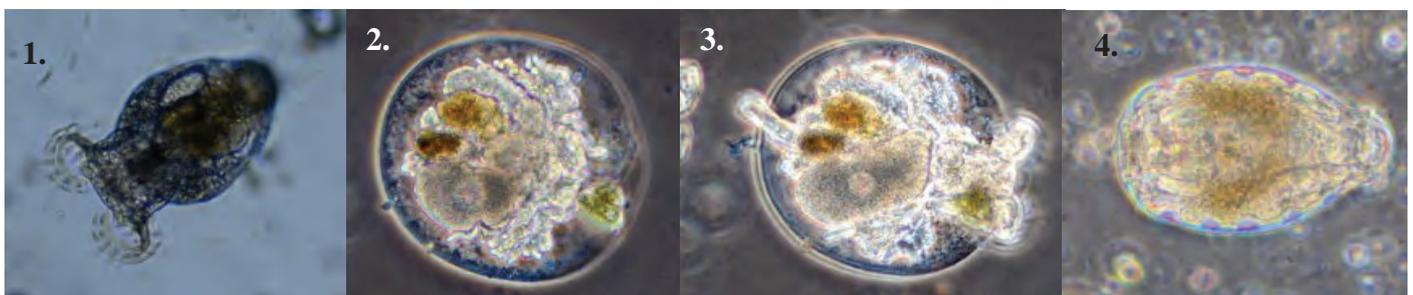
Photo 3. *Testudinella* sp actively feeding.

Photo 4. Encysted or anabiotic bdelloid rotifer. Moss

(Continued on page 3)

The deadline for FNN 290 will be **10 am on Tuesday 4th September**
FNN will go to the printers on the 11th with collation on Tuesday 18th September.

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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.

September

Monday 3rd – Fungi Group. Meeting: Teresa will give a progress report on her current work with *Crepidotus*, *Pycnoporus*, truffle-like fungi genera and ‘other’. Time permitting she will show us some images of her very recent trip to places such as Puerto Rico, New York and Quebec Speaker: Teresa Lebel, Senior Mycologist at Royal Botanic Gardens.
Contact: Carol Page 9857 6388; cpage356@gmail.com

Tuesday 4th - Fauna Survey Group. Meeting: *Wildlife Photography, in particular documenting individual Southern Right Whales.* Speaker: Chris Farrell, semi-professional photographer and author.
Contact: Robin Drury 0417 195 148; robindrury6@gmail.com

Saturday 8th – Juniors’ Group. Excursion: *Spotlighting at Braeside.* Meet at 5.30 pm. Leader: Robin Drury, Fauna Survey Group. For further details contact: Patricia Amaya juniors@fncv.org.au

Monday 10th – Marine Research Group. Meeting: For details contact Leon Altoff 9530 4180; 0428 669 773

Tuesday 18th—Collate FNN 290 starting about 10 am. All Welcome. Contact Joan Broadberry 9846 1218

Wednesday 19th - Terrestrial Invertebrates Group Meeting: For details contact Max Campbell 0409 143 538; 9544 0181 AH; mcam7307@bigpond.net.au

Thursday 20th – Botany Group Meeting: *Le Jardin des Plantes.* Speaker: Ken Griffiths, FNCV member.
Contact: Ken Griffiths botany@fncv.org.au

Sunday 23rd – Botany Group. Excursion: *Wild flowers at Brisbane Ranges*
Meet at 10 am at Burt Boardman Reserve, Steiglitz. BYO lunch, finish 2 pm. Take C142 from Princes Fwy/Anakie Rd, turn left to follow C142 then left into Sth Steiglitz Rd and left into Reserve. Google maps <https://goo.gl/maps/f8QiADho6ky>
Contact: Ken Griffiths 0457 143 831 botany@fncv.org.au

Sunday 23rd to Saturday 29th - Fauna Survey Group Survey - Yarrara Nature Conservation Reserve, north western Victoria. Prior registration essential. Contact: Robin Drury 0417 195 148; robindrury6@gmail.com

Monday 24th— FNCV Council Meeting 7.30 pm sharp. Agenda items and apologies to Wendy, 9877 9860; admin@fncv.org.

Tuesday 25th – Day Group Meeting: *Hands on photography, practical session—bring your camera* Meet at **10 am**. Blackburn Bowling Club Car Park, Pakenham St . Blackburn (opposite Laburnum Primary School). Melway 43 H 11/12
Leader: Wendy Clark, Empathy Photographics & Master your Camera. Contact: Joan Broadberry 9846 1218.

Wednesday 26th – Geology Group. Meeting: *Of megafauna and megalakes - Tales from the shores of palaeolake Bungunnia.* Speaker: Lisa Nink, PhD research in palaeontology. Contact: Ruth Hoskin 9878 5911; 0425 729 424; rrhsoskin@gmail.com

Friday 28th – Juniors’ Group. No Meeting: *Grand Final holiday*

Advance notice:

FNCV working bee, Saturday October 6th.
Please come and help with a range of tasks, suitable for all skill levels, even if only for a short time.

It is YOUR club. 10 am onwards.



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 for excursions 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: fnnews@fncv.org.au by the first Monday in the month.

Welcome Welcome

Warmest greetings to the following new members who were welcomed at our last Council meeting:

Emily Newling, Bobby Pearce, Jacqueline Herrera, Jenny Herrera and Norma Garlick.

From the President (Continued from page 1)

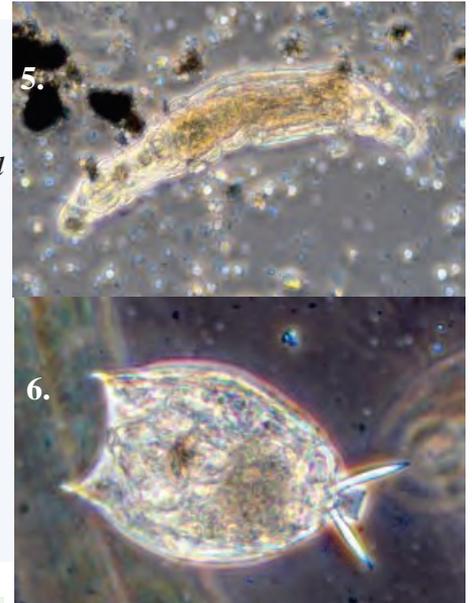
Photo 5. After rehydration. Moss

Photo 6. A less familiar rotifer *Lecane* sp. Order Monogononta. Pond water.

All photos: M. Campbell

*The term infusoria has been used for centuries to collectively describe all of the microscopic organisms, plant and animal, to be found in water and other wet environments. It originally referred to the numerous organisms that appeared in boiled and cooled infusions of hay. It was clear to the earliest microscopists that there were many, tiny, diverse living things in a drop of water, hay infusion or soil sample. Initially the quality of early optics and the limited available knowledge made differentiation and identification very difficult and the general term infusoria originally covered all minute plant and animal life including rotifers. In more recent years it has often been applied more specifically to protozoans

Max Campbell



P3 FNN 288. Cecily Falkingham found a stick insect in the Mullum Mullum Valley and requested help with the ID Photo right.

According to CSIROs Insects of Australia:

“The PACHYMORPHINAE are rather small dun-coloured, apertous phasmatids with short antennae, of which Pachymorpha, with several species is widespread in Australia. The insects are usually found on the lower part of tree trunks, or on ground litter around their base.”

The creature of the book illustration however has much thinner legs.

Cheers, Robyn Stringer



Vale Keith Marshall

Keith Marshall, a long-term member of FNCV, died peacefully in his sleep on 22 July 2018. Keith joined the FNCV on 8 June 1964. He was awarded Long-term Membership status at the Club's AGM, held on 2 May 2005.

As a member of long standing, Keith's contributions to the Club were many and varied. His primary interest was in plants, and he was a very active member of the Club's Botany Group. This involvement included taking part in numerous field excursions, in which, on a couple of occasions—to Brisbane Ranges in October 1998 and Point Addis in September 1999—he acted as leader. From July 1998 to April 2003 he regularly reported on the activities of the Botany Group in the pages of *Field Nats News*. In 2003 and 2004 he led a survey by members to areas of botanical interest around Melbourne.

In addition to this involvement with the Botany Group, Keith actively participated in aspects of production of *Field Nats News*. He was the Editor or co-editor of 29 issues of the newsletter in the period from August 1997 to January 2003. From May 1998 to July 2018 he was a member of the team that collated and labelled the newsletter in preparation for posting. He was also an occasional contributor to *Field Nats News* of short comments, notes and letters, between March 1997 and November 2007.

The Club extends its condolences to Keith's family .



Fungi Group

FNCV FUNGI GROUP MEETING

2 July 2018

The making of *Fungi in Australia*

A presentation by **Jurrie Hubregtse**

Fungi in Australia is an eBook in nine parts, which can be downloaded from the FNCV website. Jurrie explained why he undertook this project and how he chose the tools to create the final product.

Why write an eBook on fungi?

At present in Australia there are only a small number of picture-based fungi field guides to assist the amateur mycologist with fungi identification. Picture-based field guides may be good for identifying birds, but are quite inadequate for fungi. Although there are many fungi that can be identified from an image, the vast majority of species require close macroscopic and microscopic examination before an identification can be made. This detailed information cannot be obtained from an image-based field guide. An example of an excellent field guide is *Fungi of Switzerland*, which contains photographs accompanied by detailed macroscopic and microscopic descriptions. To overcome some of the limitations of the image-based field guides, Jurrie decided to produce the eBook *Fungi in Australia (FIA)*, which contains images, macroscopic and microscopic descriptions, plus references. Jurrie used the process of producing *FIA* as a means to study fungi and have the convenience of viewing the output on a tablet.

The size of the task

Before starting the task of producing *FIA*, it was necessary to scope its size to see if it could be done. It was envisaged that at least 400 species, comprising Ascomycetes and Basidiomycetes, would be included, with a taxonomic description, references and up to 6 images for each species. This information would take about 3 pages per species – in total about 1200 pages with approximately 2000 images – and would be intended for use on a tablet (page size about A5), which would be easier to carry in the field than books. Importantly, the whole process had to be easy to edit and modify.

Resources required

Jurrie had the resources: a computer with access to all the necessary public domain software; access to a university library and the internet for literature searches; and the tools to study fungi, e.g. microscope, camera, collecting equipment. The literature searches ended up being one of the more time-consuming elements of the project.

Guidelines and Rules

It was necessary to establish some guidelines and rules to maintain the look and feel, and to ensure that the content of *FIA* would be consistent and of a high standard. All named species had to be identified by comparing the macro and micro characteristics with those published in peer reviewed literature. All species with field names had to be accompanied by a taxonomic description, and all species had to be referenced. All photographers had to be acknowledged and could retain copyright of their photos.

Guidelines pertaining to *FIA*'s organisation needed to be made, to ensure consistency in presentation. In the *FIA* books

with taxonomic descriptions, the Orders are arranged alphabetically rather than taxonomically. Families within each Order are arranged alphabetically, as are Genera within each Family and the Species within each Genus. In the remaining books (the Photographic Guides) the Species are arranged alphabetically for each morphology type.

FIA consists of a number of PDF files, where each PDF file must be treated as a free-standing eBook. The parts (PDF files) must remain responsive in hand-held devices, so must not become too large. Navigation around *FIA* had to be simple and responsive: links needed to be made between items in the Table of Contents and their sections, and also between each Index entry and the page referenced.

How *FIA* was produced

Since *FIA* was to be made freely available, there could be no cost associated with its production, so all software used had to be in the public domain. There are some excellent public domain packages that can be used to produce a book, but since these packages are all 'what you see is what you get', they require manual content entry, which is too time-consuming to produce a eBook containing over 1200 pages, 2000 images and more than 1000 reference entries. Jurrie needed a system that would produce perfectly typeset documents in an automated fashion using only plain text, a text editor and some open-source utilities.

The solution Jurrie chose was to put the text describing each species of fungus into an XML (Extensible Markup Language) database. This is a flexible way to describe and store data, and could be done with a text editor – no formatting required. The photos of each fungus, along with the photographer's name, were put into a simple image database.

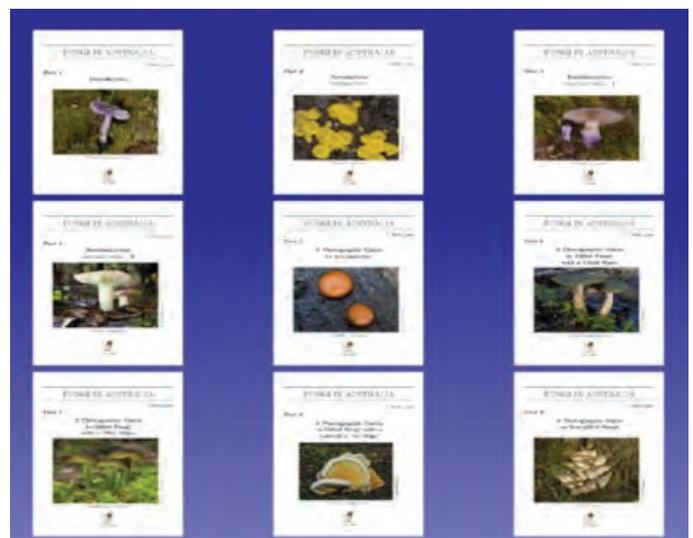
With the aid of a public domain package TEXStudio, which uses the layout language LATEX, Jurrie was able to automate the layout of the *FIA* books. Using this procedure he was able to eliminate the need for manual layout, thus greatly reducing the time taken to lay out *FIA*.

In conclusion, Jurrie demonstrated how quickly *FIA* can be compiled – and it took only a few seconds!

Many thanks to Jurrie for sharing this information with us: it was all quite amazing.

Virgil Hubregtse

Below: *FIA* covers.



FNCV FUNGI GROUP FORAY WANDERSLORE SANCTUARY, LAUNCHING PLACE

1 July 2018



Wanderslore Sanctuary is a 10.5 ha Trust for Nature Property situated on a dry ridge running north-south with stream gullies on the eastern and western sides. The vegetation includes *Kunzea*, a variety of eucalypts, Soft Tree Fern *Dicksonia antarctica* and Rough Tree Fern *Cyathea australis*, and supports a wide range of fungi, several of which we see only rarely.

Twenty-two forayers were welcomed by some members of Friends of Wanderslore, and spent a delightful sunny day finding numerous fungi. Even before we reached the entrance we saw an impressive group of Ghost Fungus *Omphalotus nidiformis* growing on a stump, and a Vermillion Grisette *Amanita xanthocephala*, Rooting Shank *Oudemansiella gigaspora* and several *Laccaria* fruit-bodies on the ground.

We were relieved to find that the rare Tea Tree Fingers *Hypocreopsis amplexans*, discovered here last year, continues to prosper, with four new fruit-bodies bringing the total to 34. This population – the largest known to date – is being carefully monitored by Fungimap, see <https://fungimap.org.au/current-projects/>

A fungus new to many of us was *Pluteus pauperculus*, which has a dark brown pileus (cap), yellow lamellae (gills) and a bright yellow stipe (stem) that sometimes has a yellow, orange or reddish orange base. It grows on rotting wood, which may be buried. *Pluteus cervinus* and *Pluteus* “yellow” were also present.

Coltriciella dependens, a species that we see infrequently, was growing on the underside of a piece of burnt eucalypt wood lying on the ground. The fruit-bodies are yellow-brown to cinnamon in colour and have a furry pored surface. Although this species grows on dead wood, it is actually mycorrhizal with eucalypts, and the bulk of the mycelium is in the soil.

One of our visitors introduced us to *Tomentella*, a corticoid fungus that grows on the underside of dead pieces of wood. Like *Coltriciella dependens*, it is mycorrhizal.

A large specimen of *Tricholoma* aff. *terreum* with an exceedingly long stipe was the centre of attention for a while, and was collected for the National Herbarium, Royal Botanic Gardens Victoria. Only a short length of the stipe was above ground level.

Many *Cortinarius* species were seen, but we could identify only four: *C. rotundisporus*, *C. archeri*, *C. austrovenetus*, and *C. sinapicolor*. A particularly attractive and distinctive *Cortinarius* had a mauve pileus with a brown centre and a pallid margin.

For those of us who have visited the Sanctuary before, the absence of *Hygrocybe* species was very noticeable: only

H. chromolimonea was found. The introduced invasive fungal ‘weed’ *Favolaschia calocera*, which we first saw here in June 2015, was still present.

A big thank you to the Friends of Wanderslore for their hospitality, and to all the participants for helping to find the fungi. Special thanks to Torbjorn von Storkirch for compiling the species list, and to John Eichler, Pat and Ed Grey and Reiner Richter for their contributions.

Virgil Hubregtse



Hypocreopsis amplexans. Photo: Jurrie Hubregtse



Pluteus pauperculus. Photo: Jurrie Hubregtse.



Jurrie Hubregtse with the large *Tricholoma*.

Photo: Pat Grey.

FNCV FUNGI GROUP FORAY TOORONGO FALLS, NEAR NOOJEE

15 July 2018



Toorongo Falls Reserve is a picturesque area, approximately 100 km east of Melbourne. With waterfalls, mossy rocks, tree ferns and wet forest – comprising various eucalypts, Blackwood *Acacia melanoxylon*, Austral Mulberry *Hedycarya angustifolia* and a few Myrtle Beech *Lophozonia* (formerly *Nothofagus*) *cunninghamii* – this is an ideal habitat for fungi.



Toorongo River

Photo: Carol Page

A cold morning followed by a fine cool day produced perfect conditions for foraging. Being a little late in the season, many fungi were past their best, and more than half were growing on wood or tree fern stems (caudices). Although we found more species here at the same time last year, we had an interesting day and saw a wide variety of fungi.

Near the car park, a species of *Hydropus* was growing on a Blackwood *Acacia melanoxylon* trunk, in a damp groove where rainwater runs. *Hymenotorendiella eucalypti* was seen on dead Blackwood leaves, the only substrate it grows on.

Along the track we passed some Myrtle Beech trees, and on some of their fallen leaves we could see tiny discs of *Hymenoscyphus berggrenii*, which grows only on this substrate.

Three large eucalypt logs were home to numerous fungi. One log supported a display of the pored bracket *Flaviporus brownii* (with very bright yellow pores), while the others held numerous species, including White Brain Jelly *Tremella fuciformis*, the light brown ‘shells’ of *Panellus stipticus* (sticky when squashed), *Cordierites frondosa*, *Hypoxylon hoveianum* and several clusters of *Hypholoma brunneum*.

Some other fungi on wood were *Antrodiella zonata*, *Bisporella sulfurina*, *Coprinellus disseminatus*, *Leucogloea compressa*, *Scytinotus longinquus*, *Trametes versicolor* and *Mycena interrupta*. *Grifola colensoi* was found near the base of a living eucalypt trunk.

Minute ‘cups’ of *Lachnum* cf. *varians* could be seen on the rachises of dead tree fern fronds. Among the fungi on tree fern stems were *Entoloma albidosimulans*, *Lactarius eucalypti*, and Pagoda Fungus *Podoserpula pusio*. The latter, when growing on tree ferns, produces single fruit-bodies instead of its usual ‘pagodas’.

Many fruit-bodies of *Rimbachia bryophila*, which parasitises mosses, were found on dying pieces of moss. Marshmallow Bolete *Fistulinella mollis*, some unidentified *Cortinarius* and Jellybaby *Leotia lubrica* were growing on the ground, as were several coral fungi, including *Clavaria amoena*, *Clavulina cinerea*, *Clavulinopsis corallinorosacea*, and some beautiful *Ramariopsis* species. The invasive fungal ‘weed’ *Favolaschia calocera* seemed to be absent from this location.



Hymenoscyphus berggrenii on a fallen Myrtle Beech leaf.

Photo: Virgil Hubregtse.

(Continued on page 7)

(Continued from page 6)

Thank you to all the participants for helping to find the fungi, and special thanks to Reiner Richter for compiling the species list. Thanks also to John Eichler and Carol Page for their contributions.

Virgil Hubregtse



Entoloma albidosimulans on a tree fern stem.

Photo: Virgil Hubregtse



Rimbachia bryophila. Photo: Jurrie Hubregtse



Geology Group

The free event below will be of interest to FNCV members, particularly those of the geology group.

Note: booking is required.

Inaugural BESSI & MESAC Fossil Exposition

(Bayside Earth Sciences Society Inc & Marine Education Science and Community Centre)

Have you ever been intrigued by fossils.....
and the fact that we have them on our doorstep in Ricketts Point?!
Would you like to meet the experts?



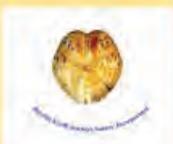
You are invited to the Beaumaris Yacht Club
Beach Road, Beaumaris VIC 3193
Sunday 26th August 2018: 9.30am to 2.30pm



Any queries please contact
Murray Orr on
pvaptyltd@bigpond.com

Bring along any fossils you have that you would like identified.
Free event but please book in at: www.trybooking.com/XEZA

9:30am	Public viewing of fossils and Q&A
10:00am	Talk by Richard Casley - a collector's experiences
10:30am	Fossils video
11:30am	Public bring fossils to be identified by expert Prof John Buckeridge
1:30pm	Talk by Ben Francischelli - Beaumaris Fossils & Melbourne Museum
2:30pm	Event Concludes



Extracts from SIG reports given at the last FNCV Council Meeting

Day Group: Andrew McCutcheon gave a well-received talk on *Nature in Central Europe* to a large group of 33 people.

Fauna Survey Group: Meeting: 3rd July. The speaker was Inka Veltheim, PhD candidate from Federation University. Topic: *The habitat and movement of Brolgas in south-west Victoria*. Brolgas are common in northern Australia but not in Victoria and NSW, where they are considered vulnerable and the subject of a Flora and Fauna Guarantee Statement in Victoria. Pressures include an 85% reduction in habitat, foxes, hitting fences and powerlines and perhaps windfarms. This study sought information on breeding, home range and movements and was undertaken in the Peshurst, Derrinallum, Streatham 'triangle' using birds fitted with GPS transmitters. Adults moved 10-60 km from breeding to flocking areas, and chicks walked up to 1.6 km to different feeding wetlands. Survival of chicks was 82% at 8-10 months. Brolgas are omnivorous feeders of yabbies, frogs, insects and tubers.

Equipment Day: 14th July. This event is held annually and count and repair fauna survey equipment for example traps. There was also time for a committee meeting. There are no surveys this month, but we will be retrieving cameras from the bush.

Raymond Gibson.

Geology Group: We had a great meeting on 27th June with over 50 attendees! We ran out of chairs!!! A really interesting topic (*New theories about mass extinctions*) and well presented (with some comics thrown in!) by Dr Rolf Schmidt.

Terrestrial Invertebrates Group: Twelve attendees showed their slides and movies which were enjoyed by all. New camps were also planned

Juniors' Group: Meeting 29th June: Max Campbell, current president of FNCV, came to talk to the Juniors about unicellular organisms. Max brought impressive videos and photos of many of these peculiar organisms. The families that attended were very grateful, impressed and engaged with the quality of work presented, but it was disappointing that there was a low attendance. However, this meeting coincided with the last day of the school term and some families could have been away.

Bellbird Dell Reserve Excursion 1st July: We had a great excursion with Anne and Ian from Whitehorse City Council. We had one non-member family and four member families attending, 19 people in total. The Juniors thoroughly enjoyed the photos and talk provided by Ian. The weather could not have been better. We saw many fungi at this time of the year and were lucky to see Golden Whistlers (male and female) as well as a beautiful Eastern Spinebill sucking nectar from a correa.



Above: Junior field nats finding out about the flora and fauna of Bellbird Dell.

Left: Juniors learning about unicellular organisms at their June meeting.

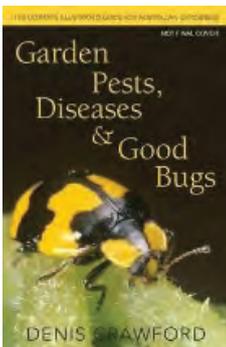
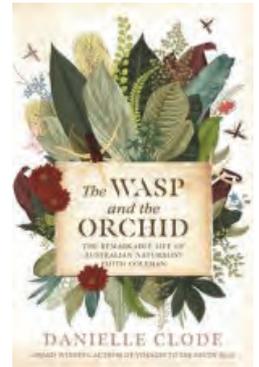


NEWS FROM THE BOOKSHOP (September 2018)

This month we showcase 5 great books that all have been published this year (bar one). We finally have copies of *The Wasp and the Orchid*, a story about Edith Coleman, an aunt of one of our favoured members', Ray Power. The second edition of *Tawny Frogmouth* has been released along with a new title by Friends of the Box-Ironbark, who are associated with the book on Mosses and Eucalypts of the Mt Alexander region. A book suitable for children aged 6-9 years, tells the remarkable story of the recovering populations of the Eastern Barred Bandicoot. Lastly, a book to tell us which bugs are good for our garden, which we should not get rid of and which ones *are* the nasty bugs that we need to control. Come into the clubrooms and have a look at the full range of books available (there are loads!) on the shelves. Or, to order or inquire about a book, please send an e mail to me, at, bookshop@fncv.org.au and I will reply as soon as I can.

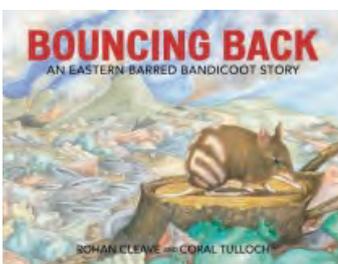
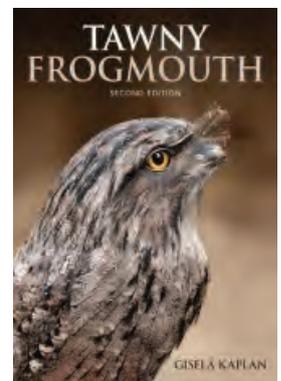
Happy reading, Kathy

The Wasp and the Orchid (D. Clode) tells the remarkable life of Australian Naturalist Edith Coleman. In 1922, a 48-year-old housewife from Blackburn delivered her first paper, on native Australian orchids, to the Field Naturalists Club of Victoria. Over the next thirty years, Edith Coleman would write over 300 articles about Australian nature for newspapers, magazines and scientific journals. She would solve the mystery of orchid pollination that had bewildered even Darwin, earn the acclaim of international scientists and, in 1949, become the first woman to be awarded the Australian Natural History Medallion. Danielle Clode sets out to uncover Edith's story, from her childhood in England to her unlikely success. (HB, 432 pp., 2018) RRP \$39.99, Members \$32



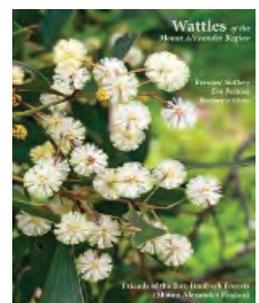
Garden Pests, Diseases & Good Bugs (D. Crawford) is the ultimate illustrated guide for anyone who wants to encourage a healthy, thriving garden. Every garden is host to hundreds of insects and other invertebrates. Fortunately very few of them are pests. But how do you tell if an insect is harmful or not? And what about those nasty looking leaf spots, and mildews, and strange lumps and bumps? This book shows you how to figure out whether an insect is a pest or not, identify the signs of disease, and apply hands-on preventative and control techniques before resorting to pesticides. (PB, 464 pp., 2015) RRP \$39.99, Members \$32

Tawny Frogmouth (G. Kaplan), second edition, presents an easy-to-read account of one of Australia's most intriguing and endearing birds. We learn that tawny frogmouths are very affectionate, have close bonds with lifelong partners, scream like prowling tomcats when distressed, fight with lightning speed and defend nest sites from reptilian predators by mobbing and spraying pungent faeces at them. Uncompromising male fights are contrasted with the touching gentleness of males as fathers. We also learn how resilient and unusual tawny frogmouths are in the way they cope with heat and cold and scarcity of water, sit out danger, and use a large variety of food items. (PB, 168 pp., 2nd ed, 2018) RRP \$39.99, Member \$32



Bouncing Back (Cleave & Tulloch) is a story about the Eastern Barred Bandicoot, one of Australia's most threatened species. When their existence came under extreme threat from habitat loss, predators and human development, Eastern Barred Bandicoots found refuge in the most unlikely of places - a rubbish tip. This captivating true story details the plight these small, nocturnal marsupials faced and the outstanding efforts that ensured their survival. This book shows that even on the brink of extinction, there is hope for the protection of our most vulnerable species. (PB, 32 pp., 6-9 yo, April 2018) RRP \$24.95, Member \$20

Wattles of the Mount Alexander Region (Slattery, Perkins & Silver) is published by Friends of the Box-Ironbark Forests. It is their latest guide that aims to help the beginner make a start at identifying wattles. Written in plain language, and generously illustrated, it presents 21 species which flourish in the Mount Alexander region of central Victoria. A general introduction explains different features of wattles, helping in identification and appreciation of these tenacious and beautiful plants. (PB, 112 pp., April 2018) RRP \$10 Members \$8





Day Group

Puffins and the Isle of May

My presentation to the July Day Group meeting focused on an encounter with Puffins on the Isle of May and later on a trip with Aurora, *Across the Arctic Circle*. This report deals only with the Isle of May.

The Isle of May is located in the outer Firth of Forth, about 8 km of the coast of mainland Scotland, (*map right*). It is one of the premier seabird breeding spots in Great Britain with more than 14 species nesting there, including Puffins, Guillemots, Razorbills, Shags, Arctic Terns, Fulmars, Eider Ducks and several species of gull.

Atlantic Puffins, *Fratercula arctica*, literally 'little priest or little brother', spend 7 – 8 months of their lives feeding in the north Atlantic Ocean. They are wonderfully adapted to open seas, with waterproof feathers and the ability to drink salt water. Puffins arrive at their breeding colonies on the coasts and islands of the north Atlantic in late March or early April. Pairs dig or refurbish burrows. A single egg is laid and incubated by both parents who then share feeding duties until the chick fledges, an average of 6 weeks after hatching. The adults return to the ocean in late July or early August leaving the young to make their way to the sea alone. The colourful outer parts of the breeding birds' bills are shed after they depart.

The Auk family of 21 living species, to which puffins belong, have webbed feet and have evolved wings which allow them to successfully fly and dive. Puffins take to the air with a running start and flap constantly whilst airborne. They stroke with their wings under water and can dive up to 60 metres.

While feeding chicks, puffins return to the burrows with their bills loaded with small fish, known collectively as sand eels, (*photo right*). Historically sand eels have not been much exploited by humans but are now a major target for industrial fishing. They are used for such things as food for farmed salmon or fertiliser.

The greatest natural predators of puffins are gulls, particularly the Greater Black-backed Gull which can snatch a puffin in mid-air and the smaller Herring Gull which pursues them in order to steal their fish. Both gulls prey on puffin eggs and chicks.

Iceland is home to about 60% of the world's Atlantic Puffins. The British Isles holds about 10%. In 2018, the *State of the World's Birds Report*, published by Birdlife listed Atlantic Puffins as endangered.

Threats are: an ocean with ever diminishing numbers of fish; hunting, especially in Iceland; loss of habitat; breeding popula-



tions concentrated on a small number of sites; only one egg per season; predators when nesting - gulls, skuas, rats, mink, cats etc; pollution e.g. from oil spills

There are three members of the genus *Fratercula*. The Horned Puffin appears superficially very much like the Atlantic Puffin. Tufted Puffins look quite different. Both the Horned and Tufted Puffin are somewhat larger than the Atlantic Puffin, do not dig burrows and make their homes in the North Pacific not the Atlantic. *Photo page 11*.

Other birds from the Auk family are:

Razorbill - A black and white bird, approximately 43 cm in size, with a heavy head and thick bill crossed midway by a white line. Razorbills nest on cliff ledges.

Guillemots - Are very numerous on the Isle of May. They are brown and white birds with a sharp beaks and choose very narrow ledges for their nests. If knocked, the egg is designed so that it spins around rather than rolling off the edge.

(Continued on page 11)

Types of Puffins

- **Atlantic Puffin**

29 cm (10 in) in length
53 cm (21 in) wingspan
weight 380 g (13 oz)

- **Tufted Puffin**

38 cm (15 in) in length
63.5 cm (25 in) wingspan
weight 780 g (1.7 lb)

- **Horned Puffin**

38 cm (15 in) in length
63.5 cm (25 in) wingspan
weight 780 g (1.7 lb)



Little Auks—Photo: J. Broadberry

(Continued from page 10)

Guillemots have a circumpolar distribution and are found in both the North Atlantic and Pacific Oceans. They are known as Murres in North America.

Little Auks are about half the size of the Atlantic Puffin and almost as cute. Although tiny they are excellent flyers and divers. (Photo right.)

Black Guillemots have a black body with white wing patches and stunning red legs and feet.

Trips to the Isle of May, run by the Scottish Seabird Centre leave from North Berwick— a short distance from Edinburgh. It can also be reached from Anstruther, a small town located to the north of the Forth of Firth. The island is closed to all visitors during the winter breeding season of the Atlantic Harbour Seals.

Joan Broadberry

Library News



Recent additions to the FNCV Library

Books

- Lindenmayer, David, (2016) *Wildlife conservation in farm landscapes* [639.9 WILL]
- Tracks and trees: discovery guide to Heathcote's forests.* A collection of seven pamphlets on natural history of the Heathcote area.[508.945 TRA]
- Wildlife in Box-Ironbark forests* This is a collection of 10 pamphlets on various fauna to be found in the Box-Ironbark forest area. [599.2/945 WIL]
- Blombery, Alec M (1978) *What wildflower is that?* [582/94 BLO]
- Slattery, Bernard; Perkins, Ern; Silver, Bronwyn (2018) *Wattles of the Mount Alexander region* [583.32 WAT]

Recent periodicals:

Australian Wildlife Research Vol.3/2018 has a focus on insects.

The latest periodicals are displayed in a rack in the library. You can borrow periodicals in the rack, as well as previous issues. Don't forget to fill in the borrowing book.

Library collections now on the website

A reminder that you can now search the library's collections on the FNCV website. Click 'About us' à 'Library' and you will be able to download searchable lists of books, periodicals, maps and photos.

Gary Presland
Honorary Librarian

Many thanks to those who helped collate and label FNN 288

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Edward Brentnall
Andy Brentnall
Cecily Falkingham
Keith Marshall
Sheina Nicholls
Barbara Burns
Anne Warren
Rosemary Daunt

Thanks to the editorial and layout team who put together FNN 289

Joan Broadberry
Wendy Gare
Sally Bewsher

Notes from the Office



Dear Members

First up – a note of caution! Several members who have been here for meetings, or volunteering their time to work around the hall or in the office, have unfortunately gone back to their cars in the car park and discovered that they've been booked for being there a bit too long. Also there are parking spots which are reserved solely for the local traders which are bordered with an orange line. Please don't park in those because you'll be booked straight away. The parking inspectors are red hot at the moment!

The fines are quite hefty so please be careful to note the restrictions and the time you arrived. The adjacent car park is three hours, but Gardinia Street is only one hour.

Volunteers are needed to help to look after our stall at the **Whitehorse Spring Festival 2018** on Sunday 21st October from 10.00 am to 4.00 pm. It's held at the Whitehorse Civic Centre Precinct, 379-397 Whitehorse Road, Nunawading 3131 (Mel Ref: 48 G9).

If you can donate an hour or two to help, you'd then be free to have a look round the extensive festival. It is always packed with interesting stalls with food, plants, information and all sorts of things. We need people for an hour (or two) starting at 10 am and finishing at 4 pm. Please let me know by phone or email what time(s) would suit you. Thank you!

Finally, if you ever have any ideas or suggestions for the office which could make life easier for members, such as changing procedures in some way, please let me know ph 9877 9860 or admin@fncv.org.au

Wendy Gare
Administration Officer

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1884-December 1893 as well as April & May 1926,
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I would be pleased to consider outstanding copies by virtue of condition or association or other issues to a view to further enhancing my sets.

Thank you.

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