



Understanding
Our Natural World
Est. 1880

Field Nats News No.265

Newsletter of the Field Naturalists Club of Victoria Inc.

1 Gardenia Street, Blackburn Vic 3130

Telephone 03 9877 9860

P.O. Box 13, Blackburn 3130 www.fncv.org.au

Newsletter email: fnnews@fncv.org.au

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

Editor: Joan Broadberry 03 9846 1218

Founding editor: Dr Noel Schleiger

Reg. No. A0033611X

Patron: Governor of Victoria

Office Hours: Monday and Tuesday 9.30 am - 4 pm.

July 2016

From the President

The FNCV runs well because of the dedicated and passionate volunteers who willingly give up their time to make everything work. Their efforts are certainly appreciated. Sally Bewsher recently retired from the FNCV Council and on behalf of the FNCV I would like to thank her for her dedication and acknowledge the enormous contribution that she has made to the FNCV over the past eight years as a very active Council member. Sally has contributed to all aspects of the Club in many capacities and of course continues to be involved with the newsletter, Day, Fauna Survey and Geology Groups. Thank you Sally.

Locusts and grasshoppers, geological education, aphid predators, birds in the Western Strzelecki Ranges, biological illustration, marine invertebrates and of course fungi have been the fare for the past month's meetings. The recent fungal foray at Badger Creek Weir was interesting for both the number and diversity of the species on show. It is difficult to move through the vegetation with any speed since new fungal forms are encountered literally with every step. So the forays are not a fast excursion through the bush and the variety of exquisite forms always makes the effort worthwhile.

It has to be said that the invertebrates made their presence known by the army of determined leeches that were out and foraging in good form. I removed at least a dozen, three of which had engorged



themselves on my precious blood before I had even noticed them. It was perfect weather it seems for both fungi and leeches. Having a mob of enthusiastic mycologists grovelling on hands and knees under the ferns is an open invitation to a hirudinean feast.

Grey Shrike-thrushes, Kookaburras, Currawongs and Crimson Rosellas joined everyone for lunch and sat on the tables and on a few heads in anticipation of being fed. They certainly had not read the signs which ex-

Arcella sp. with its "house"



pressly prohibit the feeding of wildlife. It is easy to get excellent close up pictures of a kookaburra when it settles on the table near your plate with its forlorn, begging pose. The birds are obviously fed by tourists (who also can't read?) and have developed some winning strategies to get food. See photo p3.

I have continued my examination of substrate from ponds and streams in the hope of finding more interesting infusoria. A sample from the almost dry Wimmera River was teaming



The deadline for FNN 266 August 2016 will be **10 am on Tuesday 5th July 2016**. FNN will go to the printers on the 12th with collation on Tuesday 19th July.

with ostracods, gastrotrichs, copepods, cladocerans and a seemingly endless variety of protozoans. In particular, the Rhizopoda and Ciliata are well represented in both numbers and diversity. *Lachrymaria* is an astonishing ciliate that can extend a veritable "neck" to more than ten times its normal body length. At the distal end sits a "mouth" which is able to open wide enough to engulf other protozoans close to its own size. It sits hidden in sediment or detritus and sends out, at great speed, the mouth on its long neck to patrol the

(Continued on page 3)

| Index | Page |
|---|------------|
| From the President | 1,3 |
| Calendar of Events | 2,3 |
| Members' news, photos & observations. | 3 |
| Geology Group News: April meeting & coming excursion details; May meeting. | 4 7 |
| Fungi Group News: Microscope workshop; Foray Toorong Falls, Noojee. | 5 5-6,7 |
| Day Group News: Botanical Art. | 8-9 |
| Microscopical Group News: Locusts in Victoria. | 10 |
| Marine Research Group News: Photographic review of field trips—2015-16 | 11 |
| Extracts from SIG reports to Council | 12 |



CALENDAR OF EVENTS

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

JULY

Sunday 3rd – Fungi Group Foray: *Location to be advised* –Meet at 10.30 am: the destination will be decided closer to the date and all those on the email list will receive prior notification . Contact: Virgil Hubregtse 9560 7775

Monday 4th – Fungi Group Meeting: *How we can improve the conservation status of Tea-tree Fingers *Hypocreopsis amplexans**. Speaker: Sapphire McMullan-Fisher, Senior Mycologist at RBG and current Fungimap Coordinator.
Contact: Virgil Hubregtse 9560 7775

Tuesday 5th - Fauna Survey Group Meeting: *Mallee emu-wren and fire: a balancing act*. Speaker: Simon Verdon, PhD candidate, Latrobe University. Contact: Robin Drury 0417 195 148; robindrury6@gmail.com

Friday 8th – 4.00 - 6.00 pm. Celebrate the 20th Anniversary of our move to the hall at 1 Gardenia Street and launch of the book *Understanding our natural world: the Field Naturalists Club of Victoria 1880–2015*. Come along and hear from various speakers about our history. As a special offer at the launch, the book may be purchased for \$20 and at no extra cost it can be signed by the author. Displays, talks, drinks and finger food, all welcome.

For catering purposes please register by July 1st. admin@fncv.org.au /03 9877 9860

Saturday 9th - Fauna Survey Group Survey: *Reptile survey in Eastern Melbourne Parks*.
Contact: David De Angelis 0409 519 829; d.deangelis@latrobe.edu.au

**Sunday 10th – Juniors' Group WITH Fungi Group excursion. *Fungi foray Wanderslore Sanctuary*, 2180 Warburton Highway, Launching Place (Mel Ed 37 Map 287 J6). Park down below near the Rail Trail and meet there at 10.15 am.
Note earlier time. We will go as a group up to the Sanctuary.
Contact: Claire Ferguson 8060 2474; toclairaf@gmail.com or Virgil Hubregtse 9560 7775**

Monday 11th - Marine Research Group. No Meeting: *Winter Break*

Sunday 17th – Fungi Group Foray: *Location to be advised*. Meet at 10.30 am: the destination will be decided closer to the date and all those on the email list will receive prior notification. Contact: Virgil Hubregtse 9560 7775

Tuesday 19th—Collate FNN. Starting about 10.00 am. Some folk come earlier. Contact Joan Broadberry 9846 1218

Wednesday 20th - Terrestrial Invertebrates Group Meeting: An introduction to free-living freshwater and soil Protozoa. Speaker ; Max Campbell. Contact: Max Campbell 0409 143 538; 9544 0181 AH; mcam7307@bigpond.net.au

Thursday 21st – Botany Group Meeting: *Photographing plants up close (macro) with or without a macro lens*. Bring your camera! Speaker: Wendy Clark. Contact: Sue Bendel 0427 055 071

Saturday 23th- Fauna Survey Group. 10 am onwards. *Equipment stocktake and maintenance, FNCV Hall*.
Note change of date. Contact: Robin Drury 0417 195 148; robindrury6@gmail.com

Sunday 24th – Fungi Group Foray: *Upper Yarra Reservoir, Reefton*. Meet at 10.30 am (Mel Ed 37 Map X912 U2) (Vic Roads Ed 8 Map 80 G4). Contact: Virgil Hubregtse 9560 7775

Monday 25th - FNCV Council Meeting: - 7.30 pm sharp. Agenda items and apologies to Wendy, 98779860
or admin@fncv.org.au

Tuesday 26th – Day Group Meeting: *Up close and personal with New Zealand's amazing birds and wildlife*. Join us for coffee and a chat at 10.30 am. Speaker at 11 am. Speaker: Joan Broadberry. Contact: Joan Broadberry 03 98461218

Wednesday 27th – Geology Group Meeting: *Plate tectonics – we've come a long way but we've only scratched the surface*.
Speaker: Associate Professor Peter Betts, School of Earth, Atmosphere & Environment, Monash University
Contact: Ruth Hoskin 9878 5911; 0425 729 424; rrhsoskin@gmail.com

(Continued on page 3)



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.

(Continued from page 2)

Friday 29th – Juniors’ Group Meeting: A naturalist’s week on the South Island of New Zealand

Speaker: John Harris. Contact: Claire Ferguson 8060 2474; to-clairef@gmail.com

Saturday 30th – Geology Group Excursion: Geology and storm water issues of Melbourne’s northern suburbs

Leader: Ruth Robertson, FNCV member. Meet at 11.00am at Coburg Lake. Registration essential. Full details p4.
Contact: Ruth Hoskin 9878 5911; 0425 729 424; rrhsoskin@gmail.com

Sunday 31st – Fungi Group Foray: Location to be advised – Meet at 10.30 am: the destination will be decided closer to the date and all those on the email list will receive prior notification. Contact: Virgil Hubregtse 9560 7775.

(Continued from page 1)

surrounding water for hapless prey which it rapidly engulfs. A large bulge then moves down the neck to the body.

Understanding the mechanisms for detecting prey and controlling the long neck are something to wonder at, since the animal is a single-celled organism without the normal multicellular, neuromuscular systems of metazoans. It is also challenging to think about how testate rhizopods are able to make little, unique, species-specific, tests or “houses” in which to live. Numerous species of *Diffflugia*, *Arcella*, *Euglypha*, *Trimena*, *Centopyxis* and many other testate rhizopods are common in ponds, streams, mosses and soil.

Max Campbell

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 these new members who were welcomed into our club at the last Council meeting: *Wendy Fortington, Margaret Elrick, Alexander Green, Kathryn Green, Harry Green, Isabella Green, Rhondda Green, Ian Turnbull, Verity McDonald, Jono Dashper, William McDonald, Amilia Todd, Ella Todd, Louis Booth, Bronny Read, Gareth Bontorno, Kylie Rowe and Thomas Fairman.*



A determined kookaburra at Badger Creek Weir. **Max Campbell**



King Parrots Visit in Winter:

I have enjoyed a lovely sighting from my Templestowe garden over the last few weeks. Up to nine King Parrots at a time perched on my neighbour’s European Ash to feast on its ripe seedpods.

Joan Broadberry



Diary Date:

The FNCV’s biodiversity Symposium is being incorporated into the Fauna Survey Group’s reptile and amphibian seminar weekend, to be held on 8th and 9th October 2016. **MORE DETAILS IN FNN 266.**

Correction

FNN 264 p9, minutes of the AGM:
Apologies should have read: Sarah Patterson, Geoffrey Paterson.



Geology Group

Geology Meeting

Wednesday 27th April 2016

Thanks to two stalwarts of the Geology Group who stepped in when the scheduled speaker was unable to attend.

Ruth Robertson talked about her trip to the Clare Valley with the Field Geology Club of South Australia. The underlying rocks of the area are part of the 'Burra group', and include silts, shales, carbonates and dolomites with occasional thin quartzite beds. They were originally deposited between about 780 and 700 million years ago in a subsiding basin along the edge of an ancient continent. Uplift of these rocks occurred between 514 and 500 million years ago as a result of the 'Delamerian orogeny', a period of intense earth movement.

The Clare Valley is located on a syncline, part of the 'Adelaide Fold Belt' where the rock strata have been folded into a U-shape. The famous Clare vineyards grow in the valley floors and lower slopes where there are suitable soils. They are on the upthrown side of the 'Spalding-Clare Fault' providing some extra altitude where evenings are relatively cool, apparently a plus for Riesling grapes.

The group visited a quarry for 'Mintaro Slate', a top quality stone which has been sold for decades across Australia for billiard tables, steps, lintels and many other uses. In fact the rock has not

metamorphosed into slate, but is strictly a shale which has been found to split easily along flat bedding planes.

Lisa Nink has worked at Melbourne Museum for some years – both in the Palaeontology Section and as a schools educator. Her talk was entitled "Feathers, Fur and Scales: Victorian Megafauna and the Dinosaur Dig". She has volunteered at a site called 'Eric the Red West' near Cape Otway and told us about recent finds of dinosaur teeth and bones from the Cretaceous rock on the shore.

We then jumped forward in time to the Pleistocene and what we can learn from fossils of the megafauna found, for example, in the caves near Naracoorte in South Australia. Herbivores such as giant kangaroos can be separated into two categories based on the formation of the teeth: browsers feeding mostly on leaves, and grass-eating grazers. The ratio of browsers to grazers would have decreased as the continent dried during the Pleistocene and forest cover gradually declined.

Lisa is now about to start her PhD at the Flinders University in South Australia. Her plan is to search for fossils at a number of near-coastal sites in Victoria and SA. The expectation is that these would have been the last moist refuges of the browsing megafauna as the interior of the continent dried.

Graham Paterson

Geology Excursion Saturday July 30th 2016. *Bluestone, Blaggards and Badlands; A short History of the Geology of the Northern Suburbs.*

Location. This excursion will consist of an easy downhill walk along a section of the Merri Creek bike path near Coburg Lake. The walk will include a short detour along Edgars Creek, as far as the old Kodak Factory returning along the main bike path to Bell Street. We will return to Sydney Road by bus. The meeting place is the top carpark at the Coburg Lake Park in Murray Road Coburg at 10:35am. Cars will not be required as rail transport is close by. The closest railway station is Batman (Coburg Nth) on the Upfield line. The 10:00 am Upfield train from Flinders Street arrives at the Batman Station at 10:27am. The park is 400 m east of the station. The walk, including stops, took Ruth and me about 2 hours to complete.

Facilitator and contact: Ruth Robertson. rutherob@hotmail.com
Ph 93865521 or 046 7272 630, or contact Ruth Hoskins.

Bookings are essential and the maximum number is 20. NB. I will be away 15-23 July.

Please bring; MYKI card, drink bottle, snack, camera and geological gear (compass, hand lens etc.). Also appropriate warm clothing and suitable footwear. Plan to have late lunch/afternoon tea at Sydney Road or BYO.

And in addition. Please also note that the speaker for Wednesday September 28th meeting will be renowned scientific artist and illustrator Peter Trusler. Check out this site <http://www.whatsoningeelong.com.au/whatson/52524-nwm>

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



Mintaro 'slate' quarry.
Photo: Ruth Robertson



Fungi Group

Agaricus bisporus
Photo: Virgil Hubregtse

FUNGI GROUP MEETING 2nd May 2016

Microscope workshop Organised by Jurrie Hubregtse, Fungi Group Coordinator

Jurrie began with a short presentation showing the parts of a microscope, and explained why we need a microscope in addition to field guides to identify some fungi. Field guides are good for identifying organisms such as plants and birds, but fungi are more variable, often changing colour or losing their diagnostic features (such as scales) because of ageing or weather conditions. However, while their appearance can vary, their microscopic features remain fairly constant. Jurrie illustrated this with photos of *Mycena nargan*, *Galerina patagonica* and *Panaeolina foenicisii*, showing fruit-bodies with different appearances, followed by the published microscopic descriptions, then photos of the microscopic features as seen on microscope slides.

Participants were then given worksheets illustrating the microscopic features of five different fungi (*Galerina patagonica*, *Oudemansiella gigaspora*, *Panaeolina foenicisii*, *Russula iterika* and *Entoloma aromaticum*), and had the task of identifying them by comparing the illustrations in the published descriptions on the worksheets to the features found in the prepared microscope slides. This was not as easy as it sounded! The angular spores of the *Entoloma* were very distinctive and perhaps the easiest to identify.

Jurrie rounded off the evening by demonstrating one method of making a slide to examine, using a piece of gill from a supermarket 'Swiss Brown' mushroom (a variety of *Agaricus bisporus*). We were able to see some spores plus the diagnostic two-spored basidia on the screen in the hall.

A big thank you to Jurrie for organising the event and preparing the slides, and to Max Campbell, who brought along



some of his own microscopes and helped everyone throughout the evening. Thank you also to Paul George and Ed Grey for their assistance. Everyone found the topic interesting, though some thought it was more like hard work than entertainment!

Virgil Hubregtse

FNCV FUNGI GROUP FORAY TOORONGO FALLS, NOOJEE 1st May 2016

Wet Sclerophyll Forest with small patches of Myrtle Beech and Tree Ferns

Some fourteen enthusiastic forayers who had braved the litter-strewn road and the threatening weather, joined the foray.

Prominent among numerous *Mycena* species was *M. cystidiosa*, with its tall, dark purplish-brown caps, and white sterile stipes weaving through the litter. These we could recognise, but there were a number of other species in the litter and on logs that we could not identify down to spe-

cies. However, there was one that was distinctive, *Mycena tuvara* that grows in clusters on wood and is a fairly tough species. It has a smooth, grey-brown, greasy cap, which is striate at the margin, moderately close, whitish gills and a smooth greyish white almost translucent stem with a hint of orange at the base. An identifying character is that the cap stains yellow when cut. *Mycenas* that have a context that discolours are rare (CA Grgurinovic 2003. *The Genus Mycena in South-Eastern Australia*, 134-137).

One of the features along the tracks of the Toorong River were the numerous moss and algae-covered granite boulders. These provided an unusual substrate for several fungi that are usually found on the ground or on wood and associated with either an algal mat or moss. The granite boulders were a platform for hosts of the lichenised fungi *Lichenomphalia umbellifera* which has deeply funnel-shaped, pale fawn caps and pale decurrent gills, and is always associated with an algal mat *Coccomyxa* sp. Although it is usually found on the ground, we have seen it here in earlier years covering granite rocks and also at Bunyip SP, Mortimer Reserve Nature trail. A few tiny yellowish Little Pin *Rickenella fibula*, were also found on the boulders associated with the moss where it forms a mutually favourable association (endomycorrhizal) Usually we find it growing on the ground. The bell-shaped, tan caps of the *Galerina*



Cantharella concinnus

Photo: Richard Hartland

hypnorum group which is always associated with moss are usually found on fallen mossy logs. While the rocky substrate may be unusual for these fungi, the presence of the algae and moss provides the basis for their growth. This adds to the information in most of the available reference material.

A large, fallen eucalypt log kept the group busy identifying the translucent-white frilled jelly, White Brain *Tremella fusiformis*, the sticky (when squashed) light brown, shells of *Panellus stipticus*, with its short attachment to the wood, some short, simple gelatinous rounded spikes (sometimes branched) of the yellow *Calocera sinensis*, the dark brown, smooth capped *Psathyrella echinata* (only a few young species hidden below the large mature fruit-bodies had spines to identify the species), and the dark-brown viscid caps of *Hypholoma brunneum* with some white scales still present around the margin of the cap. We also saw some unidentifiable small fungi on a fallen log, the cap had speckles and the immature gills were covered by a membrane. On looking at the photo of a mix of fruit-bodies of **New Zealand Honey Fungus** *Armillaria novaezelandiae* it was possible to see that these small unknowns were very young

A. novaezelandiae This species has a pale brown cap, felty with darker scales and a stem paler at top above ring, below the ring, brown. It is parasitic and saprotrophic – first killing its host and then eating it!

Further up the hill, attached to tree stumps and trunks, were displays of the large **Ghost Fungus** *Omphalotus nidiformis* which had a white lateral stem whose base shades into black at the point of attachment and cream decurrent gills. The funnel-shaped caps are whitish at the margin but have shades of brown and black in the centre. It is luminescent and glows with a white light at night as verified by De'ana Williams and Mark O'Brien who stayed until dark to

view the luminescence. However, note that when photographed the fungus shows a greenish light. Under a fallen log we found 'Pale capped shelf' *Pseudomerulius curtisii* (*Meiorganum curtisii*, *Tapinella curtisii*) with amazing wrinkled gills. The cap is fan-shaped, yellow, smooth like kid leather; the gills are cream and very wavy and convoluted. They radiate out from the point of attachment, and apparently stain blue although we did not see this. It causes brown rot in rotting logs (photo above).

Ivan Margitta saw *Cortinarius alboviolaceus* which had a pale lilac cap and stem, and the characteristic water droplets on the stem. The cap (to 70 mm diam) is convex with umbo and the gills are brown with maturing spores. Jurrie Hubregtse (Fungi In Australia - e-book or CD12) noted "*Cortinarius alboviolaceus* is readily identified by its pale lilac colour, neither the pileus nor the stipe is glutinous. *Cortinarius alboviolaceus* is the name of a Northern Hemisphere species that is mycorrhizal with deciduous trees. This Australian species has

an affinity to that species: the morphology of the Australian and Northern Hemisphere species are very similar. Because it has not yet been decided that the Australian species is unique, for the time being it has been given the name *Cortinarius alboviolaceus*

It started to pour with rain again in the afternoon and several of us went up to the Amphitheatre Falls. As soon as the rain stopped, continued round to Toorong Falls, which provided a magnificent scene of water over the falls. We did see lots of fungi on the way. Richard Hartland photographed the Apricot Chantrelle *Cantharellus concinnus* (photo far left). It has a deep apricot cap and paler stem, while the gills are pale and decurrent, often with small cross gills. It apparently has the smell of apricots and the European species is good to eat. Reiner Richter saw *Trogia straminea*



Pseudomerulius curtisii Photo: Reiner Richter

growing on dead wood This brown species is distinctive with a pale brown, deeply funnel-shaped cap and decurrent white gills with characteristic cross-connecting shallow veins with a translucent brown stem. De'ana Williams photographed a mass of the yellow-pored bracket *Flaviporus brownii* which has a rather non-descript pale zoned cap but brilliant yellow pores below so that once seen it can be confidently identified again and looks spectacular en masse.

Down from the track to Toorong Falls, the fawn, multi-branched Peppery Coral *Artomyces austropiperatus* was growing on a fallen rotting log. The branch tips were typically crown-like and the peppery taste was immediate and strong. Interestingly this specimen appeared to

(Continued on page 7)

(Continued from page 6)

grow caespitously with no apparent stem. Near the steps to the upper picnic area were several multi-branched fruit-bodies of the **Pale Buff Coral *Ramaria filicicola***. Typically these had tapered, pale buff branches with whitish tips and was attached to Tree-fern litter by a white mycelial mat and with white rhizomorphs.

Paul George found a small (to 30 mm) *Cordyceps*, ***Cordyceps militaris*** (collage 10 *C. militaris* Paul George and *C. meneristitis* by Marc Campobasso). This species has an orange fertile head on which the perithecia appear as small orange pimples scattered over the surface, and which merges smoothly into the stem. The fruit-body emerges below ground from an insect chrysalis (as here) or mummified caterpillar, often more than one fruit-body will be present on large insect hosts (Tony Young, 1994. *Common Australian Fungi, a naturalist's guide*. Pub University of NSW Press). This is an uncommon find for Victoria, and the first time noted for our group. In contrast to *Cordyceps meneristitis*, which has an orange-tan to brick red cap, a distinct demarcation from the stem and develops from a parasitised underground beetle larva, probably Darkling Beetles, possibly *Meneristes australis* and species of *Lepispilus*.

Thanks to all the forayers who found species and helped identify them and thank you to the photographers (Ed Grey, Richard Hartland, Ivan Margitta, Reiner Richter, De'ana Williams) who supplied many photos to select for the report.

Thanks for the list of fungi seen from Richard Hartland (plus photos) and Sue Forster. Virgil Hubregtse, Ivan Margitta, Reiner Richter, and De'ana Williams sent some images of their sightings. Thanks to Virgil Hubregtse for checking the report and species list, and for her notes and comments.

Pat and Ed Gray

Apology:

In FNN no. 264 p7. *Report of Fungi Group Meeting 4th April 2016*, the word 'Weta' is missing from the caption to the photo.



Geology Meeting

Wednesday 25th May
2016

Leon Costermans: Towards a geologically educated community Why? What? How?

Leon is a longstanding member of the FNCV and has had a distinguished career in education at all levels. Many people know and love his books about plants, but he is currently working on a book about the geology of Victoria. In this presentation Leon got the audience thinking, with lots of questions and answers.

In answer to the question **why** geological education might be important in the wider community, many reasons came from the floor, and included:

- Geology affects the ecological interactions among animals, plants, soils etc.
- It is needed by professionals in many fields such as building and architecture, agriculture, planning, mining and water management. The electorate needs enough geology to be able to assess policy involving these fields, as well as wider questions like limits to the earth's resources and the effects of climate change.

What particular aspects of geology might be most important in the wider community? The audience responded with numerous suggestions, and were then asked to 'vote' on those they thought were most important. They were also asked to indicate what they thought were the greatest difficulties that people have in understanding geology. Top of the list were the time scale, and the plethora of mysterious geological terms.

How might the wider community become better educated geologically? Leon had suggested that the 'community' might be considered in three 'categories': the general community (including organisations and authorities) with whom we don't have direct contact; individuals, groups and organisations which we,

as Field Naturalists, do have direct contact with; and school groups, where there is a science curriculum.

Leon then looked at a few aspects relevant mainly to the second and third of these 'categories'. Using examples, he referred to the importance of recognising that geology is very 'conceptual', in that we are never able to actually see many geological processes, such as the formation of granite. We need to understand the difference between just 'giving facts' (which are easily forgotten) and helping people build their own concepts, which will stay with them. People build their concepts from experiences, and the best geological experiences are in real field situations, with a good facilitator to help participants make their own observations and attempt conclusions, rather than just being told an explanation.

We need to be careful both with the terms we use, and the way we use diagrams. As an example of careless or misleading use of terms, saying 'deep in the earth' for the source of volcanic magma gives the wrong impression, as was demonstrated with a 'test' example. Other examples were given. Most geological diagrams are highly exaggerated in the vertical dimension, but as was shown with the example of the continental slope, most people don't realise this, and are left with an incorrect mental picture.

To assist with understanding geological time and scale, actual physical models can be used, such as making time-lines in the sand on a beach. As a start, just three blocks of time (which happen to fall within the Paleozoic, Mesozoic and Cenozoic for Victoria) can be used in explaining Victoria's history. This is particularly important in helping beginners understand time in the past.

To conclude, Leon talked about the need for better geological interpretation along roadways, such as the Great Ocean Road, and in national parks and other such natural areas. He also looked at the misleading way in which the label 'Great Dividing Range' is used, even on 'official' maps, as it is not, in fact, a Range, but a Divide!

He sent us home keen and better equipped to contribute in some small way to geological education in the community.

Day Group



BOTANICAL ART

Speaker *Helene Wild*

24th May 2016

Over the centuries, countless artists have painted flowers. Although, in most instances, we can recognise the flowers they portrayed, the majority are not detailed enough to fall within the category of botanical art. For example, an Impressionist artist will not attempt to show the distinguishing features of the flower he has elected to paint.

In every civilisation, the depiction of plants followed tardily upon the representation of animals. Our early ancestors covered the roofs and walls of caves with realistic paintings of wild beasts, presumably because they believed their art would cast a spell on the game they hunted and the animals would be easier to catch.

Curiosity about the medicinal properties of plants was the humble origin of scientific botany. Herbals were produced so people could accurately identify plants – both useful and deadly ones. However, repeated copying of the drawings lead to inaccuracies and stylisation.

With the advent of the woodcut, it became possible to print multiple copies of drawings. However, the majority of the first printed herbals still perpetuated the degraded plant figures derived from classic models. The woodcut went into decline at the beginning of the seventeenth century as the superior reproduction methods of etching and engraving were developed.

From the early to mid-fifteenth century, artists began illustrating religious texts with borders of naturalistic flowers. Around this time, rather than being content to adapt the oft-repeated formulae of their predecessors, a few artists elected to paint detailed studies of plants direct from nature. An example of beautifully and accurately rendered portraits of plants are the watercolours from the *Camerarius Florilegium* of ca. 1590. This florilegium is a superb record of a sixteenth century German flower garden.

Nicolas Robert (1614-1685) must ever be remembered for the famous *Guirlande de Julie*; for his flower paintings on vellum for Gaston (and subsequently for Louis XIV); and for his share in the *Recueil des Plantes* that is widely regarded as the finest collection of flower engravings made during the seventeenth century.

Simon Verelst (1644-1721) was one of many Dutchmen to seek his fortune in England, but he was bundled into an asylum after success went to his head and he announced that he was the King of Painting, the God of Flowers and equal to the King.



Viola *Helene Wild*

Georg Dionysius Ehret (1708-1770) was the dominant influence in botanical art during the middle years of the eighteenth century.

In India, there were no true botanical drawings until Mughal times. Under the direction of British botanists, many hundreds of magnificent drawings were executed by Indian artists during the early part of the nineteenth century.

Pierre Joseph Redoute (1759-1840) was the most celebrated flower painter of his day. Amongst many other endeavours, he was commissioned to paint the flowers in the Empress Josephine's garden at Malmaison.

The Australian artist, Ellis Rowan (1849-1922) was the foremost flower painter of her time. An adventurous lady, she travelled into remote areas

recording the flowers she found in gouache and watercolour.

While hospitalised with pulmonary tuberculosis, Margaret Stones (born Colac 1920) began drawing flowers to alleviate boredom. On her recovery, she went to England where she worked as a botanic artist at Kew Gardens. She returned to Australia in 2002 and now lives in Melbourne.

Celia Rosser (born Melbourne 1930) began to draw and paint plants when she lived in Orbost. In 1970, she accepted the post of Science Faculty Artist at Monash University. In 1974, she was appointed University Botanical Artist and began to paint all the known species of the genus *Banksia*.

Orchids have been cultivated for centuries and many artists have been inspired to record their beauty.

Claude Aubriet worked in Paris where he produced drawings for the royal collection. He was also employed as an artist on an expedition to the Levant where, in addition to recording plants, he recorded landscapes, antiquities and studies of native costumes.

Born in Austria, Franz Bauer worked at Kew Gardens in England. His microscopic details are outstanding. Even with today's superior equipment, Bauer's detailed work is rarely equalled.

Ferdinand Bauer (1760-1826) was the equally talented younger brother of Franz Bauer. Ferdinand's microscopic details are also superb.

When Sir Joseph Banks decided to mount an expedition to Australia under the command of Captain Matthew Flinders, to complete the detailed surveying of the Australian coastline and study the flora and fauna here, he chose Ferdinand as one of his "gentlemen of science".

Works by Mrs. Augusta Innes Withers and Miss S.A. Drake appeared in the *Transactions of the Horticultural Society* (published between 1805 and 1848) and *J. Bateman's Orchidaceae of Mexico and Guatemala* (1837-1843). In that era, women did not sign their own names but hid modestly behind the anonymity of a title. They signed their works "Mrs.

Withers” and “Miss Drake”.

There are over 200 works, including many paintings of native orchids, by Rosa Fiveash (1854-1938) in the South Australian museum.

With only primary school education, William Henry Nicholls (1885-1951) taught himself drawing, painting and a little Latin. Over 25 years, he painted almost 500 Australian orchid portraits.

An English woman, Margaret Mee (1909-1988) devoted the years 1952 to 1988 painting the plants of the vanishing Amazonian rainforest.

Collin Woolcock (1914-1990) made many coloured pencil drawings of native orchids that were reproduced in his *Australian Terrestrial Orchids*.

My contribution to Botanic Art

When I was in Grade 4 at primary school, I found my Nature Study lessons fascinating and lavishly illustrated my work book with coloured pencil drawings and watercolour paintings of insects, birds and animals, leaves, berries, flowers and fungi. My teacher, Mr. Ken Marshall, enthusiastically encouraged me to marry my love of nature with my artistic ability and, at the end of that year, he asked if he could keep my book as an example for future classes.

My great grandmother established and taught in her own art school, my grandfather was a land and seascape painter, my aunt was a brilliant painter of people portraits, and my brother taught art and craft in secondary schools. They were all Impressionists. I have broken with family tradition because I prefer to paint detailed studies, often on a plain white background – although I did not learn that this is the traditional way of painting natural history subjects until my History of Art classes at high school.

When first starting to paint botanically, do not allow your enthusiasm to outstrip your ability. Select a subject with non-complicated petal and leaf arrangements then, as your skill increases, you will gradually gain the confidence to tackle more difficult subjects. However, you should always choose a subject that inspires you because, if you don't like the plant you are working on, you are likely to walk away from it and you may never finish your painting or pick up a paint

brush again.

Many vegetables and fruits have simple shapes and are ideal subjects for beginners. You will, however, have to pay attention to the surface textures and the highlights.

There are several ways a botanical artist can depict a subject: a flower portrait: a selection of above ground parts: the whole plant, including its underground parts: a taxonomic study.

In addition to painting for my own pleasure, I work as a freelance artist for several companies and my images are featured on their products – cards and stationery, decals and ceramics, cross stitch and embroidery kits, etc., etc.

Although I enter few general art competitions, I have won many awards, including Grand Prizes. My work is in private, corporate and state collections worldwide, including the State Botanic Art Collection housed at the Royal Botanic Gardens Melbourne, the permanent collection of the Castlemaine Art Gallery, and the City of Brimbank. For 15 wonderful years, while they were located at Altona North, I was Resident Artist to the Habitat Trust and showcased my work in their offices. My art, including step-by-step demonstrations, has been featured in *Australian Artist* and *Artist's Palette* magazines.

Writing is also a passion so, when I am not painting, you could find me at my computer editing the ANOS Vic *Bulletin*.

Helene Wild

Honey Possum & Scarlet Banksia
Helene Wild



On behalf of the Day Group I would like to thank Helene for her beautiful presentation and also for generously contributing this summary of her talk to FNN.

Helene tells me that she will be at all three Maribyrnong Orchid Society shows this year and she invites us to come along and view her cards, stationery and ceramics.

Winter Show: Sat 9th & Sun 10th July, 9am - 4pm. Spring Show: Sat 10th & Sun 11th Sept, 9 am - 4pm
Venue for all shows:
Maribyrnong Community Centre
Randall St, Maribyrnong
Enquiries 0412 040 237

Many thanks to those who helped collate and label FNN 264

Sheina Nicholls
Ian McDonald
Andy Brentnall
Edward Brentnall
Hazel Brentnall
Cecily Falkingham
Keith Marshall
Joan Broadberry
Barbara Burns

Thanks to the editorial and layout team who put together FNN 265

Joan Broadberry
Wendy Gare
Sally Bewsher



Terrestrial Invertebrates Group

TIG meeting 18th May Locusts in Victoria Speaker: Gordon Berg, Agriculture Victoria

Gordon covered the basic biology, reproduction and swarming behaviour of locusts in Victoria and some of the strategies used to control outbreaks. As a case study there was also a brief coverage of the 2010-2011 outbreak.

There are nearly 3,000 species of orthopteran insects in Australia. They include grasshoppers, locusts, crickets, katydids and other related groups such as cockroaches, phasmids and mantids. Most of the typical grasshoppers and locusts belong to the Superfamily Acridoidea and the Families Acrididae and Catantopinae.

Gordon described the differences between locusts and grasshoppers, a principal difference being the fact that grasshoppers are solitary and locusts may also form gregarious swarms which can pose serious threats to agriculture.

He discussed the species of locusts in Australia. There are only four species that are recognised as true locusts in Australia.

- Australian plague locust – *Chortoicetes terminifera*
- Spur throated locust – *Austracris guttulosa*
- Migratory locust – *Locusta migratoria*
- Yellow winged locust – *Gasrimargus musicus*

The Plague Locust is by far the most important in Victoria. Management is via - Australian Plague Locust Commission and the Victorian Government.

Locusts are grasshoppers that exhibit behavioural and physiological changes under crowded conditions.

Australian Plague Locust (G. Berg)



The large Spur throated locust. (G. Berg)



Yellow-winged locust, *Gasrimargus musicus*

Behaviour is the main difference in the Australian plague locust. Locusts have both solitary and a gregarious phases while grasshoppers only have a solitary phase. In the gregarious phase locusts can aggregate and move 'en-masse'. Hoppers commonly aggregate into bands in the 3rd and 4th instars if population density is high. Once the adult stage is reached and if nutrition is adequate, fat reserves are developed and migration may occur by flight in swarms. Swarms usually move into Victoria from south west NSW and the Riverina area and tend to cross the Murray River in areas with less tree cover.

Flights usually occur at a height of

up to 3m and at up to 8km/hr (usually < 20km per day).

Swarms tend to migrate under certain conditions. For example, if adults are in high densities, are well fed with enough accumulated fat, air temperature is above about 25°C and there is a low pressure trough. However, migration may **not** occur even if all conditions are met and conversely may occur even if **all** conditions are not met. Swarming can be difficult to predict.

Migration is often to the south, but is determined by the prevailing wind direction and may be in other directions. Daytime "milling flight" enables *C. terminifera* to cover distances of a few kms per day

whereas nocturnal "dispersal" or "migratory" flights enable the locusts to cover 10's to 100's of kms per day.

Insect Monitoring Radar at Bourke and another to be established in southern NSW, will provide quantitative data on locust migrations. Networks of light traps also monitor migrating locusts, but provide little information on direction of movement. The movement is demonstrated by both radar and light trapping studies. Direction is determined by upper level winds. The swarms can migrate up to 800km at heights up to 1000m. They can land anywhere including lakes, the sea and built-up areas. Swarms have been known to land in Bass Strait to everyone's relief.

The aerial photographs shown of swarms eating their way through the landscape left little doubt about their rapacious appetite and the real threat to agriculture that serious locust plagues can pose.

Maxwell Campbell

Marine Research Group News

MRG meeting Monday 9 May, 2016: Photographic review of field trips for the 2015-2016 season.

The following summaries are in the order of presentation on the evening:

Carol Page showed photographs of MRG members at work both in the field and on dry land at the microscopes. Such documentation will be of historical importance to the club.

John Eichler showed several images including the spectacular and rarely encountered sea star *Plectaster decanus*, from Cape Paterson, the decorator crab *Anacinetops stimpsoni* from Mt. Martha, the shrimps *Alpheus parasocialis* (Harmer's Haven) and *Hadrosquilla perpasta* (Cape Paterson), various colour forms of the chiton *Rhyssoplax tricoloralis* and an amazing cluster of eighteen *Noumea haliclona* sea slugs that had almost completely eaten out a relatively



Above: *Plectaster decanus* (radius approx. 7-8cm), Cape Paterson, Sun. 13/3/2016. Below: numerous *Noumea haliclona* around remnants of their food sponge, Twin Reefs, Wed. 16/3/2016. Both photos: John Eichler.



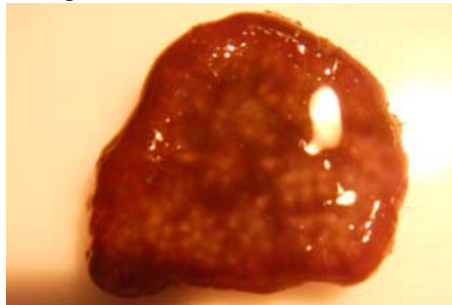
Carol Bathie followed by **Janet Pett** presented their research on ascidians, and helped to partially demystify this very challenging group.

Carol discussed the form and identification of the translucent, laterally flattened, solitary species *Corella eumyota*, and in the process introduced us to some

interesting features of ascidian morphology and function, including the ability of the heart to reverse the flow of blood. This is a poorly understood but quite fascinating phenomenon.

Janet discussed the challenges of identifying ascidians, and in particular colonial ascidians, with many forms needing dissection to identify them to species level. Together with Carol, she is working to collate diagnostic criteria that can be observed in the field to assist the identification process as far as possible prior to the need for collection and dissection.

Janet showed images of the colonial ascidian *Cystodytes dellechiajei* with the white capsules of individual zooids visible in the gelatinous matrix. On closer inspection the zooids are actually encased with white, calcareous, concave, plate-like spicules.



Cystodytes dellechiajei colony (above) and individual zooids encased by calcareous plates (below). Photos: Janet Pett and Carol Bathie.



Other species may have stellate calcareous spicules and Janet showed photomicrographs of those of the colonial ascidian *Didemnum incanum*. Also shown were dissection images of a solitary *Pyura* sp. to demonstrate important internal diagnostic characters.

Leon Altoff showed images across a wide variety of invertebrate groups with emphasis on sponges, polychaete worms, nemerteans, chitons and gastropod molluscs. Leon also discussed the challenges

of photographing minute and actively moving subjects.



Above: Four barnacle species in close proximity. Across the centre are shown, from left to right, *Tetracitella purpurascens*, *Catomerus polymerus* and *Tesseropora rosea*. Near the top of the image is *Chthalamus antennatus*. Harmer's Haven, March, 2016. Photo: Leon Altoff.

Audrey Falconer spoke to the polychaete and nemertean images shown by Leon. She had also earlier mentioned and presented copies of a recently published paper which she co-authored on the higher taxonomy of the Staurozoa (or stalked jellyfishes). This work (see under references below) re-organised the higher order taxonomy of the group with the assistance of molecular phylogenetic analyses. Two new suborders were established, the Amyostaurida and the Myostaurida, correlating with the absence and presence (respectively) of longitudinal muscles in the stalk. We congratulate Audrey on this work.

Thanks to all who attended and to the presenters for their talks and for making images available for incorporation into this summary.

References and further reading:

Kott P (1997). Chapter 23: Tunicates (sub-Phylum Tunicata), p. 1092-1255, in: *Marine Invertebrates of Southern Australia, Part III* (edited by Shepherd SA & Davies, M), South Australian Research and Development Institute, Flora & Fauna of South Australia Handbooks Committee, 1997.

Miranda LS, Hirano YM, Mills CE, Falconer A, Fenwick D, Marques AC, Collins AG (2016). Systematics of stalked jellyfishes (Cnidaria: Staurozoa). *PeerJ* 4: e1951 <https://doi.org/10.7717/peerj.1951>

Platon Vafiadis

Extracts from SIG reports given at the last FNCV Council Meeting

Botany Group: Kyle McLoughlin, a Canadian arborist presented: *From ancient cedars to invasive species: five facts worth knowing about Ontario's forest.* Ontario only has four forest ecosystems for over one million square kilometres, compared with Victoria's many. Kyle described these and spoke about the Niagara Escarpment which is an urban UNESCO world biosphere reserve. An excellent night for the six of us who attended on a very wet evening.



Fauna Survey Group: Parker River, Cape Otway, 25-28th March.

Over Easter, 14 members and visitors carried out a fauna survey at Parker River, near the Cape Otway lighthouse. This was one of our projects with Parks Victoria. We camped in a sheltered area overlooking the mouth of the river. The weather was mild with an occasional shower.



We had four main survey sites where we deployed 320 Elliott traps, 20 cage traps and 19 cameras. We also deployed 3 bat traps over 3 nights and undertook some spotlighting. The trapping revealed no surprises, with the capture and release of Bush Rat, Swamp Rat and Agile Antechinus. Bat trapping only realised a Chocolate Wattle Bat. Spotlighting revealed the abundance of Koalas in the area with 12 being spotted along a 500 metre section of road. Along that same section, a Yellow-bellied Glider and a Powerful Owl were also spotted.

The cameras were collected 3 weeks later and one highlight was the occurrence of rare Long-nosed Potoroos at a few sites, mostly old heathland.

Meeting, 5th April. The meeting was attended by 23 members. The speaker for the evening was Kath Handasyde on Echidnas. The Short Beaked Echidna is the most widely distributed mammal in Australia and being mostly diurnal, familiar to naturalists. Most of the talk covered less well known facts on the physiology, food and breeding.

Rushworth Forest Survey, 23-25th April. This survey camp was attended by seven members. We checked 139 nest boxes, of which 24 contained animals. This compares with three boxes containing animals in the heat of January. Five Brush-tailed Phascogales were present compared to one in January and 24 Sugar Gliders present this time compared to six in January. Two Squirrel Gliders were in a nest box in Plains Yellow Box woodland habitat.

Fungi Group: We have held two meetings and one foray this year. At the first meeting, Dr Tom May gave a presentation titled '*What the fungus? Dealing with identification uncertainty on fungal forays*'. 28 members attended. At the second meeting, Dr Teresa Lebel gave a presentation titled '*From seashore to snowmelt: fungal tales from the Land of the Long White Cloud*', about her two years in New Zealand. 18 members and one visitor attended.

Our foray was held at Cambarville, Yarra Ranges National Park. 17 members and six visitors attended. Although conditions were dry, more than 60 species were recorded (I don't have exact numbers).



Geology Group: At the March 23rd meeting of the Geology SIG, Dr Neil Phillips spoke on the formation of gold deposits, as well as a most informative look at the global economic status of gold mining. I found particularly interesting his statistics outlining the dramatic revival of Australian gold production since 1979, whereas production in South Africa has declined because their old mines now are more costly to mine. His talk reflected Neil's wide ranging experience as a Consultant with Phillipsgold Pty Ltd and a Professorial Fellow with the School of Earth Sciences, University of Melbourne.



Field Nats News 265

The Field Naturalists Club of Victoria Inc.
P.O. Box 13
BLACKBURN VIC 3130
Reg.No. A0033611X

PRINT
POST
100002072

POSTAGE
PAID
AUSTRALIA