Field Nats News No 322

Understanding Our Natural World
Est. 1880

Newsletter of the Field Naturalists Club of Victoria Inc.
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September 2021

From the President

Welcome to the September Newsletter. The past two months in particular have been very unpredictable but we continue to cope and we are delivering as many of our programs and activities as we can in accordance with the current COVID19 restrictions. Online Zoom delivery continues to support our meeting schedule and we have been able to deliver interesting presentations on Entomopathogenic Fungi, Leaf Beetles, Insect Fungal Interactions and the Delicate Skink *(Lampropholis delicata)*. Some of our field excursions are going ahead, so keep an eye on the Calendar. We did manage to run a few meetings in the hall between lockdown periods and hope to have many more in the near future.

The due date for FNN 323 will be, as usual, the first Tuesday of the month, **7th September.**

I am looking forward to an overflowing inbox.
joan.broadberry@gmail.com

Holometabolous insects spend a large portion of their time as juveniles which differ morphologically and behaviourally from the adult form. In particular, the large numbers of beetle larvae we encounter in leaf litter, compost, ponds, foliage and under logs demonstrate their enormous biodiversity. They vary in size from a few mm to 50 mm or more, some having particularly powerful mandibles that can easily cut the skin (photo 1). I found the large larvae shown in photos 1 and 2 living about 30 cm under my vegetable garden where they seem to be feeding on the roots from nearby eucalypts. They pupate in the soil and emerge as adults in the warmer months of summer, leaving large, 2 cm holes around the yard (Photo 3). They seem to favour the soft soil of the vegetable garden. They don't emerge immediately but sit in the bottom of their tunnels and stridulate if disturbed. The adult in photo 4 was 3 cm in length and upon release, immediately went back into a nearby tunnel opening.

The following are just a few examples of the many other kinds of beetle larvae that are commonly seen on field trips. We often encounter the larvae of the ubiquitous Honey Brown Beetle, *Ecnolagria grandis* (Photo 5) on the leaf litter.

Those of the Flat Bark Beetle, *Platisus sp.* (photo 6) are common under tree bark. There are usually large numbers of Click Beetle larvae and tenebrionid

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2. The entire larva.

1. The head and mandibles of a 5cm long scarabeiform larva.

3. Opening to the beetle's tunnel.

4. Adult beetle excavated from the bottom of the tunnel

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CALENDAR OF EVENTS

September

Monday 6th – Fungi Group Meeting: ***The interactions of arthropods and fungi – a brief overview.***
Speaker: Max Campbell, FNCV President who is very committed to the conservation of biodiversity and ecosystems specialising in invertebrates. He has been a biologist, educator and active naturalist for over 50 years.
Max will discuss aspects of the varied and complex interactions between fungi and arthropods, from the symbiotic and mutual to the pathogenic and fatal.
Prior Registration essential—the meeting may be held via zoom.
Contact: Carol Page cpage355@gmail.com 0438 446 973

Tuesday 7th - Fauna Survey Group Meeting: ***Tracking the recovery of woodland bird communities following habitat restoration: insights from a multi-scale, long-term study.*** **Prior Registration essential.**
Speaker: Dr Angie Haslem, Research Fellow, La Trobe University.
Contact: Ray Gibson 0417 861 651; rgibson@melbpc.org.au

Monday 13th – Marine Research Group Meeting: ***To be advised.***
Contact: Leon Altoff 0530 4180 AH; 0428 669 773 **Prior Registration essential.**

Wednesday 15th - Terrestrial Invertebrates Group Meeting:
Speaker: To be advised. **Prior Registration essential.**
Contact: Max Campbell 0409 143 538; 9544 0181; mcam7307@bigpond.net.au

Thursday 16th – Botany Group Meeting . Speaker, Bill Aitchison, **Acacia Study Group,** Australian Native Plant Society. **Prior Registration essential.**
Contact: Ken Griffiths botany@fncv.org.au

Wednesday 22nd – Geology Group Meeting: ***Granites of central Victoria: what are the new ideas?*** *Speaker: Neil Phillips, University of Melbourne and Stellenbosch University RSA.* **Prior Registration essential.** Contact: Ken Griffiths geology@fncv.org.au

Friday 24th – Juniors Group - No Meeting: ***Grand Final holiday***

Saturday 25th—Juniors Group Afternoon Excursion: ***Replas—Australia's leading mixed recycled plastic*** manufacturer who aims to provide a solution for plastic waste by delivering quality, cost effective, sustainable products. Price $5 per child. Attendance for one parent is free, extra parent needs to pay $5. Places limited.
Booking in advance essential. Contact: Dr. Patricia Amaya juniors@fncv.org.au

Monday 27th FNCV Council meeting (via zoom) 8 pm. Apologies and agenda items to Wendy Gare: admin@fncv.org.au. Max will email the link.

Tuesday 28th – Day Group Excursion: ***Local spring wildflower and nature walk, Blackburn Lake Sanctuary.*** Including an opportunity to view the museum-quality display in the visitors centre. **Prior Registration essential.** Leader: Ian Moodie, Team leader, Environment and Education, Whitehorse Council. Meet outside the Blackburn Lake Visitor's centre at 10.30 am. Ample car parking, toilets available. Enter the sanctuary from Central Rd. Blackburn (Opposite Gwenda Rd) Melway 48 B11. Bring cameras and lunch. Contact: Joan Broadberry, joan.broadberry@gmail.com or 0428 132 864

The calendar has been prepared on the assumption that, in September, meetings will be held at the FNCV Hall, 1 Gardenia St. Blackburn at 8 pm unless otherwise advised.

As the Covid 19 situation is fluid, this may change at any time. Activities may be cancelled or meetings switched to Zoom. Despite some relaxation of restrictions, there is still a numbers cap in the hall. You are therefore asked to register for *both* meetings and excursions as soon as you can, preferably supplying a phone number and email, so that you can be reached at short notice. Please let the SIG contact know if your plans alter.

Members are reminded that they are required by regulations to carry a mask and wear it both inside and out.

You will be required to sign in with the Victorian Government QR app (logo above). No exceptions are allowed. Luckily it is simple. Just bring your phone. Assistance is available to everyone. Try to arrive 10-15 minutes early.

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.

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mealworms in the leaf litter and under logs. (Photos 7 and 8). Enteropathogenic fungi infect and kill many "mealworms" which are found in the soil, underneath the *Cordyceps* fruiting bodies (Photo 9). Predatory coccinellid or ladybird larvae of many species (Photo 10) are frequently observed on low vegetation and in grass where they prey on small insects such as aphids and coccids.

In Spring and Summer large numbers of Leaf Beetle larvae (Chrysomelidae) munch away on eucalypts in groups (Photos 11 and 12). The eggs can often be seen wrapped around stems (Photo 13) or attached to leaves. Other tiny leaf beetle larvae, *Cryptocephalus sp,* can be found feeding in the leaf litter enclosed in a small, protective cocoon of faeces. Its head forms a tight fit with the opening (Photos 14 and 15). When searching under rotting logs it is not unusual to find passalid beetles and their larvae. Sometimes referred to as Kiss or Bess Beetles these insects provide parental care for their larvae so it is normal to find larvae and adults together (Photo 16.) The term Kiss Beetle refers to the sound they make when disturbed.

Many interesting insects in their various life stages can be found in our gardens but if you really want to see the enormous variety of our native insects, I suggest that you join our various SIG excursions throughout the year. TIG excursions will commence soon so make

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5. *Ecnolagria grandis* Larvae of Honey Brown beetle (tenebrionidae) Korumburra.

6. Cucujidae Flat Bark Beetles. Strathbogie Platisus sp.

8. Mealworm or larvat Tenebrionidae 23 mm

Left:
9. A tenebrionid larva after an unfortunate encounter with a Cordyceps fungus

7. Click Beetle larva (Elateridae) 30mm

10. Left: Predacious larva of Transverse Ladybird *Coccinella transversalis*.

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sure you register your interest.

Nature Stewards is a great success and the courses are continuing. Are you keen to learn more about your local natural area, meet other like-minded people, and find out how you can help nature at home and locally? Geelong Spring Nature Stewards program applications are now open! Running Saturdays from September 18th - > December 4th in Leopold. Find out more and Apply here: https://outdoorsvictoria.org.au/nature-stewards/

Max Campbell

11. Leaf beetle larvae chomping their way through the foliage at Genoa.

12. Chrysomelid larvae feeding on eucalypts at Genoa.

14. Left: *Cryptocephalus sp,* (4mm) walking across a leaf dragging its dung case
15. Right: *Cryptocephalus sp.* in retreat. Its head forms a tight fit with the opening.

13. Paropsis eggs Genoa.

16. Passalid adult and larva. Cathedral Ranges.

All images: *M. 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:

Leanne Greenwood, Annabelle Brown, Stephen Brown, Nicole Brown, Rylee Argoon, Julie Marginson, Peter Juliff, Kay Juliff, Lewis White and Zachary Rushbrook

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.

Thanks to the editorial and layout team who put together FNN 322

Joan Broadberry
Wendy Gare
Sally Bewsher

CORRECTIONS
FNN 321

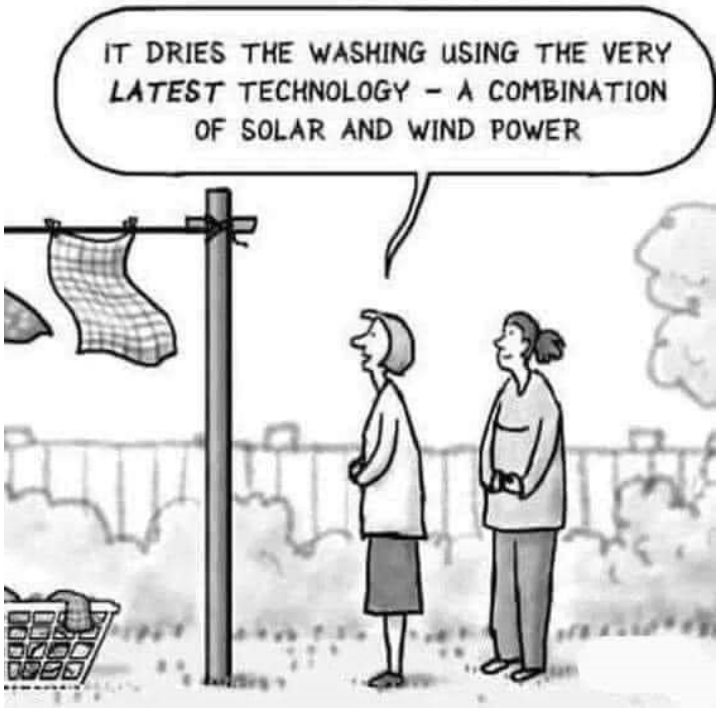
Page 9, Figure 2
Polyporus gayanus should have been captioned ***Lacrymaria asperosa***. The image was taken by **Torbjorn von Strokirch**

Page 11
'Photos: R Richter' appears under the bottom right photo, which should have been captioned ***Lactifluus clarkeae***. This image was taken by **John Eichler.**

The left and middle photos are by R Richter.

All mistakes are the responsibility of the editor.

Apologies to Sue Forster, Torbjorn, John and Reiner.



The print version of this newsletter is printed on recycled paper.

Day Group

Leaf Beetles, Chrysomelidae of Victoria

Speaker: Martin Lagerwey an entomologist and curator with iNaturalist specialising in Leaf Beetles. July 27th 2021

Chrysomelidae (Leaf Beetles) is one of the largest families in the animal kingdom. It is over-represented in Australia which, together with the fact that not a lot is known about the family, makes it a great taxon to study. A difficulty is that most type collections are in European museums, are very old and in poor condition.

Leaf Beetles, both adults and larvae, are plant eaters, in Australia feeding primarily on Eucalyptus and Acacia. Circular bite marks are left on the chewed leaves. Leaf Beetles are colourful and often incredibly beautiful. Their intense colours signal to predators that they are poisonous. Their toxins do not arise from the plants they eat, but are made within their bodies. As a defence mechanism, Leaf Beetles can withdraw their legs and antennae, hiding them beneath their bodies.

Three critical identifying features are:

- short, straight antennae
- hemispherical body shape
- particular characteristics of their footpads

The female Leaf Beetle lays her eggs on leaves, often with only the tip of the egg attached to the leaf. The larvae or grubs go through four instars (intervals between moults) before dropping to the ground and pupating in the soil. There are two life cycles per year. One generation is able to complete its cycle in the warmer months. In autumn adult Leaf Beetles hide under leaves or bark to over-winter, emerging to mate and lay eggs in spring. Females are generally a little larger and less colourful than males. Males can be distinguished from females by their broader footpad which helps them to hold onto the shiny elytra (wing cases) of the female during mating.

Leaf Beetles can be pests both to native and agricultural species, for example the Elm-leaf and Fire-blight Beetles. The latter are so named because acacias defoliated by them appear as if they have been scorched. However, Leaf Beetles can be useful for biological control, for example *Chrysolina quadrigemina* had been used to control the weed St John's Wort *Hypericum perforatum.*

Weevil Beetles are also plant eaters and the two appear similar, but adult weevils can be distinguished from Leaf Beetles by their longer antennae which have two segments and appear to be bent like an elbow.

The ten sub-families of Chrysomelidae appear in the chart below in order of number of species.

Subfamilies of Chrysomelidae

- 1 Donaciinae .....(1 sp.) Longhorned leaf beetle
- 2 Bruchinae.....(20 sp.) Seed weevils
- 3 Criocerinae .....(20) Asparagus leaf beetles (Lema.)
- 4 Spilopyrinae .....(22) *Cheiloxena frenchae*
- 5 Sagrinae .....(32) Kangaroo leaf beetles; Pollen feeding
- 6 Cassidinae.....(63) Tortoise leaf beetles
- 7 Eumolpinae .....(436) Oval leaf beetles
- 8 Galerucinae ..... (534) Flea beetles
- 9 Cryptocephalinae .....(555) Case bearers
- 10 **Chrysomelinae** ....(760) **Broad bodied leaf beetles**
  - Synetinae (tribe of eumolpinae) LeConte & Horn, 1883
  - Lamprosomatinae (11 sp) Lacordaire, 1848

- The Bruchinae, Seed weevils, appear similar to Weevil Beetles.
- The Sagrinae, Kangaroo or Frog leaf beetles are pollen feeding with long back legs.
- The Cryptocephalinae, Case bearers lay their eggs in a shelter made of faecal matter which affords protection to the larvae.
- The Galerucinae, Flea beetles have very large back legs and hop in a similar manner to fleas.

Martin's main focus was on the last group, the sub-family Chrysomelinae, Broad-bodied beetles. These are very well represented in Australia with 760 species making up approximately 25% of the 3 000 world wide total. Within the Chrysomelinae are 47 genera. One of these, Paropsines (the hemispherical ones) includes 450 species.

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The remainder of the presentation went on to look more closely at some of the species which Martin has investigated. *Paropsides calypso,* (Lilly Pilly Beetle), a beautiful green colour, was once found only in more northern latitudes. With the increased popularity of the Lilly Pilly in gardens, it has now spread across southern Australia and is regarded as a pest. He is currently studying the life cycle of an undescribed species found in Dandenong and Wombago, its food plant being Spreading Wattle, (*Acacia genisifolia).*

As so often happens, my own limited understanding and now the restrictions imposed by Zoom have only allowed me to put together a brief summary, which I am calling call *Leaf Beetles lite* as it avoids anything technical. Thus it in no way does justice to Martin's fascinating and detailed talk which covered far more than I have included. The many and varied gorgeous images shown at each stage of the presentation were a constant delight.

Once again on behalf of the Day Group I would like to thank Martin for sharing his passion for Leaf Beetles with us. We are all the richer for it.

Joan Broadberry,
Day Group Co-ordinator

Max Campbell has included a number of images (numbers 11-16), relevant to Martin's presentation as part of his President's report on page 4.

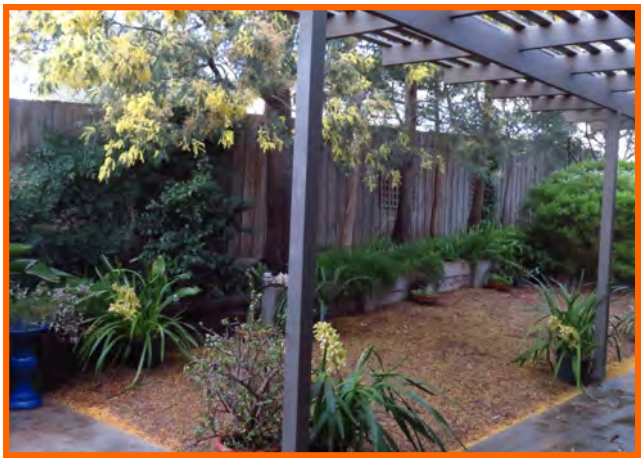
FROM the EDITOR

We seem to be at that place again when very little of the FNCV's planned program may be able to take place face to face. Maybe, maybe not, but we do have an alternative, Zoom. Our wonderful President, Max Campbell has spent probably hundreds of hours training and rehearsing members and presenters, setting up equipment sending links and running sessions. From initial resistance, thanks to Max, I have become a Zoom convert. I would like to acknowledge and thank Max, on behalf of everyone, for the huge effort he has put into doing this, so generously and effectively. Turning boomers into zoomers as the saying goes.

Field Nats News is going to need your help in the next little while. Please consider writing a report on meetings held via Zoom. It really is not much different to writing up a meeting held in the hall. It doesn't have to be long. We would also love to receive your observations and photos of what you have seen, read or noted recently or in the past. Most field naturalists have a library of images tucked away in their phones or computers. Please dig deep as you did in 2020. A lovely example appears on p12 of this issue. Thank you Judy.

The 1st of September, National Wattle Day, was officially declared in 1992. Golden Wattle (*Acacia pycnantha*) photo left, becoming Australia's national floral emblem. The first image, below was taken from the footbridge which crosses the Yarra River at Finns Reserve, Templestowe, facing downstream. The other is in my garden—the tan-bark covered by falling Silver Wattle.

Best wishes to all our readers, vaccinate, stay safe and busy, Joan
Photos: J. Broadberry



Fungi Group

Phylogenetic Trees Made Easy

Summary of a presentation by

Jurrie Hubregtse, 5th July 2021

A phylogenetic tree is a visual representation of the evolutionary history of populations, genes, or organisms. For the past 18 months, Jurrie has been studying the way phylogenetic trees are constructed, and has repeated many of the experiments used to make trees published in the literature, as well as conducting a few experiments of his own. He has concluded that it is not difficult to make a phylogenetic tree, since ample software packages (e.g. see *Step 5*, below) are available to do this.

Making a meaningful tree, however, is somewhat more complicated. Jurrie illustrated this by showing us an example of what appeared to be a well supported tree incorporating 14 taxa. However, he had constructed it by using text from a 'Dr Who 'novel! The message here is that tree-making software will try to make a tree from whatever information it is given: it is up to the user to select meaningful sequences in order to obtain a good result.

After familiarising us with some important terms, such as 'clade', 'nucleotide sequence', 'homologous', 'ortholog', and 'synapomorphy', Jurrie explained the 5 basic steps involved in estimating a phylogenetic tree.

Step 1, the most difficult step, is to determine what you want your phylogenetic tree to infer, and deduce which homologous sequences will be required. A phylogenetic tree is usually constructed to illustrate an answer to a phylogenetic question. You must be clear about the question you want answered and choose taxa/sequences that will clearly illustrate the answer.

Phylogenetic trees can be used to determine whether a fungus species belongs to a known family, genus, or to a described species; they can also reveal the relationships between different groups of fungi, and help you understand the vast variability of fungal fruiting body types.

Step 2 is to acquire sequences from appropriate databases. Fortunately, all sequence databases are interlinked, so you need to visit only two or maybe three websites. If you have sequence ID's from published papers, then using the National Center for Biotechnology Information (NCBI) Taxonomy Root Browser website would be the best option. If you are searching for a sequence or sequences that are a close match to those you have, then the NCBI BLAST (Basic Local Alignment Search Tool) website would be the best option. For only SSU (small subunit) or LSU (large subunit) sequences, using the SILVA database would be a good option.

Acquiring sequences may not be difficult but can be time-consuming. On the whole, the Kingdom Fungi has a poor coverage when it comes to being sequenced. In articles where authors mention that a number of genes were used to produce a phylogenetic tree, that is usually not strictly true. What they should say is, "We used short fragments from various genes". Finding sequences that overlap can take a long time, because many sequences are short, poorly documented fragments.

Step 3, the most important step, is to align the sequences. The purpose of an alignment program is to align sets of similar characters. It is necessary to make sure that the sets of characters are biologically meaningful. The similarities that are to be aligned must be the result of inherited characteristics/traits. To achieve a useful alignment there must be a degree of similarity between the sequences.

All alignment software packages should produce a satisfactory alignment provided that the similarity between nucleotide sequences is better than 70% and, for amino acid sequences, better than 40%.
The challenge is to find sequences with just the right identity variation to allow you to produce a well supported phylogenetic tree.

Step 4. Estimate the phylogenetic tree. There are only four basic methods for turning your multi-sequence alignment (MSA) into a phylogenetic tree:
i. Maximum Parsimony method looks for the tree with the minimum number of changes.
ii. Neighbor-joining method attempts to find a tree where the sum of the branch lengths is at a minimum.
iii. Maximum Likelihood method looks for the tree (usually incorporating an evolutionary model) that maximises the likelihood of matching the data.
iv. Bayesian Inference method is a variant of the Maximum Likelihood Method. Instead of seeking a tree that maximisesthe likelihood of matching the data, it seeks trees with the greatest likelihoods given the data.

The quality of your estimated tree is totally dependent on the quality of your MSA. The method you choose to estimate your tree will depend on the type of result you want to illustrate.

Step 5. Draw the tree. There are numerous software packages, such as **IQ-Tree**, **FastTree**, and **MrBayes**, that will

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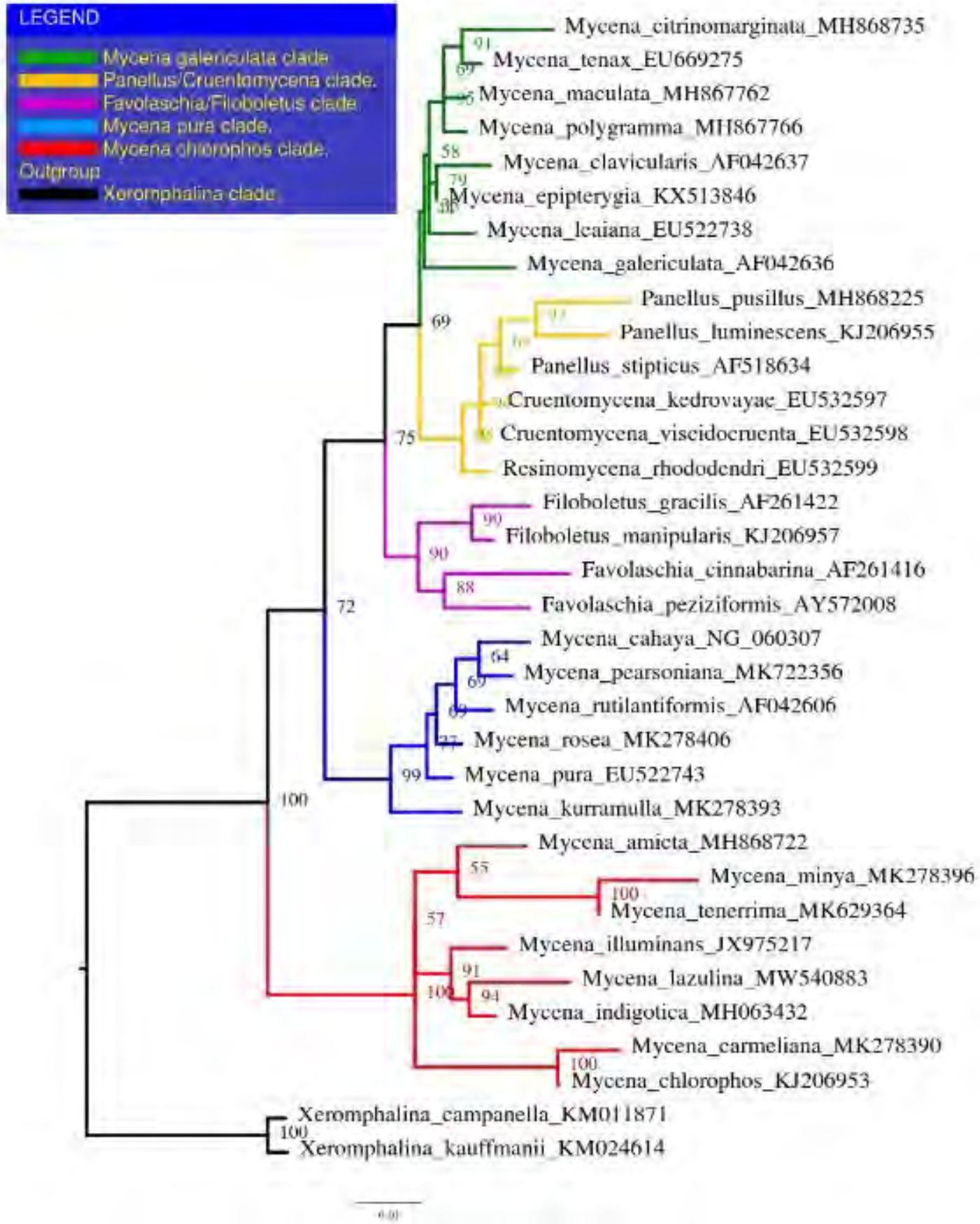

Fig. 1. Maximim Likelihood LSU gene tree illustrating structure of the Mycenaceae clade.
(There were no suitable sequences for *Roridomyces.)*

(Continued from page 8)

take the output from a tree-estimating software package and turn it into a pictorial graph. Jurrie's favourite package for this purpose is **FigTree.**

We know that gene sequences can be used to infer a phylogenetic tree, because back in 1982 Prof. David Penny and his team produced a phylogenetic experiment which proved that the evolutionary history of species that have been linked in the past can be inferred from historical changes (evolutionary information) in their sequences and expressed in the form of a phylogenetic tree (Penny *et al*. 1982). Basically, Prof. Penny's experiment used 5 different protein sequences to produce 5 trees using the same set of 11 mammalian species, then showed that the grouping of these species on the trees can be explained only by their evolutionary relationships. Closely related species appear close to each other on the tree. Jurrie repeated this experiment, then made a phylogenetic tree with 27 mammalian species, using their mitochondrial genome instead of a single gene. The resulting groupings were consistent with those in Prof. Penny's tree.

Jurrie also spoke about some other interesting experiments he had done and the methods he used to construct several different phylogenetic trees. The first of these demonstrated the relationship between the Common Mushroom *Agaricus bisporus* and Baker's Yeast *Saccharomyces cerevisiae*, one a gilled mushroom built from hundreds of thousands of filamentous cells, the other unicellular. Since the evolutionary distance between these fungi is huge, it was necessary to find a gene that has a mutation rate slow enough to be used to identify distantly separated species, but also fast enough to enable more closely related species to be separated. A gene called cytochrome c oxidase subunit 1 (COX1), has these attributes. This gene is the default marker adopted by the Consortium for the Barcode of Life (CBOL) for all groups of organisms, including animals and fungi. Jurrie downloaded 50 COX1 amino acid sequences from GenBank, aligned them using **Muscle**, and used **IQ-Tree** to produce the inferred Maximum Likelihood gene tree. This tree clearly illustrated the evolutionary relationship between the two fungi.

The second experiment involved the Mycenaceae clade. During our forays we see a variety of *Mycena* species. Jurrie demonstrated that phylogenetic analysis showed that not all the various species we see are in the same clade as the type species for *Mycena*, *M. galericulata* (See Fig. 1). We should expect some name changes in future! The biggest problem Jurrie encountered was that there are virtually no sequences of Australian *Mycena* species. To compound this problem, the Mycenaceae is not well served with sequences that can be used for phylogenetic analysis.

Finally, Jurrie told us that the fungus we have been calling *Pluteus* "yellow" has now been named *P. hubregtseorum* by Ševčíková *et al.* (2021), who produced a tree showing its phylogenetic placement among other *Pluteus* species. Jurrie also re-did their experiments, using a different methodology, and was satisfied when his methods produced similar results.

There was much more information in this presentation than is possible to include here. Many thanks to Jurrie for an informative and challenging evening.

Further Reading

Penny D, Foulds LR, and Hendy MD. (1982) Testing the theory of evolution by comparing phylogenetic trees constructed from five different protein sequences. *Nature* 297, 20 May 1982, p. 197.

Pevsner J (2015) *Bioinformatics and functional genomics*. 3rd edn. (Wiley Blackwell: Chichester, UK). https://www.pdfdrive.com/search?q=Bioinformatics+and+Functional+Genomics

Ševčíková H, Borovička J and Gates G (2021) *Pluteus hubregtseorum* (Pluteaceae), a new species from Australia and New Zealand. *Phytotaxa* 496 (2): 147-158. https://doi.org/10.11646/phytotaxa.496.2.4

Virgil Hubregtse

Magpie-larks

From *The Junior Naturalist*, July 2021 Volume 59 issue 6 p3

Each month we focus on an animal, bird, insect, plant or fungi of interest. This month we will be looking at: Magpie-larks.

I was sitting on a bus this week on a very busy street in Melbourne when a medium-sized black and white bird began attacking the window. It pecked aggressively at the glass, then flew away briefly. It then flew back and pecked at the window repeatedly for a few minutes as we waited in traffic. I wondered why it was behaving this way. There was a tree nearby, so I thought perhaps it was attempting to protect its nest? But it is winter right now, not spring time, so egg protection seemed unlikely. The bird seemed intent on pecking the glass windows, not on other parts of the bus.

Magpie-lark attacking the bus window. Drawing: Marlowe Wilton

When I got home, I researched this bird and its aggressive behaviour. It was a black and white bird that looked like a magpie, but was smaller in size. It turns out it was a Magpie-lark (scientific name *Grallina cyanoleuca*). This bird is referred to as a Peewee from its 'peewee, peewee' call and can also be called a Peewit, Little Magpie or Mudlark - this is because it builds its nest out of mud. It is often confused with a magpie but is much smaller in size.

Magpie-lark males and females look similar, but there are key differences; the female has a white throat and the male has a black throat and black eye-stripes. It turns out that when a Magpie-lark finds a mate, they usually stay together for life and defend their territory together. They take the defence of their territory very seriously and when they see their own reflection in a mirror or window, they can think it is an intruder into their territory and will attack it. So the bird who was flying at the bus, was flying at its own reflection thinking it was another Magpie-lark! Magpie-larks will also sing and wave their rump and tail up and down to signal to other birds and intruders what is their territory.

Magpie-larks are one of a few species of bird in the world that sing in duet; with the male and female singing one note a second, but a half-second apart, so it can seem as if there is only one bird singing, not two. They sing complicated duets – one sings 'Peewee' and its partner responds 'wit!' – and they both raise their wings above their heads as they call. Magpie-larks work as a team, singing duets to warn intruders to stay away from their territory. Australian scientists have discovered that the Magpie-lark pairs who sing with the most rhythmic precision frighten off other birds from their area. Magpie-larks use mud to cement grass and other materials into their nests. They then lay 3-5 eggs from early Spring.

By Zoe Burton

Magpie-lark feeding its young. Note the mud nest. Image: ANGB C. Webster

EDITOR
The monthly newsletter of the FNCV Juniors Group, *The Junior Naturalist,* is currently produced courtesy of the Burton-Wilton family.

It is just amazing. Full of interesting facts about nature, quizzes, photos, stories, jokes and drawings— all put together in a child-friendly way.

This month I have, with permission, reprinted one of their articles. Being a bird-watcher myself, I have often felt that Magpie-larks are in danger of being eclipsed in our minds by their bigger, bolder magpie look-a-likes.

Challenge: Identify the parent bird in the photo as male or female. **See p12**

From Judy Smart,
Peninsula Field Nats

I love the '**100 years ago"** column in the Mornington News. This week's was particularly interesting to me.

The gale last Friday night, from the effects of which Frankston escaped, wrought considerable damage, howev

er, at Mornington, where the damage is estimated at £1500.

The tide was one of the highest for many years, and the wind sweeping in from the north-west, with no obstacle to mitigate its force, drove the waves high up over the foreshore.

At Fisherman's Beach, Mornington, 44 bathing boxes were wrecked and washed away, and broken timber and wreckage were piled up in some places three feet high.

Rowing boats were torn from their moorings and smashed to bits. At many points, the cliffs, undermined by the wind lashed waves, were eaten away to the extent of 8 or 10 feet.

Even the massive stone coping of the sea wall at the pier could not withstand the onslaught. Though the blocks of stone were fastened together with heavy iron staples, they were lifted and all swept up on to the roadway and the pier, the decking of which suffered considerable damage.

It has been suggested by residents along the peninsula bayside that since the deepening of the entrances to Port Phillip the volume of water and the rise and fall of the tide has increased considerably, and the erosion has consequently become greater.

The steady encroachment of the sea has become more marked – what was a green sward at Mornington 10 years ago is now below high water mark – and experiences at Mornington prove that something will have to be done to prevent the inevitable ravages by the waves to public and private property.

***

From the pages of the Frankston and Somerville Standard, 22 July 1921

Library News

The following items have been added to the FNCV Library in recent months.

Any of these books or serials may now be borrowed.

Recently accessioned monographs

Bonyhady, Tim (2020) *The enchantment of the Long-haired Rat.* [508.948 BON]
Boucher, Becca & Noontil, L (2018) *The adventures of Mist: finding Koala Gardens* [599.2 BOU]
Cook, Patricia L *et al*. (2018) *Australian bryozoa*, Vols 1–3 [594.7 AUS]
Lacey, Geoff (2021) *At home in the land: the Plenty–Yarra corridor.* [508.94 LAC]
Lawrence, John F; Slipinski, A (2017) *Australian beetles, Vol. 1.* [595.76 SLI]
McCann, Ian R (2020) *The Grampians in flower*. 2nd Ed. [582/945 McC]
McCulloch, Ellen M (1987) Your garden birds [598.2/94 McC]
Melville, J & SK Wilson (2019) *Dragon lizards of Australia.* [597.95 DRA]
Moro, Dorion; Derek Ball; Sally Bryant (2018) *Australian island arks* [333 AUS]
Mulvaney, D J; Calaby, J H (1985) *So much that is new: Baldwin Spencer 1860-1929. A biography* [920 MUL]
O'Gorman, Emily (2012) *Flood country: an environmental history of the Murray-Darling Basin* [333.73 O'GO]
Pescott, Trevor (1976) *By field and lane.* [508.945 PES]
Robin, L; Dickman, C; Martin, M (2010) *Desert channels: the impulse to conserve*. [333.73 DES]
Slipinski, A; Lawrence, John F. (2017) *Australian beetles, Vol. 2.* [595.76 SLI]
Tyler, M; *et al.* (1990) *Natural history of the north east deserts.* [508.942 NAT]

Recent periodicals:

- The *Australian Journal of Zoology* V.67 is a special issue devoted to bat research in Australia.
- An item in *Wildlife Australia* 58(2) describes the new Action Plan for Australia's Imperilled Plants. There are 50 plants on the 'at greatest risk' list, including several from Victoria.
- 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

Don't forget that you can now search the library's collections on the FNCV website. Click 'About us' è 'Library' and you will be able to download searchable lists of books, periodicals, maps and photos.

Gary Presland
Honorary Librarian

Magpie-lark identification from p11:

The parent bird in the photo is a female, as Zoe has indicated, it has a white throat. An easy way to identify male and female Magpie-larks is—**the boys have black faces and the girls have white faces**.