Field Nats News No.241

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

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

May 2014

From the President

Welcome members to the May Field Nats News. I hope that you have a great Easter with family and friends taking time to do things you enjoy.

It is quite a busy time of the year for the FNCV, the with the upcoming Annual General Meeting and the allocation of grants by the Environment Fund.

You may have read in the last FNN, that the Club will be voting on a new constitution at the AGM. It is important that as many members as possible get to view the draft before the meeting. If you receive your FNN by e-mail you will have had it sent to you already, as a pdf . Other members can look at the draft constitution during office hours or during SIG meetings.

As explained in the April newsletter, the changes have been brought about by the passing of the *Associations Incorporation Act 2012*, which sets out mandatory propositions which must be included in the constitutions of all Incorporated Associations. These rules have been included into the existing FNCV constitution. I am trusting that the members will ratify this document, given the great care and months of time that has been put into drafting it. I would like to thank Robin Drury, Jurrie Hubregtse and Barbara Burns for the many, many, many hours they have put into this onerous but necessary task.

To make it possible for FNCV members who are unable to attend the AGM, and who wish to exercise a vote on this resolution, we have included a proxy form on p7.

The Club is very fortunate to have Euan Ritchie as our guest speaker at the AGM. Last year he visited West Papua to carry out camera surveys in search of the Tenkile (Tree Kangaroo). See page 12 for the AGM invitation.

A reminder that nominations for the 2014/15 Council are open. A nomination form can be found on p7. **All council nominations must reach the registered office of the FNCV by Friday 2nd May, no later than 2 pm**. (Apology: this date was incorrect in FNN 240.)

Finally, you will notice that there has been a complete make-over of the FNCV website. I would like to extend my thanks to Jurrie Hubregtse for his great efforts with the website. It looks fantastic and brings the Club into the 21st century.

John Harris

Juniors visit the Inverloch Dinosaur Dig Site. ***Read about their activities p8*****.**

The deadline for the June newsletter will be 10 am **Tuesday 6th May.** FNN 242 will be going to the printers on 13 May, with collation on the 20th.

Let it be noted that FNN has no faith in messages sent on mobiles using voice recognition software!

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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.

May

Sunday 4th FNCV Annual General Meeting 2 pm. 1 Gardenia Street Blackburn. Euan Ritchie will speak on the ***Tenkile Project (Tree Kangaroo)*** and give us an update of what they have found and what are the next steps in this project. Invitation p 12. See also page 7 for Council Nomination Form and Special Resolution Proxy Form. Contact Wendy at the FNCV office, 98779860 or admin@fncv.org.au

Sunday 4th – Fungi Group - Foray: ***Noojee, Toorongo Falls circuit*** Meet at Toorongo Falls car park, Toorongo Falls Road (turn off 2.5km east of Noojee) at 10.30am (Melway Edition 37, Page X928 B5 or Vic Roads Edition 8, Page 81 B7).
Contact: Virgil Hubregtse 9560 7775

Monday 5th – Fungi Group - Meeting*:* ***Making collections for Herbaria*** Speaker: Nimal Karunajeewa who is responsible for curating the cryptogamic groups at the National Herbarium of Victoria and ran workshops at the 2013 Fungi conference at Rawson. Contact: Virgil Hubregtse 9560 7775

Tuesday 6th - Fauna Survey Group - Meeting: ***Effects of urbanisation on Eastern Yellow Robins in Melbourne***
Speaker: Christine Connelly, PhD Candidate, Deakin University. Contact: Sally Bewsher 9752 1418

Sunday 11th – Fungi Group - Foray: ***Gembrook, Fungi after fire*** Meet at the corner of Gembrook-Launching Place Road, (C424), and the Eastern side of The Pack Track, Gembrook (Melway Edition 37 Map 299 A5). Contact: Virgil Hubregtse 9560 7775

Monday 12th – Marine Research Group - Meeting: ***Fieldwork Roundup***. Our annual slideshow and review of the new, unusual or simply beautiful animals seen this season. Contact: Leon Altoff 9530 4180 AH; 0428 669 773

Thursday 15th – Botany Group - Meeting: ***Decline of flood plain forests at Yellingbo: causes and restoration***
Speaker: Joe Greet. Contact: Sue Bendel0427 055 071

Friday 16th to Sunday 18th - Fungi Group - Weekend foray to the Grampians. Stay at The Grampians Eco YHA in Halls Gap. You will need to make your own booking. Contact: Virgil Hubregtse 9560 7775

Saturday 17th & Sunday 18th - Fauna Survey Group - Survey: ***Camp and nestbox survey*** Rushworth Forest.
Contact: Ray Gibson 0417 861 651

Tuesday 20th—Collate FNN. Starting about 10 am. Some folk come earlier. All welcome. Contact Joan Broadberry 9846 1218

Wednesday 21st - Terrestrial Invertebrates Group - Meeting - ***An Introduction to Common Garden Spiders in Melbourne.*** Presenters Wendy Clark and Maxwell Campbell. Contact: Maxwell Campbell 0409 143 538; 9544 0181 AH; mcam7307@bigpond.net.au

Saturday 24th – Juniors' Group - Excursion: ***Mt Burnett Observatory,*** 430 Paternoster Rd, Mt Burnett Vic 378. Commences at 6.30 pm. Children $5. Adult gold coin entry. Further details contact: Claire Ferguson 8060 2474; toclairef@gmail.com

Sunday 25th – Fungi Group - Foray: ***To The Ada Tree.*** If travelling east from Yarra Junction, the turnoff to The Ada Tree is 6 km on the left from the Powelltown General store. It is Big Creek Road, and unsealed. Travel 11 km to a divergence with Smyth Creek Road - veer right and stay on Big Creek Road. This is Starling Gap. The Ada Tree car park is a further 12.3 km and signed. (Melway Edition 37, Map X912 U3 [or Map 612 in earlier versions] or Vic Roads Edition 8, Page 80 F6). Contact: Virgil Hubregtse 9560 7775

Monday 26th - FNCV Council Meeting - 7.30 pm sharp. Agenda items and apologies to Wendy 98779860 or admin@fncv.org.au

Tuesday 27th – Day Group - Meeting: Speaker: Lindsey Poore**,** ***Island hopping in the Galapagos Islands: in the footsteps of Darwin.***
Meet at 10. 30 am for coffee and an chat. Speaker at 11 am**.** Contact Gary Presland 9890 9288

Wednesday 28th – Geology Group - Meeting: ***Non-traditional trace element investigations into arc magmatism***
Speaker: Matthew Bliss, School of Earth Sciences, University of Melbourne. Contact: Kaye Oddie 9329 0635; koddie@bigpond.com

Friday 30th – Juniors' Group - Meeting: 7.30 pm ***Identifying bones*** Speaker: Russell Thompson.
Contact: Claire Ferguson 8060 2474; toclairef@gmail.com

The policy of the FNCV is that non-members pay $5 per excursion and $2 per meeting, to cover insurance costs. Junior non-member families, $2 per excursion only.

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

Warmest greetings to these new members who were welcomed into our club at the last Council meeting*: Sally Mcllroy, Jason Mcllroy, Eliza Alkemade, Evie Alkemade, Sandra Alkemade, Chris Alkemade.*

Eastern Water Dragon Sighting

I thought I would send you a photo I took on a walk in Yarra Bend Park at Galatea Point on 13th March this year. I believe the photos are of a Water Dragon, which although not native to the area, have been introduced to this part of the Yarra River according to *Melbourne's Wildlife a field guide to the fauna of Greater Melbourne*. However, I have no expertise in this area. I was quite excited to see it, as I have only seen them before in Queensland

Lois Martin

A Harsh Summer

The Crested Pigeon with its widely expanding range has become a common bird of our local bushland and home gardens.

This lovely bird which arrives with soft whistling wing beats has thrived on its diet of exotic grass seeds. On a very hot summer day of almost 40 deg. we noticed a distressed Crested Pigeon sitting beside the water bowl. It drank, perched a while in the shade, then eventually fluttered to the ground and did not move. Some time later when we investigated, we found it was injured. We placed it into a box on a towel with a container of water (see photo) in a cool room.

Sadly it did not survive for long and for two weeks its partner called and searched. We are still hoping he or she finds another and that they both continue to use our garden for refuge again.

Post Script: Our once lonely Crested Pigeon is back with a new mate and showing him/her around our garden.

Cecily Falkingham

Working Bee 3/4/14

Special thank you to Tim Heywood who was at the recent Thursday working bee. He did a terrific job paving the area and fixing the steps at the back of the hall. He worked from 10 am to 3.30 pm without a break to finish the job.

Thanks go to Barbara Burns for organising the day, picking up spare bricks from Ray Gibson, visiting Bunnings for sand and cement, cutting back and weeding the garden and cleaning up all the rubbish.

Also there to help were Sally Bewsher, Heather Eadon and Sue Bendel.

It would be terrific to see some new faces helping out in future. Our next working bee will be on a Saturday. The date is yet to be confirmed.

Thanks to the editorial and layout team who put together FNN 241

Joan Broadberry
Wendy Gare
Sally Bewsher

Geology Group

Filling the gaps: using geophysics to help make geological maps

Dr Vince Morand
La Trobe University
Wednesday 26 March 2014

Now lecturing at La Trobe University, Vince formerly worked with the Geological Survey of Victoria, most recently using geophysical images to re-interpret much of Victoria's geology as part of the 'seamless' mapping project. This provided the basis for the talk.

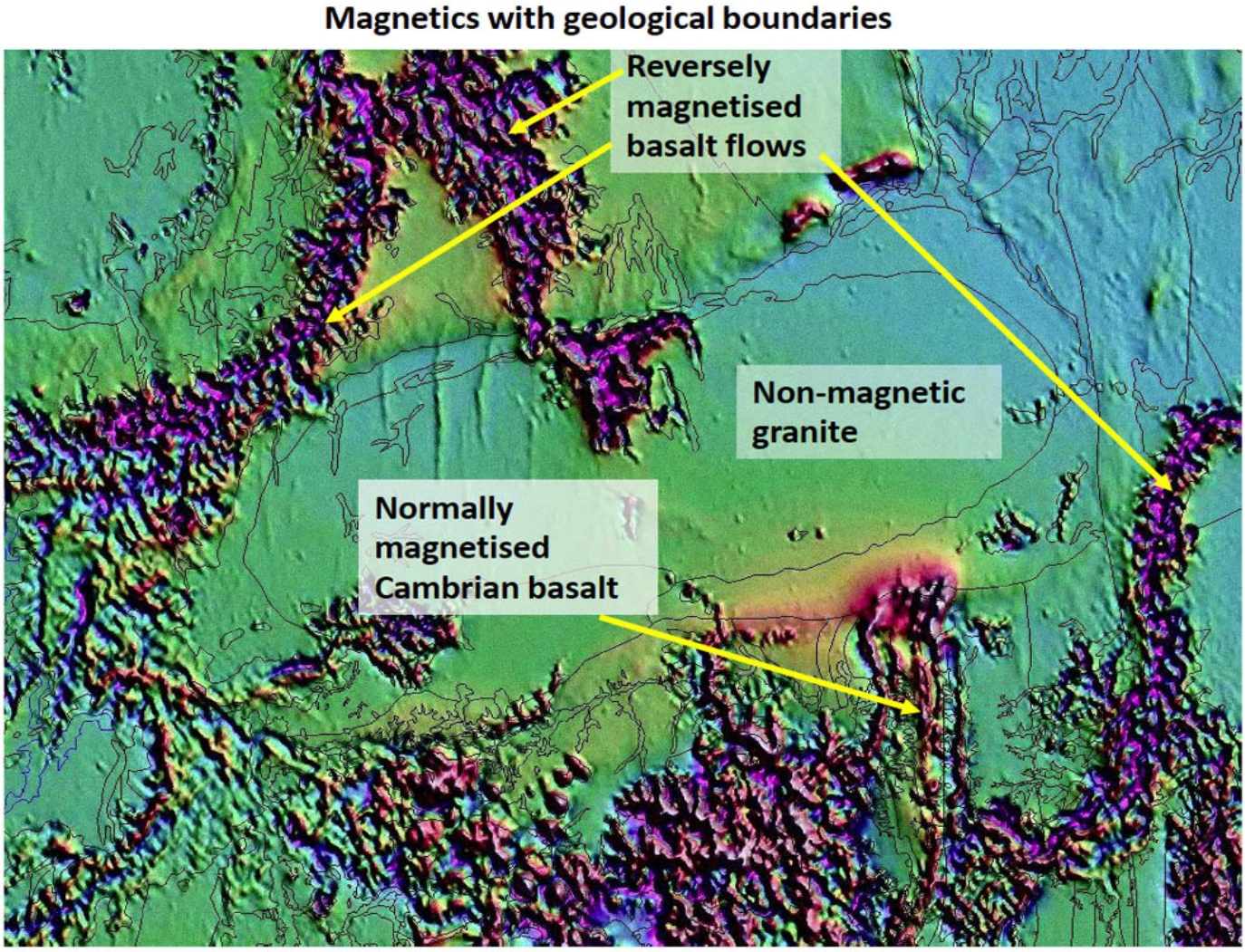
Vince opened his presentation by giving an overview of the main reasons that previous mapping has needed revision. Because extensive areas are somewhat inaccessible and usually covered by soil and vegetation, some lithological occurrences may have been missed altogether, or boundaries between widely separated exposures are questionable because they are obscured.

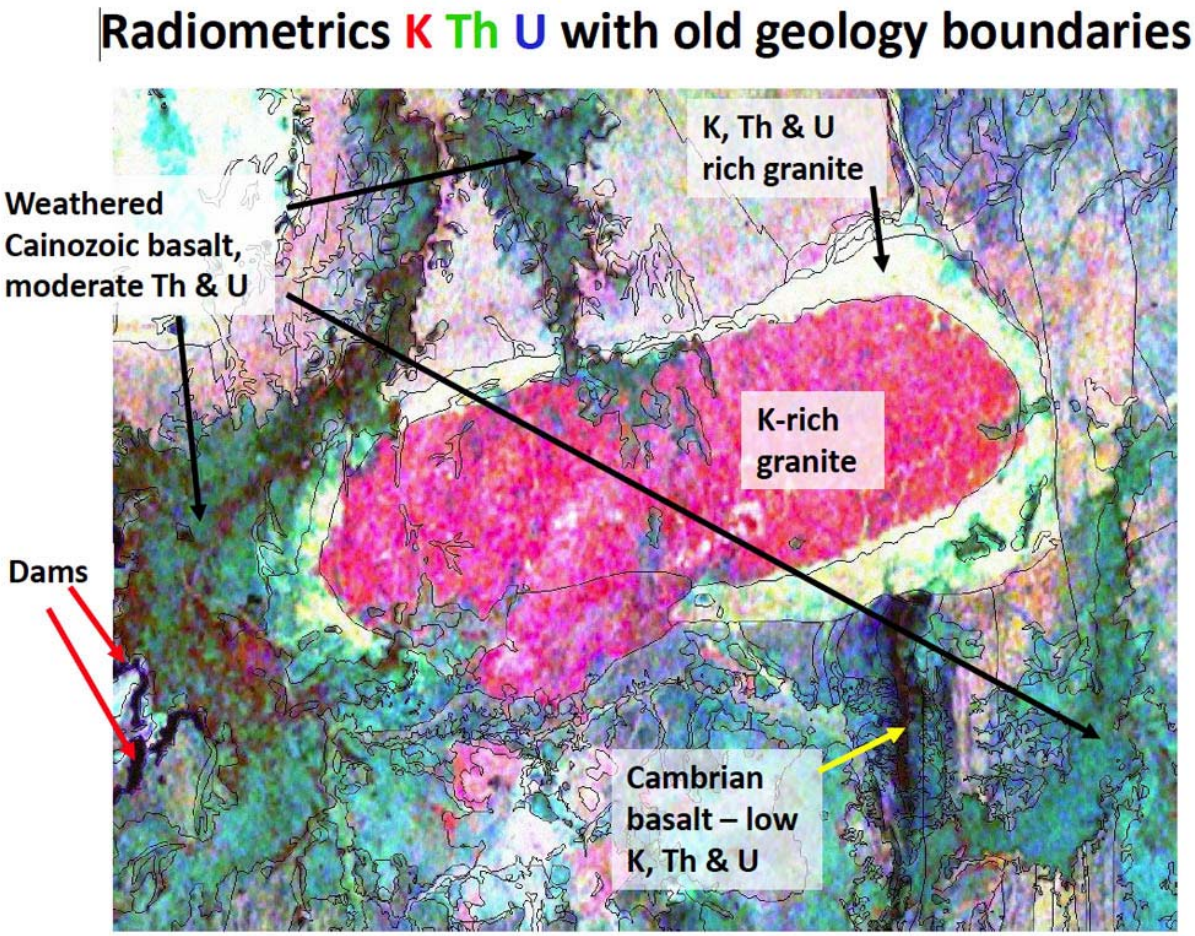
Geophysics uses properties such as magnetism, electric currents, resistivity, gravity and seismic waves to give information on both surface geology and structures well below the surface. In this session, Vince focused only on radioactivity and magnetics, combined with topography using Digital Elevation Modelling (DEM).

Radiometrics detects the various wavelengths of gamma-rays from natural radioactivity in rocks. This information is gained by flying an aircraft over the surface, although it can only 'see' the top 30 cm or so of soil or rock. Emissions from isotopes of three elements are measured: potassium (K), uranium (U) and thorium (Th). The results for each of these elements are then represented on a map by the relative intensities of three colours in various combinations: red for K, green for Th and blue for U. If all of these are present, the result is white. If none of them is detected the area appears black—this may be because the rocks are emitting no radiation, or because water is absorbing any radiation.

Different minerals have particular radioactive elements in differing proportions, and particular rock types have particular minerals, so various colours will suggest likely rock types. For example, granite, rhyolite and arkose are K-rich, and so these will show as red. Black shale typically has certain clays which are U-rich, and therefore will appear blue. Trachyte and syenite have minerals rich in all three elements, showing as white. An image in the

(Continued on page 5)





(Continued from page 4)
Mitta Mitta area illustrated the various colours for a range of rock types. This has also shown the existence of previously undetected granites.

The interpretation of magnetics is based on the interaction between magnetism of two sources: the earth's magnetism, and the magnetism associated with some minerals in rocks (mainly magnetite). This is also determined from an aircraft flying low. The strengths of fields are interpreted using colours, with red/white meaning most magnetic, and blue/purple least, although there are other factors which complicate interpretation.

It is important to note that radiometrics and magnetics each tend to work better for different rock types, and so are largely complementary in the information they provide. Vince illustrated this with images of the Cobaw area (see accompanying examples). The radiometric map showed the granitic batholith to be clearly composed of two granites of quite different composition: a K-rich central granite surrounded by a porphyritic granite. Basalts come out black. On the other hand, the granite scarcely shows on the magnetic image, but basalts show out vividly with normally magnetised Cambrian basalt and reversely magnetised Neogene basalts. Dykes can be clearly evident on magnetics, though they may not be observable in the field.

The Mansfield area provided another example in which many phenomena showed out in each type of image, including some curious effects that defied explanation. This reinforced an important reason for studying such images before going into the field. They enable a field geologist to make better use of time and expense by pinpointing localities that really need further on-ground examination.

The interest generated by Vince's clear presentation was indicated by numerous follow-up questions before the meeting's final expression of appreciation.

Leon Costermans

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PERIODICALS LEFT OVER FROM THE BOOK SALE

are available in boxes in the back of the main FNCV hall.

The titles include:
Wildlife in Australia, March 1967 to June 1976 (incomplete)

The Australian Birdwatcher, 1959—1982. Bound

Australian Natural History, 1974—1982

Audubon, 1971—1988 (incomplete)

Please help yourself, but be quick as they will be recycled if they are not taken by the end of May.

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

Day Group

Excursion to Dandenong Ranges National Park

March 25th was a beautiful autumn morning, calm and sunny. Eight members of the Day Group met at the archway leading to the Kokoda Memorial Walk in the Dandenong Ranges National Park. The aim of the excursion was to inspect the Memorial Shelter, take a short walk along Ferntree Gully Creek and enjoy a picnic lunch.

We will begin with some history. Ferntree Gully has long been a popular place to escape the city for a picnic or a bushwalk. The train line made access very easy. A desire to protect its natural beauty prompted a group of local residents in 1881 to ask the Minister of Agriculture to reserve the area. The following year 168 hectares were designated as a site for public recreation. However, it was not until December 1927 that an enlarged area of 227 hectares was permanently set aside as Victoria's second National Park. With the addition of Sherbrooke Forest and Doongalla in 1987, Ferntree Gully National Park was renamed Dandenong Ranges National Park.

Created in the early 1900s, the 1000 Steps were originally made from the trunks of tree ferns laid along the wetter areas of the track to make the climb up One Tree Hill easier. They were then replaced with wooden palings before the more permanent concrete steps were installed in 1950.

Around the picnic ground there are many well-established trees that are not native to Australia, like Californian Redwood (*Sequoia sempervirens*), but were almost certainly planted before the National Park was created in 1927. Several large Mahogany Gums (*Eucalyptus botryoides*), native to East Gippsland, were also seen.

The Ferntree Gully section of the park was adopted by the Victorian veterans of the Kokoda campaign as their memorial site in 1998 .The Kokoda Track Memorial, located at the base of the walk, was constructed in 2011. The design features a semi-circular shelter which protects a series of information panels giving an insight into the1942 Kokoda Track campaign. It includes outdoor seating to host public commemorative events such as on Anzac Day.

Kokoda Track Memorial, *Photo: J. Broadberry*

After we had taken in the historical information and photographs, our little group set out on the Ramblers Track Loop Walk. This is very short at 1.5 km, and of medium grade. As it happened, most of those who came along could probably have easily added the steeper 1.5 km section which would have taken us to One Tree Hill Picnic Ground. However, whilst planning, this had seemed a little ambitious for a half day excursion. Birds seen included a juvenile White-browed Scrub Wren, which lacked the wing bar and eyebrow of the adult.

Ramblers Track turned out to be an ideal place to learn more about the flora growing alongside Ferntree Gully Creek. We were very fortunate to have Peter Fagg on the excursion. As the group made its way back to the picnic area, he shared his extensive botanical knowledge with us.

The forest around the loop walk was dominated by three eucalypt species: Manna Gum (*E. viminalis*), Mountain Grey Gum *(E. cypellocarpa*), and Messmate (*E. obliqua*). These were large, tall trees most of which had no doubt survived a few bushfires in the past. These species, unlike Mountain Ash (*E. regnans),* usually recover after fire by means of epicormic shoots along the trunk. Some of the Manna Gum trees were flowering, as judged by flowers on fallen branchlets.

Understorey wattle trees (up to 25 m tall), mainly Blackwood (*Acacia melanoxylon*) and Silver Wattle *(A. dealbata),* were frequent, as were the Rough Tree Fern (*Cyathea australis)* and the shorter and thicker Soft Tree Fern *(Dicksonia antarctica),* the latter being confined to the shadier gullies. Small trees noticed included Blanket-leaf (*Bedfordia arborescens*), Musk Daisy-bush (*Olearia argophylla*), both in the daisy family, Hazel Pomaderris (*Pomaderris apetala*) and Christmas Bush (*Prostanthera lasianthos*) which flowers around Christmas time and whose leaves have a minty smell when crushed.

We noted two species of vigorous climbers growing on smaller trees: the Australian Clematis (*Clematis aristata*) and the Wonga Vine (*Pandora pandorana*). These would have been more noticeable in spring when they flower. Several other plant species were also seen, common to this moist type of forest, including Bootlace Bush (*Pimelia axiflora*) and Prickly Currant-bush (*Coprosma quadrifida*) and Red-fruit saw-sedge (*Gahnia sieberiana*). In summary, the flora was very typical of the widespread 'damp sclerophyll' forest in Victoria.

Peter Fagg & Joan Broadberry

The Field Naturalists Club of Victoria Inc.

Established 1880

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Club Address: 1 Gardenia Street, Blackburn.
Email: admin@fncv.org.au
Website: www.fncv.org.au
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Special Resolution
Proxy Voting Form

I,_____ current member of The Field Naturalists Club of Victoria Inc

appoint (full name)_____ _____

of (address)_____

or in his/her absence, the AGM chairperson, to be my proxy at the 2014 Annual General Meeting to be convened on Sunday 4th May 2014 at 1 Gardenia St. Blackburn and authorise him/her to vote on my behalf on the Special Resolution to be put:

"*That this General Meeting of The Field Naturalists Club of Victoria Inc. adopts the draft Rules of the FNCV, as previously circulated'.*

Special resolution: In favour of / against / use his/her discretion *
(* delete which ones do not apply)

This form must be given to the FNCV Secretary before the start of the AGM.

Signed: _____ Date: _____

NOMINATION FORM FOR FNCV COUNCIL 2014/1

Understanding Our Natural World
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The FNCV AGM will be held on Sunday 4th May, 2 pm FNCV Hall, 1 Gardenia Street, Blackburn 3130

Name of member nominated ……..……..

Position nominated for* ……..…….……

Signature of member nominated ……..……...

TWO MEMBERS SUPPORTING NOMINATION

Name …….... Signature …… Date……..….

Name …….... Signature ……. Date…….…..….

*Elected members of the FNCV Council are President, Vice-President, Secretary, Treasurer and six General Councillors. All Councillors must be FNCV members**.** (*Council also consists of Immediate Past President, and a representative nominated by each Special Interest Group.)*

Please return this form to the FNCV office
PO Box 13, Blackburn 3130
Phone 9877 9860; Fax 9877 9862
The scanned form can be emailed to: admin@fncv.org.au

Nominations must reach the registered office of the Club no later than 48 hours before the AGM, i.e. Friday 2nd May 2014 by 2 pm.

Extracts from SIG reports given at the last FNCV Council Meeting

Botany Group:

Trevor Edwards presented on "South African and Australian plants: mountains, poles and pollinators." He looked at when the African and Australian continents split from Gondwana and the relative amounts they moved. Australia has moved through more climatic zones than Africa and lacks high mountain ranges for plants to move up as temperatures rise. Australia used to be largely covered in rainforest, so plants needed to be adapted to capture light. Succulents are not well adapted to capture light and although Australia now has large arid areas it has very few succulents. Succulents are numerous on continents that have always had arid areas. Many Australian plants are pollinated by mammals as there was not the long history of plants evolving with long-tongued bees. Australia also has the greatest number of blue flowers which appear to have pollen to attract pollinators even after the pollen has been removed by the buzz pollinators.

Fauna Survey Group:

Eastern Parks Fauna Survey - Spotlighting and bat surveys took place at on the 9th and 10th of March. The sites surveyed were at Bushy Park, the Linear Trail between Jells Park and Shepherd's Bush, and the Police Paddocks. During the spotlighting the following were seen: Common Brushtail and Ringtail Possums, Sugar Gliders, Black Rats, Eastern Grey Kangaroos, Red Foxes, a Black Wallaby, Red Wattlebirds, Laughing Kookaburras and Grey-headed Flying Foxes. Heard were White-striped Freetail Bats, Striped Marsh Frogs and a Southern Boobook. The following bat species were captured and released- Gould's Wattled Bat, Chocolate Wattled Bat, Little Forest Bat and Lesser Long-eared Bat.

Fungi Group:

At our March meeting, long time Fungi Group member Ian Bell spoke about, and demonstrated, time-lapse photography, particularly in relation to fungi. He showed us the type of equipment required, how to set it up, and how to process the images, handing out a page of instructions for us to follow when we try this technique for ourselves. The presentation was illustrated with time-lapse photos of the growth of various types of fungi, and also of the planet Venus rising early in the morning. During his presentation, Ian made time-lapse photos of our meeting and then then showed us how to turn these into a time-lapse video.

Geology Group:

The Geology SIG were both entertained and educated by the talk given to the group by Ian D Lewis who works for the Dept. of Environment, Water and Natural Resources in South Australia. He is also a keen cave explorer and diver, so has used this interest to further his PhD research into the Naracoorte Caves formation and its link to the Kanawinka Fault, which runs from the Portland area to the East Naracoorte Range which he hypothesizes is the remains of a steep monocline. Ian obviously was very enthusiastic about his topic and opened a window into how geological research can use a wide variety of sources to come to interesting conclusions.

Juniors' Group:

At our February meeting, we had a full club room to hear Graham Stockfeld, from Turtles Australia, speak to us about Victoria's turtles – the three different native species, processes that threaten them and what we can do to protect them. Also, Graham spoke about the work Turtles Australia are doing to protect the turtles' nests in places along the Murray River. Graham brought along several species of different sized turtles for the kids to watch and hold, see photo right.

March has been a busy month with a Queenscliff Marine excursion on the 16th and a visit to the Inverloch Dinosaur dig site on the 23rd. At Queenscliff we spent a short time at the Queenscliff Marine Discovery Centre, before 26 of us boarded our boat to discover what creatures are living in Port Phillip Bay. A sample of seaweed was collected from the bottom of the sea bed and we all sifted through it to find a wide variety of creatures including a Sea moth, Wandering sea anemone, Pygmy leatherjacket, Colonial ascidians, brittle stars, sea horses and decorative crabs. Our trip included a visit to the fur seals at Chinaman's Hat and Pope's Eye. Despite the cold weather on the day, we had a great time. We were lucky enough to be invited, by Lisa Nink, to the Friends of Dinosaur Dreaming Family Day at the Inverloch dig site at Flat Rocks. Our group of 35 had a tour of the site, seeing the fossil trees, igneous dyke, the fault and the sea caves. We then went prospecting with Mike, who educated us about what the geologists look for in the rock, what bone looks like in the rock, and some of the finds that have been made in that area.

Terrestrial Invertebrates Group

TIG Meeting
19th March 2014
Common Moths of the Urban Environment
Speaker: Peter Marriot

The meeting was attended by ten members. During a brief feedback session members reported on their observations since the November meeting. It was observed that the recent heat wave seems to have decimated a number of invertebrate species including mantids, lepidopteran larvae, spiders and flatworms.

The invited speaker, Peter Marriott delivered an interesting and engaging presentation on moths common in the urban environment. The presentation covered the life cycles, food plants, ecology and biology of many species of moths.

20,000 or more species of Australian moths are distributed amongst 70 Families. Only 50% of these species are scientifically described. Butterflies are represented by less than 300 species in Australia. Moths therefore represent the bulk of the Australian species of Lepidoptera. Overall, the larvae of moths are not well known which is not surprising since there are generally 4-7 instars, which are often quite different, resulting in circa thousands of potential larval forms to contend with across all species. There are over 4,000 species in Victoria. A few investigators are rearing moths from egg to adult/imago so that they can record and photograph the complete life cycle.

Moths inhabit a very extensive range of niches with many specialised life histories. Some live on specific species of food plants such as sedges, grasses, eucalypts, herbs and other native and introduced plants. Emperor Gum Moths seem less selective and feed on liquid amber, eucalypts, pepper corns, Photinia and other plants. Some moths feed on algae and lichen growing on masonry and wood structures; others eat dry leaves in leaf litter. The latter probably contribute significantly to fuel reduction but are, ironically, major victims of fuel reduction burning.

There are significant numbers of species that eat dung as larvae (coprophages). Oecophorid moths such as *Oxythecta spp* eat wombat and wallaby dung, *Scatocresis* spp eat possum and koala dung, and *Telanepsia stockeri* eats koala dung. Undoubtedly there are moth species for every type of dung produced. The wood-boring rain moths and ghost moths were also discussed. There are numerous moths that eat fungi and must develop quickly or have strategies for moving to freshly emerged fungal bodies to survive. There are also moths that feed on fungal galls and caterpillars that live in social groups.

(below) *Opidiphthera helena*,
Helena Gum -moth

Opodiphthera eucalypti,
Emperor Gum-moth caterpillar

Some larvae living in leaf litter make protective coverings from small leaves. There are numerous case moths which make their cases from silk adorned with small twigs, cut leaves and other available materials. Moths may have apterous or vestigial-winged females that never fly, but lay their eggs where they have spent their lives. Moth eggs are intricately patterned and sculptured and are deposited using a diverse range of strategies.

Overall, moths display an incredible range of forms from the relatively dull (human subjectivity) to the incredibly intricate and beautiful. They range from the minute to the large saturniids. The larvae are also amazingly diverse with many adaptations to their various niches. They use a very diverse range of food resources and habitats. The larvae, which make up the major part of the active life of a species, are essentially eating machines. Eggs, larvae and pupae may undergo quiescent periods or diapause as survival strategies. These may last from days to years though at the adult stage (imago) they are often short-lived.

Moth larva in leaf litter.
(Oecophoridae?)

Spilosoma canescens
Dark Spotted Tiger Moth

Moths sometimes have explosive outbreaks or irruptions where dramatic population increases lead to large scale defoliation of forests and woodlands. A recent cup moth (Doratifera oxleyei) outbreak in central Victoria had dramatic effects. The reasons for these phenomena are not well understood but may relate to management practices

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Looper (Geometridae) caterpillars.

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which reduce predators such as birds, wasps, bats and spiders.

Everyone attending the presentation stayed for an extended time to enjoy a thoroughly informative and fascinating subject delivered by a passionate and experienced expert. We look forward to more presentations on moths in future. It would be a rewarding and interesting subject for any naturalist to engage in.

Maxwell Campbell

All photos by Maxwell Campbell

Prasinocyma semicrocea- Geometridae.

Doratifera oxleyei (Cupmoth) munching through the woodland at Clydesdale 2013.

Thanks to those who helped collate and label FNN 240

Margaret Brewster,
Hazel Brentnall
Edward Brentnall
Andy Brentnall
Keith Marshall
Joan Broadberry
Ray Power
Margaret Corrick
Sheina Nicholls

Southern Pygmy Squid

For some years now I have been visiting some of the most wonderful locations for exploring marine life. The Marine Research Group (MRG) has helped me identify some of the creatures I have marvelled at since I was a child, when I first discovered the intertidal rock platforms which are exposed at low tide. This is one of the most diverse and fascinating habitats to explore.

The beach for any Naturalist is a wealth of exciting finds. The vegetation, the birds and beach-combing can swallow up many hours. As my interest in botany, birds and marine creatures has increased over the years, the bag of Field Guides I take on a coastal holiday becomes harder to lift off the ground.

On a recent trip by the MRG to Point Lillias, we found a place of wild natural beauty, once used as a salt works and now left to the elements to restore and repair. The Group spread out over a large rocky terrain to explore. Using a Pictorial Field Guide provided by our leaders and with the patient guidance of many experts, the list of marine creatures steadily grew.

Whilst sifting through the seagrass a tiny orange creature caught my eye. (Photo left). I had found a Southern Pygmy Squid, *Idiosepius notoides*. It measured approximately 20mm. These creatures, although common, can easily be overlooked as they can change colour to blend in with their environment. The male is smaller than the female measuring approximately 16mm. After mating the female attaches her eggs to the seagrass leaves. They have eight arms and a pair of retractable feeding tentacles and feed mainly on tiny shrimps. The Pygmy Squid darted energetically around the small container in which we held it temporarily. Although a common animal, more research and protection of its eelgrass habitat is needed, especially in heavily populated coastal areas.

Cecily Falkingham

Marine Research Group News

Second part of report on the MRG meeting Mon. 10 February, 2014. Dr. Hugh MacIntosh of Museum Victoria spoke on the topic of **"Boring bivalves: Shipworms".**

This first part of the talk outlined the general biology of shipworms and was summarized in FNN 240. Here the topic is Hugh's PhD research on the biogeography of tropical shipworms.

It is known through recent research that shipworms form highly competitive meta-communities in which larval brooding species are up to 10-fold more abundant than free-spawning species. This substantial difference in recruitment is contrary to traditional paradigms of reproductive trade-offs , where competing strategies are often equally effective (ie. brooders release fewer but mature larvae which have a much lower mortality compared to the much higher numbers of (immature) larvae in free spawners).

To address the key question of why brooding shipworms are more successful than free-spawning shipworms, Hugh examined the life history characteristics of shipworms from three tropical Queensland locations, comparing growth rates, reproductive development and fecundities of a range of brooding and spawning species.

The methodology involved submersing wooden recruitment panels and allowing time for them to become colonized before retrieving them for examination. Wood panels were constructed from 2mm thick and 22cm x 15 cm sheets of radiata pine veneer plates bolted together, providing adequate surface for settlement and room for unimpeded growth, and also facilitating ease of examination in the ready separation of sheets once the bolts are removed.

Retrieval occurred between 2007-2010. All specimens were photographed and measured (length & width). Species, size and abundance was recorded for all panels, and differences between sites, times and species were examined.

In terms of abundance, the results revealed the presence of 62,075 shipworms, with 19 species across 6 genera. 11 species were free spawning (fs), 7 species were short-term brooders, and 1 species was a long-term brooder; these are listed below in their order of abundance:

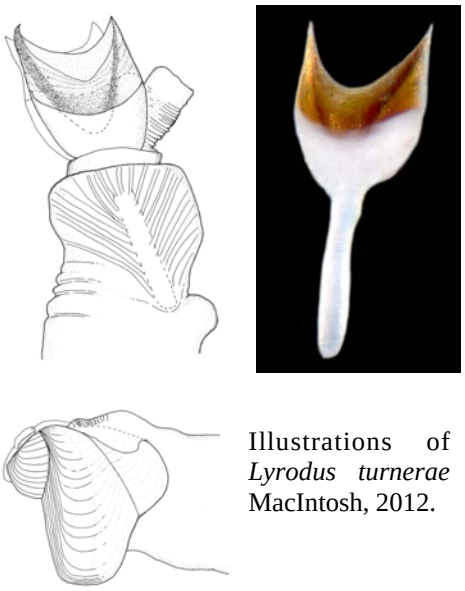
Lyrodus tristi, *Teredo parksi*, *Lyrodus floridanus*, ***Lyrodus sp.***, *Teredo johnsoni*, *Lyrodus bipartita*, *Lyrodus massa*, *Lyrodus pedicellatus*, *Bankia carinata* (fs), *Bankia gracilis* (fs), *Bankia neztalia* (fs), *Psiloteredo healdi* (fs), *Dicyathifer manni* (fs), *Teredothyra excavata* (fs), *Bankia bipalmulata* (fs), *Bankia australis* (fs), *Bankia tanzensis* (fs), *Bankia brevis* (fs), *Teredothyra matocotana* (fs).

The brooders comprised 42% of the diversity but 96% of the abundance. In contrast, the spawners comprised 58% of the diversity but only 4% of the abundance.

What is then the best strategy? It seems that the reproductive mode strongly determines recruitment success. Species must balance fecundity, retention & dispersal variables. It is the biology and behavior of shipworm offspring, rather than adult characteristics that convey the most substantive advantage to recruitment success and influence on population structure. MacIntosh et al (2012a) provides further information.

During the process of this research work, there was a species that did not key out to any of the known species of shipworm. As noted in the first part of these notes (see FNN 240), shipworm identification is based on pallet morphology. This unknown species had forked calcified pallets with a periostracal cap and strong V-shaped infolding, and it brooded larvae in its gills. These characteristics made it either a *Teredo* or a *Lyrodus*. *Teredo is* characterized by mostly calcareous pallets, whereas those of *Lyrodus* bear a large periostracal cap; therefore the species was a *Lyrodus*. Within this genus, *Lyrodus massa* is the most similar, but its pallet periostracum is a separate cup, and thus the unknown species was distinct and undescribed.

Hugh therefore examined all *Lyrodus* in the Australian Museum collection and searched the literature for similar species. He noted that this species had been recorded from tropical Australian and Papua New Guinea waters (but never described) in various past surveys: CSIRO Survey of Australian woodborers: Turner & Marshall (1970-72) as '*Lyrodus* sp. V'; Ibrahim (1981) as '*Lyrodus* sp. V'; and Rayner (1983) as '*Lyrodus* sp.' (see MacIntosh, 2012 for the references). Hugh then set upon the task of formal description, and named his species *Lyrodus turnerae*, after the late Dr. Ruth Dixon Turner for her distinguished work on marine wood borers (see Macintosh, 2012). In very approximate terms, adult specimens are 25mm long, pallets 2.5mm long, and shell valves 3.5mm in greatest dimension. The illustrations below, all courtesy of Hugh, show the posterior end with pallets (upper left), a photograph of a calcareous pallet showing the periostracal cap (upper right), and a view of a valve at the anterior end (lower left).



Illustrations of *Lyrodus turnerae* MacIntosh, 2012.

We thank Hugh for a very interesting talk and also for making his powerpoint slides available—these and the references below have enabled the compilation of this summary.

References:

MacIntosh H (2012). *Lyrodus turnerae*, a new teredinid from eastern Australia and the Coral Sea (Bivalvia: Teredinidae). *Molluscan Research* 32:36-42.

MacIntosh H, de Nys R, Whalan S (2012a). Shipworms as a model for competition and coexistence in specialized habitats. *Marine Ecology Progress Series* 461:95-105 (not sighted).

MacIntosh H, de Nys R & Whalan S (2012b). Less is more? Life history competition in shipworm metacommunities (Abstract, p. 44). *Malacological Society of Australasia, Mollusca 2012,* Program and Abstract Handbook, 3-6 December, 2012, Melbourne, Victoria.

Platon Vafiadis

From the Office...

Thank you for all the donations for the kitchen. We can always use more teabags and the biscuits have been much appreciated. If we could have an occasional packet of something special, we can use it for morning tea on collation days.

The other item to report is that Council has decided to discontinue the bonus month's membership for early payment. This was introduced to spread out the large number of memberships falling due on January 1st each year. The numbers are now spread from January to April, so we have achieved our aim.

Wendy Gare

2014 FNCV AGM - Sunday 4th May, 2 pm

You are invited to attend the FNCV AGM,

FNCV hall, 1 Gardenia St. Blackburn.

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

Special Resolution: 'That this General Meeting of The Field Naturalists Club of Victoria Inc. adopts the draft Rules of the FNCV, as previously circulated'.

Guest Speaker: **Euan Ritchie will speak on**
the Tenkile Project— (New Guinea Tree Kangaroos)

Afternoon tea served. All welcome

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

See p7 for Council nomination form and Special Resolution Proxy Form

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