Field Nats News No.279

Understanding Our Natural World

Newsletter of the Field Naturalists Club of Victoria Inc.
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October 2017

From the President

The Marine Biodiversity Symposium was a great success thanks to the dedicated efforts of all involved. In particular I would like to pay tribute to our wonderful group of speakers. *See FNN p6 and 7.*

The Fauna Survey Group is organising a great *Birds of Victoria* symposium for October 21st and 22nd. Topics include Mallee Emu-wrens, Powerful Owls, Regent Honeyeaters, Orange-bellied Parrots, Helmeted Honeyeaters, Raptor rehabilitation, Plains Wanderers and Brolgas. Presenters include: Peter Menkhorst, Dean Ingerswen, Dr. Mark Antos, Will Steele, Inka Veltheim and Alex Maisey. Do make certain you can get to it.

The deadline for FNN 280 will be **10 am on Tuesday 3rd October.** FNN will go to the printers on the 10th October with collation on Tuesday 17th.

A spiderling struggles through a tiny hole

Last week I noticed a large number of young spiders, all little replicas of the adults, had emerged from the egg case of a "Bird Dropping Spider" *Celaenia excavata*. I was able to film them producing an exit hole in the case by using their chelicerae or fangs to pull and tease out the silk comprising it (*photo left*). I finally released circa 60, 2mm spiderlings into my garden. It was still quite cold and I had expected them to hatch when the weather improved. There were no parasitic wasps or flies in this instance. The St Andrews Cross egg cases and mantid oothecae are still unhatched.

A Sminthurid Springtail

A close inspection of the now very soaked leaf litter in my garden revealed a very large number of collembolans (*photo right*) and other entognathous hexapods including the dipluran, *Campodea*. Microscopical examination usually reveals proturans as well. The Collembola, Diplura and Protura are apterous (wingless), entognathous (mouthparts enclosed within the head capsule) hexapods but are not insects.

Podurid collembolans are often seen as a blue-grey film on ponds, in water buckets and even the water left in pot-plant saucers *(photo right)*. They can also be seen in large numbers in compost bins. Our largest springtails are the entomobryids which can spring for considerable

(*Continued p3)*

All photos: **Max Campbell**

Podurid Springtails on water

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.

October

Sunday 1st to Saturday 7th - Fauna Survey Group Survey: *Southern Arc Survey*. Camping or cabins Cape Conran camp ground. Note there are cabins but no powered sites. Field work will commence Monday 2nd and finish Friday 6th October. A wonderful opportunity to see potoroos, bandicoots, numerous species of bats plus East Gippsland reptiles, birds and frogs. Contact: Peter Homan 9349 1241 or 0407 525 103, email: homanpn@gmail.com **Prior registration is essential.**

Monday 2nd - Fungi Group Meeting: *Planning for 2018 forays.* Contact: Carol Page 9857 6388; cpage356@gmail.com

Sunday 8th - Terrestrial Invertebrates Group Excursion: *Langwarrin Flora and Fauna Reserve.* Meet 10 am in the car park, McClelland Drive (at the western end of Centre Break). The reserve is a lowland plains, sandy heathland and we hope to spot a variety of pollinators. We will walk to Dune Track in the north for the morning, returning to the car-park for lunch and Aqueduct Tract in the south-east for the afternoon. There are no facilities in the park. BYO picnic lunch and a chair. See Parks Vic web site for information on the reserve http://parkweb.vic.gov.au/explore/parks/langwarrin-flora-and-fauna-reserve
Contact: Reiner Richter fncv@rnr.id.au


Sand Wasp (Bembix sp.)

Monday 9th - Marine Research Group Meeting: *The recent trip of the Investigator - Sampling the Abyss.* Speaker: Mel Mackenzie. Contact: Leon Altoff 9530 4180 AH; 0428 669 773

Tuesday 10th - Fauna Survey Group Meeting: *The amphibians of Costa Rica.*
Speaker: Ruby Albury. Contact: Robin Drury 0417 195 148; robindrury6@gmail.com

Saturday 14th – First Aid Course. For those who have already registered.
Contact: FNCV Office admin@fncv.org.au; 9877 9860

Sunday 15th – Juniors' Group Excursion: *Wildflowers at Blackburn Lake.* Meet 10.30 am at carpark to look for wildflowers. Contact: Claire Ferguson 8060 2474; toclairef@gmail.com

Tuesday 17th - Collate FNN starting about 10 am. All welcome. Contact: Joan Broadberry 9846 1218

Wednesday 18th - Microscopy Group Meeting: Speaker: to be advised. Contact: Philippa Burgess 0409 866 389

Thursday 19th – Botany Group Meeting: *Engineered coexistence: a natural solution to creating functional green roof vegetation communities.* Speaker: Dr Pam Spencer. Contact: Sue Bendel 0427 055 071

Saturday 21st & Sunday 22nd - Fauna Survey Group Seminar: *Birds of Victoria* Discussions on a variety of birds, the issues facing them, current research: Mallee Emu-wrens; Plains Wanderers; Helmeted Honeyeaters; Powerful Owls; Raptor rehabilitation; Regent Honeyeaters and more. Presenters include Peter Menkhorst, Dean Ingerswen, Dr. Mark Antos, Will Steele, Inka Veltheim and Alex Maisey. 9.30am to 4.30pm daily. Lunch & morning & afternoon tea included. Registration & payment details have been emailed to you or are available in FNN 278; www.fncv.org.au; or FNCV office. admin@fncv.org.au 9877 9860. Contact: John Harris 0409 090 955; wildlifeexperiences@gmail.com

Monday 23rd - FNCV Council Meeting, 7.30 pm sharp. Agenda items and apologies to Wendy 9877 9860; admin@fncv.org.au

Tuesday 24th – Day Group Meeting: *Fauna monitoring with remote cameras.* Speaker: Robin Drury from the Fauna Survey Group. Contact: Joan Broadberry 9846 1218. Meet at 10.30 am for coffee and a chat. Speaker at 11 am. All welcome.

Wednesday 25th – Geology Group Meeting: *Life's Great Crises: New Theories about Mass Extinctions since life began on Earth.* Speaker: Dr Rolf Schmidt, Collection Manager, Invertebrate Palaeontology, Melbourne Museum
Contact: Ruth Hoskin 9878 5911; 0425 729 424; rrhoskin@gmail.com

Friday 27th – Juniors' Group Meeting, 7.30 pm. *Wildlife and plants of the Great Forest National Park*
Speaker: Jordan Crook. Contact: Claire Ferguson 8060 2474; toclairef@gmail.com

The policy of the FNCV is that non-members pay $5 per excursion and $3 per meeting, to contribute towards Club overheads. Junior non-member families, $4 for excursions and $2 per meeting.

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distances using their long furcula. The proturans are very tiny and often require a compound microscope to see them. They do not have antennae but use the front legs in a similar way (*Photo far right*).

A Proturan

The diplurans are mostly small but visible, very white and circa 5 to 10 mm long. They have, as their name suggests, two tails or cerci. They have moniliform or "beaded" antennae (*photo right*) and the cerci are filiform. However we have some predatory forms in Australia that are over 50mm long (*photo below*) and have heavily sclerotised cerci that are pincers resembling those of earwigs (photo below/right).

Head of Heterojapyx

Heterojapyx uses its pincers to capture and hold prey. They are remarkable in appearance and once seen not forgotten; particularly if their pincers manage to grip the skin. Both proturans and diplurans have remnants of abdominal appendages. A remarkable, mostly cryptozoic fauna can be found virtually under our feet.

***Heterojapyx* can be over 50mm**

Heterojapyx forceps

Max Campbell

Welcome

Welcome

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

Nathan Gregory, Jacinta Humphrey, Anne Warren, Nimal Karunajeewa and Taylor Gundry.

Thanks to the editorial and layout team who put together FNN 279

Joan Broadberry
Wendy Gare

Many thanks to those who helped collate and label FNN 278

Hazel Brentnall
Edward Brentnall
Andy Brentnall
Keith Marshall
Neil McLachlan
Joan Broadberry
Sheina Nicholls

Vale Bill Fenner

We are saddened to report the death, on 21 August 2017 of Bill Fenner. Bill had been a member of FNCV since July 2002, until late last year when his wife notified the club that he was in care.

Bill was born in 1922 in Adelaide, where his parents had moved from Ballarat in 1916. Bill's father had been appointed as Superintendent of Technical Education in South Australia. Bill studied mechanical engineering at the University of Adelaide and initially worked as a geophysicist, later moving into positions with commercial geological exploration companies. His final role in working life was in quality management with Railways Victoria.

Bill retired in 1985, which left him more time to pursue his wide ranging interests in natural history. He was involved with the Geology Group, and when the Day Group formed in early 2008 Bill became a regular attendee of its meetings and excursions. He was a sometimes forthright man, who was known by his habit of suddenly interjecting questions. Nonetheless, his presence at meetings will be greatly missed.

Fungi Group

FNCV FUNGI GROUP FORAY 2nd July 2017 WANDERSLORE, LAUNCHING PLACE

WANDERSLORE SANCTUARY

Wanderslore is a Trust for Nature Property consisting of 10.05 hectares. It consists of a dry ridge running N-S. On the east is a permanent stream gully, on the west a stream runs through the gully after rain, and the vegetation includes Manna Gum, Mountain Grey Gum, Red Stringybark, Brown Stringybark, Messmate, Common Peppermint, and Soft and Rough Tree-ferns.

Ed Grey "After a frosty morning we enjoyed a bright, sunny day. We were joined by members of the Friends of Wanderslore and also welcomed some visitors. Along the Bridge Trail on a mossy bank were two fruit bodies of the Lavender Coral *Ramaria fennica* var. *fumigata* showing the purplish-brownish colouration of the branches. The multi-branched structure of this species distinguishes it from the similar Dull Lilac Coral *R. versatilis* var. *latispora* which has only two or three main branches. However, both species are very similar microscopically. Later, another fruit body was found alongside the Driveway above the studio. Large numbers of two species of the simple Club Corals were found scattered throughout the site. These were the Yellow Club *Clavulinopsis amoena* and the Rosy Coral Fungus *Clavulinopsis corallinorosacea*, although the fruit bodies were mostly very small – an artifact of the recent dry weather? Also along this track were several examples of the Collared Earthstar *Geastrum triplex* with the rays splitting radially around the spore sac in typical fashion."

Reiner Richter "There weren't as many fungi as previous seasons at this site (although I'd only been there once before). Meandering about I saw the *Entoloma*-like cap of a mushroom but as I was about to examine it someone called me away. Even though I ventured no more than 5 metres, when I turned around to retrace my steps I got lost and it took me a bit longer to find this individual again. It just highlights how easy it is to miss something not greatly contrasting with its surrounds. When I went to inspect the gills I noticed the entire stipe was an aberrant growth of extra gills giving it a morel-like appearance.

However the most significant find would be the rare Tea-tree Fingers *Hypocreopsis amplectens*. I have searched for this fungus before in known locations but never seen any and this is the first new locality in over a decade. At this site they seemed to favour *Kunzea* logs lying on the ground where the moisture is better retained.

In the Western Gully Loop we found some small, white corals that were simple or sparsely branched. These are possibly *Ramariopsis kunzei* and I have seen them this season in a variety of other places including Blackwood and Kurth Kiln and they seem to like earthen banks.

As fruiting fungi were not visibly abundant we started searching for invertebrates under logs. In doing so we also found *Coltriciella dependens*, a fungus not commonly recorded but not that rare once you start looking at the underside of logs lying on the ground. We also found some invertebrates as well as some amazing, tiny, possible egg cases."

John Eichler "The day's most exciting and significant discovery was a population of *Hypocreopsis amplectens*, the Tea-tree Fingers (photo right). The initial find was made beside Middle Trail by a visitor, Shirley Lahtinen, who joined the Fungi Group on this foray. Subsequent searching in the vicinity revealed a total of about 10 specimens in various stages of development in an area of about 400 square metres. The fungus was growing on the dead branches of a *Kunzea* species, probably *Kunzea leptospermoides*. At this stage the population seems to be very localised, with a search of the western and south central parts of the property in the afternoon failing to locate any more specimens. The coordinates of the site have been recorded using a GPS and the extent of the population has been marked using pink tape. Members of the Friends of Wanderslore have been told of the discovery and its significance and the find has also been reported to the Royal Botanic Gardens Victoria and Fungimap.

The discovery is noteworthy for several reasons, including:

* This is the first new Victorian location for *Hypocreopsis* in the 25 years since the initial batch of discoveries were made
* *Kunzea* is a newly recorded host and the habitat is somewhat different to other known Victorian sites.
* This is a more inland site than the known, near coastal Victorian sites
* This discovery demonstrates that a wider range of habitats and hosts should be checked for the presence of this fungus, e.g. Warrandyte and Neds Gully in the Cathedral Range
* Most specimens from Launching Place were actively growing, while those from other know Victorian locations have either died out or are declining.

Wanderslore can produce good displays of several species in the very photogenic genus *Hygrocybe*. On this foray we saw five species - *H. graminicolor* (which was a little past its prime), *H. aurantiopallens*, *H. chromolimonea*, Mauve Splitting Waxcap *Humidicutus lewelliniae (Hygrocybe lewelliniae)* (a particularly nice group of this species was seen in the afternoon) and a red species, probably *H. miniata* or *H. firma.* Recent taxonomic work has resulted in some of these species being transferred to other genera."

Pat Grey "Scattered in groups throughout the foray were green and yellow-brown *Hygrocybe* sp. The slimy green and yellow-brown cap, slimy green stem and white arcuate gills strongly suggested the Slimy Green Waxcap *H. graminicolor*, but I was unable to see the identifying grey-green slimy thread along the edge of the gills. However, Paul George sent me a photo showing this thread on the gills. Here is what Paul said 'This image shows a fine glutinous thread on the gill margin. (centre of the image). Bear in mind that many of the specimens we saw were not new (as evidenced by the orange and brown tints in the pileus) and many were fairly dry. In my experience, these were very typical *H. graminicolor* colours.' According to *Fungi Down Under* p 40 (Pat Grey and Ed Grey, 2005) there is often an unpleasant smell like burnt grass, but no-one mentioned the smell. There are a couple of other green slimy *Hygrocybe spp.:* Dark-green Waxcap *H. stevensoniae* can be pale and dark green but always darker in the centre

Hypocreopsis amplectens *Photo:* John Eichler

and white with greenish tints in the gills, but they don't have a glutinous thread along the edge; *Hygrocybe pseudograminicolor* has lime-green gills. Jurrie and Virgil Hubregtse identified *Hygrocybe aurantiopallens* '*Hygrocybe aurantiopallens* (also known as *Camarophyllus aurantiopallens*). The apricot colour fades with age, and on Sunday many fruit-bodies had become yellow with an orange centre. The caps become centrally depressed with age, and the gills are usually connected by veins.'

Reiner Richter found a gorgeous-looking deep purple patch on a

Hjortstamia crassa *Photo:* Reiner Richter

log (photo above). There was no sign of pores and the edges were fluffy. Heino Lepp (Canberra mycologist) had identified this species as *Hjortstamia crassa* for us when we found it at Woodlands (near Melbourne Airport). Richard Robinson (WA mycologist) wrote an article for the Fungimap Newsletter October 2016 – '*Purple splash fungi in Australia – there are three species!'* The species referred to are *Trichaptum byssogenum* and *Ceriporia purpurea* which have pores and *Hjortstamia crassa* (*Phlebiopsis crassa*) that is smooth. Richard goes on to say 'All three species form purple-pink to purple-mauve resupinate (flat) fruit bodies on the underside of dead twigs, sticks and small logs on the ground. When immature they can vary in colour with creamy or buff tones and have a whitish woolly or filamentous margin 1-3 mm wide. As they develop and mature, however, *T. byssogenum* and *C. purpurea* become darker in colour and develop a pored hymenium (fertile layer) while *P. crassa (Hjortstamia crassa)* becomes mauve or pale violet and retains its thin smooth or pubescent (finely hairy) hymenial features. Older specimens of *P. crassa* may also develop areolar (thin open honeycomb-like) or lacy patches.'

We also saw a number of *Cortinarius* spp. recognised by the rusty-brown spores lodged in the fibres (remains of the cortina) on the stem. However, we could name only three. The Elegant Blue Webcap *C. rotundisporus* which was recognised by the slimy blue cap with a yellow/brown umbo and pale lavender gills. Several individual fruit-bodies seen throughout the foray in the moss but some were a more metallic blue than others. The Slimy Yellow Webcap *C. sinapicolor* which had a very glutinous yellow and orange cap, and a slightly bulbous-based stem with whitish to pale yellow mycelial threads. The third species seen was *Inocybe austrofibrillosa* the very hairy species which has a distictive pale brown cap covered with a mass of pale fibrils. Before *DNA* testing confirmed it as a *Cortinarius* sp., it used to be *I. austrofibrillosa* and now it is again. Index Fungorum says that the current name is '*Inocybe austrofibrillosa* Grgur. Australas. Mycol. 21(1): 35 (2002), not a Cort after all. *C. cystidiocutenatus* in A Field Guide to Tasmanian Fungi by Genevieve Gates and David Ratkowsky (2016, 2nd edition) p 51, appears to be a different species found in Tasmania.

Torbjorn von Strokirch photographed another 'hairy head' *Inocybe australiensis*, which was found here last year. This species has a dark brown cap and shallow umbo with coarse radiating fibrils.

Carol Page photographed *Pluteus atromarginatus*, which is a wood-inhabiting species. It is recognised by its largish size, dark sooty brown cap, and pinkish free gills with a dark brown edge. The specific name *atromarginatus* refers to the dark, almost black edges of the gills, which distinguish this fungus from the similar-looking *P. cervinus* which has no dark edge to its gills.

Virgil Hubregtse summed up beautifully **"**We enjoyed foraying at Wanderslore again this year, because there are always interesting species to see at this location. This time it was surprising and thrilling to see fresh fruit-bodies of the elusive *Hypocreopsis amplectens*, which we haven't found for many years."

Thanks to John Eichler, Paul George, Virgil & Jurrie Hubregtse and Reiner Richter for contributions to identification in the field, which add to our knowledge of the species. Thanks to John Eichler, Paul George, Ed Grey, Virgil & Jurrie Hubregtse and Reiner Richter for their contributions to the report. Thanks to the photographers John Eichler, Paul George, Carol Page, Reiner Richter and Torbjorn von Strokirch who supplied many photos of their sightings to select for the report.

Pat Grey

FNN 278 p 7. The fungi excursion to Jack Cann Reserve, Blackwood, was mistakenly said to have been held on 18th July 2017. It took place on 18th June 2017.

FUNGI GROUP MEETING 7th August 2017
"Amazing Fungi" by Dr Teresa Lebel
Senior Mycologist, Royal Botanic Gardens Victoria

Did you know that there is a gilled fungus that grows under water? It is called *Psathyrella aquatica*, and two populations of it have been found in the Rogue River, Oregon, USA! This was the first of several amazing fungi that Teresa introduced us to, and one of many (mentioned below) that she hopes to see.

Next came the extraordinary red Rosy Veincap *Rhodotus palmatus*, with pale 'veins' forming a network all over the cap. This fungus is usually found on rotting hardwood logs and stumps in Eastern North America, North Africa, Europe and Asia.

Other surprising fungi included: *Guyanagaster necrorhiza* (from the Guiana Shield) – a sequestrate member of the Agaricales that is black outside but red or white inside; *Lactarius indigo* (mycorrhizal with oaks and pines in north-east

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Psathyrella aquatica, the only known gilled mushroom that fruits under water. **Photo: J L Frank**

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and south-west USA), resembling *L. deliciosus* but blue instead of orange, with blue 'milk'; *Hydnellum peckii* or 'bleeding tooth' (mycorrhizal with conifers in USA but rare in Europe), exuding red drops of fluid that have anticoagulant properties; *Calvatia gigantea*, a truly giant puffball that can grow to 150 cm in diameter and weigh 20 kg; and the rare Devil's Cigar *Chorioactis geaster*, which grows on dead cedar, elm or oak, and has been found in Texas (1893) and Japan (1937, 1973, 2007).

Teresa would also like to see the fungi that grow in the Arctic region, as well as the tropical Prettymouth fungi *Calostoma cinnabarina*, *C. fuscum* and *C. ravenelii*, and the Patagonian *Underwoodia fuegiana* (a relative of our Beaton's Club *U. beatonii*). Clearly, some travel arrangements will need to be made! (Incidentally, although Beaton's Club is usually found under *Melaleuca* trees in coastal areas, Teresa has collected it from a roadside verge in the Little Desert National Park, western Victoria.)

The National Herbarium, Royal Botanic Gardens Victoria, receives many queries about fungi. The most common of these concern edibility, identification, how to get rid of the fungi in question, and whether or not they can be smoked. Teresa hopes that, with public education, these types of queries will change, so that by 2025 people will be asking about the role of fungi in the environment, how they can be used in restoration projects, the possibility of attending workshops to learn about fungi, how to correct records in Fungimap or the Australian Virtual Herbarium, and how to contribute survey information to the 'fungal web'.

Teresa is an advisor to the Victorian Poisons Information Centre, where reports of poisonings are continually increasing – from 184 in 2013 to 253 in 2016. Most poisonings result from misidentification. For example, the Field Mushroom is confused with the Yellow-stainer, the Oyster Mushroom with the Ghost Fungus and the Straw Mushroom with the Death Cap. Sometimes the situation is complicated by the fact that edible and poisonous mushrooms can grow together: for instance, the Field Mushroom has been found amongst the more aggressive Yellow-stainers.

Teresa is involved in a number of interesting projects. 'Southern Australian *Agaricus*: diversity, identification and chemotaxonomy' includes close examination of the toxicity of Yellow-stainers *Agaricus xanthodermus*. Masters student Grace Boxshall is also working on this project and will speak about her findings at our September meeting. 'FungiSight' has been established on facebook, aiming to gather information from the general public concerning their experience with eating these mushrooms.

Other projects include the study of: truffle-like *Agaricus* and *Macrolepiota* species from the bush and mallee areas; the *Lactifluus clarkeae/ Russula flocktonae* group; and the *Lactifluus piperatus* group.

In order to educate people about poisonous mushrooms, Teresa has created a game called 'Mushroom Russian Roulette', which is played with a total of 60 cards comprising 46 with photos of edible and poisonous mushrooms, plus 6 'risk' and 8 'symptom' cards.

For the biggest project – the 'Truffle-like fungi project' – Teresa has received three years' funding from the Australian Biological Resources Study, to revise the classification of genera of truffle-like fungi and describe at least eight new genera and up to 60 new species. A massive task indeed.

Many thanks to Teresa for a fascinating evening, acquainting us with some remarkable fungi and the broad scope of the work she is undertaking.

Virgil Hubregtse

Rhodotus palmatus **Photo D Molter**

Hydnellum peckii **Photo Alan Rockefeller**

Extracts from SIG reports given at the last FNCV Council Meeting

Botany Group: Fourteen people enjoyed an interesting presentation by PhD candidate Linda Parker on the ecology of Tall Astellia, a rare rainforest herb. Linda told us that all but one known population of Tall Astellia have declined in number over the last 20 years. Tall Astellia is found in the rainforests of the Otways and the Central Highlands. It is a riparian plant that recruits from seed and division if there is a hole in the canopy. When potted Tall Astellia readily produces three pups vegetatively. Linda brought some plants with her that people took home with them**.** **Sue Bendel**

Fauna Survey Group: Meeting: 4/7/2017 *'Natural History of West Texas'*, presented by Dr Matt Anderson. The focus of the research was the Side-blotched Lizard, its defensive, general behaviour and breeding strategies. The species is short lived, mostly annual, and contends with many predators. Tail loss, one of a number of defensive strategies and its influence on breeding and general behaviour was a major focus of the research. The semi-arid area has plenty of wildlife including mammals such as ground squirrels, gophers, rabbits, and bigger mammals like antelope, bobcat, badger, skunk and coyote.

Meeting 1/8/2017 '*When Predators go Missing'*, presented by Dr Jeff Yugovic. Jeff presented evidence of over-browsing of vegetation in ecosystems where herbivore populations increase when predators are no longer present. Moreover when top predators like the dingo are removed, meso-predators like foxes and feral cats can increase. A full account is found at www.spiffa.org/do–ecosystems–need–top-predators **Ray Gibson**

Geology Group: Geology SIG members were busy at the end of July attending two outstanding presentations. Firstly, Max Campbell showed a sample of his wonderful microscopic explorations of the world of uni-cellular organisms. These living forms would have been very similar to those living at the dawn of life way back in the Archean when there are no fossil records of life. Max showed that this unicellular world is not primitive but highly evolved to be well adapted to the niches they occupied. It was a fascinating window into a world we usually think very little about.

Secondly, we were treated to a superb excursion to the Monash Earth Sciences Garden which is open to the public and interesting to explore using the MonashRocks App. But how much more we learnt! We were guided by Dr Jim Driscoll and Dr Julie Boyce who gave us a detailed introduction to the detail which is built into the Earth Garden which uses Victorian rocks to introduce participants to the basic geological processes and structures. We were most impressed by the detail these skilled presenters demonstrated in the Garden. A most interesting excursion – even if a bit windy!

On August 23rd, Ken Griffiths presented a detailed bibliography describing researchers' approaches to the understanding of Tasmanian geology ranging from the meso-Proterozoic to glaciation and other factors. He interwove his talk with terrific photos and descriptions of his climbs in both New Zealand and Tasmania which added a pertinent personal dimension. Thanks Ken for a most interesting and well presented talk. **Ruth Hoskin**

Juniors' Group: On August 20th we had 16 people join us for our excursion to the Organ Pipes National Park for a guided tour by Robert Irvine, 30 year member of Friends of the Organ Pipes Group. Robert joined the friends group after spending time at Wilsons Prom and seeing the involvement of the Friends group there he decided to get involved in his local Friends group near Sunbury where he lives. Over his 30 years with the group he has been involved in restoration of the indigenous plants of the region and removal of invasive species, and encouraging wildlife to flourish there. We saw the difference in the landscape from many pictures Robert showed us which has led to the return of birds and animals to the area. The park is home to many varieties of bats, kangaroos, wallabies, echidnas, possums, sugar gliders, platypus (in Jacksons Creek), frogs, birds and reptiles. We saw red capped robins, cuckoos, three Tawny frogmouths roosting together, and swamp wallaby's. The park is surrounded by the basalt Keilor Plains, one of the world's largest lava flows, and has several significant geological features including the Organ Pipes, a vertical wall of basalt columns; the Rosette Rock, a radial array of basalt columns like the spokes of a wheel; and the Tessellated Pavement, which consists of the tops of basalt columns "filed down" by Jacksons Creek. Robert had lunch with us at the end of the walk and showed us skulls, books and other items of interest and gave all the children Anzac biscuits in the shape of bats that he had made. Thankfully the weather was a calm and sunny winter morning in total contrast from the days surrounding it. **Claire Ferguson**

Meeting 28th July: Robin Drury from the Fauna Survey Group came as planned on Friday evening for our regular meeting. The attendance was low in numbers but it has been the same for the last 18 months. I am not sure of the cause for this. The talk was great. We learned how to use and what type of cameras exist to survey mammals and fauna in areas that are subject to be surveyed. We learned the different types of native rats that we can find when trying to survey for other mammals in the area. And of course, the difficulties that researchers and field naturalists can encounter when doing a survey for mammals in specific areas. The talk was really great and interactive, and it is a pity that a broader audience missed out on it. **Patricia Amay**

FNCV 2017 Biodiversity Symposium
Marine Biodiversity in the 21st Century

Saturday 19th August

***A Naturalist's view of the intertidal zone*, Leon Altoff;**
***Victoria's Marine Mammal Biodiversity*, Dr Kate Charlton-Robb, AMMCF;**
***Marine debris—what a load of rubbish*, Dr. Rebecca McIntosh;**
***Sea-stars and sea cucumber reproduction enhancement strategies*, Mark O'Loughlin;**
***Hydroid Biodiversity in Southern Australia*, Dr. Jan Watson;**
***The importance and impacts of invasive marine pests in coastal marine ecosystems*, Andrew Christie;**
***Sap Sucking Sea Slugs*, Robert Burn;**
***Bryodiversity - Biodiversity of Bryozoa*, Phil Bock**

Sunday 20th August

***Shark Conservation in Australia by Public Aquariums in situ and ex situ*, Dr. Robert Jones;**
***Population Ecology of Blacklip Abalone*, Mollie Fredle;**
***Global marine biodiversity—how many species are there and how to find out*, Dr. Gary Poore;**
***Wet Wild and Wonderful—Victoria's Marine Protected Areas;* Mark Rodrigue;**
***Short-tailed shearwaters on the wing: ecology & conservation of our most abundant seabird*, Dr. Duncan Sutherland;**
***Coastal Management and Seagrass*, Dr. Hugh Kirkman;**
***Tidal and subtidal vegetation on the Victorian Coast: Mangroves, Saltmarshes & Seagrass Meadows*, Geoff Carr;**
***Sampling the Abyss*, Martin Gomon**

The FNCV and organisers of *"Marine Biodiversity in the 21st Century"* would like to express their deepest appreciation to the panel of amazing speakers. A complete list of presentations appears on the left.

Many thanks also go to the wonderful group of volunteers who helped to put together the symposium. In particular to:

Max & Faye Campbell
Michael Lyons
Ruth Hoskin
June Anton
Sue Bendel
Kathy Himbeck

Special thanks to Su Dempsey, Philippa Burgess and the catering team for serving delicious lunches and morning teas.

A double anniversary

2017 is a special year for the Marine Research Group (MRG) as it marks the 60th anniversary of the groups inception and the 20th year of its merger with the FNCV.

The Marine Research Special Interest Group of the FNCV began life as the Marine Study Group of Victoria and had their inaugural meeting on the 4th of February 1957.

In 1980 the MSG amalgamated with the Underwater Research Group of Victoria (established by Jan Watson) to form the Marine Research Group and met as the MRG for the first time on 25th March 1980. On the 10th February 1997 a Special General Meeting was held to approve the dissolution of the MRG on the basis of its simultaneous merge into the FNCV.

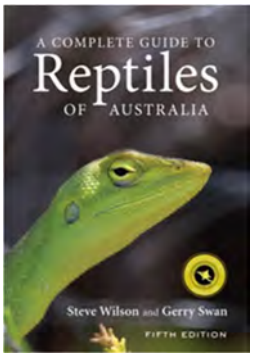
During the past 60 years the group has had nine secretaries, with the late Clarrie Handreck holding the record at 22 years. Current secretaries Audrey Falconer and Leon Altoff are not far behind!

The groups focus has been to foster the understanding of our marine environment. This has been achieved through monthly meetings and a regular schedule of field work during the summer months when tides are suitable. Further, throughout its history the group has worked closely with Museum Victoria. In July 1967 the first museum workday was introduced by curator Dr. Brian Smith and these have continued to this day. In 1984 the group published Coastal Invertebrates of Victoria An Atlas of Selected Species which was revised and reprinted by the FNCV in 2006.

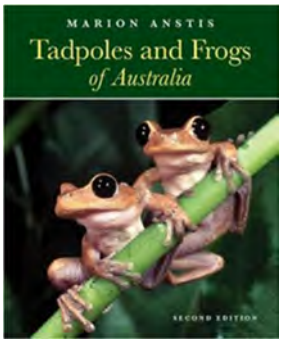
Anyone with an interest in the life that inhabits our seas is encouraged to join MRG monthly meetings.

NEWS FROM THE BOOKSHOP (October 2017)

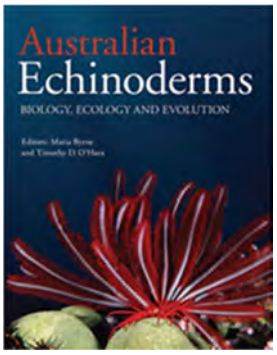
This month there are five new titles covering a range of interesting topics and include the anticipated new edition of *Reptiles of Australia*, a new edition of *Tadpoles and Frogs of Australia*, *Migaloo*, a children's book that has fantastic illustrations, a book on echinoderms (only available on order) and a history book on Hattah-Kalkyne National Park. Recently on the shelves is a wide range and large number of books being offered at a special price. Most of these are good quality, relatively recent second hand books that will not last long. Some of these titles include: *Giraffe, Otter, Hare, For the Love of Nature, Wildflowers & Plants of Central Australia, Spring Wildflowers of WA – Part 1, The Ants of Southern Australia, Living Waters,* and *Meanderings in the Bush*. Come into the clubrooms in Blackburn and have a look at the full range of books available on the shelf or to order or inquire about a book, please send an email to me, at, **bookshop@fncv.org.au** and I will reply as soon as I can. Your support is greatly appreciated. Happy reading, *Kathy Himbeck*



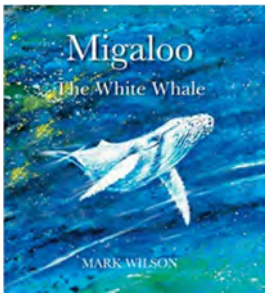
***A Complete Guide to Reptiles of Australia 5th ed* (Wilson & Swan)**. Includes images, descriptions and maps for all 1,011 species of reptiles described up until the end of December 2016. The book features easy to use diagnostic illustrations to explain anatomical features, a comprehensive glossary, and the more significant reptile habitats are pictured. Each species has a clear and concise text description to aid identification, with diagnostic differences from confusing species in bold font. Designed as a field guide, with a sturdy plastic cover and compact layout. **(PB, 560 pp., Aug 2017) RRP $49.99 Members $40**



***Tadpoles and Frogs of Australia 2nd ed* (M. Anstis)** provides comprehensive information about Australian tadpoles as well as the eggs, metamorphosed frogs and adult frogs, accompanied by detailed colour photographs. The book features meticulous keys, descriptive characters and a multitude of illustrations and assists in identifying which tadpole or egg belongs to which frog. The vast photographic array shows live frogs, tadpoles and eggs at various stages in their lives. This magnificent and unique volume is a worthy addition to the library of any naturalist. **(HB, 832 pp., Aug 2017) RRP $149.99 Members $120**



***Australian Echinoderms* (Byrne & O'Hara)** is an authoritative account of Australia's 110 families of echinoderms. It brings together in a single volume comprehensive information on the identification, biology, evolution, ecology and management of these animals for the first time. Echinoderms include feather stars, sea stars, brittle stars, sea urchins and sea cucumbers and are some of the most beautiful and interesting animals in the sea. Richly illustrated with beautiful photographs and written in an accessible style. **(HB, 624 pp., June 2017) RRP $180 Members $144**



***Migaloo the White Whale* (M. Wilson)** is a children's book that follows Migaloo as he and his pod make their annual migration to Antarctica and discovers the beauty, wonder and danger of a whale's journey. Set in the warm tropical waters off the north Australian coast, a very special whale is born: Migaloo, the only all-white humpback whale in the world. The book includes exquisite illustrations that capture the grace and intelligence of these extraordinary creatures, who enchant whale-watchers around the world. **(HB, 32pp., Aug 2015) RRP $24.99 Members $20**

***Returning the Kulkyne* (J. Burch)** is a history that tells a range of stories relating to the land that has become Hattah-Kulkyne National Park. FNCV members may particularly be interested in the role the FNCV played in establishing the first sanctuary at Hattah in 1915, campaigning to create a National Park and the 60 year involvement by Les Chandler, an FNCV member, with the park. Some of the stories are about the land degradation, timber harvesting, land use conflicts, stolen generation and restoration of the land. **(PB, 304pp., 2017) RRP $29.95 Members $24**

From the Office…..

Dear Members,
can you help with donations of packets of English breakfast style teabags for use at our meetings please? We only need "normal" black tea bags – we already have lots of spare packets of green tea, peppermint tea, earl grey tea and lots and lots of others!

If you have the urge to try an unusual type of tea when you're attending a meeting, please feel free to have a hunt through the cupboard in the kitchen – there are dozens of different flavours and styles of both tea and coffee in the numerous storage containers.

Thank you!

Wendy Gare, Administration Officer

Geology Group

Resources for Tasmanian Geology from a mountain walker

Tasmania and geology - how to find out as an outsider—August 23rd

Report supplied by the speaker: FNCV member Ken Griffiths

Ken is a retired school teacher with a sometime background in the history and philosophy of science. He is a frequent mountain walker to Tasmania, as well as to the Snowy Mountains and New Zealand. He observes the rocks with passion and respect.

In the illustrated presentation, Ken presented about 20 books or sites for review. He advocated a questioning approach, to answer curious investigation with further questions. Follow-up is very important.

The need for field guides for curious tourists has been answered partially.

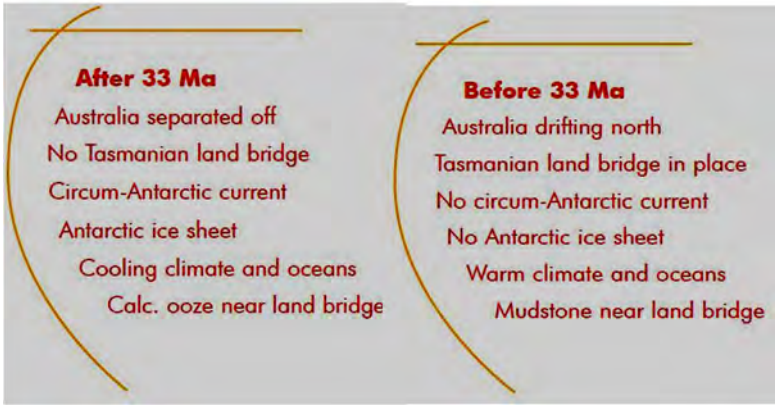
Example 1*: Geology and landforms of Cradle Mountain,* by Dick Burns
This pocket-sized handbook is very comprehensive in scope, so necessarily limited for space. It is a merit that you will want to know more.

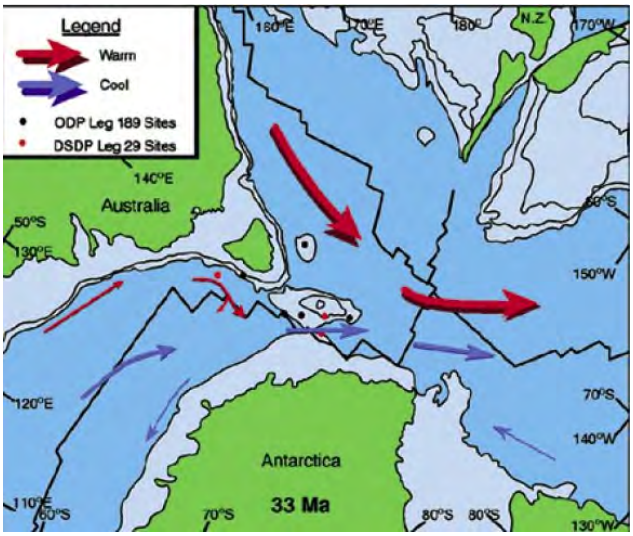
Example 2: Ocean Discovery Program - leg 189
http://www.odplegacy.org/PDF/Outreach/Brochures/Greatest_Hits2/exon.pdf
A clearly understandable application of plate tectonics to field observation - ocean drill cores. The circum-polar current is the buzz word.

Example 3: West Coast Geo Trail http://thelivingearth.com.au/
16 sites in the Queenstown - Rosebery area. Each has a roadside panel, with information or a QR code for a smartphone pdf download. In fact, you can download 17 pdf files onto your tablet, then take at least a couple of days to tour about and benefit from the field guide information.

Example 4: *Geological evolution of Tasmania*, Eds. K.D Corbett, P.G.Quilty and C.R Calver; Pub GSA (Tas Div), 2014

The geological literacy of FNCV members will suffice - you can read this technical compendium and enjoy following up lots of topics from the field of Tasmanian geology.





Left: Schistose Cradle Mt.
Scale about 30cm across.
Ancient quartzite, metamorphosed in later mountain building episode/s. Exposed and shattered and scoured by ice 19 Ky

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

Day Group

This newsletter is printed on recycled paper.

The Day Group members' morning, held on 22nd August, gave an opportunity for members to share stories of their recent natural history experiences and travel.

There were some initial problems with the equipment. However, Gary Presland came to the rescue and generously gave his time and expertise which allowed us to enjoy two excellent presentations. On behalf of everyone, a huge thank you Gary.

Thank you also to our speakers, Rob Hamson and Hazel and Edward Brentnall. Rob has written an account of his talk on the Lark Quarry trackways, which appears below.

Hazel and Edward showed a series of wonderful natural history photos taken on their recent holiday to Sri Lanka. These included birds, botany and wildlife and were of absolutely stunning quality. Early in the trip the Brentnalls' own camera had 'died'. Another passenger, obviously a very talented photographer, gave them copies of his extraordinarily beautiful images. Sometimes a negative can turn into a positive, (no pun intended!) Several people have asked for details of the trip:

Coates Wildlife Tours email: coates@iinet.net.au Web: http://www.coateswildlifetours.com.au

DINOSAUR STAMPEDE NATIONAL MONUMENT

Photo: Rob Hamson

Also known as Lark Quarry Dinosaur Trackways, this geological feature is situated just over 100 km south of Winton, Queensland on a road that is now partly sealed. The tracks were discovered in 1960 by a grazier looking for opal. He thought they were bird tracks but their true significance was realised and the site was excavated in 1976-7 by Queensland Museum and the University of Queensland. The tracks were roofed over but a more substantial building was opened in 2002. *Photo right.*

The mudstone layer containing the footprints is part of the Winton Formation (108 - 93.9 Ma), the uppermost Cretaceous rocks to be found in the Great Artesian Basin. The Eromanga Sea that had covered central Australia for about 20 million years had receded leaving a great river basin forested with trees such as Araucaria, cycads and tree ferns. Most of Queensland's dinosaurs are found in this formation. The mudstone surface shows no sun cracks so remained plastic. There are also marks interpreted as being made by logs dragged along by the current. The footprints were preserved when a flood brought down a thick layer of sand which covered them.

The current explanation of the site's 3,300 footprints which are on a single bedding plane is that a Tyrannosaurus-like theropod stalked a mixed 'herd' of smaller

(Continued on page 12)

Photo of the inside the building taken shortly after the opening in 2002.

(Continued from page 11)
dinosaurs on the shore of a lake or river. The smaller dinosaurs were an emu-sized herbivore *Wintonopus latomorum* and a chicken-sized carnivore *Skartopus australis.* The scientific description and illustrations of these two dinosaurs are based entirely on their footprints. The herd of dinosaurs found itself trapped on a spit by the lake and stampeded back more or less under the feet of the big theropod; in fact there are footprints of the smaller dinosaurs on top of the theropod's footprints. (*See below)*. This story inspired Stephen Spielberg to include it in a scene in the 1998 film Jurassic Park.

The 1984 analysis of the footprints only had 2-D images available. A 2011 study used computer techniques giving 3-D imagery and found that the eight 'theropod' footprints show no sign of claws and are very similar to footprints made by large ornithopod herbivores such as Muttaburrasaurus which was in the area at the time. A 2013 study argued that the two smaller dinosaurs were one and the same species, just different sized individuals. Also in 2013 a study suggested that this was a river crossing with dinosaurs passing backwards and forwards through shallow water of variable depth over several days, perhaps weeks. Some swam, some waded and some that swam 'tippy-toed' along the bottom leaving distinctive marks.

Whatever the explanation, this site gives us a fascinating look into the age of dinosaurs and is well worth a visit.

Rob Hamson

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