



Understanding Our Natural World
Est. 1880

Field Nats News No.235

Newsletter of the Field Naturalists Club of Victoria Inc.
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October 2013

From the President

Now that spring has officially sprung and the election is over, it's time to get out there and enjoy the warmer weather and the wonders that nature has in store. My yard is ablaze with yellow from *Pomaderris prunifolia* (see photo below) and wattles, red, yellow and purple peas (*Kennedia*, *Pultenaea*, *Hovea* and *Hardenbergia*), red and green *Correa* and pink *Epacris* and *Tetralathea*.



Welcome!

At the August Council meeting we welcomed Wendy Gare to the Club. She is finding her way around the many different tasks of the Admin Officer position.

Fred TH Smith

The Club received a letter from the lawyers of the late **Fred TH Smith**, a well-known naturalist and passionate bird-watcher who joined the FNCV in 2001. The letter advised that the FNCV had been bequeathed \$10 000 as part of Fred's estate. The Council is yet to decide on how this generous gift will be used. We extend our condolences to his family and many friends. Fred will be greatly missed.

Bookshop

The issue of the bookshop was raised at Council with some members not sure that

continuing it was worth the costs and effort of having the Admin Officer process the book orders. It had been run by volunteers 6 or 7 years ago, but has since been part of the task of the AO. After asking for a someone to run the bookshop in the last FNN, a volunteer has come forward and offered to take it over.

To further separate the bookshop from the AO position, we have set up a separate email address bookshop@fncv.org.au for all book enquiries and orders.

Bat Conference

The Bat Seminar on the 24th and 25th August was a fantastic success with approximately 50 people attending on Saturday and 30 on Sunday. An array of speakers including Dr Lindy Lumsden, Robert Bender and Carolyn Wilson spoke on microbats on Saturday while Dr Rodney van der Ree, Bev Brown and others spoke on Flying-foxes on Sunday.

(Report FNN p5).

Biodiversity Symposium – “Water and Biodiversity” – November 23rd and 24th

The planning for this year's Biodiversity Symposium is well underway. A number of speakers have already confirmed their willingness to present on Saturday. These speakers include Dr Mike Weston (Deakin Uni.), Dr William Steele (Melb. Water), Professor Paul Boon (Victoria Uni.) and Dr Richard Loyn, with another couple of speakers to be confirmed.

The first day will be at the Hall, while on Sunday there will be a field trip to the Werribee Treatment Plant. As entry to the WTP is by permit only, many people may be interested in attending this fieldtrip. Bookings are essential. It will be “first-in best dressed”, with preference going to

The due date for FNN 236 will be 10 am Tuesday 1st October. FNN will go to the printers on Tuesday 8th October, with collation on 15th.

Early submission of copy is always appreciated.

those that attend for both days. We will be organising a minibus for the trip to reduce the number of vehicles travelling around the complex. There is a separate registration form in this FNN.

Australian Natural History Medallion

Congratulations to the 2013 ANHM medallionist, Marilyn Hewish. Her award will be presented on November 11th followed by a talk on her work. More details will be in the November FNN.

John Harris

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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.

October

Sunday 6th - Juniors' Group. Excursion – Penguin research in St Kilda. For details contact: Claire Ferguson 8060 2474; toclairef@gmail.com

Monday 7th – Fungi Group. Meeting – Members' night. Planning for 2014. Contact: Virgil Hubregtse 9560 7775

Tuesday 8th - Fauna Survey Group. (N.B. This is the second Tuesday) Meeting - Remote cameras and related issues. Speaker: Maxwell Campbell, Executive Officer WSIAEC and member FNCV and MSGV. Contact: Robin Drury 0417 195 148; robindrury@hotmail.com

Saturday 12th - FNCV Second-hand Booksale. Come and join us at the FNCV hall between 9 am and 3 pm: come early and get a bargain. All sorts of books available, from fiction to factual. *Helpers needed to set up and run the day. See FNN p12.*

Monday 14th – Marine Research Group. Meeting – Victorian Intertidal Bivalves. Speaker: Our own Michael Lyons. Contact: Leon Altoff 9530 4180; 0428 669 773

Tuesday 15th —Collate FNN. Starting about 10.30 am. Some folk come earlier. Contact Joan Broadberry 9846 1218

Wednesday 16th – Microscopy Group. Meeting – From hand lens to Electron Microscope: The use of microscopes in a botanical research project. Speaker: Stephanie Conway, PhD Student from Melbourne University Department of Botany. Contact: Philippa Burgess 9598 3231 AH.

Wednesday 16th—Fauna Survey Group—Grey-headed Flying Fox Survey. Meet at Yarra Bend Golf Course carpark, Mel 2D G7 at 7.15 pm. More information from Rod Van Der Ree (rvdr@unimelb.edu.au), Jo Ainley (j.ainley@unimelb.edu.au) or Ian Kitchen (iankitchen@optusnet.com.au)

Thursday 17th – Botany Group Meeting – Why Round-leaf Pomaderris (*Pomaderris vacciniifolia*) is rare: recent findings regarding its conservation ecology. Speaker: John Patykowski. Contact: Heather Eadon 0437 541 918; heathereadon566@gmail.com

Saturday 19th – Botany Group- Excursion to Toolangi -Meet 10.30 am at the corner Melba Highway and Healesville-Kinglake Road, Castella to see several species of Pomaderris including *P. vacciniifolia* and then a short walk to see the Kalatha Giant Mountain Ash in Toolangi. Leader: John Patykowski Contact: Heather Eadon 0437 541 918; heathereadon566@gmail.com

Saturday 19th - Fauna Survey Group. Stagwatch - Come along to an evening stagwatch to search for Leadbeater's Possum and other nocturnal wildlife in the Yarra Ranges National Park. Contact: Ray Gibson 0417 861 651

Tuesday 22nd – Day Group. Excursion to Maranoa Gardens, Balwyn. Meet 10.30 am in the carpark at the end of Parring Road. Melway 46 G7. Contact: Gary Presland 9890 9288.

Wednesday 23rd – Geology Group. Meeting - Precambrian reefs of the Flinders Ranges and the rise of animal life. Speaker: Ms. Ashleigh Hood, School of Earth Sciences, University of Melbourne. Contact: Kaye Oddie 9329 0635; koddie@bigpond.com

Friday 25th - Juniors' Group. Meeting – 7.30 pm. How to Grow your own Australian Orchids. Speaker: Wendy Clark. Contact: Claire Ferguson 8060 2474; toclairef@gmail.com

Monday 28th - FNCV Council Meeting - 7.30 pm sharp. Agenda items and apologies to Wendy Gare 9877 9860 or admin@fncv.org.au



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
Welcome

Warmest greetings to these new members who were welcomed into our Club at the last FNCV Council meeting:

Faye Campbell, Grantham Milner, Ashleigh Milner, Kirstie Knowles, Akash Samuel, Barbara Dziedzic, Grant Harris, Kim Andrewartha, Michael Schoen,

MASTER YOUR CAMERA New Dates **Back to Basics 1** Learn Photography from a Professional

Learn to use the features of your digital camera so that you are in control. Learn to be able to get the photo you 'see' in the camera as you want it



*Rave reviews
from stud*

*Every Lesson is two
steps forward*



Group 1 Mornings

Thursday 10 –

12noon

Starts: Thurs 31st Oct **Ends:** 19th Dec

Group 4 Evenings Thursday 7.30 – 9.30pm

Starts: Thurs 31st Oct **Ends:** 19th Dec

Cost \$295 for 8 2hr Lessons

Topics covered:

Menu Setup, Exposure, Focus & Depth of Field, ISO & Camera Shake, White Balance, Seeing the Light, Adding Light, Composition & Cropping

Where: *Empathy Photographics* 97 Pakenham St Blackburn

More Info: Wendy Clark email: wendy@empathyphotos.com.au

www.empathyphotos.com.au ph 9877 9266 mob 0407 352 148

Oops—Thanks to Heather Eadon for the great photo of the winners of the FNCV Photography competition published in FNN 234 p3. Ed.

Thanks to those who helped collate and label FNN 234

Keith Marshall
Sally Bewsher
Barbara Burns
Sheina Nicholls
Emily Noble
Margaret Corrick
Bill Fenner
Hazel Brentnall
Edward Brentnall
Andy Brentnall
Joan Broadberry
Margaret Brewster

ANN and SEANA News

- ◆ The Australian Naturalists Network (ANN) has produced a 2013 Register of Clubs, which lists all the field naturalist clubs around Australia in the network.
- ◆ The next ANN Get-Together will take place in **Hobart, 18-26 October 2014**, hosted by the Tasmanian FNC.
- ◆ The next South Eastern Australian Naturalist Association, (SEANA) camp will be hosted by Upper Goulburn FNC at **Marysville. Confirmed dates 2-5 May 2014**

WARNING: We wish to advise that some of the old Printer's Blocks from past *The Victorian Naturalist* contain lead. In the photo below note the care taken while they were being sorted. Please take this into consideration when using them, especially if children are involved.



Thanks to the editorial and layout team who put together FNN 235

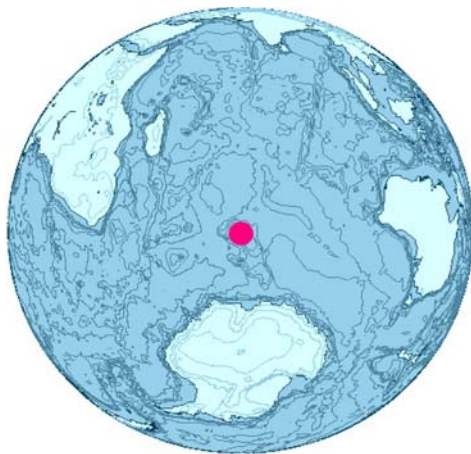
Joan Broadberry
Platon Vafiadis
Wendy Gare
Sally Bewsher



Day Group

Heard Island & McDonald Islands

In August, Tania Ireton gave a presentation to the Day Group about her trip to Heard Island and McDonald Islands (HIMI). The 48 passenger, Russian ship, *The Spirit of Enderby* (or *Professor Khromov*), chartered by the New Zealand Company, Heritage Expeditions, departed from Fremantle Western Australia on the 8th of November 2012, returning to Albany on the 2nd of December.



Aboard were staff from the Australian Antarctic Division, adventure travellers and a large contingent of birding enthusiasts, which included Tania. Dr Graham Budd aged 82, was returning to the island to update his research done between 1954 and 1971.

HIMI are located in the Southern Indian Ocean. They are volcanic, uninhabited, seldom visited and amongst the most remote places on earth, being approximately 4,100 km southwest of Perth and 1,630 km north of Antarctica. The tiny McDonald Islands group is 44 km west of Heard Island. The area of both, totals 372 square kilometres with 102 km of coastline. Eighty percent of the land is covered by ice and active glaciers. HIMI are External Territories of Australia, being handed over by England in 1947. They contain the only two active volcanoes in Australian territory. Heard Island is dominated by Big Ben, a massive volcanic cone between 18 and 20 km in diameter that rises to a height of 2745m at Mawson Peak. Mawson Peak is 517 metres higher than Mt. Kosci-

usko. The islands were listed as World Heritage in 1997, being an essentially undisturbed natural environment still in the process of being thrust up from the ocean floor.

Peter Kemp a British sailor is thought to have sighted Heard Island from the brig *Magnet* in 1833. An American, Captain Heard, made a confirmed discovery on 25 November 1853 when travelling from Boston to Melbourne. The McDonald Islands were discovered on 4 January 1854 by Captain W. McDonald. A period of intense sealing on Heard Island began in 1855, with up to 200 people living ashore in appalling conditions. The Elephant Seals were virtually wiped out by 1880.

The islands have an Antarctic climate, tempered by their maritime setting. Winds are predominantly westerly and persistently strong. Rain or snow falls on about 3 out of 4 days. Monthly average temperatures range from 0 degrees to 4 degrees centigrade. Heard Island is further north than Macquarie Island, but is located south of the Antarctic convergence, whereas Macquarie Island is north of it. This makes the temperature of the ocean surrounding Heard Island 3°C less than that of the ocean surrounding Macquarie (6°C) and the climate

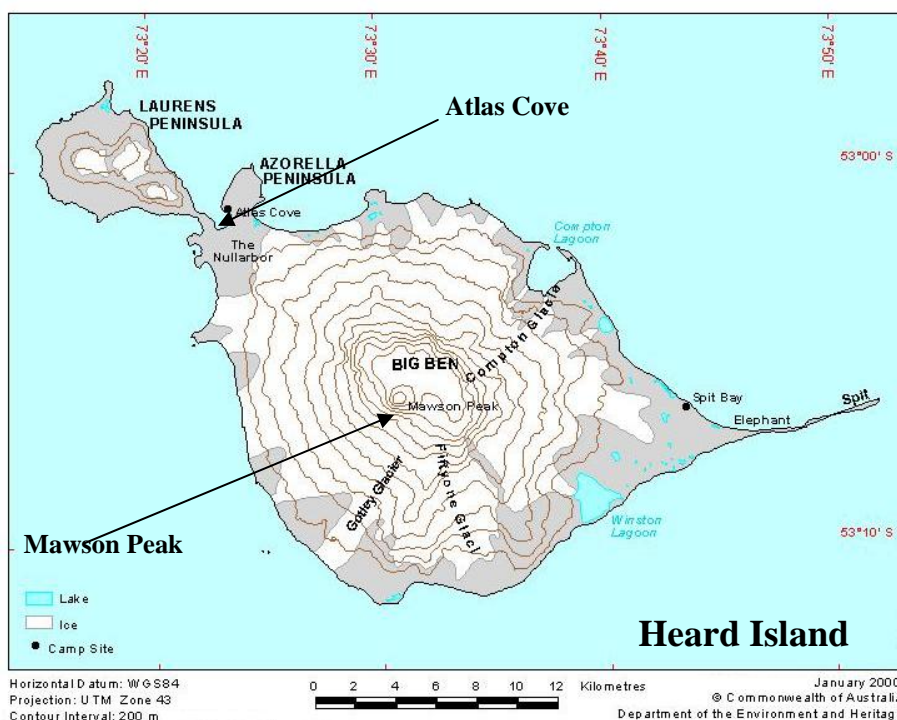
is thus more severe.

Tania went on to describe the expedition and shipboard life in detail. Unfortunately space permits only a bare outline of her fascinating presentation. The journey south began with a pod of Humpback Whales sighted after leaving Fremantle and lifeboat drill. After some days a severe storm blew up and a French crew member radioed for permission for the ship to shelter in the lee of Amsterdam Island (a French possession) located at 37°50'S, 77°31'E. The birders were delighted to identify the critically endangered Amsterdam Albatross (split from the Wandering Albatross) that breeds exclusively on the island. The weather improved and it was possible to go out on deck. More birds including Southern Skua and many species of albatross were recorded.

As the ship approached Heard Island, the staff of the Australian Antarctic Division supervised a strict quarantine procedure that required all those intending to go ashore to bring boots or clothing they might possibly wear, to be closely examined and cleaned of any animal or vegetable matter that could contaminate the islands. Outer-wear had previously been supplied to each expeditioner in sealed bags.

The plan was to anchor for three days, however there is no safe harbour on Heard Island and everything is weather dependent. Gale-force, southerly winds blew up and, to the frustration of those on board,

(Continued on page 8)





Fauna Survey Group



FNCV Bat Conference 24/25 August

Just over fifty people gathered in the hall for our weekend about bats. Many of them were from local wildlife care organizations eager to learn more about this amazing group of creatures that constitute about a quarter of the world's mammals.

We started with a word of warning from a long time batophile, Robert Bender, on the dangers of the addiction of bat study. Once started there is a very strong possibility your life will be taken over by these fascinating animals. Robert, however, looked in good health, showing little sign of the typical addict.

Robert was followed by that legend of "batdom", Lindy Lumsden, who gave us an overview of the bat world and the various species within it. Tea followed with ample opportunities to network with our fellow batty folks.

After the break, Tanja Straka from Germany, who is a PhD student at the Australian Research Centre for Urban Ecology, gave us an insight into her work studying the feeding habits of our nocturnal friends. I remember photos of many polystyrene cups with net covers with a single bat ensconced in each, so that its bowel movements came from an identifiable source. DNA analysis will be done to identify the origins of this material. Tanya also explained how the bats used echolocation to locate their food in the night sky, with diagrams and recordings about feeding buzzes.

From left: Robert Bender, Lindy Lumsden, Steve Griffiths, Caroline Wilson & Tanja Straka.



Tanja was followed by Steve Griffiths whose presentation included video taken by heat sensing cameras. These produce surreal images from the various heat signatures of the landscape including a dam. The bats were usually an orange colour as they flew into view and skimmed the water to drink or chase an insect. After this enthralling display we had lunch, with more networking.

After lunch Caroline Wilson, who has submitted her thesis on bats in Melbourne, gave a report on her findings to a still fascinated audience.

Following Caroline, we drew some door prizes, indulged in a delicious fruit platter and then most of us departed to Ivanhoe to visit one of Robert Bender's bat box sites. The bats were not playing ball and only three were disturbed from their slumbers, but people did get to see a real live bat and learned how to handle a bat in order to take the necessary measurements.

From there many of the group proceeded to Yarra Bend Park where we had set up a telescope to view the Flying Foxes. They managed to do some educational work on a group of American tourists while they were there.

We finished the day with a barbecue tea as the bats flew out to seek their own nourishment.

Sunday morning we had fewer people. We started the day with a presentation by Rodney van de

Photo: Sally Bewsher

Ree, Deputy Director of ARCUE. This comprehensively covered Flying Foxes and also the history of the Yarra Bend colony. The work done on radio tracking was of special interest to many and emphasised the nomadic nature of the Flying Fox. We then broke for tea, cake and more networking.

After the initial appetiser of Satur-



Lawrence Pope & Bev Brown

Photo: Sally. Bewsher

day's field trip, Robert Bender gave a report on his nest box projects with details of some of the subjects' lives. These were illustrated with graphs showing the weights of individual bats over many months and which boxes they frequented. Some of the early banding subjects have lived for at least nine years. The Organ Pipes project is probably the longest ongoing bat box study project in the world.

We then of course stopped for lunch and networking!

Lunch was followed by Bev Brown's presentation on the rescue and care of Flying Foxes, ably assisted by Claire Jones and Anthea Gurr. Bev's talk generated much interest among the wild life carers present.

Lawrence Pope followed Bev with an insight into the work of Animal Advocates. Much of the work involves dealing with the managers of public utilities and bureaucrats. For example, trying to get trees which attract Flying Foxes to power lines, trimmed; trying to persuade hardware chains to stock wildlife friendly fruit-tree netting; and even trying to get fishermen not to fish near the Flying Fox colony at Yarra bend. Fantastic work!

We then had another door prize draw and I continued with an explanation of some of the projects that people could get involved in. The main ones were the monthly Flying Fox count, Roberts' bat box projects in Ivanhoe and the Organ Pipes National Park and the FNCV Eastern Metro Parks Surveys.

All the feedback from our participants was very favourable - one even asked when the next one would be. Thanks to John Harris who introduced the speakers, and of course Mel who slaved in the kitchen.

Ian Kitchen



Fungi Group

Fungi Group Foray MACEDON, SANATORIUM LAKE,

23 June 2013

Vegetation - Wet messmate/gum forest and introduced species (pine, poplar, holly etc).

The Juniors were great, their sharp eyes soon found lots of fungi for us to look at. We started off around the car park where the orange-gold caps of *Flammulina velutipes* clearly showed out, the caps were not so glutinous as often seen, but the dark base of the stem was very distinctive. A group of large *Lepista nuda* (Wood Blewit) was growing amongst a clump of Birch trees whose fallen leaves covered and blended in with the mauve-brown caps of the *L. nuda*. These were one of the few mycorrhizal fungi that we saw. They gain their nutrients from a symbiotic relationship with trees – their underground hyphae (very tiny tube-like threads) join up with tree roots. As a result the fungi gain the ‘food’ (carbohydrates (sugars) and other essential nutrients) they need and in return the trees gain a greater ability to absorb water and minerals such as nitrogen and phosphorous from the soil, and are protected from some pathogens, thus enabling the plant to flourish in the soil. In the same area, on dung, was *Stropharia semiglobata*, a saprotrophic fungus that gains its nutrients by breaking down dead organic matter.

In great numbers along the rotting wood around the car park, in fact on a number of rotting logs throughout the foray, were *Psathyrella echinata* (hedgehog fungus). In their mature state this species are

Flammulina velutipes Photo: Carol Page



brown (brown caps, brown gills, brown stem) and difficult to distinguish from other brown fungi, but the identifying character is found in the young fruit-bodies that are a mass of white spiky hairs, like a rolled-up hedgehog. Probably in Australia an echidna would be a better analogy.

Under the pines, one pair of young eyes spotted the purple-capped *Russula*, *R. integrata*. This species can be distinguished from other *Russula* by the fact that the gills are yellowish and the spore print provided by the mature spores is chrome-yellow, which is unusual for this genus of fungi that usually produce a paler spore print.

On a small rotten piece of wood, Scott found a beautiful example of the coral fungus *Artomyces colensoi*, one of the more delicate of the two corals that grow on wood. It is whitish or buff with corona-like tips on the branches. The other species *A. austropiperatus* (the piperatus in the name indicates its peppery taste) is similar-looking but larger and more robust. Another coral, found on the ground was the white tongues of a *Clavulina* species. The vegetation around and close to the car park is dominated by exotic trees birch, pines etc and holly so we decided that this *Clavulina* species was most likely *C. rugosa* – the European species, rather than *C. sub-rugosa*, a similar-looking native species that grows in eucalypt forests.

On wood at the edge of the car park, a purplish rosette of shelves was growing in 3 (possibly 4 tiers) on a common stem. This had brownish to purplish zones on the upper surface which was coated with sparse crystalline, hair-like white cystidia. The lower surface was very convoluted, brown and covered in what appeared to be raised, round blisters. Pores were not present, which eliminated *Fomitopsis lilacinogilva*. The growth habit and convoluted lower surface resembles a *Podoscypha* sp. However, the identity remains a mystery. An old friend, *Coprinopsis atramentaria*, was growing at the edge of the

car park where it had been seen on previous forays. The large diameter (70 mm) deeply conical, greyish caps were somewhat the worse for wear but still distinctive. On one specimen the gills were deliquescing (producing a black liquid from the mature spores) and the cap margin had rolled up as the gills deliquescenced. In earlier times the ink formed by this fungus was used to print bank notes.



Artomyces colensoi Photo: Scott Ferguson

On a dead twig several fruit-bodies of *Byssomerulius corium* had almost fused together. The typical white, reticulate-poroid (pits ca 2 per mm) fertile surface had a white hairy margin and there was some evidence of shelves forming where the hairy white upper surface showed some faint zoning. Yellowish *Crepidotus* spp were seen on dead logs but all were showing signs of age. The gills were rust-brown with mature spores. While *C. nephrodes* (now *C. crocophyllus*) can have a buff cap treatment of both cap and gills with a solution of 5% KOH produces a red colouration. Our specimens did not react in KOH and are most likely *C. cesatii*. However, later microscopical examination by Jurrie Hubregtse showed the species to be *C. nephrodes*, and thought that the non-reaction to KOH was probably because they were old specimens. In the afternoon, I was pleased to see *Cortinarius austrovenetus* that Richard had found, the first for me this year.

On several moss-covered tree trunks was the tiny *Arrhenia retiruga* (our field name Snowflakes). The fan to inverted-cup shaped fruit bodies had smooth, whitish, soft caps and pale brown gill-folds. Carol Page thought the moss species was *Hypnum cupressiforme* and this was confirmed by Bruce Fuhrer. This species can easily be overlooked due to its size and association with moss, but we have also seen it at The Beeches growing on moss on the side of an earth bank.

(Continued on page 7)

(Continued from page 6)

At the end of the day, in a stand of mature *Acacia dealbata*, we looked again for *Cordyceps gunnii* which we had seen on a previous foray. We found one very tall (ca 150 mm) smooth, black club that looked just like a stick stuck in the ground. Several other tall ones had fallen over and it was possible to see where the black club (originally it would have been a deep olive green) runs smoothly into the yellow stem. We didn't dig any up to look for the moth larva (possibly *Oxycanus* sp.) on which it was growing.

Thanks to Bruce Fuhrer for his help, and Carol Page and Scott Ferguson for their photos.

Pat Grey & Ed Grey

Fungi Group Foray ANGLESEA,

30 June 2013

Neil Tucker from the Angair Inc led us today. He collected us from the Anglesea PO and took us to the first site, Cecil Track, which is dominated by Swamp Gum. The weather had been dry (and Anglesea has recorded less rain than most areas) but within a few minutes the sharp eyes of our group kept spotting fungi. Probably most numerous was the disc fungus *Cudoniella pezizioidea* growing on the ground on pieces of litter or wood. These small whitish-green convoluted discs could be securely identified by the fine brownish rhizomorphs looking like thin threads that stuck out of the substrate beside the discs.

On a piece of macropod dung (from an Eastern Grey Kangaroo or Swamp Wallaby) we found the very interesting minute *Pilobolus* species – a transparent stalk ending in a bulb-like structure with a black spore sac (sporangium) above. Here is what Bill Leithhead says “*Pilobolus* species ‘Dung Cannon’ is a worldwide group of fungi species associated with rotting herbivore dung, distinctive as having a ‘ballistic’ spore dispersal method. They develop as a transparent stalk with a transparent globular structure featuring a distended fluid-filled sac with a black spore packet (sporangium) located at the top. When the distended sac finally bursts, it ejects the sporangium a considerable distance away, from a few centimetres to up to 2 metres. Interestingly, the transparent sac of fluid acts as a lens, focussing sunlight into a sensitive region

inside its base at the top of the short stalk. Meanwhile the structure moves to follow the sun, so that the spore-packet is ultimately ejected towards the sun away from the dung. It can be regarded as a primitive eye. The sporangium lands on foliage, to be eaten by a grazing animal, which ultimately excretes it, thus completing the cycle”.

Another very tiny species was the parasitic yellow *Neobarya agaricicola* (*Barya agaricicola*) species. It's tiny yellow pyramids were growing all over a small agaric species. This ascomycete has perithecia with very small, papillate ostioles at the tip and lies on a mass of white hyphae on the host surface. There are a number of *Neobarya* species which infect *Xylaria* sp., Lichens and dung-inhabiting fungi. In our case, as the agaric species was growing in moss on a tree trunk, it may have been *Galerina hypnorum*.

Around the base of a Swamp Gum were the large (cap diameter to 150



Philobolus sp.

Photo: De'ana Williams

mm) *Leucopaxillus eucalyptorum*. The caps were pale brown with dark brown in the centre, the gills pale and decurrent, and the characteristic mass of white mycelium infesting the litter around confirmed this identification. Bruce Fuhrer (*A field guide to Australian fungi*, 2011, no 168) says that ‘This species is usually found under senescent or diseased trees with dense layers of shed bark’.

Then we found a small group of dark brown agarics (cap ca 60 mm diameter), a species we had never seen before. These sturdy fungi had a dark brown cap that sat above the upturned, deeply curved gills like a flat hat. The gills were quite thick and joined by cross gills. All carried on a thick stem. The spore print was brown and it looked as though it belonged to the Cortinariaceae. Being completely mystified we retired for lunch at the Angair Inc. rooms in Anglesea.

The foray after lunch was further along the Great Ocean Road at Santa Monica Centre which had a camp site next to a wet forest (Grassy Creek site). One of the most spectacular sightings was the mass of *Armillaria luteobubalina* (Australian Honey Fungus) that was growing on felled stumps of Eucalypts and on wood on the ground, which is a very aggressive parasite spreading from root to root of trees. Caps were yellow-brown with a broad umbo and had scattered minute scales on its surface that felt like sandpaper. The curved stems had thick prominent rings, above ring the stem was pale, while below it was tough and fibrillose.

The dark, blue-green mould *Trichoderma viride* was found on fallen branches. This is the anamorph (asexual) stage of the orange-brown, cushion-like *Hypocrea rufa* (the teleomorph) which was also found on



Neobarya agaricicola

Photo: Ed Grey

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(Continued from page 7)



the same branches. It is interesting that the mycelium of this mould produces enzymes which degrade both cellulose (cellulases) and chitin (chitinases). This mould can grow on wood because of the action of the cellulases and can be a parasite of other fungi since chitin, which is the major constituent of their cell walls, is attacked by chitinases. A further point of interest is the possible use of this mould as a biological control of fungal pathogens such as *Armillaria* species – this would have been very useful at the Grassy Creek site where *Armillaria* was widespread on eucalypts.

The ongoing story of the *Crepidotus* sp. identification continued. At Macedon the yellow, hairy *Crepidotus* was determined microscopically by Jurrie and Virgil Hubregtse as *C. nephrodes*, now called *C. crocophyllus*. In a study in Europe of fruit-bodies of *C. crocophyllus*, growing on a fallen rotten trunk the macrodescription of the cap was that it was at first squamulose, soon fibrillose, with brownish orange, cinnamon, rust or light yellow fibrils, and at point of attachment tomentose and cream, maize, or butter yellow. Thus the pale species that we usually call *C. nephrodes* is probably not. At Grassy Creek several *Crepidotus* fruit-bodies were growing on the bark of living eucalypts and these had white, smooth caps with a yellow edge and yellow (going brown) gills. The size range was to 60 mm across, projecting to 40 mm. Subsequent microscopical work threw doubt on the fact that this might be *C. crocophyllus* as the spores were finely spined, globose to sub-globose to ellipsoidal, with sizes 6.0 – 8.5 (–9.5) x 6.0 – 6.5 µm. While this spore size is a match for *C. crocophyllus*, importantly, *C. crocophyllus* prefers decaying stumps, logs and branches and not the bark of living eucalypts. *C. eucalyptorum* which grows on the bark of living eucalypts, has smooth spores, but size range of the spores is from 7.0 – 11.0 x 5.0 – 7.5 µm. Further microscopical work done by Virgil Hubregtse showed the spores from a spore print to be sub-globose and finely spined from with measurements of 7.12 x 6.12 µm. However, the gill material spore sizes were all over the place. Thus if we use Virgil's spore print measurements and my (Ed Grey) globose to sub-globose spore sizes, then *C. crocophyllus* would be a match as. However, this still leaves the mystery of the mixture of spore sizes and shapes unsolved.

Richard Hartland provided a sample of

Annulohypoxylon bovei (*Hypoxylon bovei*) growing on decaying wood. These minute hard brittle volcanic black cones were massed together on wood and each cone has a diameter of less than 1 mm, and a height of 1.5 mm. This was identified as *A. bovei* var. *microspora* because *A. bovei* prefers *Nothofagus cunninghamii* which does not grow in this area. The name *Hypoxylon* was changed to *Annulohypoxylon* because the ostioles are always higher than the surrounding stromatal surface and the ostiole is encircled with an annulate disc, cf *Hypoxylon placentiforme* (purple sheet) where the ostioles are level or lower than the stromatal surface.

At the end of the afternoon in the wet forest area, Richard Hartland showed me (Pat Grey) a fungus that he said was *Fistulina hepatica* at the base of a tree. However, I was sceptical in that the cap was quite dry, the pores a white/cream, none of the pink usually seen, but the pores did mark red, and it was thick and soft. Richard said that he had seen this form several other times before and when I looked under the microscope I could clearly see the separate pore tubes that are characteristic of *F. hepatica*, and a wet finger did draw a line of slime from the cap. Richard's field observations were very acute and most useful.

Thank you Neil for a great day.

Pat & Ed Grey

(Continued from page 4)



the ship was forced to sail up and down the coast all day, with no-one allowed on deck, horizontal snow and virtually no view of the island. However, keen birders are seldom daunted and sought after species such as Fairy Prion, Cape Petrel, Southern Giant Petrel, Antarctic Fulmar, Black-bellied Storm Petrel were identified and photographed through the side-windows of the bridge. Tanya pulled off an enviable coup, by photographing a Snow Petrel, a bird which breeds in snow caves on the Antarctic continent. A South Georgian Diving Petrel was found alive on deck and later released.

The next day the wind abated, the cloud lifted and the ship was able to anchor in Atlas Cove. Everyone could, at last, enjoy the stunning views of

glaciers, ash-streaked ice cliffs, and volcanic peaks. The four zodiacs were readied for an afternoon landing. Those going ashore were given instructions as to where they could walk and to bring back all solid waste.

Many fat Southern Elephant Seal pups, called 'weaners' plus some adults lay about on the black volcanic rock beach. There were also many King and Gentoo Penguins. About 15 species of plants have been recorded on Heard Island, with only one plant introduced. They include *Poa cookii* the dominant grass species on the coastal fringes, *Pringlea antiscorbutica* or Kerguelen Cabbage, (used by sealers to prevent scurvy) and *Azorella selago* or Cushion Plant which forms thick but fragile mats. Birds seen included a Black-faced Sheathbill, a carrion eater, picking over a penguin carcass, Southern Skua and Heard Island Shag. A colony of Rock-hopper Penguins nesting under a steep cliff was reached after 400 m walk. Remains of the sealing era such as pots and ruins of research huts from the 1940's could still be observed. The last zodiac returned to the ship about 9.30 pm (Fremantle time).

The next day, 22nd November, the weather was too rough to land on Heard Island so the Spirit of Enderby sailed on to McDonald Islands. No reliable chart exists of the sea floor which is constantly changing because of volcanic eruptions, so the ship could not get in close. Two of the three small, flat islands have been joined together by recent volcanic activity. No vegetation was apparent. The next day, there was the choice of a final landing on Heard Island or a trip around Atlas Cove by zodiac to observe penguin colonies. Tania chose the latter.

The ship then began a rough, nine and a half day voyage back to Australia. In summary the trip covered 5,400 nautical miles (over 10,000) kilometres, recorded 68 species of birds, 15 species of cetaceans (whales and dolphins) and three species of seal.

Thank you Tania, for sharing your experiences with us. You are a gifted speaker and photographer. The anecdotes and stories that filled your presentation brought the journey so much to life, that many of us felt we were sailing with you.

Joan Broadberry

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Lake Gregory.

Kimberley Discovery

15 Day Camping/Accom Tour - Departs 20 June & 17 July 2014
Explore Purnulu N.P, Gibb River Rd, Mornington Station and
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Kimberley Wonders

12 Day Camping Tour - Departs 9th July 2014
Highlights- Gibb River Rd, Mitchell Plateau, El Questro & more.

Rudall River Expedition

14 Day Camping Tour - Departs 30th July 2014
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Western Explorer

14 Day Camping Tour - 11th August 2014
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Mt Augustus & Karijini N.P.

Holland Track & Great Western Woodlands

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10 Day Accommodated Tour - Departs 6th September 2014
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15 Day Camping Tour - Departs 14th September 2014
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Marine Research Group News

Report on the MRG meeting Monday 12 August, 2013:

Preliminary item: John Eichler displayed a new field guide publication called 'The Urban Sanctuary. Algae and Marine Invertebrates of Ricketts Point Marine Sanctuary' by Jessica Reeves and John Bucheridge (Grey path Productions). Some of John's field images also appear in the book.

Main speaker: Mark O'Loughlin, Honorary Research Associate, Museum Victoria, spoke on the topic, 'Echinoderms—some reproductive strategies'.

Mark has been an honorary associate with Museum Victoria since 1980 and is a world authority on the echinoderm groups Asteroidea (seastars) and Holothuroidea (sea cucumbers), having collectively described over 100 species.

All echinoderms reproduce sexually, with sperm fertilizing eggs in water and so producing embryos which grow to larvae which settle out of the water column and develop to adulthood. Most echinoderm species have separate sexes (ie. are dioecious) but, rarely, hermaphrodite species in which both male and female gonads are present within a single individual (ie. monoecious) are known. Some echinoderms also reproduce asexually.

South-eastern Australia has one of the richest asteroid and holothuroid faunas with a wide range of reproductive strategies apparent across species. Mark asked the question: "In what general sorts of echinoderm species would one expect to find specialised strategies for successful reproduction?" The answer is in **small species**, which are replete in south eastern Australia. The reason for this is that egg size tends to be about the same across species, therefore naturally smaller individuals cannot produce many, and so to maximise chances of survival of fewer embryos, reproductive strategies observed in echinoderms include: a/. viviparous hermaphroditism—an individual produces both sperm and eggs and self-fertilises; this, however, produces a relative lack of genetic variability; b/. individuals release sperm and eggs in close proximity to ensure chances of fertilisation are high. This may involve aggregation for

egg and sperm release, or release of sperm onto eggs (pseudocopulation); c/. protection of fertilised eggs from predation and environmental loss—eg. brood protection internally or externally and d/. asexual reproduction eg. through fissiparity. All of these strategies are remarkably complex for animals that, although possessing a nervous system, lack a formal brain.

Specifically observed strategies to enhance reproductive probabilities in seastars include: a/. pseudo-copulation; b/. external brood-protection; c/. hermaphroditism with internal brooding in gonad and viviparity; d/. embryonic auto-ingestion in gonad or coelom ("cannibalism"); e/. gastric (stomach) brooding; f/. fissiparity (splitting and regenerating). Mark then discussed some species of asteroids to illustrate the above mechanisms:

Archaster typicus Müller and Troschel, 1840, a Japanese species, exhibits male on female pseudo-copulation, with males positioning themselves on top of females with arms between those of the female so that sperm release from the 5 pairs of gonopores is in close proximity to the eggs released by the female, thereby increasing chances of fertilisation.

Tosia magnifica (Müller & Troschel, 1842) from southern Australia also seem to aggregate for gamete release and fertilization. Gonopores are located on the aboral surface and spawning occurs into the water column, where fertilization takes place. **Tosia australis Gray, 1840** also has gonopores on its upper surface. **Tosia neossia Naughton & O'Hara, 2009**, however, has gonopores opening to the oral surface, with males releasing sperm onto egg masses that have been deposited on the substrate by females; both sexes also possibly brood-protect fertilized eggs under their bodies. This discovery was made by the late Neville Coleman in 1976 and reported by Mark O'Loughlin at an international conference at Atami, Japan in 1990.

Parvulastra vivipara (Dartnall, 1969) is a small endemic and threatened SE Tasmanian species about 10-15mm in diameter which sequential internal fertilization and internal embryo protection, with young developing in the gonad and

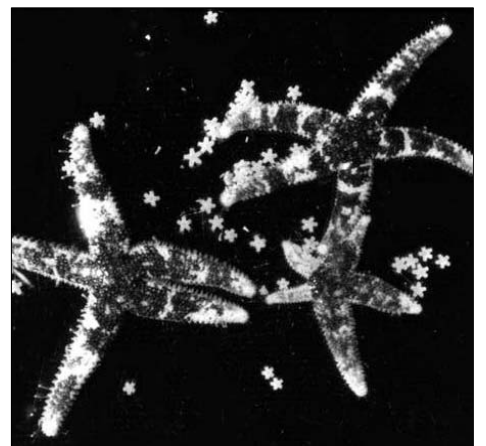
juveniles born alive (viviparity). Adults are long lived, having been successfully kept in aquaria for at least 12 years.



Parvulastra vivipara: newly born juvenile top left. Photo: John Eichler

Parvulastra parvivipara (Keough & Dartnall, 1978) is a small, related and endemic species found on the central western Eyre Peninsula in South Australia near Streaky Bay. It has a one year longevity, therefore it is vulnerable. It is hermaphroditic with internal fertilization, intra-gonadal brood protection and intra-gonadal cannibalism. It is also viviparous with up to 20 non-dispersive juveniles born per individual. The gonads contain much sperm, suggesting that some is also spawned for cross fertilization and thus lessening of inbreeding.

Smilasterias multipara O'Loughlin and O'Hara, 1990 is a south-eastern Australian species that fits well within the palm of a hand. Females release live juveniles. Also exhibits seasonal gastric brood protection.



Smilasterias multipara—females releasing juveniles. Photo: Museum Victoria.

Coscinasterias muricata Verrill, 1867. Grows to a large size. Juveniles multiply by splitting and regrowing missing parts. Fissiparity only occurs in juveniles.

Allostichaster polyplax (Müller and Troschel, 1844). Fissiparity is well known in this species, with individuals splitting and each part regrowing the missing arms. The presence of more than one madreporite (the entrance into the water 'vascular' system) is significant and a clue to potential fissiparity.

Allostichaster palmula Benavides-Serrato and O'Loughlin, 2007 from Victoria is the smallest known sea star and undergoes asexual reproduction through fissiparity.

Meridiastra fissura O'Loughlin, 2002 is a small seastar often possessing multiple madreporites and small red optical cushion sense organs; as the name suggests, it is fissiparous.



Vic showing various stages of fissiparity. Photo: Leon Altoff.

Sea cucumber strategies to enhance reproduction include: a/. viviparous hermaphrodites, brooding internally in gonad; b/. embryonic auto-ingestion in coelom ("cannibalism"); c/. brood-protection in external or internal marsupia; d/. pseudo-copulation; e/. fissiparity (splitting and regenerating); and f/. external brood-protection in pockets around body.

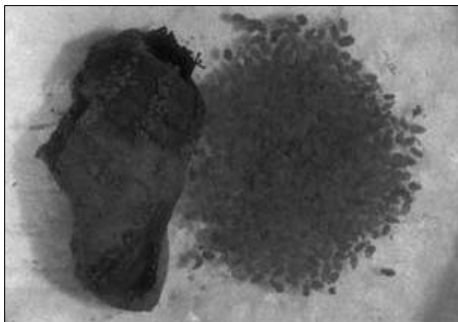
Again, Mark illustrated the above mechanisms by discussing a range of olothuroid species:

Pentocnus bursatus O'Loughlin and O'Hara, 1992 brood protects a sequence of developing embryos in the gonad. Presumably hermaphrodite and viviparous, releasing (through the body wall) one well developed juvenile at a time.

Staurothyone inconspicua (Bell, 1887) exhibits seasonal coelomic brood protection with release of juveniles in spring. Brood juveniles of various sizes have been dissected from the coelomic cavity of females. Mark then questioned why coelomic juveniles are of different sizes.

It could possibly be due to intra-coelomic brood fissiparity, or a hermaphroditic state with sequential fertilization, or auto-ingestion (cannibalism) in the coelom, but these conjectures and questions remain unanswered (research done with Christine Materia and Jane Monagle and published at the International Echinoderm Conference, Atami, Japan in 1990).

Neoamphicyclus materiae O'Loughlin, 2007, a south-eastern Australian species, exhibits seasonal coelomic brood-protection, and is presumably hermaphrodite. It also exhibits intra-coelomic brood auto-ingestion or cannibalism (there are fewer and larger embryos present in the coelomic cavity later in summer). In contrast, the related but much larger *Neoamphicyclus mutans* (Joshua, 1914) shows no evidence of brood-protection (research with Christine Materia and Jane Monagle published at the International Echinoderm Conference in Atami / Japan in 1990)



Neoamphicyclus materiae with adult on left (20mm preserved length) and 528 brood juveniles on right. Kitty Miller Bay, Victoria. NMV F58592. Photo: Museum Victoria.

Cladodactyla crocea (Lesson, 1830), a species from the Falkland Islands, exhibits an external dorsal brood-protecting marsupium for juveniles; the marsupium has the capacity to close over its edges to protect the juveniles.

Cladodactyla sicinski (O'Loughlin, 2013) is a small species from the South Shetland Islands 2012 also possesses an external marsupium.

Neocnus bimarsupii O'Loughlin and O'Hara, 1992 is a small Victorian species, probably hermaphroditic, possessing two marsupia on the dorsum and stout tube feet. It also two ventral unbranched tube feet which are able to reach the marsupia and, remarkably, can be used to transfer fertilized eggs from the gonopore to the marsupia. This is extraordinarily complex behaviour for 'simple' creatures.

Cucumaria acuta Massin, 1992 from Antarctica has a marsupium which broods embryos or juveniles.

Cucumaria georgiana (Lampert, 1886) from Antarctica is a dioecious species with males possessing a genital papilla in the tentacular crown and females having two anterior inter-radial marsupia with openings at the introvert. Different stages of embryonic development are seen in the marsupia.

Squamocnus aureoruber O'Loughlin and O'Hara, 1992 from SE Australia is a fissiparous species. The anal fragment regenerates an oral crown and the oral crown fragment regenerates internal organs.



Stages of fission (preserved). Photo: M. O'Loughlin / Museum Victoria

Cucuvitrum rowei O'Loughlin & O'Hara, 1992 from SE Australia is also fissiparous but this is not commonly seen.



Cucuvitrum rowei, Port Phillip Bay, Vic. Post fission fragments from a 20mm long live specimen NMV F157401. Photo: John Eichler

Psolodiella hickmani O'Loughlin & O'Hara, 1992 from Victoria brood protects embryos in external 'pockets' around 'neck'.

We thank Mark once again for a most interesting and informative talk, and for kindly making his presentation available for compilation of these notes.

Extracts from SIG reports given at the last FNCV Council Meeting

Botany Group



Paul Pilo from ANOS (Australasian Native Orchid Society) spoke on the orchids of North-East Melbourne showing about 40 wonderful photos of terrestrial orchids. There are about 380 species of Victorian orchids with only five of them being epiphytes. This included *Sarcocochilus australis* which is found in the Otways and used to be in Kinglake prior to Black Saturday.

On Saturday 17th August we visited a patch of remnant vegetation in Diamond Creek where we saw eight different greenhous in flower, a Helmet Orchid, a Small Mosquito Orchid, a Leopard Orchid and a Blue Fingers (found in blue and white). We also saw many other wildflowers.

Fungi Group

At our August meeting, arborist Alannah Matheson gave an interesting and informative presentation showing an arborist's view of fungi. Topics included how fungi affect trees, and the generation of sonograms to show how much of the inside of a tree is affected by fungi. Seventeen people, including three visitors, attended.



Marine Research group

The MRG is currently planning field work for the next season with trips being planned for 4th January 2014 (evening), 5th-8th February (Anglesea to Lorne area), 5th to 8th March (Mornington Peninsula) and 5th April (upper Port Phillip Bay location). All locations can be managed as a day trip from Melbourne though for the longer excursions our usual lab will be set up in the area.

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

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

From the Office.....



Dates for your diary:

Second-hand Book Sale

The Club is once again planning to hold a second-hand book sale on Saturday 12th October. Donations of books can now be dropped off at the hall for sorting and pricing. We will also need volunteers to help set up and run the day. Contact the office by Friday 27th if you could help. It is great fun.

Whitehorse Spring Festival

The Whitehorse Festival is on Sunday 20th October and the FNCV will once again have a display stall. If you can spare an hour or two to help with this, please let the office know. The festival is well worth a look, with heaps of interesting displays and items for sale.

Goodwill Wine

We have just received our latest order of a dozen mixed red and white which are available for purchase. The prices range from \$12 to \$20 per bottle, and the standard is usually very high. This is a very easy and pleasurable way of fundraising for the Club!

On a personal note, thank you all for making me feel so welcome. I'm slowly learning names, but there are a lot of members so I'm doing my best! If you're near the hall on my office days, Monday and Tuesday, please call in and say hello.

My other news which will affect the office is that I shall be on leave for the first three weeks of October. My husband Colin and I are looking forward to this long awaited holiday. We'll be on a cruise up the Danube from Bucharest to Budapest. This will mean that the office won't be attended other than the phone being periodically checked for any urgent messages. All scheduled FNCV activities will run as normal, but could you please hold off sending emails, membership renewals etc. I'll be back to face the backlog of outstanding work on Monday 21st October.

Wendy Gare

Field Nats News 235



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