



Field Nats News No.191

Newsletter of the Field Naturalists Club of Victoria Inc.
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Understanding Our Natural World
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Office Hours: Monday and Wednesday 9 am-4 pm.

October 2009

From the President

Welcome to the October Field Naturalists News. It never ceases to amaze me, what we take for granted. An instance in point, I was over in Western Australia, again, to attend a family wedding near Esperance and was staying with family on a relatively large cereal, canola and sheep property. The roadsides in the area were wide and full of remnant native vegetation, with many varied wildflowers, birds and quite a few reptiles. While wandering through the canola crop early one morning, I pondered the mass "sea" of yellow that I was surrounded by. Having done an Environmental Science degree, where the importance of corridors and roadside reserves was discussed, it only just struck home about how important such roadside reserves and the patches of remnants scattered throughout the farm really are. Around 30 birds species, tiger snake, western grey kangaroo and four species of skinks were found with not a lot of effort. All this, considering it was late winter. Photo :*Lechenaultia formosa*

I would like to thank you all, for your efforts past, present and into the future



related to the protection and understanding of our natural world. Individually your efforts may go unrecognized, but **THANK YOU!!**

August General Meeting

Bob Paddle, from the School of Psychology at ACU was our speaker for the August general meeting. Bob presented findings of research undertaken over the last 21 years, on disease as a factor in Australian mammalian extinctions concentrating on the Tasmanian Tiger and implications for the Tasmanian Devil. Bob went into detail of his own anecdotal and scientific-record findings, such as pouring through all the Police log books from the turn of the 20th Century, in Northern Tasmania, where bounty payments for the Tasmanian Tiger had been recorded.

He raised some very interesting ideas, many of which are proposed in articles yet to be published, about the extinction of such iconic mammals. Bob's presentation was well received by those that attended and left me, and I am sure others, with a few more questions to be pondered and a whole

The deadline for FNN 192 will be as always, the first Tuesday in **October, 6th**, with FNN going to the printers on the 13th.

new look at scientific research.

August Council Meeting

At the August Council meeting, a decision was made to update the laptop computer as it is having trouble with the newer com-

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CALENDAR OF EVENTS

All meetings are held at 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

Saturday 3rd - Sunday 4th - Geology Group excursion- *Gold, granite and volcanoes, geology of the Ballarat district including the Skipton lava caves and Mt Elephant.* Leader: Philip Kinghorn, local field geologist and member of Lal Lal Landcare Group. Contact: Ruth Robertson 9386 5521 AH; rutherob@hotmail.com For more details see FNN p 4.

Monday 5th – Fungi Group- 'Field Identification of Six Small Marasmius Species'. Speaker: Ed Grey. Contact: Virgil Hubregtse (03) 9560-7775.

Tuesday 6th - Fauna Survey Group.—"The influence of fire on the spatial and behavioural ecology of Desert Skinks in the South Australian Mallee." Speaker: David De Angelis. Contact: Ray White 9308 3770 AH.

Monday 12th – Marine Group- Meeting - Speaker to be announced. Contact Leon Altoff 9530 4180 AH; 0428 669 773

Tuesday 13th - Geology Group excursion (half day.)- 3D Geological visualization facility, viewing virtual objects in real space. Speaker: Dr Tim Rawlings, Manager Geoscience Victoria's Rediscover Victoria 3D project. 1 Spring St. Melbourne. Contact Ruth Robertson 9386 5521 AH; rutherob@hotmail.com Registration essential umbers limited. More details FNN p4.

Thursday 15th - Botany Group- Meeting - *Invasive ants – increasing distribution and interaction with plants in the Australasia-Pacific region.* Dr Kirsti Abbott, Monash University. Contact: Karen Muscat 0411 219 940; karenmuscat2@hotmail.com For further details see FNN p4

Saturday 17th - Fauna Survey Group.—*Stagwatch.* Come and search for some of Victoria's nocturnal wildlife (especially Leadbeater's Possum) and enjoy an evening in the bush. Contact Ray Gibson 0417 861 651. *Prior registration essential.*

Sunday 18th – Botany Group- *Field Trip to Clyde Grassland* - come along and explore a remnant grassland. Contact: Karen Muscat Karen Muscat 0411 219 940; karenmuscat2@hotmail.com

Tuesday 20th—Help collate FNN 192. About 1 pm in the hall. All welcome. Contact Noel Schleiger 9435 8408.

Wednesday 21st – Microscopy Group- Meeting - to be announced Contact: Phillippa Sterpin 9598 3231 AH.

Monday 26th—FNCV Council meeting—7.30 pm sharp. For apologies, or agenda items, contact Hali Ferguson office hours 9877 9860; admin@fncv.org.au

Tuesday 27th - Day Group excursion- *Blackburn Lake* - Meet at 10.30 am at Visitors' centre (parking available) Melway 48 B11. Gary Presland 9890 9288.

Wednesday 28th - Geology Group- *From the beach to the living room wall- the titanium dioxide story.* Speaker: Dr Mark Pownceby, Principal Research Scientist, CSIRO Minerals. Contact Ruth Robertson 9386 5521 AH; rutherob@hotmail.com

Wednesday 28th - Bat Group- *Grey-headed flying-fox count.* Meet at Yarra Bend Golf Course carpark Mel 2D G7 at 7-30 pm. As a courtesy please RSVP by e-mail or phone to Megan Davidson 9380 5062 AH; m.davidson@latrobe.edu.au

Friday 30th - Juniors Group- Meeting – *Jellyfish of Port Phillip Bay& Bass Strait.* Contact: Rob Knottenbelt 5967 1215; rknotty@hotmail.net.au

Saturday 31st Oct - Tuesday 3rd Nov - Fauna Survey Group- *Giffard Flora & Fauna Reserve fauna survey.* Stradbroke area, south of Sale. Contact: Russell Thompson 9434 7046 AH. *Prior registration essential.*



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

Member's photos & observations

We are hoping to reserve a page in future issues of FNN for natural history observations and photos. It is just so easy these days to let us know what you have noted in your travels, your walks or perhaps your garden. So how about it? Next month PLEASE share your sightings with us.

Email: fnnews@fncv.org.au by October 6th.

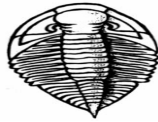
Native orchids in bloom in late winter in the Warrandyte area.



These orchids were photographed recently, in the last week of winter in the Warrandyte area. In fact seven species of finger and spider orchids were observed in flower on the day, all before the 1st September the official start of spring! The ID from upper left, clockwise is : *Pheladenia deformis*, (Bluebeard), *Caladenia rosella*, *Cyanicula caerulea*, (Blue fingers) and *Caladenia praecox*, (Early caladenia). Refer: *Wild Orchids of Victoria Australia*. Jeffrey Jeanes & Gary Backhouse.

Joan Broadberry

*Forthcoming Geology
Excursion*



*Forthcoming
Geology meeting*

3rd and 4th October 2009

Ballarat and District: Gold, Granite and Volcanoes,

Leader Philip Kinghorn: Exploration Geologist and landcare enthusiast.

Sat 3. The group will meet in the main street of Gordon at 10am. Excursion sites will include; looking at affects of climate change, volcanism and tectonic activity on the evolution of the Western Uplands; landcare activity and the geological structures and processes that created the Ballarat goldfield.

Sun 4. The group will meet outside the gates of the Botanical gardens at 9am.

We will be heading westward across the Avoca fault to explore the lava caves of Mt Widderin Station near Skipton, the largest lava caves in Victoria. Admission to the caves is \$5 each. After lunch we will be visiting Mt Elephant near Derrinallum. "The Gateway to the Kanawinka Geopark".

Participants are asked to find their own accommodation for Saturday evening in Ballarat. A \$5 dollar fee is applicable for nonmembers. Suitable clothing, sturdy shoes, lunches and good strong torches are required. On both days vehicles will be available to ensure all members have access to sites. A variety of walks are available on Mt Elephant and some short rough tracks are expected at other sites.

**Enquiries and bookings contact
Ruth Robertson. Ph 93865521.
rutherob@hotmail.com**

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

**Tuesday October 13th
Victoria Like You Have
Never Seen It Before!**

Speaker; Dr Tim Rawling. Tim is the manager of Geoscience Victoria's new state of the art 3D visualization facility.

The facility offers 3D models of Victoria's onshore and offshore geology, revealing geological structures buried beneath younger cover rocks of coastal Victoria and the Murray Basin. This facility will also be an invaluable tool for mineral, hydrocarbon and geothermal explorers as it produces computers generated simulation techniques of geological problems, such as fluid pathways.

Numbers are limited to 10 people per viewing session. Two sessions have been booked, but further bookings can be made at a later date. Non members \$5.

Time and venue: 1:45 pm.
55 Collins St. Melbourne. Between Spring and Exhibition Streets.

**Contact Ruth Robertson.
Ph 93865521.
rutherob@hotmail.com**

**Thanks to the
editorial and layout
team who put
together FNN 191**

Joan Broadberry
Noel Schleiger
Platon Vafiadis
Hali Ferguson

*This newsletter is printed
on recycled paper.*

THREATENED BIRD NETWORK - EMAIL ALERT

Field Assistant required for Helmeted Honeyeater Recovery Program

The Helmeted Honeyeater Recovery Program is requiring a part time, casual person to assist the Ornithologist with a range of duties associated with the Helmeted Honeyeater's breeding. Duties include locating and monitoring nests, monitoring individually-marked birds, filling out data sheets and basic report writing. The position is for 2 days per week for 6 months, but subject to a monthly review. Field work would occur in Yellingbo Nature Conservation Reserve and Bunyip State Park, central southern Victoria. Please visit http://jobs.careers.vic.gov.au/jobtools/incustomsearch.jobsearch?in_organid=14123 for a position description: to find the PD, under 'Department/Agency' select 'Department of Sustainability and Environment' and under 'Work Type' select 'Casual' then hit search – you will then see the 'Field Assistant Ornithology' position description. Applications for the position can be produced online at this website.

Further information can be obtained from Bruce Quin on (03) 5954 4010.



*Forthcoming Botany
Meeting—Thursday
15th October*

***Invasive ants – increasing distribution and interaction with plants in the Australasia-Pacific region-* Dr Kirsti Abbott, Monash University**

Invasive ants are a subset of the 12,571 species of ants currently described. Yet, they are of particular interest today due to their detrimental effects on human health, native biodiversity, agriculture and in some places indigenous culture and lifestyle, and also their increasing distribution and cost to national economies.

In Australia, the area infested by invasive ants is increasing, and their interaction with plants and honey-dew producing insects is amplifying impacts in both mainland and island ecosystems. Kirsti will give an overview of invasive ant species in the Australasia-Pacific region and detail their interaction with specific plants (and insects) that aid in the ants proliferation and ecological success.



Day Group

NORFOLK ISLAND

Report of a talk by Ian Endersby 28.7.09

Norfolk Island, as it is today, is dependent on its history. This history had its first phase in being a convict settlement in the late 1700's and a second phase in the early 1800's ending in 1856.

Norfolk Island was first discovered by Cook in the ship 'The Resolution'. Cook realised that with the Norfolk Island Pine trees for masts and the flax for sails, the island would be a great site for the English navy.

Convicts arrived with the first fleet. There are horrendous stories of pacts between convicts. It was kinder to be hanged for murder than live the convict life in a Norfolk Island prison. There was a second convict settlement in the 1800's. The descendants of the mutiny on the Bounty lived on Pitcairn Island until Queen Victoria gave the Pitcairners Norfolk Island as their home. They maintained the Pitcairners' language on Norfolk after they settled there. That language figures in the Norfolk Island language today.

VEGETATION AND GEOLOGY

Little of the initial vegetation on Norfolk Island is left. Situated on the Norfolk Island Rise, it is a long way from Australia and from New Zealand, the Solomons and Fiji. East from the east coast of Australia there are two failed rifts---the Lord Howe Rise and Norfolk Island Rise. On Norfolk Island there are four different lava flows stretching back 2 Ma ago. These lava flows were interspersed with tuffs. Each flow can be recognised by columnar flows at their base. Foreset bedding within the tuffs indicate the wind directions between the flows to be SE trades and NW monsoons similar to today.

Rock stacks show pillow lava basalts indicating the earliest basalts were

poured out under the sea. So there would be 2 Ma to produce the vegetation of Norfolk Island today along with the insects, seabirds and lizards. The Norfolk Island Pine is a species of the *Araucaria*, there being 17 species in the world. The lichen *Usnea* is dominant on the upper canopy of the pines. Other vegetation includes *Lagunaria*, the Norfolk Island Hibiscus, palm species, treeferns, *Cordyline*, *Capparis* and climbing ferns. *Ipomea* and *Canavalea* have drifted onto the island perhaps with the aid of birds.

BIRD LIFE

The White Tern, *Gigas alba*, has no nest: they lay their eggs on an *Araucaria* branch in the upper canopy. There are the Red-tailed Tropicbird and the Sooty Tern. The Nankeen Kestrel is the main raptor on the island. The Marsh Harrier has recently returned but it was common 200 years ago. The Silver-eye, or White-eye, may be a subspecies of the Australian Silvereye. Also present was the Norfolk Island Kaka. The Double-banded Plover has a number of populations in New Zealand. It flies to southern Australia to breed, and then returns to Norfolk in an E-W migration.

INSECT LIFE

The Caper White butterfly is similar to the one in Australia. Caterpillars feed on the native *Capparis*. A damselfly about 1" long secretes a waxy covering over itself as it ages. It does not occur in Australia but is found in New Caledonia. A transversely striped black and white caterpillar is the larva of the Monarch butterfly which has found its way to the island from the USA. Termites occur on Norfolk Island, as do the St Andrews Cross Spider and the Net-casting Spider.

UNDERWATER LIFE

Soft corals, brain coral, sea urchin species occur. Anemone species, including the Waratah Anemone, can be seen in the rock pools. Sea-

weeds were not prolific, e.g. *Caulerpa* spp. Seaweeds like colder latitudes.

Ships have to land cargo using cranes and whale boats. The parks and gardens are cared for by a Canberra Govt. dept. Rubbish has to be burnt or taken in boats back to Australia which is costly. What can't be recycled or burnt is tipped into the ocean, some of which is reworked around the island.

Ian's slides were topical and in detail to illustrate all aspects of the natural history of Norfolk Island. The subject was well researched and demonstrated. Gary Presland thanked Ian for his talk and this was well supported by the audience.

Noel Schlieger & Dorothy Mahler

(Continued from page 1)

puter operating systems that presenters may use to prepare their presentations. Leon Altoff is looking into these alternatives.

One of the things that makes the Field Nat News so enjoyable is seeing photos of people involved in the activities of the Club. It was raised that as a responsible organisation, we needed to gain members permission before their image could appear in the FNN, on any advertising material or on the website. This is particularly important with our Junior members, so the Council is developing a photo permission form which members will be asked to give their permission. While it might seem like a "nothing issue" we are trying to protect our member's privacy. I will write more on this when the form is finalised.

Other events worth noting in your diary.

The Whitehorse Spring Festival is on again 18th October from 9-4 pm. I am looking for volunteers to help with our stall, even if only for a short time. As this is the last FNN before the Spring Festival, could you please let Hali know, in the office, if you are available and what times would suit.

John Harris, President

Bookshop News

I have received copies of the 2nd edition of Gary Presland's book '**The Place for a Village**'. The new edition is slightly smaller and paperback. I have plenty of stock and at a cost of \$39.95 for members it will walk out the door. Contact the office if you wish to purchase this book.

'**The Coast of Victoria**' is out of print. I have had several requests for this book, but unfortunately it is no longer in print. Check second hand book stores or the internet. A copy is available to borrow from our library.



NEW BOOKS

Crabs, Hermit Crabs and Allies

By Gary C Poore

RRP \$19.95 Members \$15.95

This guide aims to familiarise amateur naturalists, beachcombers, divers and others who have an interest in crabs, hermit crabs and their close relatives: what they do, how they behave, their environment, ecology and diversity.

Species descriptions are accompanied by colour photographs, line drawings and illustrations for easy recognition. Maps, further references, a glossary, scientific and common name indexes are also included.

You can Save the Planet

A day in the life of your carbon footprint.

By Rich Hough

RRP \$24.95 Members \$15.90

A practical guide to saving the planet. Every day we do the same things – get dressed, travel to school, see friends – without thinking about our impact on the world. But even the smallest changes can make a REAL difference to the future of our planet.

This book takes you through the environmental baddies hidden in an average day – from shopping and eating to using mobile phones. Packed with the latest research and ideas, it highlights what you need to know, what you can do to help, and how you can take things that little bit further.....You can save the planet – starting today!

Australian Backyard Astronomy

By Dr Ragbir Bhathal and Jenny Bhathal

RRP \$24.95 Members \$19.95

Discover the stories of the heavens and our understanding of them in this beautiful book. Generously illustrated with star charts and pictures from the National Library of Australia and photographs from Australian and overseas astronomers, Australian Backyard Astronomy will captivate younger and older readers alike. Young readers will be occupied for hours with interesting facts and projects that are practical and fun to do. Older readers will enjoy the more detailed explanations and links to extra information through the Library's website. Australian Backyard Astronomy reveals Australia's Aboriginal and European night-sky heritage to children from their own backyards.

Wild Places of Greater Melbourne

By Museum Victoria and CSIRO

RRP \$29.95 Members \$23.95

Within the Greater Melbourne region there are a remarkable number of places where you can lose yourself in a forest, walk on a deserted beach or watch wildlife in the native environment. This full colour guide will help you find and explore more than 30 of Melbourne's 'wild places' selected from national parks, state forests and conservation reserves. The places described have been chosen for their habitat values and range of natural features and can be reached comfortably within a day trip from the inner city. *Wild Places of Greater Melbourne* will guide you places where you can see kangaroos and koalas, stunning forests, tranquil waterways and ancient landmarks.

Hali Ferguson, Office Administrator



Letter to the editor

Native Grasslands Threatened

In May this year the Victorian Planning Minister, Mr Justin Madden, announced there would be yet another extension of Melbourne's urban growth 'boundary,' this time mainly to the west. He said the increase in the area considered for urban expansion came because of new information on the volcanic plains vegetation of this area.

"We now know the grasslands are not as prolific in this area as originally thought. This allows the Government to consider land use and transport that may be improved by the current investigation area," said Mr Madden in his media release.

The proposed westward extensions, together with more northward extensions of Melbourne's urban ocean will obliterate much of the last remnants of Victoria's critically endangered volcanic plains grasslands.

The developers want reserved grasslands that fall within the new urban growth boundary to be used for housing, and government suggests offsets for the loss of these grasslands will be new larger grassland reserves further away from the city limits. There is little native grassland left to put in reserve. The government's answer to that is that it will purchase suitable sites and recreate native grassland.

In the audit of Australia's terrestrial biodiversity in 2002¹ the Victorian Volcanic Plains (VVP) was ranked in the highest stress class. Greater than 95% of all native vegetation in the VVP has been cleared, 15% of the original Ecological Vegetation Classes and floristic communities were probably extinct and 78% are threatened. Only 1% of the Plains Grassland and Grassy Woodland that once covered

three-quarters of the region remains, and much of this is degraded. Sixty-five taxa are listed as nationally threatened, and 173 are listed as threatened in Victoria. These include 15 mammals, 61 birds, 4 reptiles, 1 frog, 8 fish, 2 invertebrates and 93 plants. Twelve are listed as extinct.

In 1841, George Augustus Robinson, the Chief Protector of Aborigines, noted that the basalt plain in Western Victoria known as Spring Plains was covered with millions of Murnong (the Yam Daisy *Microseris lanceolata*) and described women "*spread over the plains as far as I could see them — and each had a load as much as she could carry*"²

The volcanic plains of western Victoria are the third biggest in the world, and the rich soil carried vast areas of rich native grasslands at that time. The early entrepreneurs in their haste to claim the bounty, ran vast flocks of sheep and herds of cattle on the land, which was not accustomed to hard hooves or the grazing habits of ungulates. Stock soon grazed out the succulent forbes or trampled them. The Yam Daisy was relished by sheep. Watercourses were mired by stock and planted with willows.

The Brumby Government claims urban expansion is required to satisfy the demand for housing by Melbourne's rapidly growing population. Both Federal and State governments promote population growth, so the claim is disingenuous. The first Victorian proposal to cope with this population growth 'problem' was to increase urban density – the 2030 vision – by allowing more high-rise development within the existing city boundaries, to accommodate an extra one million people.

The second proposal was to increase urban growth boundaries (UGB). The reason given for expanding the UGB

is that there is too much popular resistance to high-rise urban development within existing urban boundaries. We now have the worst outcome, which is the adoption of both solutions, because high-rise development is occurring within the city, albeit more slowly than suits the developers. Thus, planning is in place to expand Melbourne's population by at least two million people in the next few decades – one million within existing boundaries, and another million on the outskirts.

New and better grasslands?

The Victorian Government's Strategic Impact Assessment Report proposes land less than 150 hectares in area will not be protected, regardless of its conservation value, and the new reserves are to be two areas west of Melbourne. But these areas do not replicate the remnant grassland Environmental Vegetation Classes, which will be obliterated by urban growth, especially to the north.

The track record in enhancement and creation of grasslands is not good. John Morgan in a 1998 study of tube-stock plantings in three Victorian native grassland sites found that most species failed to recruit. Broad-scale native plant establishment techniques on highly degraded sites have proved effective but whether this has recreated what was there originally can only be guessed at. Whether enhanced or recreated grassland systems will survive in the long term is not known.

Translocation is often unsuccessful. An attempt was made, during construction of the Eastlink Freeway, to translocate some endangered grassy wetland vegetation. The attempt failed miserably, mainly because the hydrology of the site was changed due to Eastlink earthworks acting as a barrier to overland flow of surface water, which had previously maintained the wetland.

Offsets are a common way of trying to mitigate the impacts of develop-

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ment on native vegetation, but are only useful where there is some vegetation to be found as a replacement for what will be destroyed. The Victorian Government is proposing 15,000 hectares of restored and recreated native grassland as compensation for remnants (at least 7,000 ha) obliterated by developers. I wonder if this will happen? Not likely, going by past performance. For grassy native vegetation there has been a net loss of about 1,150 hectares per year over the period 1994 to 2004.³

Natural Temperate Grassland of the Victorian Volcanic Plain are federally listed. The Victorian system of native vegetation evaluation is not the same as native vegetation assessment under the EPBC Act. It is possible that grasslands that do not qualify as a remnant patch under the Victorian framework will trigger the EPBC Act.

A new vision?

There was originally 870,000 ha of native grassland on the Victorian western volcanic plains according to the UGB study. So at least 87,000ha of Victoria's volcanic plains grasslands should be in reserve under a Comprehensive Adequate and Representative (CAR) system. CAR reserves are one of the tools of conservation signed up for by Australia under the International Convention on Biodiversity.

As well as satisfying international obligations, larger grassland reserves would allow for reintroduction of native fauna – dingoes, quolls, bandicoots, betongs, kangaroos, wallabies, emus, etc. No ecosystem is complete without its associated fauna. But we had better maintain the existing reserves, as these are established and there is no reason to destroy them.

Australia's temperate grasslands do not attract public sympathy, and local and international visi-

tors, because there are no large temperate native grassland ecosystems in existence in Victoria or elsewhere in south-east Australia. Victoria's remnant native grasslands are tiny patches, largely sterile of native animal life. Compare the vast grasslands of Africa where there is still large numbers of native animals.

There was 30 days consultation on native vegetation issues, and that has finished. According to the Memorandum of Understanding the Victorian Government proposal was delivered to the Federal Government on Friday 14 August and now it's up to Federal Environment Minister Garrett to make a decision.

1. (NLWRA, 2002a)
2. 'Journals of G.A. Robinson, May to August 1841'. Records of the Victorian Archaeological Survey No. 11
3. *Native Vegetation Net Gain Accounting: First Approximation Report*, Department of Sustainability and Environment, April 2008

Jim Walker
August 2009

Thanks to those who helped collate FNN 190

Sally Bewsher
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Bob Rowlands
Noel Schleiger
Paul Stokes
Graeme Thomson

There was never a more accurate proverb than, "many hands make light work", With our loyal and hardworking crew of 16 we were done and dusted with the folding and labelling by 2.30 pm..



Library News

Recent additions:

Courtenay-Latimer, M. et al.(1967)
The flowering plants of the Tsitsikama forest and coastal national park.

Palmer, E. (1981) A field guide to the trees of southern Africa. Rev. ed.
Our thanks to Denise and Arthur Carew for the donation of these two books on South African flora.

Finney, C. (1993) Paradise revealed: natural history in nineteenth-century Australia.
Thanks to Gary Presland for this donation.

Jones, D. and Goth, A. (2008)
Mound-builders.

Sheila Houghton
Honorary Librarian

Advance notice NEW FNCV MEMBERSHIP FEES Apply from 1/1/2010

Family	\$90
Single	\$68
Concession	\$52
Student	\$25
Junior	\$18
Additional	\$7
Schools/Clubs	\$70
Institutions/Libraries/	
Businesses: Aust.	\$130
Overseas	\$140

The FNCV Council recently, on the advice of the treasurer, passed a motion that membership rates would rise. The new fees will not be introduced until January 2010. Members should note there has been no increase in two years. The increase has been kept to a minimum, just sufficient to keep up with inflation.



Fungi Group

“The Origin of Fungi”

A talk given to The FNCV Fungi Group
by Jurrie Hubregtse, 3 August 2009

Using the information provided by DNA analysis and the fossil record, Jurrie took us on a fascinating journey from the present day back to between 900 and 1200 million years ago (mya), when fungi first appeared.

The talk was illustrated with images of fossils as well as the phylogenetic tree established from the information provided by DNA. Eukaryotes (plants, animals, fungi) hold their evolutionary history in their DNA, and it has been possible to construct a phylogenetic tree to show their evolution. Despite the fact that there is less fossil evidence for fungi than for plants and animals, some surprising discoveries have been made.

Today the kingdom of fungi includes Ascomycetes (moulds, filamentous ascomycetes, yeasts, basal ascomycetes), Basidiomycetes (mushroom group) and Chytrids (water-borne fungi). The number of species is vast, perhaps 1.5 million or more, and ranges from single-celled organisms to a huge *Armillaria ostoyea* in Oregon USA that covers 2200 acres and is at least 2400 years old.

About 15 mya some agarics were preserved in amber, and so many details were evident that it was possible to give a full description - and a name, *Aureofungus yaniguaensis*. Fossil evidence from this time shows that most of the major fungi families were present. A 23 million year old *Ganoderma* fossil was found in the Libyan desert, indicating that wood-rotting fungi were present, and a 25 million year old ant trapped in amber was found to be infected with an ‘icing-sugar’ fungus similar to *Beauveria bassiana*, which we have seen on several of our forays.

A large number of specimens of fossil

wood from 65 mya were found to show no evidence wood-rotting fungi. A fungus found in one specimen was not the sort that degraded lignin or cellulose. The fossil record in coal deposits shows that it took about 200 million years after the evolution of lignin for wood-rotting fungi to become relatively common.

Fossils from the Cretaceous period (ca 100-140 mya) show that carnivorous fungi and boletes were both present. Carnivorous fungi are those that trap nematodes in their mycelium to boost nutrition in a nitrogen deficient environment. One we are familiar with is the Oyster Mushroom *Pleurotus ostreatus*. The significance of finding boletes is that they are basidiomycetes with four-spored basidia that form mycelial connections to the outsides of plant roots for the benefit of both species (familiar to us today).

Ascomycetes that were parasitic on leaves have been found in fossil dinosaur dung from about 200 mya (Jurassic). Interestingly, as these ascomycetes were host specific, it was possible to deduce the plant species, and hence the plants that these dinosaurs were eating.

Fossil hyphae with clamp connections from 300 mya (Carboniferous) have been discovered in the wood of a fossilised fern. This indicates that basidiomycetes were present, since only basidiomycetes have clamp connections. The hyphae probably belonged to a jelly fungus.

It was about 400 mya that the Dikaryomycota (fungi that have both male and female nuclei in each cell after mating) split into Ascomycotina and Basidiomycotina.

A 400 million year old fossil of a Chytrid fungus infecting a green alga looks remarkably like the Chytrids that still exist today. Chytrids still live in water (and also in the guts of animals), and some are in-

fecting the frog population.

A 400 million year old Glomale fungus fossil shows vesicular arbuscular mycorrhiza (VAM), which is the most widespread plant-fungus mutualistic relationship. It has been said that VAM fungi were pivotal in the origin of terrestrial flora – if it were not for this relationship, plants might not have colonised the land. It is remarkable that the structure of the fossilised VAM fungi and those found in plants today are very similar.

One of the most amazing facts is that some of the earliest land fungi grew to eight metres tall. These fossils (from about 420 mya in the Ordovician period) had been previously unidentified, but recent spectroscopic analysis has revealed that their unique carbon compounds definitely belonged to fungi - *Prototaxites*. These fungi obtained their carbon mostly from cyano-bacteria. At that time plants grew to about 1m, land animals were non-existent and thus predation was at a minimum.

Further back, in the Ediacaran era (ca 532-635 mya), what were to become terrestrial fungi diverged from water-borne fungi, while the Chytrids remained aquatic. A fossil of a lichen-like organism found in marine phosphorite shows an interaction between filamentous fungi and coccoidal-like cyano-bacteria or algae. This means that some of the Ediacaran fossils could have been lichens.

Finally, the first fungi appeared between 900 and 1200 mya when the Opisthokonts – free-living unicellular flagellates - divided to form the kingdoms of Fungi and Animalia.

Apart from taking us back to the origin of fungi, Jurrie’s talk also indicated how their origin and evolution did not occur in isolation, but must be seen in the context of the evolutionary history of all living things. Thank you Jurrie for a most interesting presentation.

Virgil Hubregtse & Pat Grey

Australian Birdfair

LEETON NSW, 13-15 NOVEMBER 2009



Australia: The Land of Parrots

The Australian Birdfair showcases our native wild birds, and the ecosystems of which they are part and dependent upon.

VENUE Yanco Agricultural Institute, Leeton-Narrandera Road Trunk Road 80, Yanco (8 km south of Leeton). Shady, full equipped facilities including air-conditioned conference and seminar rooms, catering and accommodation.

EXHIBITORS An invitation is extended to potential exhibitors wishing to be part of the Australian Birdfair. Please see contact details below.

KEY ACTIVITIES

- **Flights of Fivebough** The very popular meet and greet BBQ held at Fivebough Wetlands. Enjoy the spectacle of thousands of Glossy Ibis and Whiskered Terns come to roost together with the many thousand of other waterbirds.
- **Birdwatching Tours by TEMP**
- **Seminars and lectures** Music, photography, art and educational seminars for school students.

CONTACT DETAILS

Tracey Valentzsi, Australian Birdfair Coordinator
 P (02) 6953 2215 M 0407 262 496
 E coordinator@australianbirdfair.org.au
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 A PO Box 357, Leeton NSW 2705
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Wetlands & Waterbirds Conference

MANAGING FOR RESILIENCE

The Wetlands and Waterbirds Conference is organised by Fivebough and Tuckerbil Wetlands Trust, Charles Sturt University and the Waterbird Society.

PLENARY SPEAKERS

- **Professor Max Finlayson** A wetland ecologist and past-Chair of the Ramsar Wetland Convention's Scientific and Technical Review Panel and past-President of Wetland International's Supervisory Council.
- **Assoc. Prof. David Paton AM** Graduate of the University of Adelaide (B.Sc. Hons) and Monash University (Ph.D) has contributed to the understanding and management of Australia's natural environment for three decades.
- **Dr Chris Elphick** Assistant Professor in the Department of Ecology and Evolutionary Biology, at the University of Connecticut.
- **Dr Iain Taylor** Vertebrate ecologist working mainly on wetlands and waterbirds, with research concentrating on the ecology and conservation of waterbirds in estuarine and inland freshwater wetlands and on the significance of rice fields as a habitat for waterbirds.

Delegates wishing to present papers, contact Dr Iain Taylor
 E itaylor@csu.edu.au

CONTACT DETAILS Conference Convenor

E temp@tempmanagement.com.au
 W www.fivebough.org.au/wetlands-and-waterbirds-conference



LEETON NSW, 9-12 NOVEMBER 2009



Images Peter Menz www.menzimages.com



Marine Research Group News

Report on MRG meeting, Monday 13 July, 2009: Jacqui Pocklington spoke about the People and Parks Foundation Marine Monitoring Program.

The People and Parks Foundation Marine Monitoring Program, of which Jacqui is the Marine Programs Coordinator, is a not-for-profit organisation whose aims are to generate interest and enjoyment in the marine environment and to improve the sustainability of nature and its enjoyment by people. It has two marine programs:

Sea-search: is a survey of reef life from various sites, with feedback to Parks Victoria and other environmental organisations. Community volunteers are trained to collect data on marine biodiversity. The aim is to collect systematically sound and consistent data that will inform and guide coastal management actions. Its methods have been developed by Deakin University scientists and are applied consistently. This consistency of method and data collection allows comparisons over time.

The data collection is based on quadrat monitoring along set transects at each locality. The level of cover of sessile organisms, sessile invertebrate and algal counts, substrate data, seagrass cover (including shoot density, shoot length and epiphyte cover and epifaunal animals), and sizes of algae, plants and animals are all recorded.

Sea search data is currently being collected and analysed and will be published on line in the near future. Such data will guide the development and application of management strategies on coastal areas, together with their efficacy; will quantify the effect of human impacts; and will also document the presence or emergence of exotic pest species over time.

2. Reef life survey: this involves the collection of sub tidal marine data. Its main aim is to link divers, scientists and managers in marine research and conservation. It keeps species visual records, abundances, size ranges, and also does photography of set quadrats over time. Scientists then rigorously assess the data, which will be progressively accumulated on the group's website to allow a look at sub tidal habitats over

time. This program is a little different from Reefwatch (see MRG page in FNN 126, November, 2003) in that its statistical data is more extensive.

We thank Jacqui very much for her interesting presentation, and wish her every success in her work with this important program.

Report on MRG meeting, Monday 10 August, 2009: Dr. Gary Poore, Senior Curator, Department of Marine Invertebrates, Museum Victoria, spoke on 'Shrimps, prawns and lobsters'.

Gary began by touching on the current series of marine field guide books published by Museum Victoria (see MRG page, FNN 156, April, 2006), the first two being available ('Introduction to Marine Life', and 'Crabs, hermit crabs and allies') with the third and fourth not far from publication ('Barnacles', and 'Shrimps, Prawns and Lobsters' respectively). Gary gave an overview on the topic of the fourth volume. 'Shrimps, prawns and lobsters' will not deal with freshwater and terrestrial shrimps, but will instead maintain a marine focus.

Crustacea are a very large group, comprising over 800 families and having about 68,000 described species, with many more remaining undescribed. One, *Othonia similis*, a copepod, is estimated to be the most abundant crustacean species on earth.

The word Decapoda is of Greek origin and means 'ten legs'. This order was initially subdivided into 2 groups (both now superseded): Reptantia (the walking decapods, such as crabs) and Natantia (the swimming decapods, such as lobsters). The mantis shrimps and the opossum shrimps are not decapods, although they do resemble them, and Gary included aspects of their interesting biology in his wide-ranging talk.

Ecology of shrimps, prawns and lobsters:

These are marine organisms with greatest diversity being found in the tropics. They are rare at the poles, except for krill. They inhabit many different habitats, such as muddy shores (burrowing crustaceans such as ghost shrimps; few caridean shrimps in seagrass), intertidal reefs (shrimps in pools, stomatopods

under boulders), offshore reefs and sediments (among algae, sponge covered reefs, sandy and muddy seafloors, overhangs and crevices), and open water environments (close to seafloor: opossum shrimps and penaeid prawns; open ocean: caridean shrimps).

Reproduction and life history of shrimps, prawns and lobsters):

This is complex and varied, but is a major basis for current classification within the Order Decapoda. All groups are dioecious and lay eggs from which young hatch.

Opossum shrimps (Superorder Peracarida) are brooders. The eggs are carried in brood pouches from which they hatch to release juveniles.

Prawns (Decapoda: Suborder Dendrobranchiata) broadcast fertilised eggs. The eggs are free-floating, and go through a *nauplius* stage before reaching the juvenile stage. This process happens in open water. The nauplius is a very characteristic stage in crustaceans, bearing a single eye, no mouth, 3 pairs of limbs and a small abdomen. Barnacles and most crustaceans have a nauplius stage, and in many groups this stage happens within the egg capsule.

Shrimps and lobsters (Decapoda: Suborder Pleocyemata) carry fertilised eggs but broadcast larvae into the water column. The eggs are attached to the pleopods, which are the abdominal eggs.

The hatchling of shrimps and crabs released into the plankton is known as a *zoea*. In the crabs, the zoea passes through a *megalopus* larval stage before the mature form is seen on settlement. In shrimps, the zoea precedes the mature stage. In rock lobsters, the zoea passes through a larval stage known as a *phyllosoma* (which can live in the ocean for up to 9 months) before becoming a *puerulus*, which precedes the mature rock lobster form.

Mantis shrimps (Order Stomatopoda) have fertilised eggs that are carried by the female at the front of the body. These hatch into free-swimming ciliated larval forms called *alima* or *erichthus*.

(to be continued)

P.Vafiadis

FNCV GALA Book Sale

The Club is planning a fund-raising second-hand/new book sale, to be held at the FNCV hall, 1 Gardenia St Blackburn, on **Saturday 14 November 2009**, between 10 am and 3.30 pm. Put the date in your diary now and please invite your book-loving friends and relatives.

The club already has a small stock of pre-loved books, and more have been added recently, donated by the family of former President Tom Sault. However, many more books are needed.

Members are encouraged to donate good quality books on all subjects (fiction and non-fiction) for use in the sale. Books can be delivered to the FNCV Hall on any weekday except Wednesday. Helpers will also be appreciated.

Gary Presland is the contact person. He can be reached on 9890 9288 or 0416 316 419 or at presland@archaeologist.com

The FNCV bookshop will also be open.

FNCV members receive a substantial discount on new titles.

All welcome



Australian Naturalists' Network (ANN) 6th Get-together 24th August—4th September 2010 CHINCHILLA, Qld.

The Chinchilla Field Naturalists' Club cordially invites naturalist to participate in the 6th ANN Get-together. Chinchilla is situated approx 180 kms northwest of Toowoomba and 290 kms northwest of Brisbane, on the Warrego Highway, on the north western edge of the Darling Downs.

During the Get-together daily bus trips to places of interest will be arranged. Guest speakers have been organised for two nights. In addition there will be an optional star gazing evening and a campoven dinner. These costs will be included in the registration fee. Accommodation, food and fares will be a separate individual cost and must be organised independently. Arrangements have been made with 2 motels and a caravan park for bus pickups. Contact FNCV office for more information

In order to reserve a place, an expression of interest form and deposit of \$200 per person should be sent to CFNC Inc. (AAANN 2010), P.B. 368 Chinchilla Qld. 4413. Cheques (payable to CFNC Inc) or money orders, no credit card facilities available. No later than 1st Dec 09, please. Deposit fully refundable until 28/2/2010.

Expression of interest forms, accommodation possibilities and many more details can be obtained from the FNCV office.

A bus will be available for pickup from Brisbane Airport on Tuesday 24th August 2010, departing at 11 am. Another bus will depart from Chinchilla at 8 am on Saturday 4th September arriving at Brisbane Airport at 12.30 pm. Cost is \$50 each way.

Preferred method of communication is by email to Kath Truscott, ann2010@bordnet.com.au

Field Nats News 191



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