



## AUSTRALIA'S FUNGI MAPPING SCHEME

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### NEWS FROM THE FUNGIMAP COORDINATOR

Despite drought and patchy rains, fungi have emerged in modest abundance this season. Records of the Fungimap Target species have been steadily trickling in from around the country. The ongoing drought in NSW brought disappointment to many fungi enthusiasts and the cancellation of several forays. However I hope for many of you the Fungi season revealed new delights and familiar friends.

Forays in the south-east and west have had better luck. The **Cryptogamic Extravaganza** in the Grampians was a great success (see page 3 for more) and the newly formed fungal foray group of the Field Naturalists Club of Victoria have found a diverse range of interesting species on their fortnightly forays. You can view some of these on the website of Ivan Margitta (details on page 3).

An exciting date for next year's calendar is the **Fungimap III Conference**. The theme is *History, Ecology & Conservation* and it will be held in northern Tasmania from the 29<sup>th</sup> April-2<sup>nd</sup> May 2005 at Gowrie Park. The venue is nestled below spectacular Mt Roland, with great foray sites within walking distance from the lodgings and Cradle Mountain only a short drive away. A fungi **Exhibition and Competition** will be

held at the conference to highlight the wealth of talent we have on board the Fungimap project. So start thinking of fungi photos and art you would like to submit.

Sad news from Tasmania is that Sapphire McMullan Fisher has decided to wind-down her work as Tassie Fungimap Coordinator in order to focus on her PhD thesis. Sapphire has made a great contribution to the Fungimap project, with bountiful ideas, knowledge and enthusiasm. Luckily for Fungimap, Sapphire will continue to be involved and Sarah Lloyd, who recently started the Fungi Lovers Adventure Group (FLAG) will be taking over the torch. Welcome Sarah!

Before I sign off I would also like to welcome three new volunteers Wendy Cook, Libby Read and Ros Shepherd to the Fungimap Office. With their help we are speeding up the databasing of your records and responding to your queries and contributions. So if you are waiting for a reply to a letter or email, you should be hearing back from us soon. Thank you all for your patience. It's a busy time of year.

Cassia Read, **Fungimap Coordinator**



*Coprinus comatus* on the beach (Photo: Phillip Dawson)

New Fungimap member Phillip Dawson sent this enigmatic image of the Fungimap Target species *Coprinus comatus*, emerging from a sandy beach at Pieman Heads, west coast Tasmania. They are growing on logs that were felled upstream by piners in the 19th century, washed down by floodwaters sometime since and buried more than 60 cm in the beach sand!



## CONTACTING FUNGIMAP

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## INTERESTING GROUPS

### SA

#### Adelaide Fungal Studies Group

Monthly meetings and forays during the fungi season.

**Convenor:** Pam Catcheside

Ph: (08) 8222 9379 (w)

E-mail: [Catcheside.Pam@saugov.sa.gov.au](mailto:Catcheside.Pam@saugov.sa.gov.au)

### NSW

#### Sydney Fungal Studies Group

Fungi forays, talks and workshops in the Sydney area.

**Secretary:** Donald Gover

Ph: (02) 9661 4898

E-mail: [djgover@bigpond.com](mailto:djgover@bigpond.com)

#### Central Coast Fungi Group

Fungi forays in the Central Coast region of NSW.

**Contact:** Pam O'Sullivan Ph: (02) 4362 1543, or

Nikki Bennetts Ph: (02) 4392 1782

### WA

#### Perth Urban Fungi Project

Fungi workshops, walks, surveys in Perth Urban bush areas.

**Contact:** Roz Hart at the WA Herbarium

Ph: (08) 9334 0500.

The following two groups in WA organise events both separately and together.

#### WA Naturalists' Club, Fungi Group

Fungal forays, workshops, identification evenings and talks, based in Perth.

**Contact:** WA Naturalists' Club

E-mail: [wanats@inet.net.au](mailto:wanats@inet.net.au)

Website: <http://www.wanats.inet.net.au/>

#### William Bay National Parks Association, Fungi Studies Group

Fungi forays around Denmark.

**Contact:** Katrina Syme.

E-mail: [syme@westnet.com.au](mailto:syme@westnet.com.au)

### Tas

#### Fungi Lovers Adventure Group (FLAG)

Fungi activities in northern Tasmania.

**Contact:** Sarah Lloyd

Ph: (03) 6396 1380

Email: [sarahlloyd@iprimus.com.au](mailto:sarahlloyd@iprimus.com.au) Vic

### Vic

#### Field Naturalists Club of Victoria, Fungal Forays

Fortnightly forays.

**Contact:** Ed and Pat Grey

Ph: (03)(03) 9435 9019

## INTERESTING WEBSITES

- ◆ CSIRO Forestry and Forest Products Mycorrhiza Website  
<http://www.fpp.csiro.au/research/mycorrhiza/index.html>
- ◆ Ivan Margitta fungi photos  
[http://homepage.mac.com/ivanmargitta/Fungi\\_photos/PhotoAlbum1.html](http://homepage.mac.com/ivanmargitta/Fungi_photos/PhotoAlbum1.html)
- ◆ Friends of the Potoroo:  
<http://home.vicnet.net.au/~potoroo>
- ◆ Australian National Botanic Gardens fungi website: <http://www.anbg.gov.au/fungi/>
- ◆ FungiBank: <http://www.fungibank.csiro.au/>
- ◆ Natural Selection: <http://nature.ac.uk/>
- ◆ Royal Botanic Gardens Melbourne fungi pages: <http://www.rb.g.vic.gov.au/biodiversity/fungi/>
- ◆ Taylor Lockwood: <http://www.fungiphoto.com/>
- ◆ The Hidden Forest:  
<http://www.hiddenforest.co.nz/>
- ◆ MykoWeb: <http://www.mykoweb.com/>

If you know of other interesting fungi websites not listed above please contact [fungimap@rbg.vic.gov.au](mailto:fungimap@rbg.vic.gov.au)

## CRYPTOGAMIC EXTRAVAGANZA

Sufficient autumn rains in the Grampians and a tremendous effort by Sharon Morley and Bernadette Sinclair ensured the **Cryptogamic Extravaganza** last May was a great success. The weekend included fascinating walks, talks and workshops on fungi and bryophytes. Bruce Fuhrer opened the weekend with a stunning slide show of mysterious fungi needing names. Other talks on fungi included Pam Catcheside on South Australian fungi of the arid zone, Bettye Rees on *Hebeloma* taxonomy, and Japanese student Kentaro Hosaka from Oregon State University on the taxonomy of stinkhorns and truffle relatives.



Fungi Workshop at the Cryptogamic Extravaganza with Teresa Lebel (Photo by Cassia Read).

Many Fungimappers attended the extravaganza, sharing their knowledge and keen interest. There were several fungi forays to choose from each day, to scenic

locations such as Kalymna Falls and Dellies Dell. Expert leaders assisted with identification along the way and made constrained collections to exhibit back at the lodgings. Teresa Lebel (Mycologist from the Royal Botanic Gardens Melbourne) gave a popular workshop on general fungi identification, highlighting Fungimap target species where specimens were available from forays.



Tom May discussing *Galarina aff. unicolor* during a fungi foray at the Cryptogamic Extravaganza (Photo: Cassia Read).

At the close of the weekend, the organising committee of the Extravaganza made a generous donation to Fungimap, which is greatly appreciated and will assist with publishing and posting this newsletter as well as general running costs of the project.

## THE FUTURE OF FUNGIMAP - YOUR CHANCE TO CONTRIBUTE

Importantly for Fungimap, the Extravaganza provided an opportunity for the Fungimap Regional Coordinators to meet and discuss the future of Fungimap and priorities for **incorporation**. The main focus of our discussion was the aims of the new organisation. All agreed to keep Fungimap as the name and to broaden our aims to include education, conservation and supporting community networks as well as continue the original goal of mapping Australian Fungi.

We are now in the process of drafting the Fungimap Constitution, which will be published in the next newsletter for your comment. If you have any ideas about incorporation before then, please get in touch as we are keen to have your input.

The constitution will be finalised by the Fungimap Conference next year when we will hold our first General meeting and vote in the new constitution and structure of the organisation.

You can also help ensure the future of Fungimap by giving a tax deductible **Founding Donation**. All contributions will be gratefully received.

Contact Cassia Read for more information on (03) 9252 2374.

## A DIFFERENT VIEW OF WINTER

Geoff Lay

Winter is the time for a hive of activity – it's the only time you can get those elusive fungi photos. A typical foray starts with making lunch and a hot thermos of tea, putting on the long johns under heaps of other warm clothes and driving up into the mountains. Today it is Starling Gap, above Powelltown.

It's not raining so there is no need to don the parka, but the boots and gaiters are strapped on. I walk along a muddy track through rainforest to a creek of icy clear water. My aim is to walk down the creek looking for *Chlorovibrissea*, a delightful fungus of yellow balls on tiny black legs, which only grows on fallen timber saturated from being half inundated in running water.

The choice is now between wet knees (and posterior) or waterproof over trousers, so on goes the latter.

Walking is actually a misnomer. The ground is strewn with moss covered boulders. Huge logs, sometimes below knee level, sometimes above shoulder height, but more often at waist level repeatedly cross the creek. So you can crawl under, or sit on and clamber over. But don't forget this is rainforest so most of the wood is rotten and all is saturated. If you're lucky when you fall through the next log, your feet will land on, and stay on, one of the slippery, sharp-sided boulders. If you're unlucky you'll crash through the wooden debris, bounce off the side of the rocks and land on the lovely sandy bottom – and then sink 20 cm into the water, hoping your boots and gaiters will keep your feet dry.

After an hour I've negotiated 150 metres of creek without seeing any *Chlorovibrissea*; I haven't hurt my back but my left foot is very wet. I find some lovely coral fungus so it's time for a photo. Off goes the pack, out comes the tripod, screw on the camera and extend the legs. Hang on. Put on the miner's light around my head because it's so gloomy I cannot see where to place the legs. Not that it matters much – the first tripod leg goes straight through the rotten wood up to the shoulder. I jam my pack under one leg and look around for some stones for the others.

I finally set up the camera. We all know from the close-up workshop that the subject needs to be in a plane parallel to the film. So I try to move the branch slightly. Snap! The picture just broke in half and fell in the mud. Fortunately the fungus is undamaged so I pick up the much smaller branch and position it on the nearby bank. But the fungus is at an unnatural angle so with a combination of mud and stones I manoeuvre it into place.

Now my hands are too muddy to touch the camera so I plunge them into the creek – no longer clear but still icy. Back at the fungus I move the tripod back a little; the leg falls off its stone. Shorten the left leg a little, do some gardening around the subject. Now is the time to decide whether I prefer cramp from balancing

awkwardly on boulders, or slowly sinking into the comfortable flat mud.

It's so dark that the exposure is 15 seconds but after 20 minutes of setting up (and an hour to get there) another magical image is preserved forever. Of course it will never be seen in a competition because judges don't like naturally messy photos.



Fungimappers Geoff Lay (in the gully), Jani Lay & Pat Grey photographing fungi at the Cryptogamic Extravaganza in the Grampians (Photo: Cassia Read).

A little further down there's a lovely gnarled beech tree, a brilliant white tooth fungus and a ruined moss-covered trestle bridge from another era which makes an ideal lunch spot. To return I climb out of the creek and try the spur. It's not as wet, but it's covered in wiregrass up to head height so the creek seems positively inviting.

Back at the car I peel off the waterproof pants, then scrape off the boots and gaiters. Dry socks and shoes and a hot cuppa. What a wonderful winter's day – much better than staying at home staring at a computer!

### FUNGIMAP BOOK - PROGRESS REPORT

We have now selected all the photographs to be included in the book and Leon Costermans has the onerous job of sizing, annotating and fitting the images into the page layout. All the text – introduction, descriptions and appendices – has been written.

One of the next jobs will be the verification of images by their photographers and signing of copyright forms where needed. At this time all photographs etc will be returned to their owners. We thank everyone for their patience during this long process of selection. After this the book will need to be proof read.

We still hope to have the completed book to the printer by the end of this year and aim for the launch before the 2005 fungi season.

Pat and Ed Grey

## NEW AND INTERESTING PUBLICATIONS ON FUNGI

*Landscape* 16(4): 48-53 (2001). "Fruit of fire," by Richard Robinson. This article provides a fascinating account of fungi which appear after fire, including Fungimap targets *Polyporus mylittae*, *Morchella elata* and *Neolentinus dactyloides*.

*Geo Australasia* 22(4): 35-41. (2001). "Fascinating Fungi," by John Cooper. Features luscious fungi photos, including Fungimap targets *Cyptotrama asprata*, *Mycena interrupta* and *Omphalotus nidiformis*, and a magnificent green earth tongue.

*Landscape* 18(1): 10-18. (2002). "Forest fungi: lifestyles of the little-known," by Richard Robinson. Very readable account of WA forest fungal diversity, with beautiful colour illustrations, including Fungimap target species *Boletellus obscurecoccineus*, *Amanita xanthocephala*, *Hebeloma aminophilum*, *Armillaria luteobubalina*, *Panus fasciatus*, *Piptoporus australiensis* and *Tremella mesenterica*.

### An Introduction to Fungi on Wood in Queensland


Ian Hood, Forest Research Institute, Rotorua

This book is an introduction to the common fungi found growing on wood in Queensland. It covers over 180 species, giving their descriptions, habitat and distribution. The book is illustrated, by the author, with pen and ink drawings of fruiting bodies and distinctive microscopic characters, providing 'sufficient details for many fungi to be distinguished solely from these drawings'.

The Introduction is comprehensive, giving a background to the fungi on wood and covering aspects of their biology, ecology, distribution and diversity as well as economic impacts and uses as a food plant. Keys for identification are also provided. The text about each species is short and precise and describes a number of characters that are not easily shown in the illustrations and are presented in a manner to easily help the beginner. Some drawings of microscopic characters (all on the same scale) have also been included to help with identification. Unfortunately the number of colour illustrations is very limited.

The page for each species has been set out in an easy to read form, giving synonyms where applicable, form, texture, colour and points of interest about each species, including ecology and history, plus a number of references to recent mycological and phytopathological literature for those interested in finding out more about the species. Unfortunately the host information is frequently rather limited. The Bibliography is extensive but the Index refers only to the taxa that are found under Figures not pages.

Reviewed by Ros Shepherd (Fungimap Volunteer)



AN INTRODUCTION TO  
**FUNGI ON WOOD**  
IN QUEENSLAND

IAN HOOD

'...a valuable introduction to the wood inhabiting fungi of Queensland and Australia and an excellent source book for budding forest pathologists and mycologists. The modest price should ensure this book is on the shelves of all mycologists, naturalists and conservationists'

J.A. Simpson in *Australasian Mycologist*.

This book is available through Fungimap at the **Price of \$27.00 (GST inclusive) plus \$10.00 postage.**

## DO SUIT YOURSELF WITH SURVEYS

We have received some feedback about the various articles on surveys in the last few issues of *Fungimap Newsletter*. While some fungimappers have found these articles helpful, others have wondered if their records of target species are still useful when they are recorded as incidental observations, rather than as part of a planned survey (such as might use permanent plots, quadrats etc.).

We'd like to emphasise that collection of distribution information for the 100 target species remains the core survey activity for Fungimap. Each record is a valuable addition to the ever-growing database of target species records.

As just one example of the use of the records – the maps that are being produced for the new Fungimap book are built up from the thousands of records received, and each point on the map adds to knowledge of the overall distribution patterns. There is also much scope for further analysis of the fine scale of distribution.

## MUSICAL MUSHROOMS

Vaclav Halek is a fungi enthusiast from the Czech Republic with a difference. For the past 20 years, Vaclav has been documenting a most unusual feature of fungi. When walking in the forest Vaclav always brings his notebook and on discovery of a mushroom he stands above it and rapidly jots down a musical score from the melody he hears emanating from the fungus. His hardback book, the Musical Atlas of Mushrooms includes a CD of compositions for 40 different species.

You can read more at <http://www.radio.cz/en/article/46414>

## THE GENUS *MYCENA* IN SOUTH-EASTERN AUSTRALIA, BY CHERYL A. GRGURINOVIC

Publisher: Fungal Diversity Press and the Australian Biological Resources Study, 2002. 329 pages, hardback. RRP US\$80.

**A review by David Ratkowsky (reproduced with permission from the Victorian Naturalist).**

The genus *Mycena* is a diverse group of small white-spored gilled mushrooms, growing on wood and litter, distinguished by a slender stipe and the lack of velar remnants. This long-awaited book is a major step in the slow process of elucidating the agaricoid fungi of Australia, tackling a genus that forms a conspicuous part of the mycota of this continent. A measure of the difficulty of the task is that only 66 *Mycena* species are treated, a fraction of the species likely to be encountered out in the bush. The work is based upon the Ph.D. dissertation that the author completed in 1997. Twenty species and one variety are proposed as new, together with three new sections.

The early part of the book is devoted to the taxonomic position of the genus and to its previous treatment by mycologists. The history of the classification of the genus *Mycena*, progressing from macromorphology to micromorphology, is essential, but the 17-page table comparing the subgeneric classification systems of four leading mycologists who have wrestled with the taxonomic issues surrounding this complex genus, whilst essential in a Ph. D. thesis, is superfluous in a regional book about S.E. Australia. This reviewer would have liked to have seen these pages devoted to the inclusion of additional species beyond the 66 that were treated.

It is very satisfying for the field naturalist to be able to match a specimen to a description in a book and obtain a name for it. My partner Genevieve and I were able to identify our 'blister *Mycena*' as *Mycena albidofusca*, our dark brown 'sticky date' as *M. mulawaestrus*, our 'bleach sulcate' as *M. carmeliana* and a small red species clearly different from *M. viscidocruenta* and *M. sanguinolenta* as *M. toyerlaricola*. However, there are many other common *Mycena* species in Tasmania and presumably other parts of southeastern Australia that are absent from this book. For example, our 'grey rubbery', 'liver gills', 'pink-yellow with iodine odour', several small white species differing from *M. albidocapillaris* and from each other in odour, stipe colour or degree of glutinosity, and many distinct grey-brown species, could not be matched with names in the book.

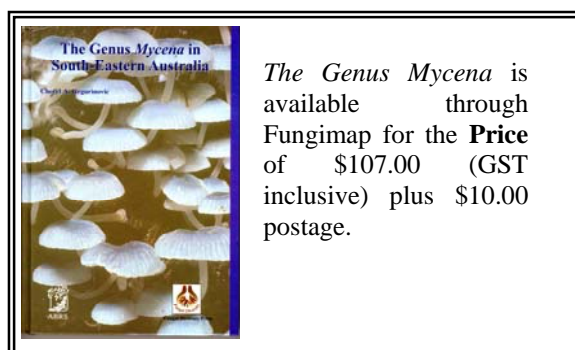
The microscopic drawings of spores, basidia, and cystidia are of a very high standard, and are to be welcomed by anyone trying to differentiate between closely related species on the basis of their microscopic features. The book is reasonably user-friendly to the field naturalist with an interest in fungi and who has access to a good compound microscope. However, nothing beats a good photograph and the first thing we did was to scrutinise the 30 colour plates in the front of the book, which include 20 superb ones by Bruce

Fuhrer, taken in the field under natural conditions. What a pity there weren't more of these photos!

The keys to the 21 sections and to the species have been presented very professionally using a detailed combination of macroscopic characters such as colour, glutinosity, presence or absence of a gill margin, whether latex is exuded upon crushing, etc., and microscopic characters of the cap, gill and stipe. This may be heavy going for the field naturalist and perhaps an artificial key for use in the field based solely upon observable macrocharacters such as colour, odour, gill attachment and photos could be produced to supplement this book.

The author has drawn a few unsettling taxonomic conclusions, proposing that what has been regarded as *Mycena sanguinolenta*, *M. epipterygia* and *M. pura* in Australia are not the 'true' forms of those species as they are understood elsewhere, thereby requiring new names for their Australian counterparts. These decisions were based upon morphology, and no mention is made of mating compatibility studies or DNA work to support the erection of new species.

The book is well presented, with quality binding and paper, and is a must for the library of every serious mycologist. It augurs well for the future if the Fungal Diversity Press, based in Hong Kong, continues to support the publication of taxonomic studies in Australia either alone or in collaboration with another body, in this case the ABRS. There is still a long way to go, as the vast majority of Australia's mycota remains undescribed and unpublished. Although this book is a great start towards the process of documenting *Mycena* in Australia, it is not the 'definitive' work on that genus, but only the beginning. This is not a criticism of the author but reflects the enormity of the task and the lack of concerted taxonomic effort in the past and at the present time, not only on that genus but also on all species-rich genera of the Australian mycota. We will need many more books like this one if our fungi are ever to become adequately known and identified.



*The Genus Mycena* is available through Fungimap for the **Price** of \$107.00 (GST inclusive) plus \$10.00 postage.

## SPORE PRINT

Spore Print is a column for your interesting snippets of information about fungi, especially if you would like some feedback on your observations or have specific questions. Please contact me at the address below and I will endeavour to answer your queries and provide some context for your observations.

### Spend a penny or feed a pot plant for Ghoul Fungus

*Hebeloma aminophilum* (Ghoul Fungus) is found in a most unusual situation. All reports of the species in natural environments to date are in association with decomposing animal carcasses (see, for example, Bougher & Syme, 1997; McCann, 2003; Young 2002).

Ammonia fungi are fungi which are induced to form fruit bodies by the artificial application of ammonia or other nitrogen-containing compounds to forest soil (Suzuki *et al.*, 2003). Experiments in various countries have identified a range of ammonia fungi, particularly members of the genus *Hebeloma*, including *Hebeloma aminophilum* (Tibbett & Carter, 2003; Suzuki *et al.*, 2003). Ammonia fungi are frequently also reported in association with animal remains, in which case the fungi are more specifically designated as 'postputrefaction fungi' (Tibbett & Carter, 2003). Indeed, Tibbett & Carter (2003) suggest that postputrefaction fungi may be of use in forensic science as tools for locating graves and estimating the time since burial.

Recent observations of Ghoul Fungus indicate that its appearance may be a marker for more than just dead animals. Participants at the recent FNCV Cryptogamic Extravaganza in the Grampians (Victoria) were keeping an eye out for *Hebeloma* for Bettye Rees, who is revising the Australian species of the genus. There were quite a few occurrences of fruit bodies that seemed identical to Ghoul Fungus, but with no obvious sign of carcasses, on the ground or buried. I noticed that the Ghoul Fungus was often fruiting just a little way along (and to the side of) the track from the car park or picnic grounds where our forays had commenced. It was just the distance that you would go for some privacy if you wanted to duck behind a bush to spend a penny, so to speak. Fruit bodies occurred within a small area (about 30 cm radius). Given that application of urea has been shown to stimulate fruiting of Ghoul Fungus (Suzuki *et al.*, 2003). It seems quite possible that urine (with its urea content) could also have the same effect.

Illustrated on the next page to *H. aminophilum* in Bougher & Syme (1997) is the quite similar *H. westraliense*, which differs principally in the habitat (not associated with animal carcasses). It was described from glasshouse-grown eucalypt seedlings, and is also reported from native *Eucalyptus* forests in W.A. (Bougher *et al.*, 1991). The glasshouse seedlings were fertilised with nitrogen for the four months prior to the appearance of fruit bodies. Perhaps *H. westraliense* is another example of an 'ammonia fungus', triggered by the application of nitrogen. It is worth noting that

because *Hebeloma* is ectomycorrhizal (growing symbiotically with plants such as *Eucalyptus*), fruit bodies would not come up with just any pot plant.

Further research is clearly required to compare the characters of *H. aminophilum* and similar fungi growing with and without animal remains. So, next time you need to spend a penny in the bush, think of it as an experiment, and perhaps revisit the site to see if any fungi are stimulated to produce fruit bodies.

### Ghoul Fungus v. Blewit

A record of *Hebeloma aminophilum* (with photo) was received from **Margery Smith** in southern N.S.W., growing in the typical manner 'among bones of decaying beast'. However, from the photo, the fruit bodies did not look typical for *Hebeloma*, and a specimen was requested. On examination, this proved to be *Lepista nuda* (Blewit), with hyaline, faintly warty spores compared to the spores of *H. aminophilum*, which are also warty, but pale yellowish brown in alkali solution. It turns out that *L. nuda* (which is cosmopolitan in distribution) is listed as an ammonia and postputrefaction fungus by Tibbett & Carter (2003). However, it does not seem to have been previously reported in association with animal remains in Australia.

Fresh, young specimens of the two target species *H. aminophilum* and *L. nuda* are readily distinguished. The *Hebeloma* has a predominantly pinkish brown cap and pink gills, and a fibrillose partial veil connects the edge of very young caps to the stipe; while the *Lepista* has distinct purple tints to the cap, gills and stipe (at least when young), and a partial veil is lacking. However, older specimens of the *Hebeloma* can become darker, and the *Lepista* often fades to brown in age. The spore print of both is described as pinkish brown, with *Hebeloma* more brown, and *Lepista* more pinkish. The *Lepista* has a strong, perfumy odour, while the *Hebeloma* smells 'stale' according to Bougher & Syme (1997).

### REFERENCES

- Bougher, N. & Syme, K. (1998) *Fungi of Southern Australia*. University of Western Australia Press, Nedlands.
- Bougher, N.L., Tommerup, I.C. & Malajczuk, N. (1991) Nuclear behaviour in the basidiomes and ectomycorrhizas of *Hebeloma westraliense* sp. nov., *Mycol. Res.* 95: 683-688.
- McCann, I.R. (2003) *Australian fungi illustrated*. Macdown Productions, Vermont.
- Suzuki, A., Fukihara, T., Tanaka, C., Ohono, T. & Buchanan, P.K. (2003) Saprobic and ectomycorrhizal ammonia fungi in the Southern Hemisphere, *New Zealand J. Bot.* 41: 391-406.
- Tibbett, M. & Carter, D.O. (2003) Mushrooms and taphonomy: the fungi that mark woodland graves. *Mycologist* 17: 20-24.
- Young, A.M. (2002) Brief notes on *Hebeloma aminophilum* R.N. Hilton & O.K. Miller ('ghoul fungus') from northern Queensland and Tasmania, *Australas. Mycol.* 21: 79-80.

### Tom May (Royal Botanic Gardens Melbourne)

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## PERTH URBAN BUSHLAND FUNGI PROJECT

Roz Hart and  
Neale Bougher



Perth  
Urban  
Bushland  
Fungi



The Perth Urban Bushland Fungi Project commenced officially in March 2004. By the time of writing, early August, the Project has already conducted many events, including talks and walks, several full day workshops and an extension course with the University of Western Australia. We have also undertaken scientific surveys in selected bushland.

When the project started our first step was to enlist interested foray leaders who already knew something about fungi. Then, at the Naturalists' Club annual June Fungi Foray, held in Busselton, we worked together so leaders would be capable and confident to lead small groups of people foraying. Now our enthusiastic band of leaders assist us on forays and collect material that we work with in our afternoon workshops.



Perth Urban Bushland Fungi Workshop, with Neale Bougher identifying and talking about fungi collected (Photo: Roz Hart).

As part of this process we have produced Fungi kits, for those who attend our workshops. The PUBF fungi kits give information on fungi particularly relevant to the Perth region and introduce common local fungi that can be easily spotted and learnt. As a visual aid we have produced a colourful poster on "Common Fungi of the Perth region" which we now have available for sale. Through this we have introduced many people to the fascinating world of fungi and started them on the road of awareness to learn more about this little known kingdom of organisms.

Neale and Roz, who you may know from past Fungimap conferences, are based at the WA Herbarium. We have established a fungi lab where volunteers assist us in describing and vouchering specimens for inclusion in the Herbarium collection of fungi. Volunteer John Weaver has done a wonderful job assisting us to gain much better value from our GPS data and photos. We have just finished organising and running numerous public events, where we were furiously busy collecting and processing lots of very interesting fungi. The fungi season in Perth is extremely short, only two months or so if we are lucky.

We already have new records for WA. Now comes the sorting and working out just what we have collected this season. We will be supplying data to each of the bushland groups who assisted us, in the form of an inventory of the fungi collected, a map and photos.

The Project arose from an awareness of the need for information about Australian Fungi, which we all know is seriously lacking. Two Western Australian Groups, the Urban Bushland Council together with the WA Naturalists' Club, sent a grant application to the funding body, Lotterywest, and were delighted when the application was successful. People working for the project are Dr Neale Bougher, the Mycologist, Roz Hart, the Community Education Officer and Jac Keelan Wake, the Project Support Officer. Phase 1 of the project is funded for 18 months.

### Observations of *Omphalotus nidiformis*

Made in the Swan River Colony by James Drummond,  
Western Australia's first Government botanist

James Drummond was the first European to collect specimens of the phosphorescent species *Omphalotus nidiformis*, the 'Ghost Fungus' which occurs across southern Australia and he made many references to it in his correspondence. His collections of fungi were sent to William Hooker, Director of Kew Gardens in London, and passed on for determination to the Reverend M.J. Berkeley. The description together with quotations Drummond's notes was published in the London Journal of Botany.

One night in about 1833, he was walking past the jetty in Perth and 'was much surprised to see a light in such a spot' When he looked more closely, he discovered that the glow emanated from a fungus growing on a Banksia stump. He went on to say that when it: 'was laid on a newspaper, it emitted by night a phosphorescent light enabling us to read the words round it.' Fungi were, of course, well known to the Aboriginal people. 'We called some of the natives and showed them this fungus when emitting light...and the poor creatures cried out 'Chinga', their name for a spirit and seemed much afraid of it..' On one journey Drummond relates: 'One night when all my efforts to get fire had been unavailing I saw at some distance in the forest a tree which at first I thought had been set on fire by lightning. On making my way to it I found that the light was produced by a remarkable agaric which grew tier above tier for several yards up the trunk of a dead *Eucalyptus occidentalis*.' 'In my late journey south of the Vasse I had rather too many opportunities of discovering phosphorescent fungi. I was for several days and nights continually wet to the skin. My lucifer matches so damp that they would not take and my hands got blistered from making fire in the native way. The sp. was different from what I described in a former letter the upper surface of the pileus nearly black in the centre and the gills nearly milk white. This curious property appears not to be uncommon among agarics with the stem at one side of the pileus which grow on dead wood.'

By Katrina Syme

## News from Victoria

### Pat Grey, Field Naturalist Club of Victoria fungal forays

As we were in Melbourne for the 2004 fungal season, we thought it would be fun to get out and see as many fungi as possible and invite anyone interested to join us. The main aim of the forays was to enlarge our recognition of fungi in the field.

We found that many of the forayers could recognise the Fungimap Targets so, using our group knowledge we have been building up a list of other species that we can recognise in the field. A group of keen photographers is photographing these and, at the end of the season, we will publish a CD with the best photographs plus brief descriptions of field characteristics.

At each foray there was a specific species that should be found in that particular area. Sometimes we found the species, such as *Hygrocybe lewellinae* (Mauve Splitting Waxcap) at Greens Bush and *Hypocreopsis 'nyora'* (Tea-tree Fingers) at Nyora, other times it was not found e.g. *Asterophora mirabilis* (Grey Jockey) in Bunyip State Forest.

At every foray a list was made of the species seen. Sample fruit bodies were taken for those not recognised and Tom May made himself available to identify them for us. Reports and lists were sent out to forayers and Park Rangers.

This has been a really exciting time for us to find that so many are keen to participate. There is the possibility that the enthusiasm will continue and a Fungal Studies Group be formed within the FNCV.

## News from WA

### Katrina Syme WA Regional Coordinator

*Fungi news from the south west coast of WA*

Earlier this year, I completed a report on fungi for the South Coast Regional Initiative Planning Team (SCRIPT) for its Natural Resources Management Strategy. Data collected through the efforts of Fungimap and other volunteers (such as Thelma Daniell, who has recorded and collected fungi in the Esperance region for many years) has contributed greatly to information of fungi distribution and is invaluable for such reports.

The area covered comprises nearly six million hectares and in three of the six subregions, only 142 fungi are listed, just over one third of which are identified to species. The draft Strategy is available on [www.script.asn.au](http://www.script.asn.au) for public comment until July 30<sup>th</sup>, 2004. Midwinter in Denmark sees people peering at the grey weeping skies and complaining bitterly about how miserable it is, before migrating to bask in the sun at Coral Bay and Broome. It's not as though it gets really cold here – in fact I can only recall two years in the last twenty eight that we have experienced frosts in Denmark. And what delights these wet weather refugees have missed! I returned home in late May after two dry-ish weeks in Melbourne and the Grampians to find the south west coastal region lusciously damp, with fungi fruiting in

large numbers. I have never seen so many *Austropaxillus* – they were appearing in their hundreds across the open areas amidst regrowth forest on our property. In their company were eight species of *Russula*, innumerable (it seemed) species of *Cortinarius*, including *C. lavendulensis*; while half-hidden tufts of tiny leathery, toothed *Phellodon* and pink *Cantharellus cinnabarinus* var. *australiensis* – some more than 60mm broad – peeped from the edges of fallen leaves.

The Amanitas have been in short supply, (except of course, for *A. xanthocephala*, which seems to fruit all winter almost everywhere) but the sandy heaths not far from the Southern Ocean are just beginning to yield a few species and last week some fine examples of *Amanita eucalypti* were seen (but not near eucalypts!)

Each Wednesday, a small group of devotees meet to learn about the fungi which grow in William Bay National Park. Samples of fungi are gathered and photographed; spore prints collected and notes taken. Group members have already absorbed enough knowledge to begin making their first fully-documented collections for the Parks Association. Last week, we saw an abundant range of fungi, including four species of scarlet, yellow and orange wax cap, one of which blackens with age. The pink stinkhorn *Colus pusillus* was fruiting along sandy tracks and fallen branches of *Agonis flexuosa* were ribboned with *Stereum hirsutum* or sprouting numbers of *Gymnopilus allantopus*. Whilst collecting some *Entoloma*, a sharp-eyed member of the group spotted a group of tiny black, velvety bracket fungi with black gills and a white spore print (possibly *Resupinatus*); nearby, were numbers of a diminutive species of *Pisolithus* which grows in the sand dunes. It fruits much later than the other two common south coast species: *P. albus* which is found on the shoulders of highways and *P. marmoratus* which favours open areas near forest.

At the Walpole Primary School on July 1<sup>st</sup>, I talked to the junior class about fungi as part of a major project the school has undertaken to research the history, culture and biodiversity of Walpole. During the week, I managed to find fungi in a wide range of sizes, shapes, textures and odours to show the children – and just that morning had come across some fine examples of *Cortinarius sinapicolor*, whose glutinous universal veil delighted the class. It was a thrill to find such an enthusiastic audience.

## News from NSW

### Bettye Rees, NSW Regional Coordinator

The number of species collected by the Sydney Fungal Studies Group this year has been severely affected by the on-going drought. Two forays have had to be cancelled, but nevertheless interesting finds of new species and old friends have been reported to make the available trips rewarding. A little rain has at last fallen, resulting in fruiting of *Cortinarius* species as late as July in Sydney urban settings.

A display entitled "Fascinating Fungi" was mounted by NSW State co-ordinator Bettye Rees in the herbarium foyer of the Royal botanic Gardens Sydney, fulfilling a

longstanding request from Tim Entwisle, the new director of the gardens. The display was an introduction to the fungal world in all its aspects, ranging from the History of Mycology in Australia through to demonstrations on the fungal life style, fungi as food, parasitism and fungal symbioses of all kinds. There were also some fungal paintings, and embroidery and stamps featuring fungi (which Heino Lepp had produced for Australia post) to name a few of the things included. The ABC featured the display in "Totally Wild", their Friday afternoon television programme of natural history for children (at least in New South Wales).



Bettye Rees with her Fascinating Fungi display (Photo: Gay Spies)

Display cases contained all the relevant literature on Australian macrofungi (including the Fungimap CD), plus early editions of Jean Jaques de la Billardi re's description of *As roa rubra*, the first fungus to be described from Australia. These are in black and white and one was an Octavo edition from the Herbarium library's special collection. This species has been chosen for the logo of the International Mycological conference to be held in Cairns in 2006.

The exhibition ran for about three months and was held from February till April last year. It gave me especial pleasure to put this part together and I hope to enlarge the display to include other early Tasmanian descriptions and collectors in the next Fungimap Conference to be held in Tasmania in 2005.

This season Fungimappers Roy and Joan Freere and Pat Jordan have staged a wonderfully varied fungal display also entitled "Fascinating Fungi" at the "Settler's Shed" in Robertson in the Southern Highland region of NSW. The display followed the day of an annual foray to Robertson Reserve for the Sydney Fungal Studies Group and incorporated some of the collections made by the group. The display was very wide in its scope including freshly collected fruit bodies, slide shows (including the Fungimap CD), microscopy, simple explanations of basic mycological terms and wonderful posters of the life and development of fungi. On the Monday, groups of children from the local school were brought in class by class, and enthralled by hands on demonstrations and talks given by Pat Jordan on "what makes fungi different from plants". Full instructions and warnings were reinforced regarding the handling and edibility of fungi, finishing with a hand-

washing session! This is the age to learn about fungi and illustrates the richness of life in small country towns throughout Australia particularly when there are knowledgeable and dedicated people who enjoy teaching and helping.

## News From Tasmania

### Sapphire McMullan Fisher

Exciting news - Fungimap III will be held in Tasmania in 2005. Four days of forays, workshops, talks and other fungal stuff! This fantastic event will be organised by Cassia and your new state coordinator, the delightful Sarah Lloyd. I'm sad to stand down as state coordinator but I know that as this thesis of mine nears completion I will not have enough time to commit to Fungimap. I'd like to thank all those I have met through our common interest in nature's fungi, especially for sharing their experiences and good humour.

Fungimap is undergoing a period of change at the moment, what with a conference on the horizon and plans to incorporate. People should feel free to contact Cassia or other coordinators to suggest ideas and hopes about what they want Fungimap to become in the future. We hope to continue putting fungi on the map through collecting data and sharing knowledge about Australia's fungi. Hopefully good dialogue between all people involved in Fungimap will facilitate our growth into the future.

Despite all this stuff about incorporation I hope most of you are taking the time to discover the fungi wherever they might be found and enjoy them! All the best - Sapphire

### Welcome to Sarah Lloyd, the new Tassie Fungimap Coordinator

Sarah has had a lifelong interest in birds. Her move to a forested area in northern Tasmania in 1988 coincided with the start of the Australian Bird Count conducted by Birds Australia and she was the major Tasmanian contributor to that project. She subsequently participated in Birds Australia's Birds on Farms survey and the 2nd Atlas project.

Being a firm believer in the value of volunteer-based projects for increasing individual and collective knowledge and enhancing personal observation skills she determined to start contributing to Fungimap after hearing about the scheme in 2000.

Sarah is fortunate to live where eucalypt forests, melaleuca swamps, treefern gullies and dogwood forests all occur within 100 metres of home. Daily walks to these areas, ostensibly to exercise the dog, soon turned into extended fungal forays. When the dog became bored and returned home in disgust, she had to admit to a growing obsession with these intriguing organisms.

It is not just the beauty and variety of colour and form but more importantly their role in the ecosystem that really got her hooked.

## COLOUR REFERENCES FOR DESCRIPTION OF FUNGI REPRESENTATION OF MUNSELL AND RIDGWAY COLOURS ON A VIDEO MONITOR

Robert Hancock

Descriptions of fungi in scientific works usually refer to the colours of fresh specimens, but it is often difficult to obtain the colour reference books to which the author refers. For example, J.B.Cleland in *Mushrooms and Toadstools of South Australia* (1934-5) included many references to Ridgway's *Colour Standards and Colour Nomenclature* (1912). A cross-reference listing from Ridgway to the Munsell Colour System and the *Methuen Handbook of Colour* 3rd Ed. (1978) was provided by Rayner (1970) in a *Mycological Colour Chart*. Not many amateur mycologists would have access to any of these publications on colour.

With the widespread availability of computers which can display nearly 16 million colours, it is now feasible to generate your own Munsell colour chart on screen. With the **Paint** program it is possible to define custom colours having precise mixtures of Red, Green and Blue light. All we need to know is the correct R:G:B mix for any Munsell colour. Each colour specimen in the Munsell system is defined in terms of its three tristimulus coordinates, x, y and Y, and these values are tabulated in various standards (such as JIS Z8721-1977). These x, y and Y values can be converted to R:G:B mixtures, according to defined mathematical relationships. This is rather tedious, but there are useful on-line conversion programs such as [www.colorpro.com/info/tools](http://www.colorpro.com/info/tools).

For use in the description of fungi, I have generated a range of colours, covering part of the complete Munsell colour space. Very bright colours were not considered necessary, as the majority of fungi tend to come in fairly subdued hues. Very pale shades were also omitted, as these are easy enough to visualise as lighter versions of the colours illustrated. Similarly very dark colours were omitted, as the eye tends to register all of these as nearly black. The results are contained in 40 files with a total of 1171 colour samples. (The complete Munsell colour system has about 2750 colours).

In addition to the selection of Munsell colours, I have generated files showing the Munsell equivalents of the 226 Ridgway colours in Rayner's list. It has been noted by several observers that different copies of Ridgway vary in

colour. The inks used in the Ridgway charts were subject to fading and discoloration with age. The colours shown are those determined from a copy of Ridgway by Hamly in 1949, as it was considered that Hamly's copy was possibly closer in condition to the copy used by Cleland in the 1920's than the Rayner copy examined in 1970. The colours are grouped in 10 files according to hue. Munsell and Methuen approximate equivalents are indicated.

It must be realised that these colour samples can not be considered as 'standards', because of various factors which decrease the accuracy of the colours as displayed. Firstly, there is likely to be variation in colours on different video monitors. This is probably the major error involved in using video-generated colour samples. There are several free calibration programs on the Internet (such as **Monitor Calibration Wizard** [www.benchmarkhq.ru/be\\_monitor.html](http://www.benchmarkhq.ru/be_monitor.html)). Secondly, some minor variation is introduced in converting the tristimulus data to integer values, but these differences are normally undetectable. In any case, fungi are rarely completely uniform in colour, so a good approximation should be sufficient for most purposes. The light conditions under which the colour samples are viewed can also significantly affect their appearance. Indirect sunlight is best. A computer with a monitor capable of displaying 16 million colours is essential to obtain correct colour reproduction. Although the files can be viewed on lower resolution monitors, the colour samples will be severely dithered (broken into dots) and highly inaccurate.

**The colour files (with an expanded version of these notes) are available from the author on CD-ROM for \$8.00 including postage within Australia.** Files may not be copied without permission. No warranty is given to the accuracy of the data or its fitness for any purpose. For certified Munsell colour standards, contact [www.gretamacbeth.com](http://www.gretamacbeth.com), or the international standards institutions which issue colour standards.

**Robert F. Hancock**

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### FORTHCOMING EVENTS

Please note that not all these activities are organised by Fungimap

Event	Date	Place	Stat	Contact
Adelaide Fungal Studies Group Excursion. <b>Leader: Pam Catcheside</b>	11 <sup>th</sup> SEPTEMBER 2004,	Venue to be decided	SA	Pam Catcheside Ph: (08) 8222 9379
Adelaide Fungal Studies Group meeting. Specimens: identification/discussion	14 <sup>th</sup> SEPTEMBER 2004, 7:30pm	Plant Biodiversity Centre, Adelaide	SA	Pam Catcheside Ph: (08) 8222 9379
Adelaide Fungal Studies Group meeting. <b>Speaker: to be announced</b>	12 <sup>th</sup> OCTOBER 2004, 7:30pm	Plant Biodiversity Centre, Adelaide	SA	Pam Catcheside Ph: (08) 8222 9379
<b>Fungimap III Conference</b>	29 <sup>th</sup> APRIL - 2 <sup>nd</sup> May 2005	Gowrie Park, Mt Roland	Tas	Cassia Read Ph: (03) 9252 2374

**ACKNOWLEDGMENTS: FUNGIMAP RECORDERS**

Glenys & John Purkis	7			NSW	
<b>VIC</b>		Dave & Lyn Munro	50	Arthur Andrews	1
Gwen Barnes	6	Martin O'Brien	1	Ray & Noreen Baxter	13
Robert Bender	10	R Reimers	2	Allen Benter	1
Elaine Bertotto	1	Rosemary Robb	22	Robin Corringham	3
Julia Davis	13	Nigel Sinnott	35	Patricia and John Edwards	7
Ron Fletcher	3	Katy Sommerville	1	Bob and Wendy Gibbs	3
Maureen French	2	Irene Spokes	1	Paul Jones	7
FNCV Fungal Foray	93	Ian & Cathy Taylor	7	Barry Kemp	6
Wayne Gebert	1	Anne Timm	2	Rae Mashford	2
Sally Green	2	Neville Walsh	1	Alan Stearn	1
Pat & Ed Grey	14	Judy Woodfull	1	Ian Watt	1
Maurice Gubiani	28	<b>WA</b>		Jacob Lee	1
Wendy Hancock	1	Matt Barrett	56	<b>QLD</b>	
Brian & Margaret Hawley	2	Shirley & Graham Fisher	6	Tony Lamont	1
Jodie Honan	5	Peter Head	1	Rhonda Melzer	1
Dave King	4	Margaret Langley	1	Ceri Pearce	2
Joan F Kottek	1	Mavis Sowry	3	Henk Voogt	5
Chris Kurz	1	Katrina Syme	71*	<b>SA</b>	
Andrew Lanchbery	14	<b>TAS</b>		Rita Bogna	1
Teresa Lebel	3	Genevieve Gates	1506*	Pam & David Catcheside	166*
Marie McIntyre	3	Helen Jones	14	Robert Hancock	3
David Meale	1	Sarah Lloyd (FLAG)	156*	Adelaide Fungal Studies Group	5
Sharon Morley (VPRI)	104	Roy Skabo	9		

**DONATIONS**

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- Cryptogamic Extravaganza

\*Includes records of the 200 non-target species for the Department of Environment and Heritage

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Fungimap Newsletters are available in colour on-line at our website:

<http://www.rbg.vic.gov.au/fungimap/>

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The Fungimap Newsletter is edited by Cassia Read.

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