

AUSTRALIA'S FUNGI MAPPING SCHEME

fungimap newsletter 13

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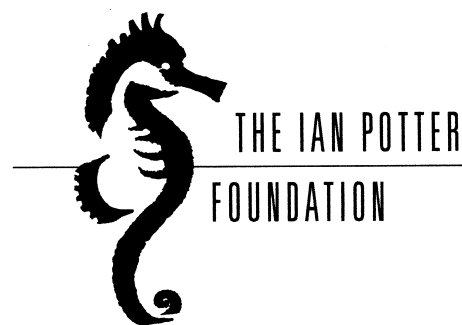
News from the FUNGIMAP Coordinator

Fungimap has continued at a frenetic pace since our last newsletter. Apart from our usual tasks, we have been quite amazed by the response to our fungi image collection project. The generosity of our recorders in donating their photos of our target species has been wonderful. Such quality and creativity has left us quite humbled. In recognition of this effort, we have decided that every person who donates a photo that we use on the Fungimap CD ROM will receive a free copy of this CD.

So far we have received images of approximately .62 of the Fungimap target species. It seems the last 38 species are either not well known or are quite rarely found. These are the very fungi we feel it is most important to inform our recorders about. They are often absent in identification books and as such are difficult to identify. A list of the wanted species is provided on page 2. Please read it and see if you have any of the images we are desperately seeking.

Throughout this newsletter you will find a number of articles aimed at helping our recorders better identify the Fungimap target species. These include a discussion of Anemone and Starfish fungus and a table indicating where the 100 species are most commonly found in Australia. When reading through the table, be aware that many of the fungi on the target list may well exist in places they have not yet been recorded. For this reason the table should be thought of as a starting point. See whether you can fill in any of the gaps in a species distribution.

The expansion of Fungimap across Australia extends further with every new recorder that



joins us. Aiding our growth in Western Australia has been the endeavor of that states coordinator, Katrina Syme. Katrina has only recently finished a series of very successful workshops that saw her drive thousands of kilometers into some very remote regions. As a consequence of her efforts we have many new Western Australian members who are increasingly adding to our collection of records (we have over 7,250 records of target species in our database at the moment).



Katrina Syme at work in WA.

On a more somber note, I will unfortunately be leaving Fungimap at the end of the year in order to continue further with my studies. I have thoroughly enjoyed my time as Fungimap Coordinator and would like to thank all those recorders who have sent letters and feedback into Fungimap Central. Your commitment and enthusiastic efforts in sending in those records have made my work a pleasure

I wish you all many happy fungi filled years ahead.

A final Goodbye,
Your Fungimap Coordinator,

Katy Sommerville



THE RECLUSIVE, THE SHY AND THE EXCENTRIC: FUNGAL IMAGES ON THE FUNGIMAP WISH LIST

Fungimap is still collecting images of fungi for our CD-ROM project. As outlined in our previous newsletter the aim of the CD-ROM is to make identification of our target species easier. So far we have received images of 62 of the target species (with more arriving all the time). This is a fantastic effort by all those contributing recorders. Fungimap would like to thank all the photographers who have sent us images of the target species. We have decided that anyone who contributes an image that is used on the CD-ROM will receive a free copy of the finished product in recognition of their generosity. Unfortunately, there are still several species of fungi that we do not have any pictures of. While we encourage our recorders to send images of any of the target species, please look to see if any of the fungi listed below are hiding away in the back of your photo-album. We have a limited time frame in which to complete the CD-ROM so please look to see if you have photographs of any of these species soon.

PHOTOS OF THESE TARGET SPECIES ARE NEEDED:

<i>Amanita austroviridis</i>	<i>Hypocreopsis sp A</i>
<i>Amanita chlorophylla</i>	<i>Leucopaxillus lilacinus</i>
<i>Anthracophyllum archeri</i>	<i>Morchella esculenta</i> group
<i>Ascocoryne sarcoides</i>	<i>Mucronella pendula</i>
<i>Banksiomyces macrocarpus</i>	<i>Mycena leaiana</i>
<i>Beenakia dacostae</i>	<i>Mycena nargan</i>
<i>Calostoma fuhreri</i>	<i>Mycena viscidocruenta</i>
<i>Calostoma rodwayi</i>	<i>Mycoacia subceracea</i>
<i>Chlorovibrissea bicolor</i>	<i>Neolentinus dactyloides</i>
<i>Claustula fischeri</i>	<i>Noctalis mirabilis</i>
<i>Colus hirudinosus</i> group	<i>Pleurotus australis</i>
<i>Cookeina tricholoma</i>	<i>Podaxis pistillaris</i>
<i>Dictyophora indusiata</i>	<i>Polyporus hartmannii</i>
<i>Entoloma virescens</i>	<i>Rozites roseolilacina</i>
<i>Flabellophora superposita</i>	<i>Rozites symeae</i>
<i>Gloeophyllum concentricum</i>	<i>Stereum ostrea</i>
<i>Hebeloma aminophilum</i>	<i>Tubaria rufofulva</i>
<i>Helvella villosa</i>	<i>Uromyces politus</i>
<i>Hygrophorus lewellinae</i>	<i>Vibrissea dura</i>

IDENTIFICATION, INFORMATION AND FUNGIMAP - DELAYS EXPECTED

Due to the enthusiasm of the growing band of Fungimap recorders, there are now more than 7,000 records on the Fungimap database. Keeping track of all these records, and dealing with correspondence related to Fungimap is beginning to outstrip our resources. Batches of records are not acknowledged individually, but we have always tried to respond to all specific requests for information and identification that are received. There are some letters from the last few years that have gone unanswered, but we don't throw anything away, its just at times we get behind, especially during the fungal season. Unfortunately, we are now quite behind in some areas, especially in identification of specimens (at least 2,000 specimens awaiting identification). We ask for your patience while we work away at the backlog of enquiries and identifications.

On the positive side, over the next few months there will be some exciting developments for Fungimap, including the production of a CD-ROM guide to target species. The Fungimap database is also being completely restructured, and soon maps of target species will be available over the internet, updated weekly. In addition, organisation for the Fungimap Get Together in W.A. next year is going well.

So, keep sending in records by all means, but we ask for your patience if you are waiting for replies to specific enquiries.

Tom May (Royal Botanic Gardens, Melbourne)

Available now from Fungimap:



Katrina Syme's 'Fungi diary 2001' is a beautifully illustrated gift for yourself or another. Arriving just in time for Xmas, it has the added bonus of containing several pictures of our target species. Cost: \$18.00 + \$2.00 postage (including GST) (make cheques out to Fungimap - Royal Botanic Gardens, Melbourne). Send cheques to the address listed at the back of this newsletter. Note. The diary can also be picked up in person from the Herbarium in Melbourne on Tuesdays, Thursdays or Fridays until mid December 2000.

TELLING APART ANEMONE FUNGUS AND STARFISH FUNGUS

The Anemone Fungus (*Aseroe rubra*) and the Starfish Fungus (*Anthurus archeri*, synonym *Clathrus archeri*) are two highly distinctive members of the stinkhorn group. Characters shared by the two species are the bright red receptacle which forms several arms, arising initially from an 'egg', and the slimy, foul-smelling spore mass. Key differences which aid identification are listed in the table below.

<i>Aseroe</i>	<i>Anthurus</i>
Arms 6-9	Arms 5-6
Arms regularly bifid	Arms not regularly bifid
Arms free	Arms united at tips initially
Spore mass on disc	Spore mass on arms



Aseroe rubra from Kosciusko National Park
(Photo: Margery Smith©)

In *Aseroe* there are 6-9 arms, which are each regularly bifid (divided into two at about the same level in each arm). The division may occur near the tip of the arm, in which case it is

obvious, but sometimes the division may be close to the base of the arm. Where this occurs, each of the two branches of the arm may appear to be a separate arm. However, you can still spot the fact that the separate 'arms' are in fact branches because the branches are in pairs, and there will always be an even number of branches (and there will appear to be more than 10 branches). Also, the two branches are usually closer together to each other than to the adjacent pair of arms. In *Anthurus* there are 5 (or rarely 6) arms, which are not regularly bifid, although rarely one of the arms can be divided in two.



Anthurus archeri from Kosciusko National Park
(Photo: Margery Smith©)

Initially the arms of *Anthurus* are united at the tips, but the link is usually broken on emergence from the egg. The arms of *Anthurus* tend to have a more vertical orientation, although they are not particularly stiff, and may all fall to one side. The arms of *Aseroe* are free, and tend to lie in a more horizontal plane. In *Anthurus* the spore mass (gleba) is formed along the arms, whereas in *Aseroe* the spore mass is usually concentrated at the disc which forms at the top of the stem. This disc is often perforated, and then the interior of the stipe can be seen from above once the spore mass has been removed (by flies).

Tom May (Royal Botanic Gardens, Melbourne)

NAME CHANGES

1. CAMAROPHYLLUS LILACINUS

In this series, details of changes to the names and circumscriptions of target species will be discussed. Note that we will continue to refer to the old names in Fungimap literature for the moment, and you will also find the species in most field guides under the old names.

Camarophyllus lilacinus

Tony Young now combines the genera *Gliophorus*, *Hygrocybe* and *Camarophyllus* under the name *Hygrocybe*. Therefore *Camarophyllus lilacinus* has been transferred to *Hygrocybe* as *Hygrocybe cheelii* (it could not be recombined as *Hygrocybe lilacina* because there was already another fungus with this name). Tony has also recently described another species of *Hygrocybe* which is quite similar to *Camarophyllus lilacinus*. This is *Hygrocybe reesiaae* (named for Bettye Rees, Fungimap Coordinator, Sydney).

Both *Hygrocybe cheelii* and *H. reesiaae* have strongly decurrent gills which are widely spaced and relatively thick. In

H. reesiaae the cap is pale to intense lilac but without pink tints and the surface is smooth under a x10 hand lens; the stem is pale lilac, darker above, and becomes buff. In contrast, *Camarophyllus lilacinus* / *H. cheelii* has a bright pinkish mauve or lilac cap, which appears smooth, but under a x10 hand lens is finely velvety; the stipe is pinkish mauve or lilac above, but yellow towards the stipe base. *H. reesiaae* is generally smaller (stipe 16-30 mm long and 3-4 mm thick), while *Camarophyllus lilacinus* / *H. cheelii* has larger stipe (30-50 mm long and 7-12 mm thick). The two species have very similar spores and other microscopic characters.

We will database all records of this species group as *Cantharellus lilacinus*. If you think you have one of the species in particular, then indicate this (with details of why), and we will also database this information so that separate maps of each species can also be produced.




REFERENCES

- Young, A.M. & Wood, A.E. (1997) in *Australian Systematic Botany* 10: 911-1030.
Young, A.M. (1999) in *Austrobaileya* 5: 535-564.

Tom May (Royal Botanic Gardens, Melbourne).

<i>Fungimap Target Species</i>	STATE							AREA				EXOTIC SPECIES
	TAS	VIC	SA	WA	NSW-ACT	QLD	NT	Arid	Tropics	Temperate	Cool Temperate Rainforest	
<i>Hygrocybe graminicolor</i>												
<i>Hygrophorus lewellinae</i>												
<i>Hypocreopsis</i> sp. A												
<i>Ileodictyon gracile/cibarium</i>												
<i>Leotia lubrica</i>												
<i>Lepista nuda</i>												
<i>Leucopaxillus lilacinus</i>												
<i>Macrotyphula juncea</i>												
<i>Marasmius elegans</i>												
<i>Marasmius oreades</i>												
<i>Microporus affinis</i>												
<i>Microporus xanthopus</i>												
<i>Morchella elata/conica</i>												
<i>Morchella esculenta</i> group												
<i>Mucronella pendula</i>												
<i>Mycena austrororida</i>												
<i>Mycena interrupta</i>												
<i>Mycena leaiana</i>												
<i>Mycena nargan</i>												
<i>Mycena viscidocruenta</i>												
<i>Mycoacia subceracea</i>												
<i>Neolentinus dactyloides</i>												
<i>Nyctalis mirabilis</i>												
<i>Omphalina chromacea</i>												
<i>Omphalotus nidiformis</i>												
<i>Oudemansiella radicata</i>												
<i>Panus fasciatus</i>												
<i>Piptoporus australiensis</i>												
<i>Piptoporus maculatissimus</i>												
<i>Plectania campylospora</i>												
<i>Pleurotus australis</i>												
<i>Podaxis pistillaris</i>												
<i>Podoserpula pusio</i>												
<i>Polyporus hartmannii</i>												
<i>Polyporus mylittae</i>												
<i>Poronia ericii</i>												
<i>Pseudohydnum gelatinosum</i>												
<i>Rozites metallica</i>												
<i>Rozites roseolilacina</i>												
<i>Rozites symeae</i>												
<i>Schizophyllum commune</i>												
<i>Schizostoma laceratum</i>												
<i>Stereum hirsutum</i> group												
<i>Stereum ostrea</i>												
<i>Tremella fuciformis</i>												
<i>Tremella mesenterica</i> group												
<i>Tubaria rufofulva</i>												
<i>Underwoodia beatonii</i>												
<i>Uromyces politus</i>												
<i>Vibrissea dura</i>												
<i>Volvariella speciosa</i>												

KEY

	Fungi recorded in this state or area with records currently in the Fungimap database. Most are sight records sent in by Fungimap recorders, however, some Herbarium specimens and selected literature records have also been included.
	Fungi seen in this state or area but not yet in Fungimap database (known only from literature records), or likely to occur based on the ecology of the species.
	Fungi not yet known from this state or area.

“NATIVE BREAD”

POLYPORUS MYLITTAE

by Valda Dedman

I was recently given a specimen of a most unusual fungus. A student had collected it at Moggs Creek, near Geelong in Victoria. It was on the dry side of a hill, lying on the top of the soil. It was more or less round, soft and spongy but with a tough dark brown skin, and appeared to have been dug up, for there were particles of clayey soil and fine rootlets adhering to it. The student took it home, put in on the back verandah, watered it sporadically, and even broke off a piece to give to her grandson. For three weeks it showed no change, then it began to develop a white spongy growth close to the broken-off area. At the same time the ball began to harden and collapse inwards.

It was found on 5th March and brought to me on 5th April. I kept it in a plastic bag in a warm room. The fruiting body continued to grow. Each morning when I took it out, it was covered with droplets of moisture, the flesh a fresh, velvety white with sulphur yellow patches which faded as the day progressed. It developed no real stem, but spread out in a series of lobes, with fine closely-packed pores on the undersurface. I photographed it often. After a week it appeared to have reached its optimum size, so I removed the bag and placed the fungus on a sheet of black paper, hoping to catch some spores, but in this I was unsuccessful. The fungus merely gradually dried up and shrank in size and weight. The fruiting body (sporophore) became firm, cream or buff-coloured and the ball (sclerotium) wrinkled, contorted and extremely hard. At no time did it have a strong smell and it was not attacked by insects. On 11th April I noticed a curious blue-green to grey patch, 1 cm in diameter, like a secondary mould. This remained constant as the sporophore shrank.

Polyporus mylittae is unusual in that it is more commonly known from its vegetative stage than from its fruiting stage. It produces large underground food reserves known as sclerotia, which were ploughed up in great numbers by early farmers. They are commonly found in forest or woodland, were very numerous in Gippsland and well-known from the Otways (Victoria). They lie from a few centimetres to more than a metre below the surface and look something like large potatoes, varying in size from an apple to a soccer ball, and up to 15 kg in weight. Sclerotia are composed of a dense mass of fungus mycelium, the individual strands of hyphae being closely interwoven, enclosed in a thin rough crust that may flake off with age. When cut or broken, the interior is seen to have a rice-pudding appearance, with waxy-yellowish compartments of irregular shape separated by white walls (septa) less than 2 mm thick. The sclerotium shrinks as its food reserves are used by the fruiting body.

The sclerotium may remain dormant for many years before producing one or more fruiting bodies. Fruiting was first described by Henry Thomas Tisdall in a paper read before the Field Naturalists Club of Victoria on 11th November, 1885. Tisdall realised that the species was one of the polyporoid fungi, whose spores are produced in a series of tubes rather than along radiating gills. The spores are white. It is not known what stimulates the fungus to fruit. Perhaps it is damage to the skin. Tisdall first noticed a “whitish-looking substance oozing through in two places, one portion from

what I then imagined to be the stem, and the other from the cut side of the fungus”. He put the cut side face down to get rid of “the mould”, and when he next visited it, “the new growth had made wonderful progress” and had raised the whole specimen nearly half an inch. He put his collection away in a cellar and two months later found more fruiting bodies.

The species was formally described in 1892. Sclerotia were first reported in 1834 and were thought to be a kind of native truffle. Since sporophores are so rarely found on buried specimens in situ, it has been suggested (Sinnott 1974) that animals such as wombats or bettongs might assist in triggering fruiting behaviour and dispersal of spores. It has also been claimed that fire is a stimulant.



Polyporus mylittae photographed 8 April 2000
by Valda Dedman©

Polyporus mylittae is commonly known as “Blackfellows’ Bread” [Native Bread] and was thought to be an aboriginal food. As to its palatability, Jim Willis wrote “... it is almost incredible that such hard sclerotia could have been eaten at all in the fresh state they have somewhat the consistency of very rubbery gristle, while dried examples are always as hard as horn”. Tasting tests on raw material were carried out by members of the Victorian Archaeological Survey at Yambuk in December 1976 and in Melbourne in January 1977. Everyone taking part agreed that it was not unpalatable, although somewhat bland and even slightly sour. Trevor Pescott relates that Bill Robertson, as a lad in Forrest, used to eat slices raw. Trevor was also told of a member of a forestry crew who “used to cut it up into slices, fry it in the pan, then eat it with honey and butter”. Its taste is said to be unchanged in cooking. The sclerotium when freshly dug could resemble a cottage loaf just out of the fire; the fruiting body reminded me of rising bread dough. When Dr Milligan asked the aborigines how they found the native bread, they universally replied, “A Rotten Tree”. This gives a clue as to the original source of nourishment and energy for the sclerotia. Polyporoid fungi help to break down dead and decaying organic matter in soil, litter or wood.

Sclerotia which have not fruited become very hard and have been put to a variety of uses. Nigel Sinnott used one as a doorstep and thought it would make a good cannonball. There are reports of them being made into walking-stick handles and Trevor Pescott photographed a hand sculpted from Blackfellows’ Bread perhaps one hundred years earlier.

(Continued page 7)

ACKNOWLEDGEMENTS

FUNGIMAP CONTRIBUTORS: RECORDERS AND DUNG COLLECTORS

NSW	David Ratkowsky	5	Annette & Ron	Bunbury Naturalists' Club	12
David Coleby	1	Di Williams	28	Brenda Hammersley	19
Robin Corringham	15			Mary Hart	51
Patricia Jordan	70	VIC		Jarred Pedro	10
Barry Kemp	2	Sue Bendel	1	Mavis Sowry	3
Rae Mashford	1	Helen Bernasconi	5	Katrina Syme	39
Angela Sharratt	1	Garry Cheers	53	Gwenyth Warren	7
Sydney Fungal SG	35	Judith Cooke	3		
		Ann Cremean	1	DUNG FUNGI	
QLD		Valda Dedman	10	COLLECTORS	
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Melzer	1	Cecily Falkingham	41	Cheryl Grgurinovic	
		Jenny Gray	1	Robert Kellermein	
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Pamela Catcheside	62	Virgil Hubregtse	65	P.S. Short	
Robert Hancock	5	Paul Jones	3	Nigel Weston	
Mount Gambier Field		Dave King	9		
Naturalists Society	4	Joan F Kottek	2		
		Dorothy Mahler & Noel			
TAS		Schleiger	46		
Genevieve Gates	433				
				WA	
				W.F. Buther	3
				Peter Donecker	2

A MONTH IN MY FUNGARDEN

By Lois Prictor. June 2000

Lauriston Park (Kyneton, Victoria) consists of 2 hectares containing a house, a dozen 100 year old trees, some ancient Hawthorns and a large number of Australian and exotic trees planted over the last 20 years.

During the month of June, when most flowering plants are dormant, the fungi garden comes alive with colour. The delicate *Collybia* sp. with their brick red caps adorn the areas under the gum trees. The grassy patches have lovely lemon yellow *Bolbitius vitellinus* popping up everywhere, and not far away are the mauve gills of *Lepista nuda*. On the dirt turned up by a fallen cootamundra wattle one finds the tiny ochre caps of *Coprinus* sp., growing bigger each day until they self-destruct into inky blobs. The spectacular *Amanita muscaria* with their bright red spotted white caps have already adorned the ground under the birches and the Irish strawberries. Following them are the more subdued pink caps of *Laccaria laterita*. The rest of the Fungarden such as *Boletus* sp. and *Lepista* sp. remain a dull ochre, with the consistent *Cortinarius* sp. always poking its brown cap up.

POLYPORUS MYLITTAE continued from page 6

A visit to the Internet shows that the fungus is also used in herbal remedies. *Polyporus mylittae* is one of the ingredients in a "natural" dewormer for cats and dogs. It is not clear what the source for the ingredients is, but the trade could pose a serious danger to the species, which is one of Fungimap's target species.

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2001 Australian Cryptogam Calendar. OUT NOW!



Heino Lepp's photographs of Australian Cryptogams make this calendar something special. Heino has once again included several photographs of the Fungimap target species.

A full-color, electronic sample page can be e-mailed to anyone interested. Just send an e-mail to judith@anbg.gov.au

Cost- It is \$12 for a single copy, but if 2 or more copies are going to the one address then each copy is only \$10 (this includes postage within Australia).

Orders and questions to Judith's e-mail address or to the postal address below. All cheques payable to: Heino Lepp, PO Box 38, Belconnen, ACT 2616

APOLOGY

Fungimap would like to apologise to Margery Smith for printing her name as 'Margaret Smith' (the photographer of the luminescent *Omphalotus nidiformis*) printed in Newsletter 12.

UP COMING EVENTS

Event	Date	Place	Contact
2001 - Pam Catcheside Fungi Workshop	beginning April	Plant Biodiversity Centre Hackney Rd, Adelaide, SA	The PB Centre 08 8222 9307
2001 Fungimap Get Together	Thursday 21 st - Thursday 28 th June	'The Cove', Wilson Inlet, Denmark WA	Katrina Syme ph08 9848 1644

INCREASED POSTAGE COSTS FOR FNCV BOOKS

Please note- From now on books purchased from the Field Naturalists Club of Victoria will incur an additional charge if requiring postage. Previously postage was estimated at \$2.00

per book however this was a gross underestimation of the cost of sending a book across Australia. The total cost of postage will now be \$4.50 per book.

TO CONTACT FUNGIMAP

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Next Issue

- Fungimap in Northern Australia: a discussion (contributions welcome – write to the Fungimap)
- Name changes 2: A new Podaxis.
- A whole lot more!

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The Fungimap Newsletter is edited by Katy Sommerville.

FUNGIMAP NEWSLETTER

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