



Fungimap Newsletter Issue 4 -- April 1997

Australian Fungi Mapping Scheme

Fungimap of Victoria Project

c/o FNCV 1 Gardenia Street

Blackburn 3130

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Fungimap grows and gets going for `97

Talk about a dry season. I have found very few fungi around Wandiligong, Bright and Mt. Buffalo. Indeed, all I've been able to find has been some *Coprinus* species, most likely *C. plicatilis*; a puffball, which I think is a *Lycoperdon*; various bracket fungi, many *Schizophyllum commune* (which fall between the Agaricales and Apyllophorales) and just recently a death cap, *Amanita phalloides*, in my own garden.

However, when the autumn rains start, we can expect there to be a huge flourish of the visible signs of fungi. Some times it's difficult to remember that they are actually always there working away at breaking down the cellulose materials in plants. Did you know that if we didn't have fungi, it has been estimated that in 100 years we would be sitting 80 feet higher than we are now. This is because all the debris wouldn't break down.

So get ready for fungi hunting.

I would also like to thank those people who have already started sending in records for 1997.

1996 Results

Well done to all fungi hunters! We surpassed our target of 500 species! Starting with this edition, we will start to publish maps of the fungi. This has given us more knowledge about

the initial 8 target species than we have had before, so the scientific evidence available is growing and showing that Fungimap is of enormous benefit.

42 new species added to Fungimap

In this edition we are publishing another 42 species which are now on the Fungimap hunters list. All of these species can be found in Bruce Fuhrer's book *A Field Companion to Australian Fungi*. If you don't already have this, it is available from the FNCV for \$20.00 plus post and packing of \$4.00.

Pat Grey at the Herbarium

Having 50 new species means that more work will be coming in. Pat Grey has kindly agreed to assist with records coming into the Herbarium for Fungimap. Pat will be sorting through the records in the first instance checking for accurate identifications and sending the ones which we're not sure about on to Tom May. Pat will also be checking grid references and entering the data onto the Fungimap database, from which maps can be produced. Since I no longer live in Melbourne, Pat has also agreed to keep running our historic survey of Wattle Park.

Telephone Number

I know that some people have tried to telephone me but haven't been able to contact me.

The telephone number is exactly as I printed it:

03 5750 1795

There is no 9 in it, so please do not add it. Secondly, 03 is the new area code for all of Victoria. Unless you live in the Bright/Wangaratta area, you may need to put the 03 in.

Late news

The Victorian State Government has provided Fungimap with \$4800 to produce a kit on How to Undertake a Fungi Survey and to run a seminar. When completed, this will be

added to our existing kit on collecting and preserving fungi. All individuals who have purchased the existing kit will get a copy of this new section free.

Another thankyou

We also need to give a special thank you to Andrew Wright of the Colour Copy Centre. Normally, it costs between \$2.80 to \$3.30 to print the colour brochure. On our last run Andrew did 200 copies for us at \$1.75. If you need photocopying done, especially colour photocopying, I would highly recommend Andrew. His work is of a better quality than any other photocopy printer I have seen. He can be contacted on 0418 551 192. Andrew has a special service where you mail material to him and he mails it back.

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Fungi identification

Omphalina

One of the eight target species in the pilot project was an *Omphalina*. *Omphalina* have small fruit bodies (no more than 4cm diameter) with a central stem, decurrent gills and can be brightly coloured. You will often find *Omphalina chromacea* along walking and road tracks in bare ground, or moss. Several of the species are only found with an algal mat and it is likely that they may be the fungal component of a lichen (a symbiosis between an alga and a fungus). They can be confused with *Mycena* and *Clitocybe*. However, *Mycenas* usually have a bell shaped or conical cap. *Clitocybe* is more difficult, and for the amateur it is usually differentiated by size. If you are more technical, the hyphae in *Clitocybe* usually have clamp connections whereas, usually, *Omphalina* do not.

Defining characteristics

Omphalinas have **white, yellowish, yellow-brown yellow green, yellow orange to**

brown gills, which are decurrent and a white spore print, and the cap is no more than 4cm in diameter. Volva: not present.

Gill attachment: decurrent.

Stipe: attached centrally to the cap, often thin.

Cap: plane to depressed, often changing with age from plane to depressed or umbilicate.

Other characteristics

There is usually no smell or taste. They are often brightly coloured.

Habitat

Usually found in bare ground, grass, with lichens or on well rotted wet logs.

Name meanings

Once again, the name meanings give us a clue as to what to look for. *Omphal* means navel, referring to the depressed shape of the cap in this genus.

Dangers

Little is known about *Omphalina* and they are generally too small to bother about anyway.

Do not try to eat them.

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What's coming up?

More than mushrooms are coming up! In the next few months we have the following activities coming up:

April

Saturday 19 April

Fungi -- identification and survey techniques: Part One: Workshop with Tom May & Rus Shulla. *Venue:* FNCV. *Time:* 10a.m. - 4 p.m. *Cost:* \$25 for FNCV & Fungimap members, \$50 non-members. BYO lunch, tea and coffee provided. Contact: FNCV Office.

Sunday 20 April

Wattle Park Fungi Survey. A follow-up of our pioneering survey of an urban park

Venue: Chalet carpark, Wattle Park (Melway 60K3). *Time:* 10 am *Contact:* Pat Grey (03) 9435 9019

May

Friday 16 - Sunday 18 May

Fungi -- identification and survey techniques: Part Two: Field Trip to Mount Buffalo in North East Victoria This will be an exciting two day field trip with accommodation at Mount Buffalo. Costs will vary from \$50 (backpacker's hostel, with lunch only provided) to \$170 (motel style accommodation with full food). Costs are for two nights accommodation. Contact. FNCV Office or John Julian on 0419 895 873 or (03) 5750 1795. Bookings need to occur by 30 April, 1997.

Saturday 24 May

Fungi at Langwarrin. See autumn fungi at Langwarrin Flora and Fauna Reserve with Tom May.

Venue: meet carpark McLelland Drive (Melway 103, C10).

Time: 10 am. *Contact:* Noel Schleiger, Botany Group FNCV (03 9435 8408).

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Spore Print by Tom May

Thanks

Thanks to the following who have contributed records: Pauline Spurgeon, Pat Jordan, Caroline Ash, Ron Fletcher, Ian Endersby, John Avram and Di Williams.

100th batch of records

The 100th batch of records was received from Ian Endersby in January -- it was a record of *Aseroë rubra* from the Bogong High Plains.

Records from the National Collection of Fungi

The National Collection of Fungi is made up of the collections of three of the major mycological herbaria in Australia: BRIP (Plant Pathology Branch Herbarium, Department of Primary Industries, Queensland), DAR (Herbarium, Biological and Chemical Research Institute, NSW Agriculture), and VPRI (Herbarium, Institute for Horticultural Development, Agriculture Victoria). The emphasis of these collections is microfungi, particularly those of agricultural importance, but macrofungal collections from across Australia are also held. Whilst working at the National Herbarium of Victoria in 1996, John Avram compiled records of the target species in the National Collection of Fungi database, with the help of Ian Pascoe (Agriculture Victoria Department of Agriculture). This exercise was part of a project to assess the conservation status and distribution of macrofungi in Victoria project, carried out at the National Herbarium and supported by the National Estate Grants Program. Information on 91 collections of the target species was located. There were 40 records of *Aseroë rubra*, but only three of *Dermocybe austroveneta*, two each of *Mycena interrupta* and *Amanita xanthocephala*, and one of *Omphalina chromacea*. This batch of records took the number of records over the 500 mark -- our target for 1996.

Recording sheets

At present Fungimap recorders are sending records in a variety of formats, but we are finding that all the necessary information is usually present. In the next few months Pat Grey will be assisting with the preparation of recording sheets. In the meantime, continue to send in records, either of individual sightings, or where there are multiple records of various species from the one site, the species seen can be listed under the site details (locality, date, vegetation description). Where you are recording just one species at a number of different sites, the site details for each record of the species can just be listed

under the species name.

Corrections

You need to be careful with corrections, as I found when I made some comments on identifications in *Mushrooms and Toadstools of Australia* (Shepherd & Totterdell) in the last Fungimap Newsletter -- a few of the page numbers which I provided were wrong, and are corrected below, along with a couple of other comments and corrections.

Shepherd & Totterdell

p. 62. Hebeloma coarctatum

Seems more like Entoloma sp.

p. 64. Hygrophoropsis aurantiaca

Paxillus infundibuliformis group. See p. 88 for another illustration of the same.

p. 90, p. 108. Phylloporus rhodoxanthus

This species is included twice; the two descriptions differ in some respects.

p. 151. Cyttaria gunnii

Certainly not. Appears to be a slime mould (Lycogala sp.)

Thanks to John Eichler and Tom Verberne for drawing my attention to matters needing corrections (my own and others!).

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Updated target species list

The Fungimap target species are the eight original species, along with a further 42 species, taking the list of target species to 50. We have chosen species which are illustrated in Bruce Fuhrer's *Field Companion to Australian Fungi* so that there is a ready source of high quality illustrations for all species. A second update of 50 species will be

produced then further illustrations become available. The list will eventually be expanded to also cover some rare species.

Records of all target species from all parts of Australia, recent or old, are requested. Some of the additional species are not so distinctive as the original eight species and some recorders may wish to limit themselves to the more obvious species. Remember to indicate if you are in any doubt about the identification of a record, and in such cases it is best to send a photo.

Original Eight (illustrated in Fungimap colour brochure -- in addition, all species except for *Amanita muscaria* and *Battarraea stevenii* are also illustrated in the *Field Companion*)

Amanita muscaria

Amanita xanthocephala

Aseroe rubra

Battarraea stevenii

Dermocybe austroveneta

Mycena interrupta

Omphalina chromacea

Omphalotus nidiformis

Additions March 1997 For this first updated list, all species are illustrated in Bruce Fuhrer's *Field Companion to Australian Fungi* (published by FNCV).

Agaricus xanthodermus

Amauroderma rude

Anthurus archeri

Armillaria luteobubalina

Ascocoryne sarcoides

Banksiomyces macrocarpa

Boletellus obscurecoccineus

Calostoma fuscum

Cordyceps gunnii

Cordyceps hawkesii

Cortinarius austroalbidus (in *Field Companion* as *C. albidus*)

Cortinarius radicans

Cortinarius rotundisporus

Cyttaria gunnii

Fistulina hepatica

Gymnopilus pampeanus

Hericium clathroides

Hygrophorus lewellinae

Ileodictyon gracile (in *Field Companion* as *Clathrus cibarius*)

Leotia lubrica

Lepista nuda

Macrotyphula juncea (in *Field Companion* as *Clavariadelphus*)

Marasmius oreades

Microporus xanthopus

Morchella elata/conica (in *Field Companion* as *Morchella* sp.)

Mucronella pendula (in *Field Companion* as *Myxomycidium pendulum*)

Mycena austrororida

Mycoacia subceracea

Neolentinus dactyloides (in *Field Companion* as *Lentinus terrestris*)

Oudemansiella radicata

Panus fasciatus (in *Field Companion* as *Lentinus fasciatus*)

Piptoporus australiensis

Piptoporus maculatissimus

Podaxis pistillaris

Podoserpula pusio

Poronia ericii (in *Field Companion* as *P. punctata*)

Pseudohydnum gelatinosum

Schizophyllum commune

Tremella fuciformis

Tremella mesenterica

Vibrissea bicolor

Volvariella speciosa

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Dung hunters wanted

What does dung have to do with fungi? An exciting new project in the *Fungi of Australia* series aims to document the dung fungi of Australia, and help is needed to collect samples. Fungimap recorders are being asked to contribute to this project.

Fungi of Australia

The Australian Biological Resources Study has recently commenced a new series on the Australia biota, *Fungi of Australia*. This series is intended to describe the fungi of our country to the same level as the *Flora of Australia* is doing for vascular plants, bryophytes and lichens. The first two parts of this new series, *Fungi of Australia vol. IA Introduction -- classification*, and *Fungi of Australia vol. IB Introduction -- Fungi in the Environment* have already been published.

Other early volumes in the series will deal with Australian fungi from the point of view of

different ecological groups. For example, it is intended to produce books describing the wood-rot fungi as a group, the gut fungi, the lichenicolous fungi (those parasitising lichens), and many others. The first of these projects is just about to get under way. Dr Ann Bell of Victoria University, Wellington, New Zealand, already well-known for her work and publications on the dung fungi of New Zealand (including a very useful book, *Dung Fungi, an Illustrated Guide to Coprophilous Fungi in New Zealand, 1983*) has offered to write a volume on the coprophilous fungi of Australia. This project will proceed over the next 2-3 years, with publication planned at this stage for about the year 2000.

The success of the project and usefulness of the publication will clearly depend upon the material available to Dr Bell. She has a small collection to begin with, but it is clearly lacking in geographical coverage and in the range of 'hosts' sampled. ABRS is attempting to set up a circle of volunteer collectors to try to bolster the range of material available.

The collection techniques are very simple. All that is required is a pool of interested persons, widely distributed throughout the country, who are willing to become involved.

Background

Strange though it may seem, there resides on the dung of herbivorous animals a unique and beautiful flora of tiny fungi whose activities are in part responsible for the breakdown of this substrate. The spores of these coprophilous fungi pass through the gut of animals to germinate and develop on the dung after it is voided. Most of them are not found on any other substrate. Because of its unique fauna, Australia has a unique and interesting coprophilous fungal flora and in order for us to study it we require samples of dried animal dung.

The dung of herbivores is preferred, although any dung will yield some fungi. The dung of carnivores is usually degraded by bacteria rather than fungi, because bacteria prefer

protein substances, and fungi on the whole prefer cellulose-containing substrates.

Hence we would like collections of dung from wild indigenous herbivorous (or omnivorous) Australian fauna (e.g. kangaroo, wallaby, wombat, quokka, cassowary etc.), rather than introduced animals such as cattle or sheep. Animals from enclosures (e.g. zoos or similar) which regularly receive worm drenches or are fed on artificial diets are rarely fungally interesting. Hence we much prefer dung from wild animals.

Don't worry if you can't see any fungi on the dung -- in the laboratory fungi will be isolated from the samples by incubating the dung in a moist chamber, and by growing on an artificial medium (such as potato extract stiffened with agar).

Collection techniques

Collection of samples could not be easier. Thoroughly air dry the dung, and then place each sample in a clean (no need to sterilise) paper bag, which is then folded.

The fresher the sample the better, although for the most part you will not know the age of the dung. Samples may be kept in a refrigerator (not a freezer) if that is convenient, but it is not necessary as long as the sample is thoroughly air dried. The amount that is required for each sample is, ideally, about enough to fill 2 or 3 film canisters, although the exact amount is not critical. Large dung samples can be broken up into convenient smaller sizes, but the dung should not be pulverised. Results are much better from large portions, as fungi do not grow well on finely pulverised samples.

Normal hygiene precautions (washing hands after handling etc.) should be observed when handling dung samples.

Labelling

Each sample should be accompanied by a label (clearly hand written or typed) giving

details of the source of the sample. The basic information required is: Name of collector/ date of collection/place of collection (in words, e.g. Victoria, 5 km SW of Mildura) / grid reference (latitude/longitude to the nearest minute, otherwise Australian Mapping Grid reference) / habitat (e.g. forest, farmland, heath, roadside at edge of forest, walking track in rainforest) and vegetation type (*Eucalyptus* forest, *Nothofagus* rainforest etc.) / animal responsible for the dung (to species if known, otherwise broad group such as kangaroo, bird, bandicoot, possum, lizard etc.).

Despatch of specimens

Entry of samples into New Zealand will require special arrangements with Customs and Quarantine. For this reason samples will be sent to New Zealand in batches with necessary documentation. Coordination of this will be undertaken by Dr Tom May and Fungimap volunteers in Melbourne.

After isolation and identification of the fungi involved, representative samples will be returned to Australia for lodging in Australian herbaria. The collections will therefore help to boost Australian scientific collections as well as contributing to a very worthwhile project.

Samples, fully air dried and labelled, should be sent at regular intervals to

Fungimap Dung Survey

Dr Tom May

National Herbarium of Victoria

Birdwood Ave

South Yarra Vic 3141

We hope that you and your friends will be able to help in developing this important study program.

A.E. Orchard

Executive Editor

Tom May

National Herbarium of Victoria

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Books and kits

Following the successful Fungi Identification Seminar on Saturday, 16 June, a number of people expressed an interest in books.

1. Cleland, J.B. (1934-1935) *Toadstools and Mushrooms and other larger fungi of South Australia* Part I. (A.B. James, Government Printer, South Australia.) Reprint 1976.

In particular, Cleland was mentioned at the Seminar as being on sale at the Museum for a reasonable price. It is not available there any more!

Pat Grey however has contacted the publisher in South Australia and we will be getting 10 copies of the booklet. It will cost \$8.00 posted.

Only two are now left.

2. Cole, M, Fuhrer, B. & Holland, A. (1984) *A Field Guide to the common genera of gilled fungi in Australia*. Revised edition (Inkata Press: Melbourne)

Bntce Fuhrer has also been able to get us nine copies of *The Field Guide to Common Genera* by Cole, Fuhrer and Holland. This will cost \$11.00 when packaged and posted. This guide is made up of a folder and a number of loose leaf sheets.

Only four are now left. Please contact John directly to order a copy.

John's telephone number is

03 5750 1795.

P.O. Box 178

Bright 3744

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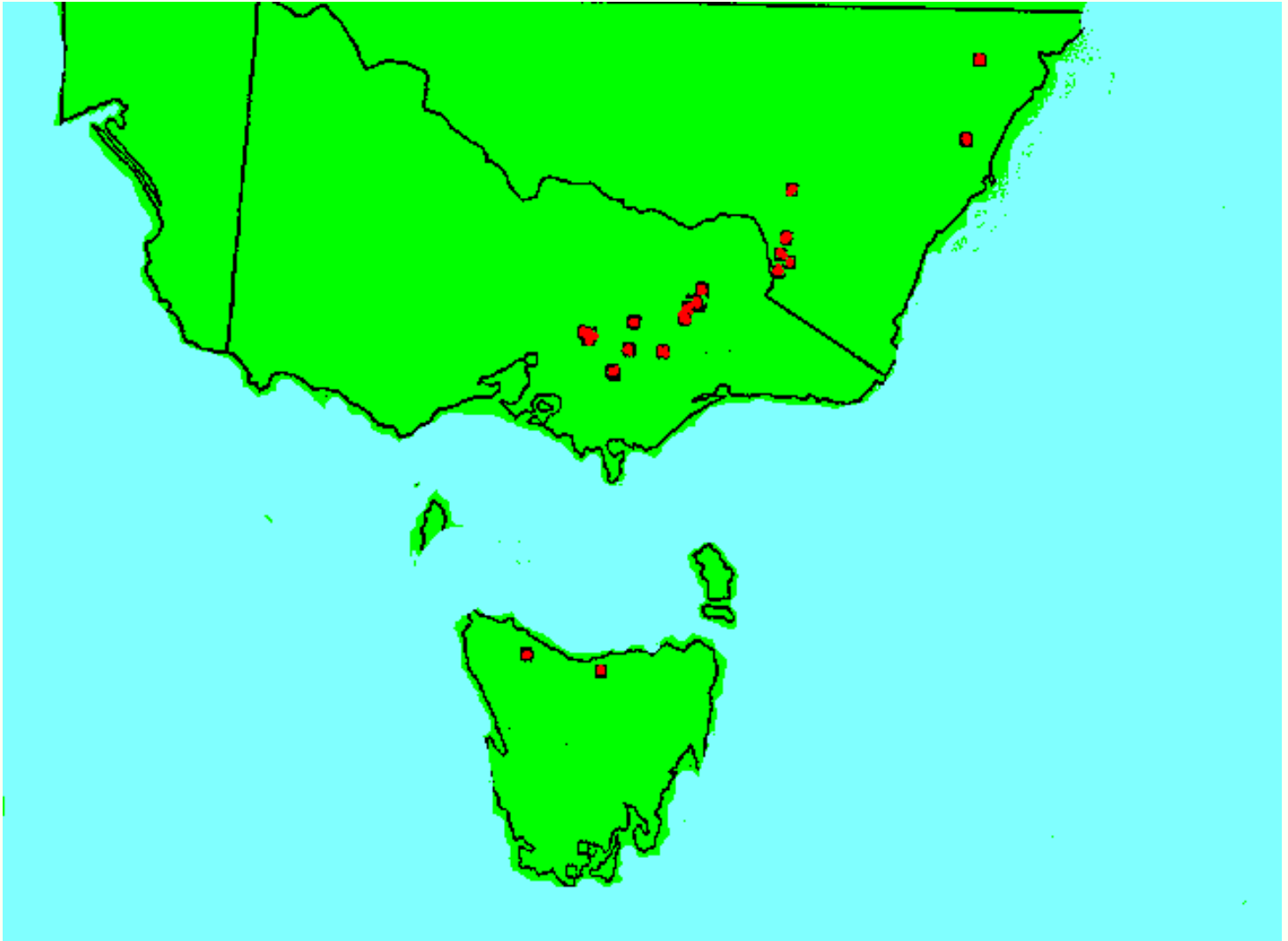
Aseroë rubra

Distribution of *Aseroë rubra* based on selected Fungimap records submitted in 1995/1996

These are the *Aseroë rubra* records for which latitude/longitude have been supplied with the records, or converted from other grid references. Don't worry if your record is not yet on the map -- there are still quite a few records to process.

From the map it is clear that *Aseroë* is common in the high country of Victoria and southern New South Wales. All the records from these areas are from native vegetation. There are also a couple of lowland records from Melbourne (and *Aseroë* is also common in Sydney). In Melbourne the occurrences are probably introductions, since the fruit bodies have been sighted in mulch and garden beds, rather than intact native bush. The great thing about a map is the blank spaces that it indicates. Tasmania is shaping up as an interesting area -- the four records on the map are all near the coast -- what about the high country?. In Victoria, Ian McCann mentions that *Aseroë* has been sighted in the Grampians -- we need confirmatory records of this. We also know that *Aseroë* is common in the tropics -- but where exactly?. Please keep sending in records of this extraordinary species.

We are still experimenting with mapping programs. A trial map of the Bogong High Plains shows more than a dozen records of *Aseroë* in an area of some 50 x 50 km, with all records at high elevation only. We hope to present these maps in the next newsletter.



Distribution of *Aseroë rubra* based on selected Fungimap records submitted in 1995/1996

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Target species

The pilot scheme has now finished successfully and we would like to thank those people who sent in fungi records.

Another 42 species are now available for fungi hunters to search for and have been printed in this newsletter.

Many people may still like to just search for the 8 species and that is okay. We have more colour brochures available and these can be purchased for \$5.00 which includes post and packaging. This small charge means that we will be able to keep printing copies of the

brochures to maintain supply.

Later in 1997 the list will be expanded to the full 100 species. Currently, final details are still being worked on and it is hoped that this will be finished early in the new year.

We sincerely thank Bruce Fuhrer who provided the photographs at no cost.

The eight target species are:

Amanita muscaria (Fly Agaric)

Amanita xanthocephala (Vermilion Amanita)

Aseroë rubra (Anemone Fungus)

Battarraea stevenii (Drumstick Fungus)

Dermocybe austroveneta (Green Dermocybe) (= *Cortinarius austrovenetus*)

Mycena interrupta (Pixies Parasol)

Omphalina chromacea (Chrome Omphalina) (= *Omphalia chromacea*)

Omphalotus nidiformis (Ghost Fungus) (= *Pleurotus nidiformis*)

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Who to contact

All fungi records should be sent to the Fungimap Project, National Herbarium of Victoria, Birdwood Avenue, South Yarra, 3141. All administrative and general enquiries should be sent to John Julian, c/- FNCV, Locked Bag 3, Blackburn 3130. John can be contacted on (03) 9830 4795.

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The Who's Who on the Scientific Advisory Committee

The Field Naturalists Club of Victoria has agreed to auspice the Australian Fungi Mapping Scheme.

The Committee which guides the project is made up of the following people:

Dr Tom May - National Herbarium of Victoria (Convener)

Professor Rob Wallis, Deakin University School of Aquatic Science and Natural Resource Management

Bruce Fuhrer - Monash University/National Herbarium of Victoria

Cheryl Grgurinovic - Australian Biological Resources Study

Dr Noel Schleiger - Field Naturalists Club of Victoria

Jack Simpson - State Forests of New South Wales

John Julian has been appointed as Executive Officer and currently works half a day per week in an honorary capacity.

Pat Grey works as required at the Herbarium checking records as they come in for accuracy and assisting Tom on the project.

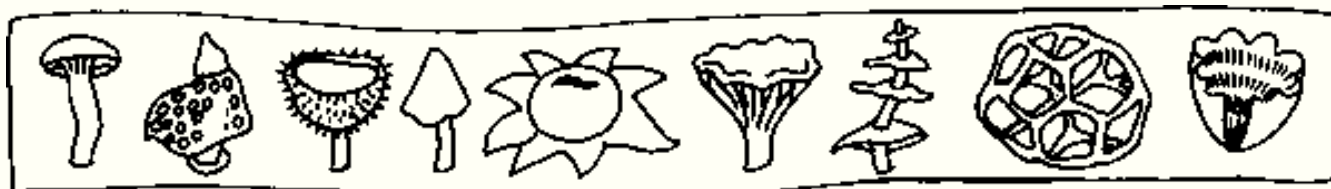
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Putting Australian fungi on the map