

THE QUEENSLAND MYCOLOGIST



Bulletin of
The Queensland Mycological Society Inc.

Future editions of The Queensland Mycologist will be issued quarterly. Members are invited to submit contributions to the Editor. The deadline for scientific contributions for the next issue is 15 February 2007 and for general contributions 1 March 2007.

Please ensure that the Secretary (fungiql@gmail.com) always has your current email address. If you are on the mailing list but do not wish to receive future issues, please contact the Secretary to have your details removed from the list.

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QMS CALENDAR

Meetings are held in the Bailey Room at the Herbarium, Mt Coot-tha, commencing at 7pm on the second Tuesday of the month, unless otherwise scheduled.

QMS General Meeting: 13 February, 2007. Fungi of Downfall Creek, address by John Wrench.

QMS General Meeting: 13 March, 2007. Fungi of Lamington NP, address by Dr. Tony Young.

QMS General Meeting: 17 April, 2007. The BATH Project, address by Ray Baxter, et al.

QMS General Meeting: 8 May, 2007. tba

QMS General Meeting: 6 June, 2007 (Wednesday). Address by Teresa Lebel (guest speaker).

QMS/BATH Volunteers Briefing: tba.

President's Note:

Well! We have reached the end of our first year of operation. The society has moved ahead at a blistering pace. Since the Fungi Forum in November 2005, we have gone from being an idea, or interest group if you prefer, to a fully incorporated society with professional objectives. A management committee was formed, several workshops have been conducted, two major projects (Fungimap conference 2007 and B.A.T.H.) were committed to, and regular monthly meetings were maintained – always with interesting and stimulating presentations on a wide range of fungi-related topics.

I am humbled, however, by the efforts and dedication of so many of our members. It is a real pleasure to be able to work with people who are committed to this field. There are many, if not all, members whom I could nominate for special mention, but, not because I devalue anyone's contributions, I will undertake the perilous process of thanking a few in particular.

First and foremost, Karalyn Herse and Rachel Griffiths, the Secretary and Treasurer respectively, deserve our plaudits. The incredible amount of work, dedication and professionalism with which they have undertaken their duties is highly commendable and exemplary. My deepest thanks, ladies, for your participation, and for being the engine-room that has driven this society forward.

Secondly, I would like to thank Ray and Noreen Baxter who have worked tirelessly, and often "beyond the call of duty", in preparing documentation, databases, policies and ground-truthing of many of our field sites. They have been the go-betweens for QMS and the B.A.T.H. project, and, whilst Ray has been a Committee member, Noreen has been responsible for producing the society's Newsletter. Guys! Your efforts are tremendous and truly appreciated, even if I do make your life difficult Noreen.

Thirdly, I would like to thank all the other Committee members, Sapphire McMullan-Fisher and Dr. Tony Young, for their advice, input, ideas, dedication and work. These positions often do not bear fancy titles, but they are integral nonetheless. Sapphire, thanks for undertaking to coordinate the Fungimap conference planning. It is a huge and often thankless task, but it will be well worth the effort in the end. We get to showcase Queensland after all!

There are many others who deserve our thanks. You know who you are, and we all recognize that your participation has, in some cases, been very involved and demanding. I would love to name you all, but the magazine can't become a 30 page novella. Be assured that your involvement does not go unnoticed. A special thanks to all those who presented lectures and workshops throughout the year.

To all, the merriest of Christmases, and the happiest of New Years. Drive carefully if you're travelling anywhere, relax, recharge and I look forward to launching into a fresh, and very busy, 2007 with QMS.

Nigel Fechner
QMS President



FUNGI IN FOCUS: *Cyathus sp*

This is one of the Gasteromycetes that were the subject of Dr T Young's address to the August 2006 meeting. The common name used for this genus is "bird's nest" fungus.

In August 2006 a troop of these fungi was observed at Moggill in a pot that had previously grown purple basil. By September a second troop had appeared nearby in rotting sugar cane mulch.



The juvenile specimens appeared as minute mid brown, shaggy, flat-topped cones (the colour was darker when wet and lightened as the cone dried out). Over a period of days the flat apical membrane lightened to a beige/brown, then split – first in half, then into quarters, then the top peeled back to reveal the mass of black peridioles in the base of the cone.

Viewed under a x10 hand lens after dissection, each shiny black peridiole had a sticky white tail (funiculus). The smooth interior surface of the cone was slightly lighter than the exterior. The top of adult cones was 5mm in diameter and the height was 8mm. The troops consisted of 50+ fungi.

These were thought to be *Cyathus stercoreus* but microscopic study of the spores would be required for definitive scientific identification.

Dr Tony Young's comments regarding the identification to species were: "the smooth inner surface and the lead-grey-black peridioles confirm this, but ultimately, the only way to be absolutely 100% certain is to check the spores. *C. stercoreus* has huge globose spores, lead-grey-black peridioles and smooth inner surface, while *C. striatus* has ellipsoidal spores, grey-white peridioles and a striate cup margin. Normally, you expect to find *C. stercoreus* on dung, but we also know that it sometimes uses litter.....the fact that your specimens were on a fairly nitrogenous cane-trash substrate seems to suggest *C. stercoreus*.....but we now know that *C. striatus* is also widespread here in Qld.....it comes up in huge colonies on mulch under my cumquat trees....."

FUNGIMAP 2007 CONFERENCE

The Fungimap 2007 Conference will be held from Thursday, 31 May to Tuesday, 5 June 2007 at Bornhoffen PCYC Camp, which is located at 3510 Nerang-Murwillumbah Road, Natural Bridge, Queensland. This is dormitory style accommodation. For those who wish a higher standard of accommodation there are other holiday cabins in the vicinity.

Anyone wishing to volunteer to assist with organising the conference should contact Karalyn Herse at fungiqld@yahoo.com.au. Sapphire McMullan-Fisher is the QMS/Fungimap Conference Organiser and can be contacted at sapphire@flyangler.com.au.

Foray sites have to be identified near the Conference venue, so if anyone has knowledge of any specific sites please contact Sapphire or Nigel.

THE QMS/BATH PROJECT

The QMS/BATH Project Team conducted the first survey, or “test run”, of some of the IBISCA sites over the second weekend in November. Some members of the team were able to go up early on Friday 10 November so they spent the afternoon with Nigel Fechner checking out some of the 700ASL (Above Sea Level) sites.

Saturday, 11 November started with a fairly rapid walk of about 5km out to the 1100ASL sites. IQ-1100-B which is on a 25° slope and fairly well covered with fallen *Nothofagus moorei* logs proved to be the toughest of the 1100ASL sites to work. In contrast, IQ-1100-D was a lovely flat site.

Once back at base the very weary team started processing the collections but darkness soon fell so it was time for drinks, dinner, Nigel's fungi show and then bed. Nigel's fungi show started with Diana Leemon doing a spectacular display of *Omphalotus nidiformis* dancing in the dark followed by the power point show of Q-fungi (made by Dr T Young) and ended with a showing of the fungi photos taken during the day.

On Sunday 12 March the 900ASL sites were targetted. In order to try to cover more of the sites the team split into two groups to get the fungus spotting, photographing and describing moving a bit faster – the aim was then for Nigel to go through the fungi found to identify those known to him and authorising collections as he deemed appropriate. The slope on IQ-900-A was 15°; IQ-900-B 17°; and IQ-900-C 20°; so you can see it was another exhausting fieldwork session. While the teams were working on IQ-900-A & B, Nigel hurriedly covered the C site alone. Time ran out before we got to IQ-900-D.

Fortunately a late checkout had been arranged from one cabin so the team just had time to get back to Cainbale, load up and head for home. This left Nigel with most of the specimens to work on at home – although he did entrust a few to other workers to lighten his workload a bit. During preparation of the collection for drying a bug was seen disappearing into a pore on the collection of *Rigidopous sp* so this became the first collection of entomological interest.

The weekend proved to be a steep learning curve for the team, as well as providing plenty of steep scrambling exercise. A review of the survey will be undertaken and procedures revised before the next survey period.

The “Bunkhouse” at O'Reilly's has been booked for 23 and 24 February 2007 for the second survey. **Any QMS member is welcome to join the QMS/BATH Project Team for the second survey, and can do so by contacting Jennifer Singfield (3869 0359 or jennifers@sautec.com.au) or Ray and Noreen Baxter (3202 5008 or rbaxn@acr.net.au).**

SUMMARY OF QMS MEETINGS

At the September 2006 Meeting:

This was a fairly brief meeting. General business was covered and updates were provided on progress of Fungimap Conference IV preparations for 2007, and the QMS/BATH project.

At IMC8 an approach was made to QMS by British Mycological Society to publicise QMS activities in the BMS journal and to consider planning for a BMS Fungal Study trip to Queensland in a few years time.

Susan Nelles spoke and showed specimens of some arid land fungi she had seen on a recent trip.

At the conclusion of the meeting, Diana Leemon gave an address titled "Why the Forgotten Fungal Kingdom is really the Fabulous Fungal Kingdom".

At the October 2006 Meeting:

This was another brief meeting. The main discussion points were:

- The Fungimap Conference in 2007 will definitely be going ahead. There will be a need to identify some foray sites in the area near Bornhoffen.
- The QMS/BATH Survey – the first survey period is scheduled for November. Volunteers will attend an Information/Induction morning 14 October and then meet with Nigel Fechner in November in preparation for the survey.
- The Grants Committee is still investigating avenues for obtaining grants.
- Dr T Young raised the prospect of a Target list for Queensland fungi.

The topic of the address by Sapphire McMullan-Fisher was "Fungimap Fungi of Queensland". Notes on this address are included in this issue.

At the November 2006 Meeting:

Following the general meeting Dr Evelin Tiralongo gave an extremely interesting presentation on "The Pharmacological Potential of Macrofungi".

Later Dr Tony Young gave a brief talk on Q-Fungi - a project for the future that he has suggested QMS consider.

At the December 2006 Meeting:

As this will be the final meeting for the year it has been planned as a party night with members bringing food and drinks. All participated in the Quiz session.

To assist those in attendance at meetings, notes on the addresses given are included in issues of the Queensland Mycologist. However, the notes never do justice to the topic as they do not reflect the enthusiasm of the speaker or cover the questions and discussions that were raised on the topic. So remember it is far better to be there, get the information first hand and participate in the invaluable information sharing opportunity.

*Merry Christmas
& Happy New Year to Everyone*



WHY THE FORGOTTEN FUNGAL KINGDOM IS REALLY THE FABULOUS FUNGAL KINGDOM

By Diana Leemon to the QMS meeting, 19th September, 2006

I believe fungi are “The Fabulous Fungal Kingdom.” The more you study them the more fascinating they become, but for a lot of people, sadly, they are “The Forgotten Fungal Kingdom”.

My earliest memory of an encounter with fungi came one morning when I was cycling down a country road between cane fields on my way to primary school. I saw a fascinating red life form hadn't seen before, but I didn't have time to investigate it until my return trip that afternoon, by which time it had gone – I couldn't find it. For years I kept looking for it and even wondered if I had imagined it. I now know that it was an *Aseroë rubra*, the first fungus described in Australia, and I now know why it disappeared so quickly.

At university I was fortunate to be able to study Mycology (these studies have disappeared from most Australian universities today!). I have no idea why I chose to study fungi, but once I started I was hooked and found the fungal kingdom both fascinating and fabulous.

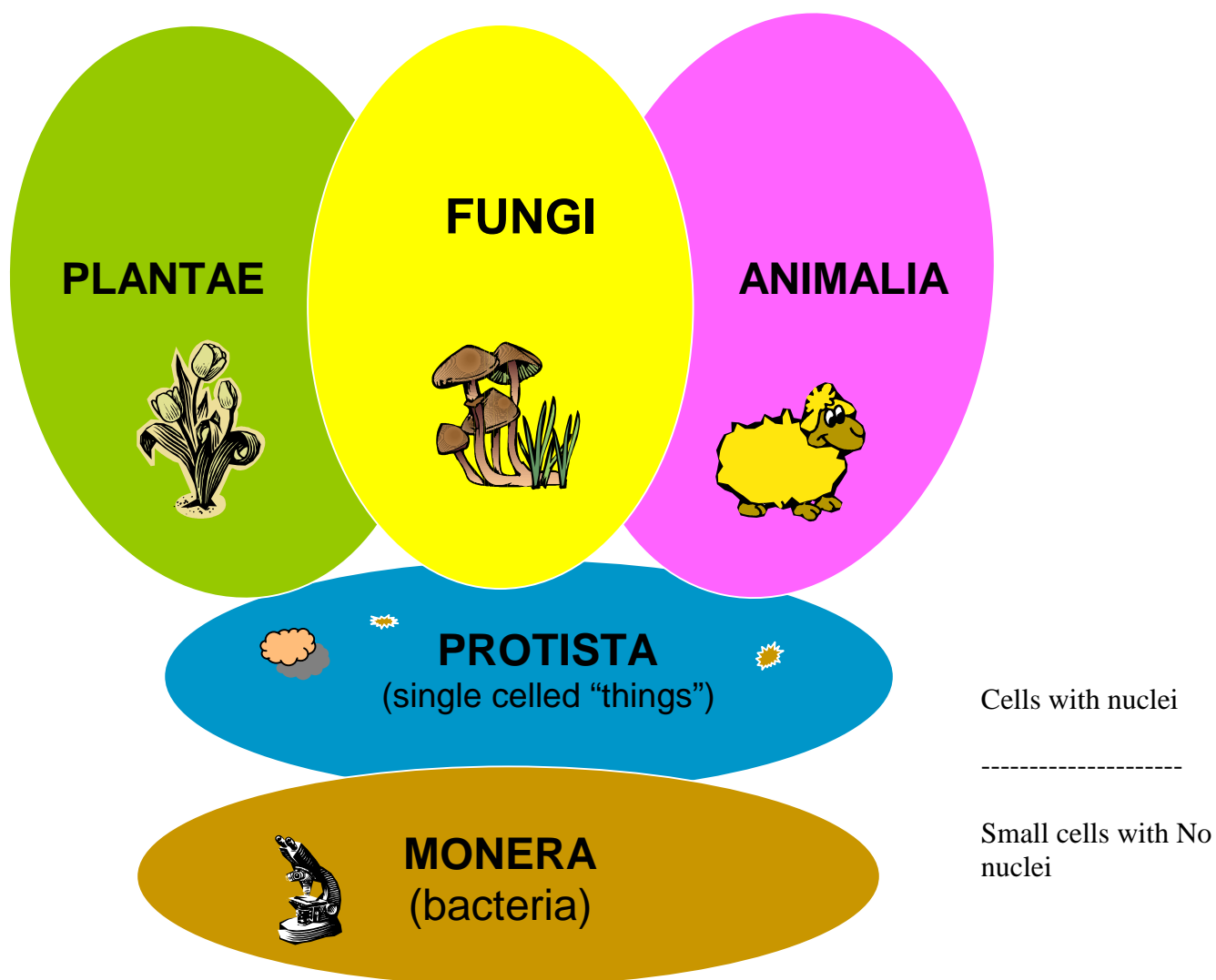
Tonight I will give a brief overview of the fungi, concentrating on three ways in which I think they are fascinating:

- They are a unique life form, very different from other life forms. Fungi have been around for 545 million years, as has been shown in fossil records.
- They have had a major impact on human history.
- They are having an even greater impact on modern life (even though people are totally unaware of that impact).

At the recent International Mycological Congress in Cairns, Professor David Hawksworth, a member of the British Mycological Society and a great Mycologist, made a statement I am going to borrow: “Have you thanked a fungus today?” not a bad motto, and it sums up their importance to our lives.

In considering where fungi fit into the scheme of life: the most primitive Kingdom is Monera (bacteria; very simple small cells with no nuclei), the next Kingdom up is Protista (still single-celled, but with nuclei in their cells e.g. amoeba, etc). Then there are the three Kingdoms with more complex multicellular organisms: Plantae, Animalia and the Fungi. Fungi actually sit between animals and plants as they have characteristics in common with both, although it is now realised that they share more genes with animals than plants.

It is believed that Fungi diverged from the Kingdom Animalia, because of the genes which they share in common. This relationship is also reflected in the similar biochemical pathways and resulting products observed in both animals and fungi, but which are not present in plants. The thing that connects fungi to plants is that some appear from out of the ground and can, like *Aseroë rubra*, resemble a flower. Fungi may have more of the characteristics of animals than plants, but they are a truly unique life form nonetheless.



What makes a fungus a fungus?

- Fungi are multicellular organisms that can have quite complex shapes and forms.
- Fungi have a unique form of tubular growth, like long thin tubes of spaghetti, which are called hyphae (sl) or mycelium (pl). The hyphae can branch and later fuse back together so you get incredible 3D structures.
- Fungal cell walls contain chitin, which is also found in the animal world (crustaceans and insects), but not in the plant world.
- Fungal cells are not really cells – they are more correctly “interseptal segments”. There can be several nuclei in one “cell” and the nuclei can move. Fungal genetics can be a nightmare when there are several nuclei to account for.
- Fungi must take in nutrients from their environment. Plants take in simple substances - CO₂ and water, and in the presence of sunlight energy captured by chlorophyll in leaves, they produce complex organic compounds. Plants are autotrophs because they can make their own food. Animals must break down the complex organic compounds they require, as do fungi. Animals and fungi are both heterotrophic, therefore, meaning they must ingest organic compounds.
- Fungi digest their food outside of their “body”. They secrete enzymes into the environment around them to break down complex compounds into simple nutrients that can be absorbed through cell walls into the mycelium.
- Fungi have a sexual and an asexual cycle, which makes it very difficult for us to identify and work out which asexual form matches with which sexual form. Some fungi regularly

go from sexual to asexual, as with rusts on plants. Then there are other fungi that have forgotten how to go between sexual cycles and have become separated. It is confusing.

- Like animals, fungi have higher and lower life forms (e.g. vertebrates and invertebrates). There are the simple and the very complex. The simple ones have a totally different cell structure. Lower = Zygomycetes. Higher = Ascomycetes and Basidiomycetes which produce the fruiting bodies we go out and find and then there is the asexual state which are lumped into the group Deuteromycetes.

Fungi have three lifestyles:

- Saprophytes which break down dead material - decomposers which pop up in mulch after rain.
- Symbionts – which grow with other organisms (lichens & mycorrhizae).
- Parasites – which invade other organisms: fungi, plants, insects or animals.

The historical impact of fungi has been considerable over the years:

1. Human enjoyment of fungal fermentation products probably began around 8000 or so years ago, coinciding with the evolution of agricultural practices (c. 9500 BC). There is evidence of winemaking in Russia dating from circa 6000 BC.
2. Famines resulting from fungal attack e.g. the Irish potato famine resulting from *Phytophthora infestans* destroying potato crops.
3. Witchcraft:
 - A group of fungi in the genus *Claviceps* cause a disease of cereal plants called Ergot. Soon after infecting plants the ergot begins to grow in the inflorescence. The fungus has two life stages. In the first it causes a sticky, sugary honeydew to flow from where a seed would develop. In the second stage, a hard knot of mycelium takes the place of a seed, looking to the untrained eye a bit like the seed. This stage is pharmacologically very complex. The fungus causing ergot in rye (*Claviceps purpurea*) produces the most amazing range of alkaloids – LSD was first isolated from rye ergot. Ergot alkaloids have also been used in childbirth to induce labour. The consumption of foods made from ergot rye cause adverse symptoms in animals and humans, some of which include dementia, facial distortions, paralysis, convulsions and hallucinations. In the middle ages, when the cause and effect of disease was unknown, these symptoms were taken as evidence of witchcraft.
 - During the 16th – 19th century in central Europe, the effects of ergot were seen as witchcraft, causing many innocent people to be burned as witches.
 - It is now believed that the Salem witchcraft trials in Massachusetts (1692) may have been based on an outbreak of ergot poisoning.
 - Ergot in grain still causes considerable stock poisoning.
4. Medical use:
 - Chinese medicine has used *Ganoderma lucidum* for 4,500 years in the treatment of cancers, heart disease, and hepatitis.
 - *Cordyceps* sp. (vegetable caterpillar) was, and still is, used as a tonic. In 1993, the sporting success of some Chinese athletes was attributed to the *Cordyceps* tonic they were drinking.
 - Knight's templar, a mouldy concoction, was used in the middle ages to treat infected wounds (possibly early Penicillin?).
5. Religious: Hallucinogenic fungi were used by a number of early societies as part of religious ceremonies e.g. Aztec, Mayan and pre-Mayan civilizations.

Modern Impacts:

1. Food: Cheeses (Blue cheeses, Camembert, Brie); alcoholic drinks and bread (*Saccharomyces* yeast); Soya sauce (*Aspergillus* sp. fermenting soy beans.); Tempeh (Soy grits and *Rhizopus*); Quorn (available in Europe, is a non-fat, high-fibre meat substitute made from *Fusarium*); and edible mushrooms (various).
2. Fungal symbionts, lichens. Fungus sharing life with algae. Lichens are an indicator of the health of the environment. In a lichen the fungus provides the “house” and absorbs some water and nutrients while the algae in the middle photosynthesises the food.
3. Mycorrhizal fungi provide minerals to plants and plants provide food to the fungus. Up to 90% of higher plants have a relationship with mycorrhizal fungi. It is now believed that mycorrhizal fungi make the difference between a plant thriving or just struggling along. It is also thought that trees might provide as much as 10% of their photosynthetic products to these fungi. A better understanding of these fungi has led to a recognition that the health of our woodlands depends on mycorrhizal fungi.
4. Endophytes: the fungus mycelium grows through the plant tissue. Sometimes the hyphae grow through the epidermis and into the cortex cells of the roots, sometimes into the stem, and sometimes in the leaves. These hyphae are harmless, not damaging the plant unless the host becomes stressed. Sometimes they act in a beneficial way when the plant is under stress. In NZ they have found an endophytic fungus that produces a metabolite in Rye grass which causes insects to stop feeding on the plant. Unfortunately, this substance is also poisonous to stock, causing what is known as Rye grass staggers. The study of endophytes is a relatively new and very interesting field of mycological research.
5. Biological control: many fungi are adapted to invading and killing insects or nematodes, sometimes actually actively trapping them. Products have been developed using these fungi to control pest insects such as locusts.
6. Fungi in biotechnology: this is the really big area where they affect modern life - antibiotics (Cephalosporins, Penicillins etc); steroids (contraceptives); and cyclosporines (immuno-suppressants used to stop transplant tissue rejection). Organ transplants would not be possible without these drugs. Citric acid used in soft drinks is produced by fungal fermentation, as are a number of other essential enzymes used in food processing.
7. Fungal decay impacts on our lives. Some fungi perform the vital role of breaking down and recycling cellulose and lignin. This positive role can be a negative role when they attack organic compounds that are useful, like our back stairs or garden furniture. Recycling becomes biodegradation!
8. Human pathogens: approximately 200 microfungi are harmful to humans, although generally we have highly developed immune systems to combat them. The most common are the dermatophytes - fungal infections in skin, hair and nails (“ringworm” and its brother “jock itch”). Humans innately have a high level of immunity. but immuno-compromised people (e.g. AIDS or transplant patients) are at high risk from common fungi such as *Aspergillus* or *Candida*.
9. Plant Diseases: fungi are the most important cause of crop diseases, costing billions of dollars annually. They have changed native forests. Dutch elm disease (*Ophiostoma novo-ulmi*) has destroyed elm forests across North America, Britain and Europe. In Australia, *Phytophthora cinnamomi* is destroying eucalypt forests.
10. Fungal metabolites: some ‘spoilage’ fungi growing on foods can produce a range of toxic metabolites. Aflatoxins, produced by *Aspergillus* sp on peanuts, cause liver cancer; Fumosins, produced by *Fusarium* sp., cause oesophageal and renal cancers. Patulins,

produced by *Penicillium sp.* (the little green powdery thing on your apple), are carcinogenic in experimental animals. If you find fruit with this mould growing on it – throw the apple out. The basic message is “**TOSS OUT MOULDY FOOD**”, because the mould extends much further into the food than what you can see, and you never know what nasty substances it may have produced in the food.

The Fungal Kingdom is fabulous and does not deserve to be forgotten, as it impacts on our lives in a myriad of ways. We take modern antibiotics for granted, but without drugs such as Penicillin many of us might not be reading this.

FUNGIMAP TARGETS IN QUEENSLAND

Presented by Sapphire McMullan-Fisher to the QMS meeting, 10th October 2006

The aims of Fungimap are:

1. To stimulate and support the study of Australian macrofungi through the accumulation, storage, analysis and dissemination of information about fungi
2. To link and bring together those with an interest in Australian macrofungi, providing opportunities for sharing and learning; and fostering relationships between groups and individuals that share the objectives of Fungimap
3. To promote the appreciation of fungi with a focus on Australian macrofungi in the natural environment.
4. To foster the conservation of Australian macrofungi.

Fungimap, as the name suggests, is a project aimed at trying to map where certain distinctive fungi species are found. To narrow the field, and make it possible for amateurs to assist by reporting sightings, Fungimap started with eight “Target” species, because they were fairly easily recognised without the use of a microscope. The number of targets grew to 100 species, and is now 105, which includes a number of myxomycetes. Fungimap did start in Victoria, but it has records from every state – wherever a target is reported in Australia.

Why map where specific fungi are found?

- Basically, organisms often tend to be distributed in relation to biogeographical parameters - where organisms live is limited, usually to a specific area and in a specific substrate, and this is mappable.
- Conservation mapping is very important for identifying and listing rare and threatened taxa.
- For long term monitoring and management.

All environmental management plans should remember the three F's - Flora, Fauna & Fungi. Maps give distributions and help monitor the spread of taxa, including 'weed' fungi.

Currently Fungimap records for Queensland show:

- 31 targets mapped in “Fungi Down Under”.
- 48 targets recorded from the Fungimap database (Aug 2006).
- 68 targets based on personal observation, FDU & Young 2005.
- that QLD records are far fewer than those from VIC, TAS, NSW, WA.

Fungimap targets found in Queensland, listed by broad morphological groups are:

Basidiomycota			
Agarics:	FDU Page	Agarics:	FDU Page
<i>Agaricus xanthodermus</i>	17	<i>Marasmius elegans</i>	44
<i>Amanita xanthocephala</i>	21	<i>Mycena austrororida</i>	46
<i>Armillaria luteobubalina</i>	23	<i>Mycena interrupta</i>	47
<i>Coprinus comatus</i>	26	<i>Mycena leaiana</i>	48
<i>Cyptotrama aspratium</i>	33	<i>Mycena viscidocruenta</i>	50
<i>Entoloma virescens</i>	36	<i>Omphalotus nidiformis</i>	53
<i>Gymnopilus junonius</i>	37	<i>Oudemansiella radicata</i>	54
<i>Hebeloma aminophilum</i>	38	<i>Panus fasciatus</i>	55
<i>Hygrocybe graminicolor</i>	40	<i>Schizophyllum commune</i>	57
<i>Hygrophorus lewellinae</i>	41	<i>Volvariella speciosa</i>	59
<i>Lepista nuda</i>	43	<i>Anthracophyllum archeri</i>	22
Bolete & Polypore:	FDU Page	Bolete & Polypore:	FDU Page
<i>Boletellus obscurecoccineus</i>	62	<i>Dictyopanus pusillus</i>	64
Polypore/Brackets:	FDU Page	Polypore/Brackets:	FDU Page
<i>Piptoporus australiensis</i>	73	<i>Flabellophora superposita</i>	66
Polypores:	FDU Page	Polypores:	FDU Page
<i>Amauroderma rude</i>	63	<i>Laccocephalum mylittae</i>	69
<i>Fistulina hepatica</i>	65	<i>Microporus affinis</i>	70
<i>Gloeophyllum concentricum</i>	67	<i>Microporus xanthopus</i>	71
Corals:	FDU Page		
<i>Hericium coralloides</i>	75		
Leather fungi:	FDU Page	Leather fungi:	FDU Page
<i>Cymatoderma elegans</i>	77	<i>Stereum hirsutum</i>	78
<i>Podoserpula pusio</i>	61	<i>Stereum ostrea</i>	79
Puffballs:	FDU Page	Puffballs:	FDU Page
<i>Battarraea stevenii</i>	88	<i>Calostoma fuscum</i>	90
<i>Podaxis pistillaris</i>	92	<i>Calostoma rodwayi</i>	91
<i>Schizostoma laceratum</i>	93	<i>Geastrum fornicatum</i>	87
Stinkhorns:	FDU Page	Stinkhorns:	FDU Page
<i>Aseroë rubra</i>	95	<i>Phallus indusiatus</i>	100
<i>Colus hirudinosus</i>	97	<i>Phallus multicolor</i> (not a target)	100
<i>Ileodictyon gracile/cibarium</i>	99		
Chanterelles:	FDU Page		
<i>Craterellus cornucopioides</i>	60		
Jellies:	FDU Page	Jellies:	FDU Page
<i>Tremella fuciformis</i>	83	<i>Pseudohydnum gelatinosum</i>	82
<i>Tremella mesenterica</i>	84	<i>Ascocoryne sarcoides</i>	111
Ascomycota			
Discs:	FDU Page		
<i>Poronia ericii</i>	113		
Cups:	FDU Page	Cups:	FDU Page
<i>Cookeina tricholoma</i>	107	<i>Plectania campylospora</i>	109
Clubs:	FDU Page	Clubs:	FDU Page
<i>Cordyceps hawkesii</i>	105	<i>Cordyceps gunnii</i>	104

Morels:*Morchella elata/conica***FDU Page**

114

Morels:*Morchella esculenta***FDU Page**

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Beech balls:*Cyttaria gunnii***FDU Page**

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Beech balls:*Cyttaria septentrionalis* (not a target)

Myxomycota – ‘slime molds’ are now being included as Target species:

Slime moulds:*Fuligo septica**Lycogala epidendrum***Slime moulds:***Ceratiomyxa fruticulosa**Hemitrichia serpula***Macrofungal weeds***Amanita muscaria*

- originally came in with exotic pines
- mycorrhizal with oaks, birches and other exotics
- has been found growing in association with eucalypts and myrtle beech (*Nothofagus cunninghamii*)
- Teresa Lebel, in Victoria, is currently conducting research into this association.

Favolaschia calocera has been recorded from Lamington NP, and is included in the new additions to the Fungimap Target list.

Target Suggestions*Marasmius aff. haematocephalus**Podaxis beringamensis**Laetiporus sulphureus**Filoboletus manipularis**Pycnoporus coccineus**Xylaria polymorpha*

Thank you for the images:

- David Catcheside, Ian Bell, Katie Syme, Paul George, Richard Robinson, Tom May & contributors to the Fungimap CD.



Proposed Q-Fungi Target Species

(By Dr T Young)

<i>Agaricus augustus</i> Fr.	<i>Hygrocybe chromolimonea</i> (G.Stev.) T.W.May & A.E.Wood
<i>Amanita ochrophylla</i> (Cooke & Masee) Cleland	<i>Leucocoprinus birnbaumii</i> (Corda) Singer
<i>Anthracophyllum archeri</i> (Berk.) Pegler	<i>Macrocybe crassa</i> (Berk.) Pegler & Lodge
<i>Aphelaria complanata</i> (Corner) R.H.Petersen	<i>Macrolepiota dolichaula</i> (Berk. & Broome) Pegler & R.W.Rayner
<i>Aseroë rubra</i> Labill.	<i>Macrolepiota konradii</i> (Huijsman ex P.D.Orton) M.M.Moser
<i>Auricularia auricula-judae</i> (Bull.: Fr.) Wettst.	<i>Morchella elata</i> Fr.
<i>Auricularia cornea</i> Ehrenb. : Fr.	<i>Mycena leaiana</i> (Berk.) Sacc. var. <i>australis</i> Dennis
<i>Calvatia lilacina</i> (Mont. & Berk.) Henn.	<i>Omphalotus nidiformis</i> (Berk.) O.K.Mill.
<i>Calyptella longipes</i> (Cooke & Masee) W.B.Cooke	<i>Oudemansiella canarii</i> (Jungh.) Höhn.
<i>Chlorophyllum molybdites</i> (G.Mey. : Fr.) Masee	<i>Panaeolus antillarum</i> (Fr.) Dennis
<i>Coprinus disseminatus</i> (Pers.: Fr.) Gray	<i>Phallus multicolor</i> Berk. & Broome
<i>Cortinarius archeri</i> Berk.	<i>Phallus rubicundus</i> (Bosc) Fr.
<i>Cyathus striatus</i> (Huds. : Pers.) Pers.	<i>Phellorinia inquinans</i> Berk.
<i>Cymatoderma elegans</i> Jungh.	<i>Podaxis beringamensis</i> Priest & Michael Lenz
<i>Cyptotrampa aspratium</i> (Berk.) Redhead & Ginns	<i>Podaxis pistillaris</i> (L.: Pers.) Fr.
<i>Filoboletus manipularis</i> (Berk.) Singer	<i>Polyporus arcularius</i> (Batsch.: Fr.) Fr.
<i>Fomitopsis lilacinogilva</i> (Berk.) J.E.Wright & J.R.Deschamps	<i>Poronia oedipus</i> (Mont.) Mont.
<i>Geastrum pectinatum</i> Pers. : Pers.	<i>Ramaria capitata</i> (Lloyd) Corner var. <i>capitata</i>
<i>Gymnogaster boletoides</i> J.W.Cribb	<i>Ramaria lorithamnus</i> (Berk.) R.H.Petersen
<i>Humidicutis lewellinae</i> (Kalchbr.) A.M.Young	<i>Suillus granulatus</i> (L.: Fr.) Roussel

Note: The above list is a tentative, but proven, list of easily identifiable macrofungi occurring in Queensland. Images (without copyright restrictions) are held for almost all of the above. The aim was to construct an initial target list of no more than 40 taxa.

We all know the first question anyone ever asks about fungi is “Can you eat it”. The response to that is “Yes, if you bought the fungus from a shop”. Having said that, a member has suggested that Fungi recipes should be published in the QM, so starting with this issue fungi recipes submitted by members will be published, space permitting. Maybe if enough recipes are collected, QMS will be able to publish a recipe book for sale to the general public at some future time.

FUNGI FOOD FILE

Please Note: For ecological and personal health reasons, QMS recommends that only mushrooms commercially grown for human consumption are to be used in any recipe. **BE AWARE! WILD MUSHROOMS MAY BE TOXIC.**

Marinated Vegetables Mushrooms & red onions

¼ cup olive oil (approx.)
500 g mushrooms (tidied)
1 chopped or quartered red onion
6 sprigs of thyme (stems removed)
4 cloves of garlic (crushed or chopped fine)
1 tablespoon of brown sugar
100 ml balsamic vinegar

Heat the oil in a thick based fry pan with a lid, or in a large pot. Add the onions, cook about 1 minute, and then add mushrooms, thyme & garlic. Cook with the lid on for about 7 minutes, stirring occasionally, until mushrooms are just soft all over. Season with pepper, then add brown sugar and cook for a further 3½ minutes until caramelised. Add balsamic vinegar and simmer for 2-3 minutes to reduce liquid. Taste, and add vinegar or sugar to taste. Transfer to a sterilized jar and top it up with olive oil. Marinated vegetables will last about a month in the fridge.

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