

THE QUEENSLAND MYCOLOGIST
Bulletin of
The Queensland Mycological Society Inc.



The Queensland Mycologist is issued quarterly. Members are invited to submit articles for publication (limit 200 words) to the editor. The deadline for contributions for the next issue is 1 March 2008.

Please ensure that the Secretary (fungiqld@yahoo.com.au) 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 name removed from the email address list.

Annual Subscription \$20. Members are reminded that the 2008 subscription are due. Please pay the Treasurer at the February Meeting or mail a cheque to the Treasurer, QMS, PO Box 2304, Keperra, QLD 4054.

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. Field trips are scheduled for the Saturday preceding the monthly meeting.

QMS Field Trip: 9 February 2008. Carindale private property. Leader Jan McNicol, Ph (H) 38444679 (W) 3138 3574

QMS General Meeting: 12 February 2008. – Workshop “Describing Fungi”. Facilitators: Ray & Noreen Baxter

Saturday 16 February 2008: Preparatory Workshop for “2008 Lamington Survey”. Leaders Ray & Noreen Baxter 3202 5008

QMS Field Trip: 29 February to 2 March 2008. Lamington National Park. Leader Jon Atkinson 0401 283148

QMS General Meeting: 11 March 2008. Workshop on microscopic features for identification of fungi (using specimens collected on the Lamington weekend field trip) by Nigel Fechner

QMS Field Trip: 5 April 2008. Linda Garrett Park, Mapleton. Leader Patrick Leonard Ph 5456 4135 or 0403 592956

QMS General Meeting: 8 April 2008. Presentation by Patrick Leonard “Fungi of New Zealand”.

QMS Field Trip: 10 May 2008. TBA. Contact Jon Atkinson 0401 283148

QMS General Meeting: 13 May 2008. Presentation - TBA

QMS Field Trip: 7 June 2008. TBA. Contact Jon Atkinson 0401 283148

QMS General Meeting: 9 June 2008, Annual General Meeting and Election of 2008/9 Office Bearers. Guest speaker Joan Cribb.

QMS WEBSITE: www.qms.asn.au

At last the QMS website is a reality!! The website basic design was constructed by Steve Barr and Cassie Leisemann then taken further by Rachel Griffiths and Diana Leemon. Our thanks to all those who have put in the effort to get it this far. The website is still in its infancy and will be added to and developed in the months to come. QMS now needs a webmaster – any volunteers out there? Anyone interested please contact Diana Leemon or any of the Committee members.

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QMS acknowledges and appreciates the sponsorship that has been given to the Society by the Queensland Herbarium, SEQ Catchments and Brisbane City Council.



ACTING PRESIDENT'S REPORT

by Diana Leemon

A few more months have passed and I am still the acting President, but happy to return to the Vice-President's position! Anyone wishing to join the committee will be welcomed with open arms. We are a reasonably friendly bunch, but feel we could achieve more with some more willing helpers!

I would like to thank Michael Powell for having stepped into the position of Secretary at the AGM last June when no one else would come forward. I realised at the time that Michael already had huge commitments on his time, but was appreciative that he took on the job. Unfortunately Michael has had to tender his resignation from the Secretarial position due to family and work commitments. On behalf of QMS I would like to offer our thanks to Michael for his Secretarial contribution during the last 6 months, especially for securing the grant to purchase a light projector. Following Michael's resignation Ray Baxter has volunteered to take over as Acting Secretary, many thanks to Ray for stepping up to help. I look forward to working with Ray.

In the last months of 2007 QMS has held two workshops. The new microscopes purchased with the SEQ catchments grant were critical to each of the workshops. The first workshop, October 20 was an Introduction to Microscopy run by me (many thanks to Floss Wainwright and Ken Cowell for providing such a fantastic venue for the workshop). The second workshop, November 24 was an introduction to Fungal Identification by Patrick Leonard (many thanks Patrick for his expertise and the time spent putting together the workshop and to Fran Guard for organising a great venue for this workshop). Patrick's workshop incorporated a section on using the microscope to look at spores and spore bearing structures. It is planned to repeat these workshops and run other workshops during 2008. For QMS to achieve its objectives (see below) it is essential to skill as many members as possible in fungal identification whether at the basic level of doing a meaningful specimen description or the more advanced level of identifying a specimen to genus level.

Jon Atkinson is planning a week-end trip to survey fungi on the Lamington Plateau February 29 – March 2. Workshops will be run before this trip to train members in skills that will be needed during the survey. Participating in a week-end survey is a great way to increase your mycological skills or gain some skills if at the very beginner level.

Again I would like to acknowledge the support from SEQ catchments that enabled us to purchase the microscopes. They have enabled us to begin workshops to skill people in fungal identification which in the future will translate into more people recording the fungal biodiversity of Queensland.

The objectives of the Queensland Mycological Society are to:

1. *Provide a forum and a network for amateur and professional mycologists to share their common interest in macrofungi;*
2. *Stimulate and support the study and research of Queensland macrofungi through the collection, storage, analysis and dissemination of information about fungi through workshops and fungal forays;*
3. *Promote, at both the state and commonwealth levels, the identification of Queensland's macrofungal biodiversity through documentation and publication of its macrofungi;*
4. *Promote an understanding and appreciation of the roles macrofungal biodiversity plays in the health of Queensland ecosystems; and*
5. *Promote the conservation of indigenous macrofungi and their relevant ecosystems.*

QMS FIELD TRIP PROGRAMME

Please note: If the meeting date is changed then so will the field trip date. If you are unsure of a field trip date, or have nominated for a field trip and cannot attend please contact the field trip leader.

Jon Atkinson Ph 3861 1738, mobile 0401 283148 (email buildingbistro@hotmail.com) is the QMS Committee member responsible for the Field Trip programme. All members are invited to consider leading a Field Trip or attending a Field Trip. If any member wishes to attend any of the field trips below, please contact either the trip leader or Jon Atkinson (buildingbistro@hotmail.com):

9th February 2008: Nancy Cramond's place in Carindale. Leader Jan McNicol, Ph 38444679 (H) 3138 3574 (W) or email: jmcnicol@vtown.com.au. The terrain is undulating and the track rough. **The meeting place will be opposite 3rd house in Ever Street, Carindale, sign-on time is 0900.** BYO morning tea, block out and tick repellent. Jan advises that this is a scrub tick area. This site is close to Carindale shopping centre, west of Gateway arterial and is on half an old pineapple farm which is regenerating so there will be some dry vine scrub and some weeds. Wear sturdy walking shoes. Field time will be 3 hours.

Friday 29th Feb to Sunday 2nd March to Lamington National Park Leader Jon Atkinson 0401 283148 (buildingbistro@hotmail.com). This field trip is a follow up to last year's IBISCA survey, a project initiated at Griffith University. IBISCA (Investigating the Biodiversity of Soil & Canopy Arthropods) was an international collaboration to determine which groups of organisms are the best climate change predictors at different altitudinal zones, and which survey methods pick up these changes most effectively and efficiently.

QMS believes that there may be scientific value in monitoring the fungi at the same sites at the same time of year over a number of years, to identify any patterns.

The survey covers several demarcated survey plots at various altitudes at Lamington National Park, involving teams of 4 or 5 to find, photograph, describe in the field, collect, describe and photograph in more detail back in the work room at the base, and preserve collections for the herbarium. This will occupy the full day Friday, Saturday, half day Sunday. As resources allow, the committee intend to offer relevant workshops in preparation for the trip.

There will be self-catering accommodation in a selection of single, double and communal rooms. Cainbale Mountain Lodge have offered accommodation for 16 people in 3 chalets for \$1200, costs to be split fairly between all attending. If either more or less people wish to attend, there is alternative accommodation available in the vicinity at similar rates.

Numbers are limited so places will be allocated on a first come first served basis. 15 members have already signed on for the trip.

5th April 2008. Linda Garrett Park, Mapleton (Sunshine Coast hinterland): Leader Patrick Leonard Ph 07 5456 4135 email patbrenda.Leonard@bigpond.com. This will be along a normal walking track. Meet in the Mapleton Pub car park at 0900 (approximately 2 hours drive from Brisbane). From the Mapleton Pub the group will drive along the Obi Road and soon turn right into Delicia Road to the starting point in the Linda Garret Park, the last km of this access road is unsealed. Time in the field will be approximately 3 hours. This is a wet sclerophyll forest. Coming from Brisbane the trip, including travel time will take most of the day so it is suggested that attendees bring lunch as well as morning tea.

FIELD TRIP REPORTS

Diana Leemon reported on the **6 October Field Trip** she led to Main Range (Cunningham's Gap). Despite the continuing drought the 10 participants found 19 fungi, three – *Stereum ostrea*, *Cymatoderma elegans* and *Dictyopanus pusillus* - were Fungimap targets (FDU p79, 77 & 64). David Holdom kindly provided the photos that were shown at the meeting, including a short video of the *Ganoderma* sp sporulating. Other fungi seen were believed to be *Hypocreopsis* sp. (Fungi on Wood by Ian Hood p64), *Bisporella* sp., *Pulcherricium caeruleum* (The Encyclopaedia of Fungi of Britain & Europe by Michael Jordan p116) as well as a yellow discomycete, and numerous corticioid fungi of different colours (brown, white and lilac).

The **10 November Field Trip** to Linda Garrett Park, Mapleton led by Gretchen Evans and Lin Fairlie had to be moved from that venue as there were no fungi to be seen. QMS member, Fran Guard, offered her property Dilkusha on the Maleny–Montville Road, as an alternative venue and the fungi were plentiful. The following article on one of the many interesting finds was contributed by Pat Leonard.

Half way through our foray we walked along down a steep track towards the creek, and a small white fungus was spotted near the edge of the track. At first it was thought to be a puffball, but, when we dug it up it had pink gills and proved to be a small *Agaricus*. We then found older specimens with dark brown lamellae and a small thin fleshed ring and completely white cap. The collected specimens proved to be *Agaricus campestris* growing in a somewhat unusual habitat.

Agaricus campestris var *campestris* is a relatively common fungus growing in paddocks and along grassy tracks. Its main characters are:

- Cap: white, convex, 45-90 mms in diameter and with no ornamentation on the cap.
- Stipe: white, 45-60 mms high with a thin ring just over half way up, generally smooth, not having any floccules or striations on it. The ring is thin and sometimes falls off.
- Flesh: the cut flesh does not yellow or redden.
- Gills: crowded, free, pink at first then reddish to dark brown.
- The edge of the gill is fertile so there are no cheilocystidia.
- Spores: ellipsoid, 7-8 x 5-5.5 μm with a thin spot in the top of the spore wall.
- Habitat: on the ground in small groups usually in grass paddocks which have not been treated with fungicides or artificial fertilizers.
- Also found growing along grassy paths, and occasionally also on woodland edges.

Further down the track another small group of similar fungi was found, but with clear adpressed (appressed) grey brown squamules on the cap. The macroscopic characters were otherwise very similar to the earlier finds apart from the squamulose cap. A microscopic examination found these to be *Agaricus campestris* and the cap characters confirmed that it was var *squamulosus*, otherwise identical to the earlier collection.

It is unusual to find these *Agaricus* species growing in a well defined track used by motor vehicles, even more unusual to find both the main varieties of *Agaricus campestris* growing in such close proximity.

Despite heavy overnight rain falling on most of the Gold Coast, Brisbane and the Sunshine Coast six QMS members enjoyed the **8 December 2007 Field Trip** to Redcliffe Botanic Gardens led by Jan McNicol.

On arrival at the Redcliffe Botanic Garden Jan had arranged for the group to be met by Don Perrin, who was the main driving force in the community movement that led to the establishment of the gardens 25 years ago, and who is still deeply involved in the management of the gardens. Don gave an overview of the gardens as well as pointing out a number of places where he has seen fungi in the days prior to the field trip. Don rejoined the group at about 1330 hrs by which time everyone was finished – even though the site was not!!

After the initial quick walk through the garden with Don Perrin the group tried to retrace the route taken at a more leisurely “study” pace. During that walk we failed to locate the yellow jelly like *Calocera sp* or a juvenile white lump, possibly a *Laetiporus potentosus* (white punk), that were seen in the first walk through.

In all more than 35 fungi were recorded: thirty one Basidiomycota, three Ascomycota, and one Myxomycota.

On one dead tree (thought to be *Acacia concurrens*) were a very large group of *Auricularia cornea*, a few *Tremella globispora*, and >10 small *Crepidotus sp*. At the base of the tree were approx 10 small dark brown/black, almost parabolic gilled fungi with white stipes in the soil/debris; in the area near that tree were found numerous polypores some were possibly *Hexagonia sp*; and on a small stick an interesting floppy brown gilled fungus and some *Stemonitis sp*. In retrospect, there was such a plethora of fungi found, with everyone present seeing different specimens, that the recording system failed with at least one photographer having photos of fungi that were not recorded. A review of practices could eliminate this problem.

Most frequently seen were *Schizophyllum commune* at least 5 sites of >10; *Pycnoporus coccineus* <3; *Polyporus arcularius* x 2; and a large number were wood rotting bracket and shelf fungi – usually very old, hard, blackened specimens extending up or along dead wood.

The 5 January 2008 Field Trip to Chermside Hills Reserve was led by John Wrench and attended by seven members. Prolific fungal displays had burst out across Brisbane following the good rainfall, so in anticipation of the expected abundance of fungi, it was decided to walk into the least disturbed native bush and then work back to the start, even so not all fungi seen could be recorded.

In addition to the fungi recorded the forest litter and animal scats abounded with small brown fungi that were thought to be a mixture of *Marasmius*, *Galerina*, and *Mycena sp*. Field Descriptions were made of 37 fungi, some of which were seen repeatedly.

Highlights of the day were the vibrant red *Hygrocybe sp.*, *Clavaria sp.*, *Amanita sp.*, and *Russula sp.* all of which were seen for the first time since the field trips began last year. In addition there were repeated sightings of *Mycena viscidocruenta* (a Fungimap target species).

FIND OF THE FIELD TRIP

September: *Plectania campylospora* submitted by Patrick Leonard

During the September field trip in the Maroochydore Bushland Botanic Garden, Ken Cowell found a splendid black cup fungus growing on a fallen branch. Not only did we see a fully mature fruit body, but there were a number of younger cups at various stages of development. *Fungi Down Under* was consulted but the specimen appeared slightly different to the target species, so the foray leader offered to undertake further study. As no interesting mycorrhizal fungi were collected the ascomycete was subjected to rather closer scrutiny than might otherwise have been the case. It keyed out clearly to the genus *Plectania* in Dennis (1960). A check with the Australian Virtual Herbarium revealed that three species of *Plectania* have been recorded in Australia:

1. *Plectania platensis* is a dark reddish brown species described by Spegazzini (1899) in Argentina in 1899, albeit growing on a Eucalyptus tree.
2. *Plectania campylospora* which is the fungimap target, is also dark brown.
3. *Plectania rhytidia* is also red brown and *Plectania platensis* has now been synonymised with it.



Photo by Ray Baxter

Microscopically the Queensland specimen is closest to the Fungimap target species. So the supposition must be that *Plectania campylospora* has a black form in Queensland which is a variation of the same species found in different parts of Australia.

References:

- Dennis, R.W.G. (1960) British Cup Fungi. The Ray Society.
 Grey P. & Grey E. (2001) Fungi Down Under. Fungimap. p 109.
 Spegazzini, C. (1899) *Anales del Museo Nacional de Buenos Aires*, Ser. 2 6: 310-311 (1899)

October: *Pulcherricium caeruleum* submitted by Diana Leemon

During the October Field Trip to Main Range National Park (Cunningham's Gap) a wonderful specimen of the magnificent electric blue fungus *Pulcherricium caeruleum* was found (pictured below). The fungus is aptly named as Pulcherricium = most beautiful and caeruleum = blue. This fungus belongs to the crust fungi = corticioid fungi = resupinate fungi. It is also found overseas and not quite so uncommon as one might first think.

Corticioid fungi are quite common and they do most of the work of decaying logs in the forest. A wide variety (in a rainbow of colours) can be found by carefully turning over logs and branches to look on the moist underside where the fruit body can be found. The fruiting body of a crust fungus is not like any other fruit body. Crust fungi have no elaborate structures but compensate by having their fruiting bodies remain active from early spring to late autumn. Many are able to dry out and re-hydrate. The fruit body only consists of a thin layer of hyphae called a subiculum containing a layer of basidia on the surface of the log. The basidia will always point downward for spore dispersal.

Although there is a wide range of colours seen in corticioid fruiting bodies *P. caeruleum* would have to be the most beautiful. The stick we collected looked like it had been coated in deep blue velvet with lighter blue at the edges. *P. caeruleum* is usually found on smaller branches 5 – 10 cm rather than on large logs, so keep a look out for it next time you are foraging through a forest.



Above: *Pulcherricium caeruleum* on a branch collected during the September foray to Main Range National Park (Cunningham's Gap). Photo courtesy of Dave Holdom.

January: *Hygrocybe* sp.

This specimen was growing in litter covered soil. It had a smooth red cap, with a diameter of 14mm and the cap rim was becoming wavy. The gills were red with a yellowy tinge to edges, distant and had short lamellules. The bright red stipe was 35mm high with a diameter of 2.5-3mm.

In the field this solitary, beautiful, bright red *Hygrocybe* sp. (photo below) found in the Chermside Hills appeared to be similar to the specimen identified as *Hygrocybe coccinea* on page 83 of Bruce Fruhrer *A Field Guide to Australian Fungi* (2005).

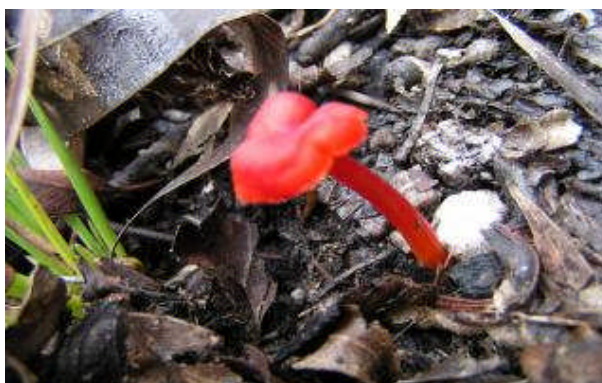


Photo by Ray Baxter

Being a single specimen a collection was not made. This was unfortunate as later, on reviewing A.M. Young *Fungi of Australia Hygrophoraceae* (2005), it was noted that "Australian material identified as this species (*H. coccinea*) has proved to be either *H. miniata* or *H. kandora*". In this case it would have been responsible to make a single specimen collection for the Herbarium for identification.

ENTOMOPATHOGENIC FUNGI or FUNGI THAT CONSUME INSECTS

Address by Diana Leemon to QMS Meeting 11 September 2007

In nature fungi act as population regulators of insects and other invertebrates. Some of these fungi can be exploited as biological control agents of livestock parasites.

This talk covered:

- how fungi cause disease to give a background to what is being done;
- the major groups of fungi that have been used then focussed on the particular group of fungi Diana is currently working on;
- research projects being undertaken;
- the “What and Why” of research projects;
- the structured way in which research is approached;
- laboratory investigations and
- field work projects.

Mode of invasion

Fungal spores landing on the exterior of an insect are able to germinate and invade the insect.

- Spores land on insect.
- Spores adhere to insect cuticle.
- Spores germinate if the conditions are suitable, if the temperature (spores are very temperature sensitive) and moisture levels (about 90% moisture) are right.
- Invasion of insect will then occur, hyphae grow throughout the insect.
- Then at some point, depending on the type of fungus the insect dies.
- Once the insect dies the fungus continues saprotrophic growth – the insect shell becomes full of fungal hyphae.
- Some time later, under suitable conditions, whatever they may be for that fungus, it then sporulates directly on the outside or produces a fruiting body.

Fungal Groups that have the ability to invade insects evolved repeatedly in the fungal kingdom. Most common ones are:

- Zygomycetes, which are a group of lower fungi that do not have cross walls, they tend to be microfungi
- Ascomycetes and their related anamorphs – (asexual stage) – sometimes that ascomycete may have lost the ability to go into the sexual stage.

Zygomycetes

A few groups within the Zygomycetes invade insects, but the better known are from the entomophthorales (ento=insect, phthorales=destroyer):

- Mainly in temperate region regions.
- Highly invasive, and very pathogenic, can destroy an insect within days. If a population of insects has built up quite high, this type of fungus can spread within the population and cause an epizootic that will wipe out most of that insect population within a short period of time.
- Obligate parasites therefore are difficult to grow in culture.

- Commonly alter the insect behaviour before death and time of death. The insect will move either higher up or down its habitat just before death, depending on the type of fungus that has invaded it. After the death of the insect, the fungus starts to produce spores that are ejected from the insect cadaver. Altering the insect behaviour before death ensures that the insect dies in a location in which the fungal spores can be thrown out at the right time of day, into the right environment for their germination

Ascomycetes

- Hundreds of species.
- Many tropical and little investigated.
- Best known genus – *Cordyceps*, which has 100's of species.
- Anamorphs include species of *Metarhizium* and *Beauveria* (connecting up the anamorph to the sexual stage is mainly done through molecular work).

Cordyceps

- After infection and death the insect is mummified into a sclerotium=survival stage.
- It survives over winter or a dry period and this survival stage is protected by a number of complex substances. This is a very complex pharmacological process.
- Under favourable conditions a phototrophic area of the fruit body emerges – and that is the club that we know as *Cordyceps*.

Called “Vegetable caterpillars” in China and used in herbal medicine for health and vigour, many examples can be found infecting beetle and moth larvae, even tarantulas. One particular species is imaginatively named as *Cordyceps nunchuchesperia* because of the shape of the fruit body “clubs”. *Cordyceps unilateralis* commonly infects ants in the Atherton Tablelands. Again it is interesting that the fungus gets into the insect's brain and alters its behaviour causing it to clamp onto a leaf with its mandibles, which is its last act before it dies, the fungus then mummifies the ant and a fruiting body emerges from its body.

Metarhizium and *Beauveria* are asexual states and they produce asexual spores. They have been known for a very long time. *Metarhizium* produces a mass of powdery green spores and is known as the green muscardine disease. *Beauveria* produces a mass of white spores and is known as the white muscardine disease. (The French muscardine means “bon bon” a type of sweet. These two diseases were the scourge of the silk worm industry so they were first investigated and described in the eighteenth century.)

Biological Control

Metarhizium and *Beauveria* are the subjects of Diana's research into insect pathogens to control livestock parasites:

- Both occur in soil and insects world wide– you have a fairly high chance, if you do the right sort of isolation on either soil or dead insects, of getting them out.
- They have a wide host range.
- Easily grown in culture and formulated into myco-insecticides or bio-pesticides (so named because the spores once formulated are applied in the same manner as conventional pesticides).

Researchers work on them for biological controls because they are endemic, easy to find and produce.

It is not a new idea

- In the late 19th early 20th century fungi were being investigated as bio-controls in the Ukraine and in USA.
- In the 1920's chemicals emerged, these gave cheaper, more effective and faster pest control of insect pests thus enabling a rapid increase in food production for a growing world population.
- Most countries stopped using them but Russia, China, South America continued using some.

Why the renewed interest?

A number of problems have emerged with chemical pesticides, such as insect resistance and chemical residues in the environment and food products. Research has returned to searching for biological organisms to help control insect pests. Today there are a number of fungal bio-pesticides in use world wide. In Australia we have four registered products using *Metarhizium* to control things like plague locusts; grasshoppers; cane grub; and turf scarab beetle.

Fungal Bio-pesticides Mode of Action

The researcher has to think through:

- How do insects pick up the spores in their environment?
- What is their life cycle etc. and how does this match with fungal spore attachment and germination.
- The key factors to look at are:
 - number of spores required to cause rapid death – the number has to be economic and effective; time frame for mortality – if it takes ten days for the insect to die the insect might have time to destroy the crop;
 - optimal site for insect invasion;
 - fungal characteristics – how easy is it to produce large quantities of spores easily?
 - can viability be maintained?

All isolates of *Metarhizium* and *Beauveria* used in this DPI & F research program have been isolated in Queensland.

Research Approach

- Assay development.
- Selection of suitable fungal isolates:
 - optimal temperature suitable for the environment in which they will be used and lower than human body temperature (37°C);
 - vigour & sporulation;
 - virulence to target pest;
 - investigate the pathogenesis, want to know how it kills the target pest.
- Determine the minimal spore dose.
- Production of test quantities of spores.
- Field testing.

Current Projects

At DPI & F researchers are currently working on three projects:

Feedlot Nuisance Flies

Beef from Coles - the last 60 days of an animal's life is spent in a feed lot to condition the animal for market, there is a lot of manure around the feed lot and as a result millions of nuisance flies breed in the manure. Chemical control for the flies is not an option, because of the chemical withholding period.

Nuisance flies (primarily *Musca domestica*, the house fly) lay many batches of eggs in the manure, the flies irritate the cattle, and feedlot workers and sometimes nearby communities. It was noted that the flies spend a lot of time resting in the shade and vegetation. A spore formulation with something to attract flies was developed to spray onto the flies and the vegetation. This seems to be working.

Sheep Lice and Blowflies

Blowflies are attracted to odours given off by wet fleece - after rain or the moist wool around the rear end of the sheep. The flies lay eggs in the fleece, these develop into larvae which, by the third stage of their development, are eating into the dermis of the living sheep, once you get hundreds of larvae on the sheep, they will be eating the sheep alive. When you see this happening, mulesing makes good sense as it prevents the initial fly strike in the breech area. The mulesing operation is done once and is better than being eaten alive by blowfly maggots. Once the larvae are fully developed they drop off, pupate in the soil and start the cycle again.

Lice are only about 1mm long and feed on wool grease and dead skin in dense fleece. Lice are very slow to reproduce, but even though their numbers are slow to build up they do so largely unseen and will cause extreme irritation to some sheep. Irritated sheep will pull at their fleece, the fleece gets deranged and breaks. The quality of the fleece along with the yield will drop. Currently farmers either dip or jet sheep with chemicals, but this introduces a chemical into the fleece. Chemical residues in the fleece are threatening the access of Australian wool to international markets. In addition louse resistance to some of the chemical controls is also a serious problem. Current research is looking at developing a spore based formulation that can go into the fleece to control lice and exert some control over blowfly strike.

Small Hive Beetle

This is a new project. The small hive beetle is an exotic pest that arrived in Australia in 2002. It is seen as an increasing problem to honeybee industry. Despite the dry weather in recent years beetle populations in Eastern Australia have increased rapidly. The beetles lay eggs in the honeycomb, larvae feed and crawl around in it and destroy the honeycomb. The bees chase them but the beetles hide and are very long lived and it is possible that when the beetle problem increases significantly the queen will vacate the hive. Isolates of *Metarhizium* that will kill the beetles in the laboratory have been found, the challenge is now to find how to apply the spores to the hives to control the beetles.

SUMMARY OF QMS MEETINGS

General Meeting 11 September: Acting President, Diana Leemon advised that

- Three microscopes had been purchased from UQ.
- Michael Powell was successful in obtaining a \$2,500 grant for QMS to purchase a digital projector and screen – which will be very useful for workshops and training programmes.
- The Treasurer was investigating obtaining an ABN and GST exemption for QMS.
- The evening address, titled “Entomopathogenic Fungi” or “Fungi That Eat Insects” was given by Diana Leemon.

General Meeting 9 October

- QMS to purchase copies of Fungi Out West, published by the Chinchilla Field Naturalists’ Club, for sale to members.
- 20 October, 2007 a Basic Microscopy Workshop to be conducted by Diana Leemon in Nundah at the home of Floss Wainwright and Ken Cowell.
- Patrick Leonard is planning an “Identifying Fungi Using Keys” Workshop on the Sunshine Coast in November.
- Jon Atkinson has commenced planning a weekend at Green Mountain for Friday 29 February to Sunday 2nd March to review some IBISCA/QMS sites.
- The evening address, titled “Nematode Trapping Fungi” was given by Lois Eden.

General Meeting 13 November

The planned speaker had to withdraw at short notice, so the meeting had an extended foray report and a discussion about the QMS objectives, where we are in respect to meeting them and what sort of things the membership might like in the coming year.

General Meeting 11 December

This meeting was very informal the only business being the report from the December Field trip which was given by James Hansen and Klaus Querengasser on behalf of the leader Jan McNicol who could not attend. While at the Redcliffe Regional Botanic Garden John Wrench had asked Don Perrin if QMS could assist him by writing to both Don and Redcliffe Council, highlighting the importance of the garden and the ecological need to retain these areas - complete with bush litter and debris – in the suburbs.

Accordingly a motion was put to the meeting that Jan McNicol and John Wrench draft letters for QMS to send the relevant authorities in support of the gardens.

The QMS Christmas Party then followed.

FUNGAL FEASTS

Please Note: For ecological and personal health reasons, QMS recommends that only mushrooms commercially grown are used in recipes. **BE AWARE! WILD MUSHROOMS MAY BE TOXIC.**

The following fungi recipes were contributed by Diana Leemon.

Mushroom Turnovers

3 tbs. butter
 1 small onion finely chopped
 200 g mushrooms finely chopped
 ¼ tsp. thyme
 2 tbs. flour
 ¼ cup sour cream
 Sheets puff pastry

Melt butter, add onion, cook until lightly browned.
 Add mushrooms cook ~ 3 min stirring. Season with thyme, salt & pepper
 Add flour, mix, then blend in sour cream. Cook until thickened
 Set aside and cool

Cut each sheet puff pastry into 9 squares, place small amount of mushroom mix in centre of each small square. Fold pastry over to make triangle, seal edges. Brush pastry with water & sprinkle with sesame seeds (optional). Bake ~220° C until golden brown.

Mushroom & Green Onion fritters

2 tbs. olive oil
 400 g Swiss brown mushrooms, sliced
 2 cloves garlic, crushed
 1 1/3 cups SR flour, sifted
 1 ½ tsp. ground coriander
 Salt & pepper to taste
 2/3 cup milk
 2 eggs, lightly beaten
 10 green onions, thinly sliced
 Extra light olive oil for frying
 Mango Chutney, to serve

Heat oil add mushrooms & garlic, cook until just tender. Cool for 10 min.
 Combine flour, coriander, salt & pepper. Lightly whisk milk & eggs together in a jug. Gradually pour egg mixture into flour mixture, mixing constantly until smooth.
 Add mushrooms & green onions, stir gently to combine.

Pour oil into large frying pan (1/2 cm depth), heat
 Using 1 heaped tbs. mushroom mixture per fritter, cook in batches 3 min each side until cooked through.
 Drain on paper towel.
 Serve immediately with mango chutney

HOW TO JOIN MYCENA - A YAHOO GROUP FOR FUNGAL ENTHUSIASTS

Submitted by Jan McNicol

Method 1. Send me an email <jmnicol[at]vtown[dot]com[dot]au and I will add your email address to the list.

Method 2. Send an email to <mycena-subscribe[at]yahogroups[dot]com>.

Method 3. Go to the website <http://groups.yahoo.com/group/mycena> and click on the link. Join this group. If you already have a Yahoo group identity, this will be easy, but if you don't, you will be asked to create one. Yahoo will send a message to your nominated email account to ensure that you really want to join and that you are a real person, not some spamming machine. The advantage of this move is that as a group member, rather than just a email list subscriber, you will have access to other features of the web site including the calendar, files and photos.

Method 4. If you already have a Yahoo group identity, go to the Yahoo groups web site <http://groups.yahoo.com/> find Mycena and join it.

For anyone not familiar with Yahoo groups and similar facilities, they function as online organisational formats, allowing members to correspond with each - so if you send a message to <mycena[at]yahogroups[dot]com> everyone else on the group will read it. This can be useful or embarrassing, so double check who you're communicating with before you hit that send command.

Having a Yahoo email address is unrelated to a Yahoo group identity. Totally separate provinces of the great Yahoo empire.

Members can share photographs, create links, store all types of Microsoft Office files, conduct polls, create databases and plan events using the calendar. It's all fairly intuitive and intended for people with an average level of computer literacy.

If you want to see another Yahoo group in full swing, have a look at <http://groups.yahoo.com/group/brisrain>, another group I own. We have great fun, especially with online plant identification.

The name Mycena is not intended to restrict discussion to that genus. It was just a short and catchy name, that wasn't spoken for elsewhere in Yahoo groups.

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| <p>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, where possible it is far better to attend the meetings, get the information first hand and participate in the invaluable information sharing opportunity.</p> |
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