# THE QUEENSLAND MYCOLOGIST

**Bulletin of**
**The Queensland Mycological Society Inc.**
**Vol 8 Issue 1, Autumn 2013**

# The Queensland Mycological Society

ABN No 18 351 995 423

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Could members notify Secretary (info@qldfungi.org.au) of changes to their contact details, especially e-mail addresses.

## Society Objectives

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 macro-fungi
2. Stimulate and support the study and research of Queensland macro-fungi 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 macro-fungi;
4. Promote an understanding and appreciation of the roles macro-fungal biodiversity plays in the health of Queensland ecosystems; and
5. Promote the conservation of indigenous macro-fungi and their relevant ecosystems.

The *Queensland Mycologist* is issued quarterly. Members are invited to submit short articles or photos to the editor for publication. The deadline for contributions for the next issue is May 15 2013, but earlier submission is appreciated. Late submissions may be held over to the next edition, depending on space, the amount of editing required, and how much time the editor has. It is preferred that photos are submitted full-size to allow flexibility in resizing and cropping to fit the space available while minimising loss of quality. Authors who have specific preferences regarding placement of photos should indicate in the text where they want them, bearing in mind that space and formatting limitations may mean that it is not always be possible to comply. All original material will be reprinted or reproduced, unless otherwise stated, provided the source of the information and the copyright author are acknowledged.

**Cover photo:** The earth star, *Geastrum* sp. is the QMS emblem. Susie Webster took this photo of *Geastrum saccatum* during the Mt Cordeaux field trip in February. Read the report by Megan Prance on page 7.

# Contents



# QMS Calendar 2013

Meetings are held in the F.M. Bailey Room at the Queensland Herbarium, Mt Coot-tha, commencing at 7pm on the second Tuesday of the month from February (no January meeting), unless otherwise scheduled. Check the website for details and any changes. There will be 3-4 guest speakers invited during the year and other meetings will be informal.

To assist those unable to attend meetings, notes on the talks are included in the Queensland Mycologist wherever possible. However, the notes never do justice to the topic as they do not reflect the enthusiasm of the speaker or cover the discussion that follows. So remember, where possible it is better to attend the meetings, get the information first hand and participate in the invaluable information sharing opportunity.

## QMS Meetings 2013

Details of meetings are not yet finalised. Check the website for updates. Suggestions from members for topics or names of potential speakers or talks will be welcome at any time. Please contact a member of the executive.

| **Date** | **Items** |
|---|---|
| April 9 | Linda Garrett foray report |
| May 14 | TBA |
| June 11 | AGM.<br>Norm Duke: *Your local mangroves and tidal wetlands – wicked or wondrous?* |
| July 9 | Morwenna Boddington: *Russulas* |
| August 13 | Pat Leonard: *Lactarius* |
| September 10 | TBA |
| October 8 | Roger Shivas: *Rusts and Smuts* |
| November 12 | TBA |
| December 10 | End of year party |

AGM June 11. All Executive and Office holder positions will be vacated and elections/re-elections will take place. N.B. It is very important for a community group like QMS, to share the tasks around. Please be prepared to volunteer or "be volunteered" for a job!

## QMS Supper Roster 2012-13

| **Date** | **Savoury** | **Sweet** |
|---|---|---|
| April | Floss Wainwright and Ken Cowell | |
| May | Susie Webster | |
| June | Vanessa Ryan | Patrick Leonard |
| July | Jutta Godwin | Fran Guard |
| August | Ronda Warhurst | Scott Buckley |
| September | | |
| October | | |
| November | Matthea Paulus | |
| December | Everyone brings a plate | |

# QMS Forays & Workshops 2013

Field trip details may change as a result of drought or other unforeseen circumstances. Check the website for changes. The dates are normally the Saturdays following the QMS meetings of February to July. Exceptions this year are for the weekend at Ravensbourne, and the foray to the Greater Glider Conservation Area.

Members are invited to suggest venues for additional forays. If you have any suggestions (and especially if you are willing to lead a foray), please contact Fran or another member of the executive.

| Date | Location | Leader |
|---|---|---|
| April 19-21 | Ravensbourne NP (Weekend Camp) | John Dearnaley (John Dearnaley [at] usq.edu.au) |
| 4 May | Greater Glider Conservation Area Alexandra Hills | Susan Nelles (zefarella [at] gmail.com) |
| 18 May | Chermside Hills | John Wrench, James Hansen |
| June 15 | Cooloola | Fran Guard (foray [at] qldfungi.org.au ) |
| July 13 | Maroochy Wetlands | Pat Leonard and Judith Hewitt (patbrenda.leonard[at]bigpond.com) |

# 2013 Workshop Program

The 2013 workshop program has yet to be finalised, but it is intended that one will be held in Brisbane and one outside the metropolitan area, tentatively in August and September. Details should be in later newsletters. In the meantime check the website for details.

Members are invited to suggest topics.

# Editor's Comments

Welcome new members: David Sedgmen, Judith Hewitt, Amanda Buckley, Scott Buckley, Tom Franz, Bev Miles, Theresa Bint, Tasha Goodson, Rita de Heer, Leanne Rowbotham, and Adrian Harris.

The June 2012 newsletter featured a cover picture of a fungus photographed in the Bunyas and identified at the time as *Leucoprinus birnbaumii*, or something close to it. In fact DNA studies have shown it to be a species of *Pluteus* new to Australia. By good fortune more were found on the Mt Cordeaux field trip (see page 7). Hopefully a report with more detail will appear in a future newsletter. Our fungal flora still has many surprises and new discoveries in store, and I am sure that will continue for many years.

This time we have two foray reports, one from last year's foray to the Greater Glider Conservation area, and another from the recent foray to Mt Cordeaux, always a very productive area for fungi.

Fran has produced a great summary of her talk on encounters with fungi in north-western Europe. They clearly have a much stronger “fungi as food' culture than we do, but as Fran said, they have had thousands of years to learn which are safe ( to which I would add, probably the hard way)

“Toxic *Trogia*” summarises the recent identification of a new species of *Trogia* causing multiple deaths in a remote part of China. *Trogia* is, depending on whose understanding of the genus you follow, a widespread genus with species in Australia. Superficially resembling edible species, they illustrate the need to be sure of identifications, a theme we have covered before, but they also demonstrate the amazing chemical diversity of the fungi.

QMS plays a valuable role in mapping our biodiversity and deserves the active support of members. With the AGM approaching, I urge members to consider standing for office and taking some pressure off the small pool who fill the positions every year. In some cases it may be possible for people to share tasks, and perhaps that idea could be discussed at future meetings.

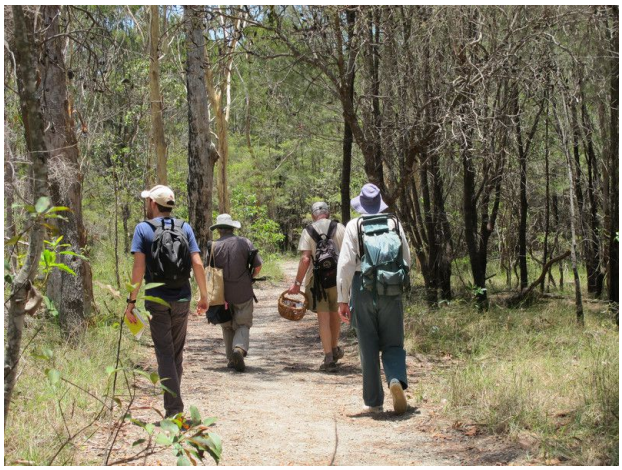
Megan Prance sent me a great piece of fungi art, and a link to the site where she found it. The link is included in this newsletter, but for copyright reasons I am unable to include the picture. Susan Nelles then sent in some links to TED Talks on fungi. If you don't know about TED talks, now is the time to discover a treasure trove! These links and others I find or am sent in the future will be scattered through the newsletter where there are gaps to be filled. I welcome links to interesting fungi-related sites that members may come across, so please send in any you find. Even if they have been in the newsletter before, they may be worth repeating. I am calling them **Fungi-linx** and will put them in boxes to distinguish them from the main articles. Perhaps a links section could be added to the website if that has not already been done.

# Report on Foray to Greater Glider Conservation Area, Alexandra Hills Sunday 25 Nov 2012.

**Susan Nelles**

This is a 52 hectare bushland in the Redland Coolnwynpin Ck catchment area, with low hills and gentle slopes. The vegetation is open eucalypt forest, dominated by *Eucalyptus racemosa* (scribbly gum) and *Allocasuarina littoralis* with a grassy under-storey.

There are several patches of heath land, mainly banksias, paperbarks, *Leptospermum* and sedges.



Various mammals including bandicoots, planigales and dunnarts as well as rodents may feast on the fungi, as evidenced by gnawings.

It was the first time QMS has surveyed this site, and 10 people carefully examined the many fallen trees, branches etc. along the path and creek before we reached the GGCA. There was an abundance of *Polyporus* and allies.

Despite recent good rain, there were no pretty mycorhizal fungi in the main forest, though I have seen agarics, puffballs, boletes and stinkhorns during wetter times. It will be useful to survey this area in a different season.

Two of the group are arborists and gave us interesting observations on the trees.

**List of fungi seen:**

*Amauroderma rude*
*Cyathus striatus*
*Daedaleopsis confragosa*
*Fomitopsis lilacinogilva*
*Hexagonia tenuis*?
*Hymenochaete villosa*
*Inonotus lloydii*
*Phaeotrametes decipiens*
*Phellinus badius*
*Phellinus* sp. no 1
*Phellinus* sp. no 2
*Phellinus* sp. no 3
*Polyporus arcularius*
*Pycnoporus coccineus*
*Stereum*?

I visited the site 2 days later after some rain, saw the remains of a fungus, and spied a plump animal lying nearby in the sun.

A rodent was feeling replete
He'd eaten a whole Bolete
Was it tasty I asked
He burped as he basked
It was delicious, nutritious and sweet.

**Figure 1 (next page). Fungi from the Greater Glider Conservation Area Foray**

Top row, from left: *Hymenochaete villosa* © Sean Freeman, Phellinus badius © Patrick Leonard, *Phellinus* sp. © Sean Freeman;

2nd row: *Inonotus* sp. © Patrick Leonard;

3rd row *Daedaleopsis confragosa*, upper view © Susan Nelles, lower view © Megan Prance;

4th row *Fomitopsis lilacinogilva* © Megan Prance

**Fungi-linx**

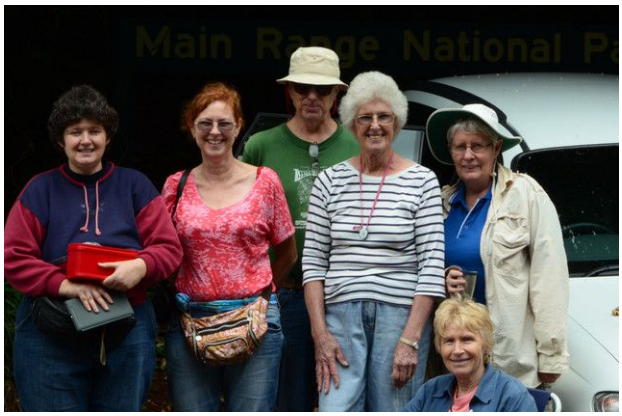
For some great mushroom art, go to:
http://romantik111.deviantart.com/art/mushrooms-202676704
Thanks to Megan Prance for spotting it.

# Mt Cordeaux Foray, 16 Feb 2013.

**Megan Prance**

After a very dry December followed by what seemed like weeks of interminable rain, Saturday showed promise of being a good day for a foray. The rain did hold off, but not everything went smoothly. I was asked to take on role of Foray Leader as Susan was unable to come. Luckily for me, Vanessa and Chris Ryan gave me the opportunity to be a passenger for a change, but before we arrived a security alarm was triggered at their home. Jon kindly offered to drive us home after the foray so Chris was able to return home to attend the alarm.

We had a small team of 7; Ronda Warhurst did a great job as scribe, Vanessa collected most of the specimens. Susie Webster and Lil Spadijer did a lot of the spotting. Peter Warhurst, Jon Atkinson and I concentrated on the photography, putting the new tags designed by Vanessa to use. They are brilliant! She has carefully drawn a 3cm scale and used a large solid font for the numbers. Our photos now have a good scale and the white paper is perfect for correcting white balance in the photos.



Between us we had a good spread of skills for identifying our finds, but without a senior mycologist there were more than a few specimens not collected as the spotter was asked “Are you prepared to do the work on it? If yes, we can collect, but if no, it stays where it is”. We found a number of the “Rainforest regulars”, like *Auricularia auricula-judae, Cymatoderma elegans*, *Cyptotrama aspratum, Filoboletus manipularis* and *Polyporus badius.* Jon was happy to discover an *Agaricus decidulus,* and also *A. augustus*. Lil spotted and identified *Mutinus boninensis*. I was happy to see *Trametes menzesii* – this has two different forms, but the more common form is very easy to identify in the field by being a small, thinner than most Trametes, and with a distinct lilac edge. It has 4-5 pores per mm.

On the day I was most curious about specimen 12. It is a little whitish agaric with decurrent gills and infundibular cap. I thought it may have been a *Trogia* or *Omphalina* or maybe even *Gerronema*. However, a simple test with Melzer’s reagent on the spores ruled all of these out. Maybe it belongs in the *Mycena* group. At the QMS meeting Pat Leonard said he had found the same species at Buderim and was equally puzzled as to its identity.

The most exciting specimen of the day was number 5. Initially I had thought it was a yellow *Amanita* but it was growing on wood. Nigel Fechner suggested it may be a *Pluteus*. While I was working on it an email arrived from Sapphire McMullan-Fisher informing us that the DNA result on a specimen (MC34) we collected at Bunya Mountains had come back with a surprise result. The field ID had been *Leucocoprinus birnbaumii* however DNA confirmed it was *Pluteus* aff. f*enzlii,* a new record for Australia. I had to look twice, but the photo of MC34 looked like a younger version of our Number 5! Vanessa had made spore prints and together we had looked at them under the microscope and photographed the spores. I sent the photos to Matt Barrett & Sapphire and eventually he confirmed it agreed with MC34. Both these collections had been singletons. The next surprise was to hear that Susie and Lil had continued to foray for a few more hours and had found several more of the same species, this time not as singletons. Unfortunately these were not collected. Susan Nelles and Lil went back to the site on the following Wednesday. They were able to go to the same log as described by Susie and found more. The Bunya collection had been made after a very wet weather and the conditions at Mt Cordeaux were similar.

## Photos

Plate 1(page 8)

Top row *Pluteus* aff. *fenzlii*. Left, © Peter Warhurst; centre & right © Lil Spadijer

2nd row *Agaricus augustus* © Peter Warhurst

3rd row, *Agaricus decidulus* © Jon Atkinson, *Mutinus boninensis* © Peter Warhurst

4th row Trametes menziesii, unidentified agaric © Megan Prance

Plate 2 (page 9)

Top row *Xerula* sp.

2nd row *Xerula* sp., *Favolaschia calocera*

3rd row *Morganella* (possibly *subincarnata*), *Amanita* sp.

4th row *Crepidotus nephrodes*

All photos © Peter Warhurst

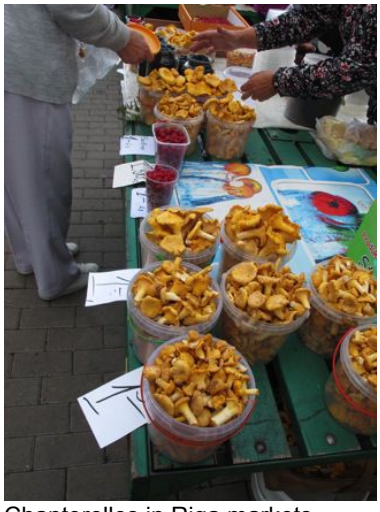
# Fungi for Food

**Fran Guard**

*Cantharellus cibarius* growing in troops in deciduous forest in Latvia

One of the most interesting aspects of travel in another country is trying out the particular foods of that country. A couple of years ago, while travelling in China, I ate several dishes that contained fungi. One in particular was a delicious soup made of a number of different fungi, none of which I could identify. Individually, they were a little rubbery in texture and not very distinctive in flavour. However, cooked together with garlic and herbs, they made a tasty dish.

Last August while in Finland, I had a much closer encounter with food fungi. It was the season for chanterelles (*Cantharellus cibarius)*, so on our first day in Helsinki, we found chanterelles by the kilo in the markets. We bought some and were instructed how to cook them. They were very tasty! The next day we went out in the woods of Nuuksio National Park, found some more, though not a lot as the locals had been out even earlier; picked and cooked our own – another tasty morsel.



Chanterelles in Riga markets

**Cooked Chanterelles.**

The recipe is simple.

Clean the fungi with a brush.

Lightly fry a small onion in butter.

Add the chanterelles, whole, and cook until almost all the water has evaporated from them. (They contain a surprising amount of water.)

Add sour light cream, and serve with boiled potatoes.

We continued keeping an eye out for chanterelles wherever we went after that. So we ate them again in Latvia and saw them in every market that we visited.

In Latvia we stayed with local folk who go out mushrooming and berry picking late summer every year. On one occasion, we gathered a whole basket of very fresh large, red *Russulas.* I never did find out their species name. Our friends took them home, removed the stems, peeled the caps, dipped them in beaten egg, rolled them in flour and pan-fried them. We said politely that we would try a little (and hoped there would be enough left for the autopsy, if needed!) We should not have worried. They were SO TASTY! The texture was somewhat like well cooked chicken breast, and the flavour delicate and a little like chicken. Naturally, we ate several.

*Russula vesca* (one of the many edible red Russulas, known as The Flirt, because the edge of the cap is drawn back to reveal her petticoats!)

On another occasion, I had the chance to try *Boletus edulis* soup. It is considered the “King of Boletes”, and has a strong mushroomy flavour. In a rich creamy soup, I found it delicious, though it was too strong for Bob.

*Boletus edulis*

A fungi foray with Latvian mycologists was an education, not only in the number of known and named species, but in the variety of edible fungi that they would regularly collect for their dinner table.

I am sure that Australia has many more edible species than the few we collect and eat with any degree of confidence. However, Eastern Europeans are about 2000 years ahead of us in trialling them. Also, with the variety of available good food in Australia, few of us are willing to be the guinea pigs trying out new species.

Lunch basket full after an hour’s foray in Latvia

# Toxic Trogia

**David Holdom**

Since the late 1970s, around 400 people have died suddenly in northwest Yunnan Province, in China. The phenomenon, termed “sudden unexplained death” or SUD, affected people of all ages and was preceded by generally mild symptoms. Because of the remoteness of the region and the fact that the affected people belong to several ethnic groups and many do not speak Chinese, investigation was difficult. A major effort has now led to the identification of the cause, and to a series of papers in international and Chinese journals describing the epidemiology and toxicology, and naming a new species of fungus.

The culprit turned out to be a previously undescribed fungus, now named *Trogia venenata*. The fungus, referred to locally by a range of names, including “little white mushroom” and “nail-like mushroom”, is a common saprophyte on rotten wood in subtropical mountain areas between 1,700 and 3,000m altitude. Wild mushroom collecting is a significant source of income in the area, but *T. venenata* had no commercial value, so was eaten only by locals. The epidemiological work is described by Shi *et al*. (2012) in the open source journal *PLos One*. The paper also discusses other mechanisms of fungal toxicity and members may find it interesting. The link is included below. Unfortunately the taxonomic paper is in the subscription-only journal *Mycological Progress*. The toxins are also described in a closed journal, but there is an interesting summary on the Royal Society of Chemistry website (see references below)

*Trogia venenata.* Source: Shi et al. 2012 PLoS ONE 7(5): e35894. doi:10.1371/journal.pone.0035894

**Systematics**. *T. venenata* was described by Yang *et al*. (2012)., and the authors also briefly discuss the systematics of *Trogia* as a whole The genus is poorly understood, the type species from India not well known and the type specimen has been lost. Different treatments recognise from three to 90 species, with the latter described by the authors of this paper as “unwieldy”. Wikipedia cites the10th edition of the *Dictionary of the Fungi* (2008) as estimating about 20 species in the genus . Yang et al. compare the features of *T. venenata* with nine other species, though indicate that some of those may be synonyms. DNA analyses showed that *T. venenata* is closely related to *T. Infundibuliformis*, a species considered to occur in Australia. The name comes from “venenatus”, meaning poisonous.

*Trogia infundibuliformis* © Patrick leonard

**Toxicology.** One part of the study led to identification of three non-protein amino acids (Shi *et al*., 2012, Zhou *et al*., 2012). One of those was a known toxin, and the other two were new. Toxicity testing on mice yielded LD50 (the dose required to kill 50% or a sample in a given time) values of 71 and 84mg/kg for the new compounds, on a par with a number of insecticides such as chlorpyrifos and more toxic than most pesticides sold for domestic use. The amino acids occurred at about 2 g/kg dry weight. The third amino acid was not tested as it was already known to cause seizures in rabbits. Early suggestions that toxicity might be due to high barium concentrations have been ruled out, though not the possibility of synergies.

A summary of findings on the nature of the toxin on the Royal Society of Chemistry website quotes James Hanson, emeritus research professor of chemistry at University of Sussex, UK, and an expert on fungal metabolites, as saying that other fungi including *Amanita*

*Trogia aff anthidepas* © Patrick leonard

*muscaria* and *Coprinus comatus* also produce toxic amino acids.

An extract of *T. venenata* caused severe hypoglycaemia in mice within 2h of ingestion, and it was suggested that

that causes cell death and heart damage. The precise mechanism is not known, but the authors noted structural similarities to a plant toxin that blocks lipid metabolism, indirectly causing hypoglycaemia and cell death. Postmortems carried out on human victims revealed damage to heart, liver, kidney and lung tissue. Shi *et al.* (2012) describe the findings in more detail.

Shi *et al.* outline the symptoms commonly reported for other types of fungal toxicity, and report that in contrast pre-mortality symptoms of *T. venenata* poisoning are mild or non-existent. Of 13 SUD cases studied one died while asleep but the others collapsed during daily activities, 7 dying within 10 minutes of collapse and the others becoming comatose and dying within 1 day. For the 3-5 days preceding death the victims had transient but recurrent symptoms that did not interfere with normal activities. A BBC report quotes one of the team as saying two-thirds of victims, experienced symptoms such as heart palpitations, nausea, dizziness, seizures and fatigue.

Cases of SUD ceased after campaigns were conducted to warn villagers of the dangers of *T. venenata.*

**References**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## Fungi-linx

**Susan's TED links:**

**http://www.ted.com/talks/paul_stamets_on_6_ways_mushrooms_can_save_the_world.html** 2008

Paul Stamets believes that mushrooms can save our lives, restore our ecosystems and transform other worlds.

And if you do not know his web site, it is well worth a look: **http://www.fungi.com/**

**http://www.ted.com/talks/eben_bayer_are_mushrooms_the_new_plastic.html** 2010

Product designer Eben Bayer reveals his recipe for a new, fungus-based packaging material that protects fragile stuff like furniture, plasma screens -- and the environment.

Eben Bayer is co-inventor of MycoBond, an organic (really -- it's based on mycelium, a living, growing organism) adhesive that turns agriwaste into a foam-like material for packaging and insulation.

**http://www.ted.com/talks/jae_rhim_lee.html** The mushroom burial suit 2011

Here's a powerful provocation from artist Jae Rhim Lee. Can we commit our bodies to a cleaner, greener Earth, even after death? Naturally -- using a special burial suit seeded with pollution-gobbling mushrooms.

And finally..

**Discover Nature at JCU**
http://www-public.jcu.edu.au/discovernature/index.htm
The site has sections on Fungi by common and scientific name. Also plants, including weeds, and animals (multiple links for subcategories)