The Natural News

Central North Field Naturalists Inc.

No. 58 ~ August 2014

Hericium ramosum on Eucalyptus regnans/obliqua Photo S. Lloyd

The Search for the Golden Fagus (Part 1)

Paul Edwards

When the autumn weather
turns the leaves to flame …
September Song: Kurt Weill & Max Anderson

Introduction

Increasing numbers of tourists and residents venture into Tasmania's national parks after Anzac Day (25 April) each year in search of the golden Fagus, the spectacular annual show of autumn colours by the endemic deciduous southern beech, *Nothofagus gunnii*. I joined the search last year in Cradle Mt. National Park, and again this year in Mt Field National Park. Those expeditions aroused my interest in the Fagus and led me to write this two part article. In Part 2 (next issue) I sketch some of the basic physics and chemistry underlying the Turning of the Fagus – no longer the sole province of dedicated bushwalkers and fellow members of the Australian Plant Society and field naturalist clubs.

Digital images of the autumnal Fagus are now legion, greatly extending the photographic lexicon pioneered by Olegas Truchanas and Peter Dombrovskis. Tourist operators and native plant nurseries actively market the Fagus and this year marked an inaugural Fagus Festival with a (somewhat premature) dinner on April 26 at Mt Field NP to celebrate The Turning. What is it about this scraggy little bonsai-candidate shrub, otherwise known as "tanglefoot", that appears to be raising it to the status of a Tasmanian icon?

Part of the answer lies of course in its uniqueness. It is Tasmania's, although not Australia's, sole native deciduous tree, despite an enthusiastic assertion to that effect on the web by Tourism Tasmania. Fagus communities provide unexpected exotic splashes of yellow, orange and (occasionally) red amidst the browns and greens of the eastern-facing slopes around the alpine lakes, tarns and in the sheltered gullies of the Tasmanian highlands in late April and early May.

Early Fagus colours, Robert Tarn (western shore), Tarn Shelf, Mt. Field NP, 27 April 2014.

N. gunnii belongs to an ancient genus. The fossil evidence shows that *Nothofagus* species populated the temperate Antarctic forests of the Cretaceous period, 80 mya (million years ago) when the planet was wetter and warmer, the concentration of atmospheric CO_2 was over 1000 ppm (2.5 times the 2014 level) and Antarctic temperatures must have been at least 10 degrees hotter.

The geographic distribution of the 34 extant members of *Nothofagus*, widely dispersed as they are over Australasia, Oceania and South America, is believed to define the ancient super continent Gondwana in the Cretaceous, and led historically to the original Gondwana hypothesis. The Fagus is one of four members of the ancient *Fuscospora* subgenus and its closest relative is actually *N. alessandrii*, a native of Chile. South America separated from Antarctica and Australia at the beginning of the Oligocene era, about 45 mya, and Australia and Tasmania rafted away with their consignment of *Nothofagus* species and other Gondwana plants (K. Corbett, 2001).

Early *Nothofagus gunnii* foliage, Robert Tarn, Tarn Shelf, Mt Field National Park, 27 April 2014.

Late Fagus colours, Robert Tarn (western shore), Tarn Shelf, Mt Field NP, 10 May 2014 (Photo: M.Ziegeler).

The comparative rarity of the species is undoubtedly a major factor in the rise of "Fagusmania". Stands of the slow-growing, fire-sensitive shrub are estimated to have a total area now of no more than 100 square km, much less than its more prolific relative, the myrtle beech, *N. cunninghamii*.

The Turning

According to the Tasmanian Parks & Wildlife (TPSW) websites:

> *"as days shorten, chlorophyll starts to break down and another pigment called anthocyanin takes over. It is this pigment which gives autumn leaves their colour."*

However, current thinking has moved on and it is doubtful whether the ubiquitous anti-oxidant anthocyanin plant pigments play any significant part in the normal turning of the Fagus. Rather, it is the carotenoid pigments, the yellow xanthophylls and orange carotenes that gild the autumn Fagus leaves by absorbing light at the blue end of the spectrum, masked earlier in the season by the green chlorophylls.

Although the TPWS websites maintain that *"the deciduous beech turns a spectacular range of autumn colours, from rust red through to brilliant gold"*, this seems to be the exception rather than the rule. The yellow colours of late autumn, presumably due to the carotenoids unmasked by the departing chlorophylls, usually give way to the brown tannins of dead foliage, not the striking anthocyanin-based reds of the northern hemisphere maples and oaks. The claim that anthocyanin gives autumn leaves their colour therefore seems unlikely if northern hemisphere deciduous leaf chemistry (US National Arboretum) is any guide. Actually it is well known that in the northern hemisphere the most brilliant reds generally follow cool, sunny, and dry autumn weather. Interestingly, the Patagonian and Chilean deciduous relatives, *N. antarctica*, and *N. alpina*, normally display intense red autumn foliage, unlike *N. gunnii*. (D. Ziegeler, 2014)

Yellow, gold, red & purple pigments in the Fagus. Innes Falls, Cradle Mt. National Park.

Plant pigments lend their colours to fungi and to the flowers, fruit, roots, bark, stems and foliage of a wide variety of plants, sending signals to pollinators, seed dispersers and predators. Although not synthesised by animals, they also serve important communication functions when consumed and displayed by birds and animals, and are evidently vital components of the natural world.

Of course tanglefoot foliage is not the only splash of autumn colour in the Tasmanian highlands. The trunks of the Tasmanian snow gum *E. coccifera*, and the alpine yellow gum *E. subcrenulata* (right), like the mainland snow gum *E. pauciflora* on the NSW cross country ski fields, also display striking carotenoid yellow and (probably) anthocyanin red colours like those found in Fagus leaves.

To return to the present: in summary, as the daily input of solar energy to their foliage declines at the end of summer, deciduous trees like the Fagus prepare for winter by closing down normal photosynthetic production and shedding their leaves. As they do so, they display a range of brilliant yellow, orange, and (occasionally) red colours. Although the benefit to the trees, of these swan-song colour changes is somewhat unclear, the basic physics and chemistry is now well understood and makes an interesting story which I shall outline in the second part of this article.

Alpine yellow gum (*E. subcrenulata*) trunk colours. Lake Lilla, Cradle Mt. NP, 26/04/2013.

Acknowledgements

My thanks to Noel & Karen Manning (LFNC); to Keith and Sib Corbett (Australian Plant Society Tas. Hobart group) for expeditionary hospitality; and to David and Melissa Ziegeler for enlightening botanical and bio-geographical guidance.

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http://dennisharding.com.au/large-format-film

A Subterranean Liverwort

Tom Thekathyil Photographs by Phil Collier

In May 2014 CNFN president, Phil Collier, discovered what appeared to be liverwort sporophytes growing out of newly burnt sedgy heathland and sent images to a couple of contacts for their opinion. He stated that they

> *'are crowded threads that are embedded about 10 mm into the ground otherwise I might be tempted to think they are fertile parts of a liverwort. These have persisted for several days now in large patches in recently burnt ground'.*

I stared at the images for some time and could not imagine any locally known liverwort to exhibit this behaviour and decided it was worth making a trip to the site to observe the phenomena at first hand.

Several days later I called at the property and sure enough there were masses of 'threads' in strong contrast to the burnt ground. My initial opinion was that this was some form of fungus. Patches of ground up to 300 mm across were near white with the 'threads'. I collected a couple of soil cores and took them home for closer study.

Under the microscope it was obvious that the sporophytes were those of a liverwort but with notable differences from what I have been accustomed to:

a) Sporophytes seemed to persist over several days while in other leafy liverworts they dehisce and collapse in a matter of hours. This was Collier's observation as well as mine of the sample we collected and potted up - setae (stalk) had not collapsed several days later and capsules had not 'opened'. This may account for the density of sporophytes on the ground - they comprise of several days growth.

b) Capsules do not dihisce by splitting open into quadrants and releasing all the spores/elaters. Rather they appear to have a pair of slits at the side which open to release spores,

Newly burnt sedgy heathland at Rubicon Sanctuary with the white 'threads' of the liverwort.

Spores are released through a pair of vertical slits at the sides of the capsules.

much in the same way as the moss *Andreaea*. I speculate this could go on for days depending upon weather conditions. A wet capsule placed under the dissector microscope looked intact when placed on the slide but within 10 minutes slits had opened on both sides and elaters and spores were being ejected over several minutes.

Examination of underground parts showed club-like vertical growth with sporophytes emanating from the top. I was able to remove part of the gynoecial bracts (guard leaves protecting the female organ) which were heavily toothed. The cells seemed to contain oil bodies, capsule walls had the typical pattern, and both spores and elaters were typical of liverworts.

As far as I knew there are only two subterranean liverworts, *Cryptothallus mirabilis* from western Europe and *C. hirsutus* from Costa Rica. This could be a new species.

I posted a note on Bryonet (a listserver for bryophyte enthusiasts) about my observation and provided some images. A few hours later it was suggested that this was probably the marsupia (underground female organ) and sporophytes of *Lethocolea pansa* where the sterile gametophyte dies back each year. In this case they had been burnt to the ground.

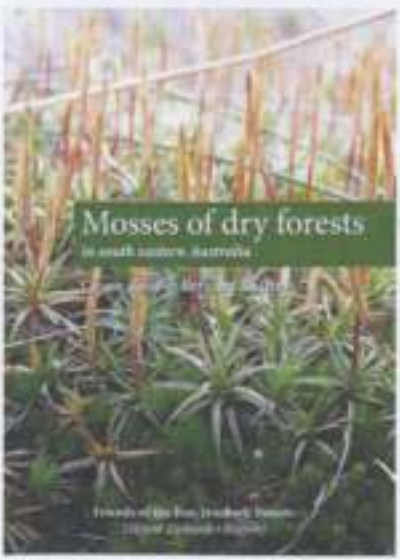
L. pansa is unusual in that fruiting is rare and no herbarium seems to hold fruiting material. Not surprisingly there were several requests for specimens.

This called for a second trip to the site and this time I took a closer look at the unburnt ground nearby. There were pale patches (obviously dead from heat of fire and bleached) that turned out to be *Goebelobryum unguiculatum*, the fruiting of which is not as rare as *L. pansa*.

Cleaning the soil cores yielded numerous marsupia as well as fragments of vegetative grow, all of which were toothed and belonged to *G. unguiculatum*.

This proved to be a major disappointment - from what I thought was an extremely rare *Cryptothallus*, to a rather rare fruiting *Lethocolea*, to the more common *Goebelobryum*. However it provided an opportunity to record an event that most people would never see.

This article is on the disjunctnaturalist website illustrated with Toni's micrographs.



Mosses of dry forests in south eastern Australia by Cassia Read and Bernard Slattery. Friends of the Box-ironbark forests (Mount Alexander Region) (2014) PO Box 322 Castlemaine 3450. rrp $10 + $2 postage.

This small book describes the ecological roles of mosses, their life cycle, structure and important identifying features.

The mosses depicted are *'eye-catching species that may have a feature distinctive enough to be identified without the need for a high power microscope'*. Each species has a drawing of a leaf and 3 or 4 photographs illustrating capsules, green or desiccated leaves and growth habit:

> *Here's a glimpse of this little known part of the plant kingdom. Written for students and absolute beginners, it's technically accurate but free of technical language.And it's generously illustrated.* (From the back cover)

Fungi season

Sarah Lloyd

On May 4 2014 a large contingent of field naturalists converged on 'Feathertop', the Lower Barrington property of Philip Milner, to join in the fungal survey conducted by Dr Genevieve Gates and Dr David Ratkowsky.

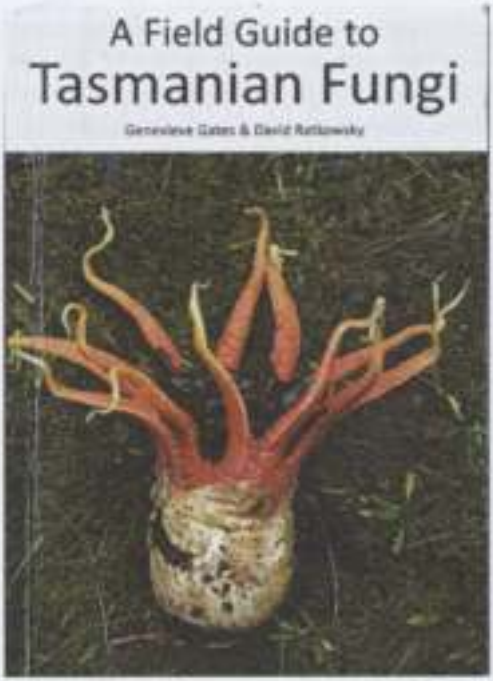
Philip's property encompasses a beautiful garden of native plants, open grassy areas and a steep gully in the headwaters of the Don River. The gully has escaped recent disturbance and is dominated by magnificent giant ash (*Eucalyptus regnans*) with a mid storey of dogwood (*Pomaderris apetala*) and musk (*Olearia argophylla*). There is little ground layer vegetation but numerous scattered logs and other coarse woody debris.

It's easy to forget just how fortunate we are to have two of the country's leading mycologists in our midst. Genevieve and David are not only willing to travel to attend and lead fungal forays just about anywhere, but they have just produced an extremely informative field guide.

A Field Guide to Tasmanian Fungi is a long awaited resource based on over 1000 fungal forays made by the authors. Many surveys were undertaken during Genevieve's work on the fungi associated with coarse woody debris for her PhD thesis. It was this group that seemed to be most abundant during our foray at Lower Barrington.

Some of us made an attempt to identify species from the new book ourselves, but mostly we handed them to the authors who were invariably able to identify the species we found. By the end of the day a list of 45 fungal species was compiled.

A Field Guide to Tasmanian Fungi begins with introductory paragraphs describing fungi and their life modes. It continues with an outline of the features to look for when identifying fungi (spore colour, presence or absence of veils, gill structure and attachment etc) and keys to the



genera of gilled fungi in Tasmania based firstly on spore colour. A table that summarises the key features of the major genera of gilled fungi found in Tasmania is also included.

The majority of the book is devoted to species descriptions arranged in alphabetical order by genera. The main features of the genera are outlined at the start of each section with additional information such as Gondwanan origin, taxonomic status etc. The species descriptions including size, colour, odour (if any) and the habitat where it is likely to be encountered. Each species has a photograph and diagram indicating the month or months when it is likely to be seen. The photographs are excellent and those of Michael Pilkington are outstanding, indeed they are works of art.

The authors use the latest published names and indicate where species have been incorrectly named in other field guides. For those species

Curry punk. *Piptoporus australiensis* on very old bryophyte-covered log.

Shaggy-capped fungus, *Inocybe meridionalis* growing amongst moss on the ground.

Tiny wasp on gilled fungus *Galerina hypnorum* growing amongst moss on a bryophyte-covered log.

Hypholoma fasciculare var. *armeniacum* on a bryophyte-covered log.

not yet scientifically described and named, as is still the case for hundreds of species in Australia, the authors give their 'tag name', i.e. a name they have used in the field to describe frequently seen species. The tag names describe a feature of the fungus (e.g. *Amanita* 'marzipan' refers to a strong odour of almond essence; *Cortinarius* 'green gills' is self explanatory) and is a good idea for one's own field work.

Back at home I flicked through the pages and was immediately able to put a name to a few species I'd been unable to identify. The next day came the big test - how useful is the book as a field guide? It certainly passed test number one: it fits into a jacket pocket.

The first fungus I encountered was a tall species not far from the house. It could have been either a *Mycena* or an *Entoloma* so I collected the specimen and took a spore print. The white spores indicated *Mycena* and my specimen resembled the photo of *M. marangania* and the litter habitat was the same.

I then found two species that looked similar to the *Mycena* but with the salmon-pink gills characteristic of *Entoloma* spp. This Genus is well represented in the book as Genevieve also has to her credit a monograph covering the Entolomataceae family.

I bypassed a few *Cortinarius* species (of which there are many) on the way to the swamp and noticed a pure white fungus. Just as I was checking the book and trying to decide if it was a *Leucoagaricus* or white *Lepiota* some slime moulds caught my eye. Stalked white sporangia of *Didymium squamulosum* had developed on moss, the dead and live leaves of cutting grass (*Gahnia grandis*), and a blackwood (*Acacia melanoxylon*) leaf. In one instance, a sporangia was sandwiched between two fruit bodies of *Torrendiella eucalypti*, a distinctive cup fungus that grows only on blackwood leaves.

After using the book to identify *Peziza thozetii* growing near the clothes line, I headed down to the gully where I found a small *Stereum*,

Myxomycete Didymium squamulosum with cup fungus *Torrendiella eucalypti* on a blackwood leaf.

Cup fungus *Peziza thozetii* and gilled fungus *Coprocybe filaris* on buried wood in grassy area.

Myxomycete Comatricha sp. (with fungal filaments) on fertile surface of *Stereum* sp. on dead stringybark.

S. ochraceoflavum, and numerous species of myxomycetes on a dead stringybark (*Eucalyptus obliqua*) that fell in early April.

At this stage I had to make a decision about whether to continue my test of the book's usefulness or to devote myself to collecting the abundant myxomycetes that were also in the field. I chose the latter course for several reasons: I know from previous experience that identifying fungi is no easy task no matter how many excellent field guides are at hand. It requires a lot more than simply flicking through the pages of a book. It takes time to collect the specimens and get spore prints, and a lot of space in the house. Furthermore, slime moulds are ephemeral, unpredictable organisms that need to be collected as soon as they mature for fear they will get washed away by rain or covered in white fungal filaments.

One can only imagine the countless hours that go into compiling a field guide of this nature. Decisions must be made about the species to include and what photographs best illustrate the species.

One of the things that I found confusing when I started my exploration of fungi about ten years ago was that most species change considerably as they mature. Some start an intense colour that slowly fades with age and some are covered in scales or spots that disappear after rain or as the fruit bodies mature. This is something that no one field guide could be expected to cover.

A Field Guide to Tasmanian Fungi is full of information that should allow users to identify many common and not so common species. It is published by the Tasmanian Field Naturalists Club and is available from their website and bookshops.

We sincerely thank Philip Milner for allowing us to visit his property and Genevieve and David for compiling the species list from Lower Barrington – and for producing this excellent guide.

Fungi and myxomycetes at Lower Barrington May 4 2014

Armillaria novaezelandiae
Bisporella citrina
Bjerkandera adusta
Calocera guepinioides
Clitopilus lateritius
Collybia eucalyptorum
Coprinellus disseminatus
Crepidotus nephrodes
Crepidotus variabilis
Datronia brunneoleuca
Gloeoporus taxicola
Gymnopilus austropicreus
Junghuhnia rhinocephala
Laccaria sp.
Lasiosphaeria ovina
Lentinellus pulvinulus
Lepiota 'blue'
Lepiota 'carmine brown'
Leucogloea compressa
Leucoprinus sp.
Marasmiellus affixus
Mycena austrofilopes
Mycena cystidiosa
Mycena interrupta
Mycena kuurkacea
Mycena mulawaestris
Mycena nargan
Mycena roseoflava
Mycena subgalericulata
Mycena vinacea
Mycena viscidocruenta
Mycoacia subceracea
Omphalotus nidiformis
Oudemansiella gigaspora
Phellinus wahlbergii
Psathyrella echinata
Pseudohydnum gelatinosum
Psilocybe hepatochrous
Resupinatus subapplicatus
Rickenella fibula
Scleroderma cepa
Skeletocutis nivea
Stereum ostrea
Tremella fuciformis

Myxomycetes

Ceratiomyxa fruticulosa
Lycogala epidendrum
Stemonitis sp.
Trichia verrucosa
Trichia sp.

Platypus Health and Conservation Research in the Inglis River Catchment – update

James Macgregor

I have previously written articles for the Natural News about my platypus health and conservation research in the Inglis River Catchment in northwest Tasmania which has been kindly supported by the Central North Field Naturalists. The fieldwork for the project has been completed and I am now putting the results together. I am planning to update the Natural News on the findings as different parts of the analysis are completed and they are accepted for publication in peer-reviewed journals. The first paper that we have written relates to the development of a novel method of monitoring wild platypuses (Macgregor et al., in press). The aim of this part of the project was to develop a platypus monitoring technique that didn't rely on repeated capture of animals or the application of relatively large tracking devices, that was relatively non labour-intensive and that could be used in the long term.

As I have described in my last article for the Natural News, platypuses that have been

Flat panel and tunnel antennas in place in small creeks.

captured during the fieldwork have been individually identified with a microchip before release (a routine procedure in many platypus and other wildlife studies), and that we have monitored the movements of microchipped platypuses past certain sites in small creeks using in-stream antennas. We have used two different antenna types: a flat panel ~45 cm square that is placed on the creek floor for platypuses to move over, and a short 60 cm diameter tunnel that platypuses can move through. The flat panels are able to detect one type of microchip; the tunnel is able to detect two different types of microchip. Antennas were connected to a decoder on the creek bank, from which stored data could be downloaded periodically, and each whole system was powered by a solar panel. As a result, the systems continued to gather data even if unattended for days/weeks.

During the 13 month development phase of this part of the project, we recorded a total of 528 platypus movements (consisting of 18 individual platypuses) past nine fixed locations during 264 days of monitoring. Sites were monitored one or two times for durations of 8-39 days. We detected 13 of 18 (72%) platypuses captured at the nine monitoring sites within the previous 16 months. Two platypuses that had been captured at different sites were also detected. Importantly, three of seven (43%) platypuses microchipped at these sites 3-5 years previously were also detected, indicating the applicability of this technique for monitoring long-term survivorship. Behaviour patterns and frequency of detection varied between platypuses. Although we weren't able to rule out the possibility that at least some platypuses left the water to avoid the antennas on some or all of the occasions they passed them, we considered that the variation in detection frequency and pattern was likely to result from differing positions of the monitoring site within each platypus's home range.

During three monitoring periods when we

Platypus after release in the small creek where it had been captured (Photo: Helen Robertson).

placed two antennas in the same creek as each other and within 3 m of each other, we were able to determine the direction of platypuses and compared the performance of the units. This also allowed us to determine that individual antennas failed to detect platypuses on 7% of occasions and that on one occasion a platypus turned around after encountering a tunnel antenna. There was also evidence from the results of all the monitoring periods that on a small percentage of occasions, platypuses remained near the monitoring site for longer than expected, presumably investigating the antenna for a short time. However, statistical analysis showed no sign that the number of platypus detections decreased over time while the antenna was in place at each site, indicating that any effect on platypus behaviour was minimal.

This part of the project has shown that the use of in-stream antennas used at appropriate sites is an effective method of monitoring the movements and survivorship of wild platypuses. We hope that this will be an important tool for research into platypus ecology and for assessing the conservation impacts of the various threats platypus populations face.

Reference:

Macgregor JW, Holyoake C, Munks S, Connolly JH, Robertson ID, Fleming PA and Warren K (in press). Novel use of in-stream microchip readers to monitor wild platypuses. Pacific Conservation Biology.

This project is being performed with the generous financial assistance of the following organisations/grants: Central North Field Naturalists, Winifred Violet Scott Estate, Caring For Our Country Community Action Grant, Holsworth Wildlife Research Endowment, National Geographic Society, Cradle Coast Natural Resource Management, Tasmanian Alkaloids, Australian Geographic Society, Universities Federation for Animal Welfare, The Forestry Practices Authority, Weston Fernie Research Fund. Equipment for the project has also been provided by the Forest Practices Authority and the Department of Primary Industries, Parks, Water and the Environment. My supervisors are Dr KristinWarren, Prof Ian Robertson, Dr Carly Holyoake and Dr Trish Fleming at the School of Veterinary and Biomedical Sciences, Murdoch University, Western Australia, Dr Sarah Munks at School of Zoology, University of Tasmania/Forest Practices Authority, Hobart, and Joanne Connolly, School of Animal and Veterinary Sciences, Charles Sturt University, NSW. We also have formal collaborations with Assoc Prof Kathy Belov, Australian Wildlife Genomics Group, University of Sydney, and Dr Rebecca Lonsdale, Diagnostic Veterinary Imaging, Western Australia.

On June 1 2014 CNFN members braved the cold and wet and started to compile a list of fungi at the Bush Heritage Block at Liffey. Bush Heritage owns several blocks in the Liffey Valley and is collating information about the cultural, social and natural history of the area. CNFN will visit the area periodically and forward our observations.

Considering the weather we were pleased to list so many fungal species (p. 15) and I was delighted to collect the myxomycete *Elaeomyxa reticulospora*. More information on this 'very rare' species will be included in Issue #59. - S. Lloyd

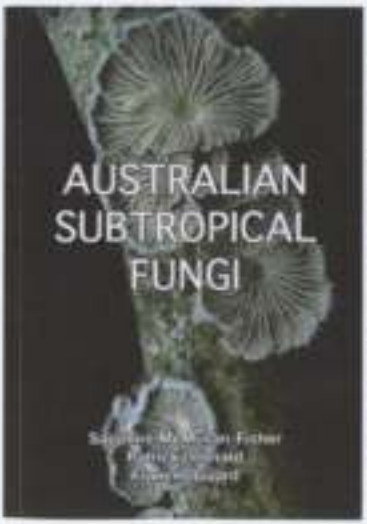
Elaeomyxa reticulospora

Fungi and myxomycetes recorded at Bush Heritage block, Liffey, June 1 2014

Agaricus sp.
Amanita ?grisella var. *luteolovelata*
Artomyces austropiperatus
Ascocoryne sarcoides
Barrya agaricola
Calocera guepinioides
Chlorociboria aeruginascens
Collybia eucalyptorum
Cortinarious 'violet & bulbous'
Cortinarius austroveneta
Cortinarius sp. (lilac stipe)
Cortinarius submagellanicus
Crepidotus nephrodes
Crepidotus sp.
Cytarria gunnii (not fruiting)
Entoloma ?porphyrescens
Entoloma discrepans
Entoloma melanophthalmum
Entoloma readii
Entoloma sp. (blue/black cap and stipe; creamy gills)
Entoloma sp. (beige cap, blue stipe)
Galerina muscorum
Ganoderma australe
Gleoporus taxicola
Gymnopilus sp.
Gymnopilus austropicreus
Gymnopilus ferruginosus
Heterotextus peziziformis
Hypholoma fasciculare var. *armeniacum*
Hypholoma fasciculare var. *fasciculare*
Hypocrea aff. *megalosulphurea*
Lactarius eucalypti
Leotia lubrica
Lepiota fuliginea
?Leucocoprinus 'white'
Marasmiellus affixus
Marasmius 'angina'
Marasmius crinis-equi
Marasmius sp.
Mucronella pendula
Mycena austrofilopes
Mycena carmeliana
Mycena cyctidina
Mycena epipterygia
Mycena interrupta
Mycena mulawaestris
Mycena subgalericulata
Mycena viscidocruenta
Nectria cinnabarina
Phellinus wahlbergii
Pycnoporus coccineus
Pluteus atromarginatus
Psathyrella echinata
Pseudohydnum gelatinosum
Psilocybe hepatochrous
Russula lenkunya
Russula persanguinea
Schizophyllum commune
Stereum ostrea
Stropharia semiglobata
Torendiella eucalypti
Trametes versicolor
Tricholoma aff terreum
Xerompholina leonina

Myxomycetes

Ceratiomyxa fruticulosa
Elaeomyxa reticulospora



Australian Subtropical Fungi by Sapphire McMullan-Fisher, Patrick Leonard and Frances Guard. Suncoast Fungi (2014), 160 pp ISBN 978 0 646 91552 4 (paperback). rrp $30

The introductory sections cover ecological roles, weeds, conservation etc. Each fungus featured has one or more photographs and descriptions of the fruiting body, substrate, habitat, frequency, notes about confusing species and etymology.

Although this book is about fungi from the subtropics, a surprising number of species (including the *Schizophyllum commune* depicted on the cover) are also found in Tasmania. And it is interesting to learn that Queensland is a hotspot for boletes, has a bizzare array of stinkhorns and has some beautifully coloured species that are never seen in Tasmania including a pink marasmius (*M. haematocephalus*) and a powdery blue *Entoloma* (*E. hochstetteri*).

Walks and other events

September 7 Tasmanian Arboretum 46 Old Tramway Rd, Eugenana. Meet at 10.00 at the carpark.

October 5 Birralee. Sue Gebicki's property. Meet at 10.00 at 369 Priestley's Rd/Lane, Birralee. Priestleys Rd/Ln links the Frankford H'way with Birralee Rd (B72). Sue's phone 63961348 Mob: 0400860651

November 2 Julie and Michael Serafin's property at 152 Echo Valley Road, Liena.
Meet at 10.00 outside the public toilets in the main street at Mole Creek where we will car pool before heading west. For late comers the directions are as follows: Head to King Solomon's Caves; go down the hill to Liena and cross the bridge over the Mersey River. Stay left heading up the Mersey valley and through the gate to the Hexagon Shack. There will be a notice on the gate.

December 7 AGM at John and Lynn Hayward's property at Hawleys' Rd. Weegena.
Meet at 10.00 for a walk followed by a BBQ lunch at 12.00 (bring food to share). The AGM will start at 1.30. As in previous years we will be voting on an audit exemption.

Hawley's Rd is the 2nd turn to the left after Kelly's Cage Rd. Jim will put tape at the turnoff and at the gate into the property (third turnoff to the right). Drive through the property until you come to the cabin. There is a toilet, running water, cutlery etc at the cabin.

January 4 Vale of Belvoir Meet at 10.00 on Cradle Mountain Road about 100 m south of the junction with the "Link Road", now called Belvoir Road. There is a Telstra shed on the left hand side with places to pull off the road. The Tasmanian Land Conservancy may seek our help with some survey work and we will see some of the highlights of this magnificent sub-alpine valley. Any walking is off-track in open grassland/sedgeland.

February 1 February Plains Meet at O'Neils Picnic Ground, Gowrie Park (clearly marked on the Mt Roland side of Claude Rd, with toilets) at 9.00 am where we will pool transport. A 4 km return walk (with 200 m gentle climb) to the edge of February Plains and the recently restored Basil Steers trappers hut at 1050 m. This is west of the Mersey River and south of Borradaile Plains. The road is steep in places but OK for a 2WD with care.

October 23-26 Bruny Island Bird Festival http://www.bien.org.au/

Friday November 7 – Sunday November 9 2014 Federation Gathering hosted by the Burnie Field Naturalist Club.
Friday evening meal at Two Oaks Café; talk by David Cooper about Wynyard area geology. **Saturday** excursions to geological sites e.g. Table Cape, Fossil Bluff and Doctors Rocks, or to either Rocky Cape or Fernglade—depending on the orchids. Dinner at Seabrook Hotel. **Sunday** Drive to Margaret Kinsey's famous garden of Australian native plants. BYO lunch.
Accommodation options include the Beachside Caravan Park (Somerset) or nearby motels. Please notify the Burnie FN (bekayee@gmail.com) if you plan to attend the Friday evening meal & talk.

Please accept our apologies for the red lines on the newsletter. The printer will be serviced when several strong people are around to get it into the car to take to Launceston - and the track dries out.

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