



AUSTRALIA'S FUNGI MAPPING SCHEME

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Coordinator's report

Sapphire McMullan-Fisher

You may have noticed some changes to Fungimap recently. In April, Fungimap Committee member Lyn Allison, with the assistance of Susanna Duffy, updated our entire website which had been ailing since 2016. I hope you are enjoying the new look and finding the new content in the form of posts a good way to stay in touch with us. We are also highlighting this new content by linking to it in our monthly eNews. Members are automatically joined up to the eNews, but we are happy to have anyone else join too.

The other big change is that we have a new President. Roz Hart has taken over from Tom May who has been in that position since 2005. In this Newsletter, Roz introduces herself and her hopes for Fungimap. I am sure we will all miss Tom in the role, but we are delighted he will still be involved as part of the ID team and be able to focus on working with Pam Catcheside and Sarah Lloyd in finishing the long-awaited second edition of Fungi Down Under.

As ever, with not-for-profit groups like Fungimap, there is a dedicated team who keep us moving towards our goals of:

- Stimulating and supporting the study of Australian macrofungi through the accumulation, storage, analysis and dissemination of information.
- Linking and bringing together those with an interest in Australian macrofungi, providing opportunities for sharing and learning; and fostering relationships between groups and individuals that share the objectives of Fungimap.
- Promoting the appreciation of fungi, with a focus on Australian macrofungi in the natural environment.
- Fostering the conservation of Australian macrofungi.

Our management committee members are: Roz Hart, Jasmin Packer, Sara Romberg, Paul George, and Lyn Allison. Our current committee is short of one member, so if you have time to help, please contact Roz.

In July, the “Fungimap Office” Volunteers and other Fungimap Volunteers who live in Melbourne had a get-together with a walk around the gardens and a delicious shared lunch on the day that both “Gardens & Fungimap” volunteers came in to do their Royal Botanic Gardens Victoria training. As July is usually a good time to spot fungi in Melbourne, we had hoped to find some, but alas, the cold, dry winds more typical of spring arrived early and all we saw was the Scarlet Bracket Fungus (*Pycnoporus*), three times.

Fungimap started collecting data in the mid 1990’s and the Fungimap database has evolved, with verified records are now shared with the Atlas of Living Australia (ALA). We know that one potentially sensitive topic with our recorders is the issue of privacy, but on the other hand it can be frustrating wondering who made a particularly interesting record. As Coordinator, I sometimes get emails from enthusiasts who think we are just being difficult in providing the “Fungimap recorder number”, but not sharing who our recorders are.

Personally, I am pleased that Fungimap has continued to protect my privacy because observational data is “not just a name”, but a place and a time showing where I was and if all the data is considered the frequency and timing of places I visit. So in this modern era of electronic data I register with applications like Biocollect and iNaturalist using a less obvious user name.

For Fungimap, the default setting for each recorder is that your name is not attached to records your submit when these records are provided to external data sets (only the recorder number is provided). However, if you would like to choose to reveal your name when Fungimap records are made public, such as through the Atlas of Living Australia, please email fungimapids@gmail.com and we’ll change the default setting. If you ever want to find out your recorder number, contact us via the same email and we will let you know the number.

Contacting Fungimap

Fungimap Incorporated

Royal Botanic Gardens Victoria
 ABN 28 290 974 280
 Private Bag 2000
 South Yarra VIC 3141
 Telephone: +61 3 9252 2374
 Fax: +61 3 9252 2413
 Email: info@fungimap.org.au
 Website: www.fungimap.org.au

Fungimap Committee

President
 Roz Hart

Vice President
 Jasmin Packer

Secretary
 Paul George

Treasurer
 Sara Romberg

Committee Member
 Lyn Allison



Fungimap Office Volunteers below Guilfoyle’s Volcano July 2018: Ema, Caine, Graham and Wendy (L-R) (Image: SJM McMullan-Fisher).

President's Report

Roz Hart Aug 2018

What an amazing fungi season it's been! Much variety and lots of them. After a slow start, winter finally arrived with plenty of rain on the west coast here in WA. It's an exciting time for Fungimap too. At our AGM in May 2018, our inaugural and long-serving President, Dr Tom May handed over the role of Fungimap President, now it's time to introduce myself as your new Fungimap President. There will have to be some changes, as I live in Perth, Western Australia, and Jasmin Packer, the Vice President, is based in Adelaide. What better way could we demonstrate that we are truly an Australia-wide organisation?

I've been intrigued by, and interested in, fungi as long as I can remember. I was intrigued with fungi we came across when searching for caves in the wet SW WA Boranup forest as a University student many years ago and I have friends from that time with whom I still share my fungi passion. I'm a microbiologist, trained at UWA and I taught Microbiology there for several years before becoming an environmental consultant specialising in surveys for dieback (*Phytophthora*). My many and varied interests include Permaculture, edible bush food, bushwalking, caving, and dogs. I've been President of the WA Naturalists' Club, and have a special interest in our junior members. I worked as Community education officer with the Perth Urban Bushland Fungi Project at the WA Herbarium for 8 years. I'm currently a volunteer Kings Park Guide, teaching my fellow guides about Fungi and their importance in the environment.

I intend that as a national group, Fungimap (Inc.) will continue to connect those of us who value and appreciate fungi, providing us with opportunities for field and educational experiences that we might otherwise not have access to. I intend encouraging more regional fungi-based events for those with limited access to fungi experts. Victoria and Queensland are now the only states which employ mycologists, while here in the west, with government cutbacks to Science, we are in the awful position of having no State mycologists anymore.

I joined Fungimap in 1999, after hearing about this exciting new 'fungimapping' organisation from Katie Syme in Denmark and Alan Notley in Perth. I attended the first Fungimap Conference in Denmark, Western Australia in 2001, organised by Katrina Syme, and her committee. Katie was then Fungimap

coordinator for W.A. This set the model for the 7 wonderful biennial conferences that followed. In 2001 fungi enthusiasts in WA were inspired to form the Fungi Study Group within the WA Naturalists Club Group, which organises many great fungi trips, workshops and forays. Due to these conferences I am very fortunate to have Fungimap friends all over Australia.

I have been on the Fungimap Committee since 2014 as Vice President. I have participated in several Fungimap strategic planning days and have greatly valued the interactions Fungimap has provided. Participating from WA has given me what I trust will be a helpful and different perspective. Being on the other side of the country, WA Fungimap members miss the inspiring Fungimap conferences which Fungimap no longer has the resources to organise. There is some good news, however. Last year, Fungimap received a grant from the Victorian Government Biodiversity On-ground Action program, for the project 'Putting Victoria's fungal biodiversity on the map'. This project aims to raise awareness of the importance of fungi across that state, and look for 'lost fungi' which are likely rare, and threatened fungi about which there is little known.

Fungimap wishes to continue to encourage regional groups to hold their own activities and will help with organisation, posters, brochures and mycological expertise. This model has successfully worked for a couple of years with groups in South Australia and, most recently, in south-west WA. We hope that by working with environmental groups around the country, we can continue our aim of educating people about the importance of fungi.

Fungimap continues to: compile and verify records from across Australia, provide monthly e-news and will bring out Fungimap Newsletter 59 before the end of 2018. Following the success of Fungi Down Under, we are well down the path to producing a second edition of Fungi Down Under 2 (FDU2) which we intend to publish in 2019. Relieving Tom of his presidential duties will allow him time to concentrate on producing FDU2 with Pam Catcheside and Sarah Lloyd.

Committee member Lyn Allison has done a great job this year setting up our new website and making it much more user-friendly. See <https://fungimap.org.au>.

I intend that Fungimap will continue to raise awareness of Fungi in government circles and advocate for

inclusion of Fungi in Biodiversity planning at all levels of government and land management.

Conceived by mycologist Tom May, Fungimap has grown from a small group in Victoria into a national organisation. Tom was Convenor and then President, since Fungimap's inception in 1996. I thank Tom for his inspiration and commitment over all those years. I trust that by working together, Fungimap can continue with a shared vision to support everyone to be advocates for fungi. In an era of fast-changing technology, as an organisation we need to adapt to constantly altering circumstances.

I invite you to contact me to discuss your ideas and suggestions as to how Fungimap can work with you in your local area to help raise awareness of fungi.



Roz Hart on Three Capes walk in Tasmania with Fungus and pack (Image: Gail Taylor).

Farewell from Tom May

When I had the idea of mapping some species of Australian fungi back in 1995, I thought that a mapping scheme would run for a few years, focussing on a small number of species. One thing led to another, and here we are today with Fungimap an incorporated, national NGO for Australian fungi, that has published a successful field guide (Fungi Down Under) to 100 target species for mapping, about to be expanded to 200 species, and accumulated more than 100,000 observational records of fungi. More surprising than this, for me, was the way that the initial idea of a mapping scheme connected people around Australia with an interest in fungi. Fungimap provided opportunities for networking and learning, through the Newsletter

and the Fungimap Conferences and other events. It has been very satisfying for me to support and enhance these connections through my roles as Convenor of Fungimap (1996-2005), and as President of Fungimap Inc. since incorporation in 2005.

Since the mid 1990s, I've been fortunate to have a stable position at Royal Botanic Gardens Victoria, with scope to work on a wide range of projects connected with fungi. This has led me in some interesting directions, but like many mycologists, the variety of projects does mean that life can be quite busy at times. Over recent years, I have taken on increasing responsibility for fungal nomenclature, including as Secretary of the Nomenclature Committee for Fungi and a member of the Editorial Committee for the International Code of Nomenclature for algae, fungi, and plants. After more than 20 years at the helm of Fungimap it makes sense to step down now, to give more time for other pursuits, and importantly to allow for new blood and ideas on the Fungimap committee. That is why I did not renominate as President at the AGM earlier this year.

My organization RBG Victoria has been very supportive of Fungimap across the last two decades, and will be continuing that support through hosting the national office of Fungimap Inc. Personally, I'll continue active involvement with Fungimap, especially focussing on the next edition of Fungi Down Under and ensuring regular updates from the Fungimap database to the Atlas of Living Australia. I'm also keeping up my weekly session with Graham Patterson, checking incoming records the 'Fungimap ID team', among which there is always something interesting.

I wish Roz Hart and the current Fungimap committee (Lyn Allison, Paul George, Jasmin Packer and Sara Romberg) and Fungimap Co-ordinator Sapphire McMullan-Fisher all the best for tackling the challenge of financial sustainability for Fungimap and taking the organization into new directions.

I've made lifelong friendships among 'fungimappers', and there are many people who have provided support to me and to Fungimap, too numerous to mention all individually here (but see in particular the list of Regional Co-ordinators, Committee members, Fungimap Coordinators and office staff in Fungimap Newsletter 50). However, I'd particularly like to thank everyone who has

sent in records; it was the flow of records, and the connections between recorders, that made Fungimap a viable idea in the first place.

Tom May, Immediate Past President of Fungimap – Thank you

Pam Catchaside

Tom recently stepped down as President of Fungimap after over twenty years. I am sure that I speak for Fungimappers everywhere when I say a huge thank you to Tom for all he has done to put fungi on the map of Australia. Of course, Tom has done far more than this, he has brought together a community of people who may have had little knowledge of fungi and who are now joined by their interest, love and passion for the fungal kingdom.

I am going to be self-indulgent and reminisce about Tom and Fungimap. Apologies for my errors, omissions and people I have left out.

I first met Tom in September 1996 at the inaugural meeting of the Australasian Mycological Society (AMS) in Melbourne. I had long had an interest in mycology and I found it thrilling that there was to be a society dedicated to fungi in Australia. Moreover, there was to be a field trip to Marysville in Victoria immediately after the meeting and of course I applied to join. The group of fourteen at Marysville included Tom and his partner Sara Maroske, Ian Pascoe, Bettye Rees, Katie Syme, Gretna Weste, David (Catchaside) and me and New Zealanders Peter Johnston, Peter Buchanan, Peter Austwick and Eric McKenzie. Going out into the bush with people who were excited about seeing fungi and having the fungi identified and explained was a joy. I could have been overwhelmed by the numbers of fungi we were finding, I wanted to know them all but Tom advised that it was better to get to know and research five species and then go on to others – reassuring and sensible advice that I try to pass on to others. Tom explained his vision that Fungimap would help in mapping Australia's fungi. I and the others were hooked and I returned to Adelaide, ready to look for and send in records of the target species. Fungimap had started with a modest eight species which, by early 1997, was expanded to fifty and by 1999 another fifty species were added bringing the total to 100 species.

Fungimappers, as we became known, were kept in touch by the Fungimap Newsletter. This was edited by John Julian who also acted as administrator for Fungimap. Those who sent in records were acknowledged, thanked and encouraged - as they continue to be. All too often the efforts of enthusiastic volunteers, though they may be appreciated, are not always acknowledged and I think this is part of the philosophy that Tom has engendered which makes Fungimap such a viable and productive society.

Our next excursion in 1997 was a joint Field Naturalists Club of Victoria/Fungimap trip to Mount Buffalo National Park in the Australian Alps. The mission was to follow in the footsteps of Baron Ferdinand von Mueller, later director of the Royal Botanic Gardens, Melbourne and carry out a survey that was the first since 1853 to collect fungi in a systematic way from Mount Buffalo. There were 18 of us and it was a truly marvellous experience to be with fungal enthusiasts. As always, Tom pointed out and identified fungi, explaining the roles that each played and sharing anecdotes about them.

Later in 1997 the Australasian Mycological Society held its conference in Adelaide. One excursion was to a site that David and I had recognised as being of significant fungal interest, Deep Creek Conservation Park. Very ambitiously I volunteered to be the list-keeper. After the foray I did as much research as I could to find the correct spelling of the names. *Steccherinum ochraceum* had me totally flummoxed but Tom gently and kindly corrected, amongst other errors, my *Steckerrinum*. I also remember Tom's finding *Nothojafnea cryptotricha* and showing me the inconspicuous hairs on the outer receptacle of the red-brown cup. Perhaps it was then that my enthusiasm for cup and disc fungi started.

Tom's encouragement gave me confidence to spend more time amongst the fungi. I think we all feel that if we are alone in trying to know and understand a difficult group of organisms such as the fungi, we do need help and Tom has always given me this whenever I have asked. He has never made me feel inadequate or criticised my often clumsy efforts. But I am just one person he has encouraged. He is unstinting in giving his time and expertise.

Even after the Marysville excursion in 1996 I felt I could go back to my Year 11 Biology students and pass on what knowledge I had gleaned. As I went on further trips with Tom, my enthusiasm for fungi grew and my students became perhaps not equally enthusiastic but certainly looked out for fungi and

brought them to me, designating me a 'Fun Guy', my first experience of that joke. Tom epitomes for me the ripple effect of a stone thrown into a pool. I have always looked upon him as my fungal mentor.

That role became more obvious when, in 1998, I went to a workshop run by Tom and Bruce Fuhrer in Bairnsdale, Victoria. That workshop cemented my future amongst the fungi. The school where I had been teaching closed at the end of the year, giving me the freedom to pursue the fungi. Tom always encouraged, answered questions but never forced anything. I think that is one of the strengths of Fungimap: people are encouraged, all contributions are welcomed but we are never made to feel we should do more if we are unable to do so.

By 1999 Fungimap was thriving and Tom decided that it was time to expand beyond the Melbourne headquarters and appoint Regional Co-ordinators. I was thrilled to be asked by Tom to be the Regional Co-ordinator for South Australia, along with Katrina Syme for Western Australia, Bettye Rees for New South Wales, Heino Lepp in the ACT and David Ratkowsky for Tasmania.

John Julian and Pat Grey had been dealing with the increasing workload resulting from the success of Fungimap. In 2000 Katy Sommerville took over as the first Fungimap Co-ordinator. In April 2000 we had a get-together in Mount Field National Park, Tasmania, with Tom, Katy, Regional Co-ordinators and others.

We didn't really know each other well and Tom had suggested that each of us should choose a fungus and act it out for the others to guess its identity. The ice was well and truly broken when Bettye Rees brought out one long red and two round white balloons to demonstrate *Phallus rubicundus*. Since and before then there has been a relaxed joyousness about Fungimap events, with Tom just being there in a comfortable way.

In 2002 it was my pleasure that we had another get-together, this time in Adelaide and, apart from planning, we visited Deep Creek again, Belair National Park and Kuitpo Forest. Each time, Tom's phenomenal knowledge was such a huge advantage. I would not have recognised *Leucopaxillus lilacinus*, the first time this species had been recorded in South Australia.

Later, in 2008, with Tom's encouragement I organised surveys on Kangaroo Island. A group

of twelve Fungimappers from all over Australia gave their time and expertise to help with the documentation of the island's fungi.

Then there were the Fungimap conferences, the first in 2001 in Denmark, WA. This was a wonderful affair, organised superbly by Katie Syme which demonstrated the confident, vibrant society that, under Tom's guidance, Fungimap had become.

Further Fungimap conferences followed: Rawson, Victoria in 2003, Gowrie Park in Tasmania in 2005, Natural Bridge, Queensland in 2007, Wallerawang, New South Wales in 2009, Denmark, WA in 2011, Rawson, Victoria in 2013, Batemans Bay, NSW in 2015. Each conference was a huge success, not only because we all learnt so much from the talks, forays and discussions but because of the camaraderie that the Fungimap network engendered.

In between conferences there were surveys in Tasmania: to the Tarkine in 2005 (sponsored by Australian Geographic), 2006, 2012 and 2013 and to the Blue Tier region in 2010. There was the Queensland Fungi Festival in 2015. But the success of Fungimap has led to problems. Under its influence, regional groups and societies have grown up and now there is at least one in each State. Running conferences and events in this huge continent is expensive and requires much organisation. Tom has passed the baton on to others and it is up to all of us who care about the traditions and ethos of Fungimap to continue with his vision for the fungi of Australia.

While writing this, I have become more and more aware of how much Tom has done for and with Fungimap. He is Senior Mycologist at Royal Botanic Gardens Victoria, a role with numerous and often arduous other duties. Tom's vision has brought together professionals and amateurs to further develop the knowledge and understanding of Australia's rich mycota. He has truly put Australian fungi on the map.

Thank you Tom.



Tom May and Pam Catcheside at Rawson Fungimap II in 2003 (Image: David Catcheside).



Tom May at Fungimap IV in 2007 (Image: David Catcheside).

Please don't pick your ears!

Brian Clauss

Originally named by Linnaeus for its resemblance to scoops for earwax removal, *Auriscalpium* the ear pick fungus genus, is a spined fungus closely related to *Hericium* (Lion's Mane) and *Gloiodon*. In fact, *Gloiodon* is so closely related to *Auriscalpium* that phylogenetic reconstruction sometimes puts them on the same branch; suggesting that the genera may in fact be one and the same. *Auriscalpium* is a combination of the Latin, *auris*, "ear"; and *scalpo*, "I scratch", generally meaning ear pick. The type species of *Auriscalpium* is *Auriscalpium vulgare*, a European member of the genus that grows from the cones of pine trees with other members growing from fallen wood of *Acacia*, other tree litter, or

from sandy soils. The climates of these fungi are spread over a range from warm to temperate, and are generally fairly wet. While there are fewer than a dozen members of the genus *Auriscalpium*, they are found all over the world. Three of these species have been observed in Australia: *Auriscalpium* sp. 'Blackwood', *A. umbella*, and *A. barbatum*. Though these are the only three species that have been observed in Australia, it's likely that more species have yet to be described due to the small and non-descript nature of the fungus. The presence of the genus across a wide variation of climates, and the vast amount of fungi yet undescribed mean that it's also likely that more members of the genus from other parts of the world are also awaiting description.

Most members of the genus are little brown mushrooms that only reach a height of a few centimetres tall, causing them to easily blend in with the rest of the litter on the forest floor. Once the mushroom is in hand one of its most distinguishing features is readily noticeable, rather than gills the fungus has spines as its spore bearing structures! These spines, or teeth as they are sometimes called, are soft conical projections from the underside of the pileus that are extensions of the context but which are wrapped in hymenial tissue. Often confused with members of the genus *Hydnum*, *Auriscalpium* has ornamented spores and is often much darker in colour. Another feature that sets some species of *Auriscalpium* apart is their dimitic tissue, meaning that some tissues of the mushroom (usually the cap context) are composed of normal generative hyphae as well as thick walled skeletal hyphae. These skeletal hyphae can make some members of the genus stiff to touch. Despite their similar macroscopic appearance, *Hydnum* and *Auriscalpium* are known to be but distantly related. In fact, the gilled genus *Lentinellus* and several coral fungi are more closely related to *Auriscalpium*.

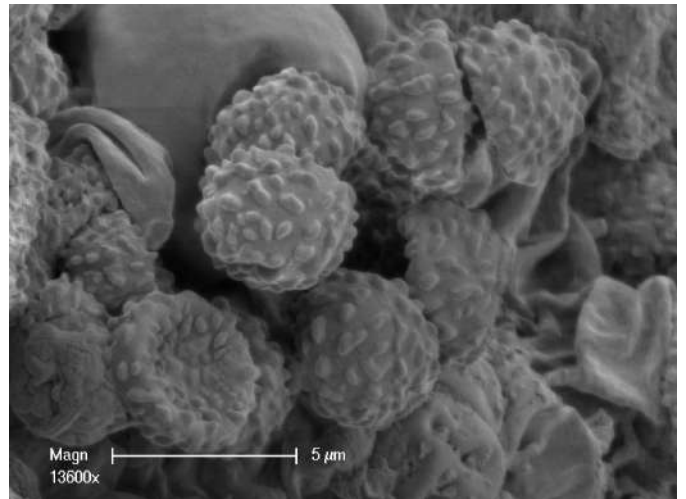
The members of *Auriscalpium* are all remarkably similar to each other. Microscopic characters within the genus are often overlapping or only distinguishable by measurements as small as a single micron. Often the only microscopic factor that is distinguishably different between species is the presence or absence of dimitic tissue. Macroscopically, the species are much more distinct but there is still some significant overlap between them, suggesting that molecular work will be a key factor of further species delineation. At the moment, molecular data are only available for a handful of the taxa within the genus. With DNA

sequences from all species, the genus could be better described and new species could be added more readily. Increased molecular data could also prove to be strong evidence for transfer of any currently described fungi that deserve combination into this genus. The soon to be described member of the genus, currently known by the field name *Auriscalpium* sp. 'Blackwood', will be nominated for protection under the Victorian Flora and Fauna Guarantee Act. While at Royal Botanic Gardens Victoria as holder of a Jim Willis studentship, I worked with Dr. Tom May, Senior Mycologist at RBGV on a description of the new species. This description was a result of combined morphological and molecular analyses.

Auriscalpium sp. 'Blackwood' is a suitable candidate for nomination under the *Flora and Fauna Guarantee Act* because of the extremely small range of the fungus, which has been found on only one tree in the world despite searches for it across the state for the last decade. The living *Eucalyptus* tree that serves as this mushroom's substrate hosts the fungus in its soft stringy bark, which the stipe of the fungus often grows directly out of. These searches were conducted by the Field Naturalists Club of Victoria (particularly Pat and Ed Grey) approximately a dozen times a year at various locations, not to mention the number of Field Naturalists that were put on high alert to be searching for the fungus. Because of this small range, changes to the Jack Cann reserve where the tree is located could prove disastrous for this fungus which may not occur anywhere else in the world. This threat to this species makes a strong case for its placement under legislative protection under the FFG in order to preserve Australia's fungal biodiversity. If you think you've spotted this fungus, get in contact with Fungimap to confirm and report it! Who knows, one day you may be responsible for the discovery of a mushroom that is entirely new to science.



Macro photos of *Auriscalpium* sp. 'Blackwood' taken on a FNCV foray (Image: Hubregste).



TIF SEM photo of spores with ornamentation.

Putting a Tea-tree finger on the pulse of fungi conservation

Angela Little

It has been exciting to see keen public interest in fungi arising over the last decades, as people embark on foraging missions in the search for edible mushrooms and engage with social media groups which promote and bring together fungi enthusiasts. Sadly, despite public interest, fungi are still seldom thought about in conservation and land management planning and research is greatly underfunded. Low funding and their cryptic nature put many fungi species at risk of vanishing. Tea-tree Fingers (TTF) is a species at threat of disappearing from our environment and prompt action is required

to assure its conservation and continuation. When asked if I would like to do my student placement at Fungimap on a taxonomy or conservation-based focus I jumped at the opportunity to contribute to the preservation and conservation of TTF.

Tea-tree Fingers (*Hypocreopsis amplexans*), be they rarer than other fungi species and/or at threat, are undeniably a vulnerable species. It is in fact the only macrofungus listed under the *Flora and Fauna Guarantee Act (Victoria)*. The species was first found in New Zealand in 1983, and first discovered in Australia in 1992 at Nyora, with a further Australian population being found in New South Wales. There are only four known sites of TTF in Victoria. It is found growing on dead wood in heathy woodland thickets on a handful of host tree species, in areas which have had no recent fire events.

TTF are myco-parasites, meaning they are a fungus that lives on another fungus. Currently, one host fungi species is known, *Hymenochaete*, a decomposer fungus which appears on dead wood and looks like brown smears. This small paragraph of information essentially sums up the available knowledge of TTF, not much is it?

I have been working with Sapphire McMullan-Fisher to study the fungus in earnest and to gather new data and incorporate old data to better understand this species. The main way we are investigating TTF is through photo-monitoring. This is done by taking photos of TTF fruit bodies and tagging them as we find them. Repeated annual visits and further photo taking will allow us to track growth rates over time. DNA sampling is also being used so we can find out information such as whether fruit bodies are genetically related and the nature of the relationship between TTF and host fungi species.

In February 2018, Sapphire and I hit the Victorian bush to conduct some field surveys in search of TTF, with the aid of Fungimap volunteers. We visited areas where TTF had been previously recorded, hoping to add to photo records, find new fruit bodies and discover something, anything, new about the species. Committed volunteers hunted high, but mostly low (Tea-tree Fingers tend to occur on fallen branches sitting on or near to the ground) (Fig. 1). The surveys proved to be a “goldilocks and the three bear’s moment”:

- The first site Greens Bush was too dry, and for all our looking no TTF were found;

- The second site Nyora was too wet as we were blocked from getting to the site by a creek and couldn’t access the area where TTF had been sighted;

- Eureka!! The third site, Grantville, was just right!



Fig. 1. Day one of Tea-tree Fingers field surveys at Greens Bush, on the Mornington Peninsula. L-R: Roz Hart, Sapphire McMullan-Fisher, Angela Little, John Eichler, Gidja Walker (Image: SJM McMullan-Fisher).

At Grantville, we located a previously recorded fruit body with a new fruit body growing beside it (Fig. 2). Further fossicking at the site by a determined volunteer uncovered another specimen growing nearby! It was exciting to find that one of the fruit bodies was growing on *Hymenochaete* (Fig.3). We got some fantastic images for our photo-monitoring (Fig 4) and DNA samples of both TTF and *Hymenochaete*. We hope to discover that TTF aren’t solely reliant on just one host and that there are more species it lives on as this would increase chances of survival.



Fig. 2. Left: An older fruit body found at Grantville. Right: A fresh fruit body found at Grantville (Images: John Eichler).



Fig. 3. Left: Fungimap volunteer Angela Little recording data. Right: Dedicated Fungimap volunteer John Eichler gets up close and personal with these rare little beauties at Grantville (Images: SJM McMullan-Fisher).



Figure 4. Now you see it, now you don't: an example of the benefits of tracking fruit bodies by photo monitoring Left: July 2017. Right: August 2017 (Images: John Eichler).

Hints and clues to the ecology of TTF continue to reveal themselves as we look and study them more. Educational material circulated by Fungimap in 2016, lead to the discovery of a further thriving population of TTF being found by the Field Naturalists of Victoria Fungi Groups ongoing surveys in 2017. This population wasn't found near the bay like previous populations but inland, telling us that the species are not reliant on being near to the coast.

Photo-monitoring of Tea-tree Fingers has shown that the fruit bodies are being eaten by something (Fig 5). This observation gives us new questions to ponder, such as:

- Is this a method of spore dispersal?
- Is there absence of another food source in the ecosystem?
- What species is eating it?

With three extant populations and armed with new information we are closer to better understanding this cryptic fungus. The answering of questions

has led us to more questions, as good science does. There is a lot of work to be done in the future to discover Tea-tree Fingers life history and interactions with its environment, including further DNA sampling and laboratory analysis, physical observation and investigation into what has been eating the fungus. We also hope to learn more about host fungi species and relationships and both their optimal habitat conditions. Tea-tree Fingers is still elusive, but knowing that it is out there somewhere and using the few clues we have so far, this unravelling mystery is a most worthwhile cause.



Figure 5. An example of a TTF fruit-body which is being eaten by something (Image: SJM McMullan-Fisher).

Failure can be fun

Mark Learmonth

(A similar article was published in Park Watch no. 267)

The Gurdies Nature Conservation Reserve is a small reserve (about 260 hectares) of open woodlands, with a rich understorey of mostly Tea-tree (*Leptospermum*), paperbark (*Melaleuca*), and lots of orchids and fungi. The environment is a mixture of sandy loam and slightly swampy streamside thickets. It is not far from Grantville along the Bass Highway to Phillip Island.

“Tea-tree Fingers” (TTF) is a very scarce fungal species, having only been found in Victoria in a few locations: Greens Bush (Mornington Peninsula), Grantville Nature Conservation Reserve and Nyora. I heard about it in 2015 from Tom May of Fungimap - while I was planning a Victorian National Parks Association (VNPA) walk to The Gurdies - and so

I was on the lookout for this rare and very unusual looking (to my untrained eyes) species.

After the 2015 trips a small group of us decided to try to really look for this fungus “properly” armed with cameras and GPS equipment, vegetation maps and survey forms from Fungimap and so on. Although several of us were registered with “collection permits” we had no intention to collect anything, except photographically.

In 2016, we had two enjoyable days wandering through this reserve, in August and September, both prime months for fungi. On the second foray we also were joined by Graham, a volunteer from Fungimap, to share his expertise and increase our chances. He has actually seen TTF at Nyora. Thanks to the rest of the team - Carol, Di, Elspeth, Jenny, Jill, John (our GPS guru) and Rosemary - who all went eagle-eyed into the areas we chose to search.

What did we find? As you may know, TTF is very rare and is very fussy about where it lives. It prefers dead Tea-tree or paperbarks, but prefers the branches to be above the ground. It also wants a “substrate” fungus to associate with, and likes a slightly damp environment as is found near the creeks in The Gurdies. In fact, we thought that The Gurdies has lots of this (and similar) habitat and being close Grantville and Nyora, so we think it should be here.

What didn't we find? Well, the truth is that we did not find any Tea-tree Fingers! However the days were most enjoyable, even if we were not successful, so we are not for giving up.

We have been down there again over the last little while and on both occasions we had a lovely walk (the Gurdies is really a special place). There were tantalizing fungi all over the place, including attached to Tea-tree and Melaleuca plants. It really has a rich fungal fauna. However, no Tea-tree Fingers did we find. The first walk was on 3 May as a preview and the second was a VNPA walk on 9 June. There are a couple of viewpoints along the walk where I am pretty certain we can actually see Grantville NCR, which does have them I believe. Even the wind seems to be blowing in the right direction, but no luck! One day ...

Gurdies NCR is an underrated reserve with lots of orchids, lots of small birds, some great views and is even accessible by public transport. Thanks again to all who helped in our ongoing quest.



Looks worth exploring! (Image: Mark Learmonth)



We will need a GPS location to find this spot again! (Image: Mark Learmonth)



Tea-tree Fingers (*Hypocreopsis amplexens*) is about the size of a 50 cent coin (Image: SJM McMullan-Fisher).

Funding for *Amanita* taxonomy

Dr Elaine Davison

The Western Australian Naturalists' Club Inc. and Lotterywest have approved a two year grant of \$20,000 for 'Improving local knowledge of *Amanita* mushrooms in Western Australia'. The money will be used for molecular sequencing, with the work to be done at Curtin University. This is wonderful news and will build on work that has been underway in Western Australia (WA) for the past 10 years.

The aim of the project is to improve the knowledge of local *Amanita* species by describing new species, preparing better descriptions of named species and making this information available to mycologists and educators through publications, websites including FloraBase, and a Lucid key. This information underpins studies of the biodiversity and functioning of local ecosystems, because amanitas are important mycorrhizal symbionts of many woody plants.

The molecular work will target the ITS fungal bar code region, as well as the nuLSU (28S), rpb2, β -tubulin and ef1- α gene regions. The ITS region is usually useful in discriminating between species, whilst the other gene regions are valuable resolving deeper relationships within the genus.

Many Fungimap members will be familiar with amanitas, because they are large, conspicuous and common. The genus is easy to recognise in the field, but individual species are difficult to identify, often requiring microscopic characters to give confidence in species names. There is a key to Australian *Amanita* species by Reid (1980) and to eastern states species by Wood (1997). However, since these works appeared, new species have been described, revised etc., with much of this work being done in WA.

In addition to detailed microscopic observations, molecular sequencing is now required for new descriptions and to provide robust descriptions of already named species. This is the approach that I and my colleagues have taken. About 20 *Amanita* species have been described or revised in the past 10 years, with funding for sequencing provided from non-salaried grants from ABRS. However, reviewing collections held at the WA Herbarium, at least 30 species more await description.

These new descriptions will be made available through publications in the scientific press, through images on websites such as the Atlas of Living Australia (<https://www.ala.org.au>) and on the *Amanita* website (<http://www.amanitaceae.org>). Another initiative will be to prepare descriptions and distribution information for FloraBase (<https://florabase.dpaw.wa.gov.au>), a website run by the WA Herbarium that includes the correct name, images, description and distribution of plants and fungi within the state. The WA Herbarium aims to include fungi within FloraBase, however this is unlikely happen without appropriate resourcing; this *Amanita* project is a start.

Another outcome from this funding is further development of a multi-entry Lucid key for local amanitas which, when published, will make the identification of these species much easier for both amateur and professional mycologists, and could form the basis of an *Amanita* Lucid key for the whole of Australia.

These basic taxonomic studies are the foundation for further studies, whether these are surveys of the diversity of organisms that occur in WA, or a greater understanding of ecological function of local woodlands.

References

Reid DA (1980) A monograph of the Australian species of *Amanita* Pers. ex Hook. (Fungi). *Australian Journal of Botany*, Supplementary Series 8, 1–97.

Wood AE (1997) Studies in the genus *Amanita* (Agaricales) in Australia. *Australian Systematic Botany* 10, 723–854.



Amanita hiltonii a local species named by Reid after Roger Hilton, mycologist at the University of Western Australia. Since being described it has not been recorded again, however, examination of the type from Kew indicates that it is one of the commonest (and wrongly named as *A. ananiceps*) species in the jarrah forest. (Image: Elaine Davison)



Amanita wadjukiorum a recently described species from Kings Park, the most extensive bushland in the centre of Perth. This species is widespread in the Perth Metropolitan Region (Image: Elaine Davison).

Weird forms of mushrooms

Tom May

Among the numerous images submitted to Fungimap, there are sometimes quite weird forms. Here are two images that arrived recently. The first is an *Agaricus* where there is a perfectly formed sporing body (the term I now favour over fruit-body), with an additional area of lamellae around the normal area of lamellae. The second is a *Leucoagaricus* with one pileus fused across two sporing bodies, each with an individual stipe.

For the *Agaricus*, the extra section of lamellae is as if one sporing body has pushed up under another (but there is one stipe). From the top, there is one complete pileus. The tissue between the two sections of lamellae is pale with fine scales, like the surface of the edge of the pileus. The presence of small inverted areas of lamellae on the pileus (or pores in the case of boletes) is seen from time to time and sometimes there is a complete duplicated pileus upside down on the surface of the main pileus. These sorts of abnormal forms are called 'rosecomb'. However, the lamellae in 'rosecomb' grow away from the pileus surface (in the opposite direction to the normal lamellae), whereas here the normal and extra lamellae are all growing downwards.

For the fused pilei of *Leucoagaricus*, this fusion probably initiated at a very young stage. When more

mature sporing bodies of mushrooms encounter objects, such as blades of grass, they usually just push them aside. Mushroom sporing bodies expand quite rapidly from the young button to the mature sporing body and often at least some of the expansion of the sporing body is by enlargement of existing hyphal compartments (like blowing up a balloon, but through osmotic pressure rather than air pressure). When two mushrooms grow close together they push against each other rather than fusing. So, the fusion of the *Leucoagaricus* probably happened when two primordia (very young sporing bodies) were close together and there was an entanglement of the hyphae at this early stage. In contrast to fleshy mushrooms, tough polypores engulf blades of grass, because hyphae at the edge of the pileus are actively growing and dividing, albeit rather slowly, and at the microscopic level the hyphae just grow around the grass blade.



Unusual form of *Agaricus* with inner and outer sections of lamellae (L from above, R from below) (Images: Damon Jarrett).



Unusual form of *Leucoagaricus* with two fused pilei (Image: Ivan Margitta).

A mass fruiting of *Podaxis pistillaris* in WA

Katrina Syme

In September last year, on a (too hasty) road trip to the Pilbara region of Western Australia, I recorded as many fungi and lichens as I could find. On September 10th, between Lake Ballard and Menzies, two small fruiting bodies of the truffle-like *Agaricus endoptychum* were found not far from a small freshwater lake. The next evening, at a spot near the Great Central Highway, there were a few dried specimens of *Podaxis pistillaris* and a couple of days later, when we stopped to marvel at pools of spreading purple pea flowers *Kennedia prorepens*, I saw desiccated *Pisolithus*, *Pycnoporus coccineus* and a rock-hard, dried-up bolete. A day or so later on the Gunbarrel Highway a small group of *Tulostoma* and a solitary tiny puffball were found. It wasn't until we were heading towards Mt Augustus that I made the first record of *Psora decipiens* — a lichen that is common in the rangelands further south.

Homeward-bound more than a fortnight later, in station country near 'Wooleen' just north of Murchison, our friends in the lead vehicle called on the two way radio saying that there were fungi on either side of the road. Suddenly we came across them — *Podaxis pistillaris* for the next kilometre or so — dozens and dozens of them, thrusting through the soft red soil on the sides of the road. They were large, chunky and scaly. Because of their size I thought they might be *Phellorinia herculeana*, but one had matured and had split open revealing a charcoal-coloured mass of ripening spores. I just hadn't seen such fresh specimens before. *Phellorinia* have rusty brown spores and (as far as I can see from the pictures found on the web) the stem doesn't extend through to the top of the fruit body as it does in *Podaxis*. Incredibly, at the same time as we were busy taking our photos, Roz Hart was doing just the same at Mt Gibson to our east! I later learnt that rain had fallen only a week or two before, rendering roads to some of the nearby stations impassable.

How wonderful it would be to have access to this country and record many more of the fungi which emerge following these rare rainfall events.



***Podaxis pistillaris* near the Great Central Highway (Image: Katrina Syme).**



***Podaxis pistillaris* north of Murchison (Image: Katrina Syme).**

Book review: Leaf Litter by Rachel Tonkin (Angus & Robertson, Australia, 2006)

Tom May

The subtitle of this large format book is 'exploring the mysteries of the hidden world'. It was published in 2006, but I think it is worth noting as a very fine documentation of local natural history — and it includes fungi!

Fourteen painted panels about 45 x 33 cm show the same scene of tree base, shrubs, litter and soil; through the seasons and during day and night. There is magnificent detail in depictions of leaf litter and the underlying soil, full of tunnels, along with an array of fungi plus above and below-ground animals (including many invertebrates). Lift-up flaps hide plant roots, carcass-burying beetles, root-munching grubs, ant tunnels, and the underground chambers of mole crickets. From page to page, plants flower, produce fruit and drop seed. A horse-dropping fungus pushes up, only the marbled surface visible among the leaves; and across several pages, ends up as a powdery mass of spores. A *Cortinarius* is fresh in one painting, drying out in the next and several pages later has mouldy spots on the blackened pileus. This book is evidently the result of close attention to nature and natural interactions and cycles.

There is a list of numerous 'things to find', with common names for many of the species depicted, including detail such as 'bird's-nest fungi, with no eggs left inside' and 'spotted beetle eating pollen [with] special antennae ... for picking up scent signals from female beetles'. None of the fungi are identified beyond 'toadstool' or 'slime mould', but they are very accurately depicted and I could identify: *Gymnopilus junonius* (p. 2), *Oudemansiella gigaspora* group (p. 2), *Lichenomphalia chromacea* (p. 3), *Chlorophyllum brunneum* (p. 4), *Cortinarius austrovenetus* (p. 5), *Mycena kuurkacea* (p. 5), another *Mycena*, possibly *M. subvulgaris* (p. 6), *Leratiomyces ceres* (p. 9) and *Coprinellus micaceus* group (pp. 16-17). There are a dozen or so more fungi scattered through the pages.

This is a book for children, to play spotto and ask questions about the web of nature, but also for adults, to marvel at how much goes on in each patch of bush — especially when we get our eye in for the tiny things. It is wonderful to see such artistic accuracy in the depiction of Australian nature at this fine scale. The depiction of litter, with leaves in various stages of decay, insect-bites and fungi-

spots and all, reminds of the style of fungi artist Katie Syme in placing substrate such as leaf litter at the base of the fungi she depicts; detail that is often lacking in other paintings of fungi.

I heartily recommend this book as a window into the overlooked. The concluding lines are: 'Leaf litter is fragile and easily destroyed, but it is vital for our survival and for the future of our world. We need to learn to look after it.'



Illustration from Leaf Litter (Image: Rachel Tonkin).

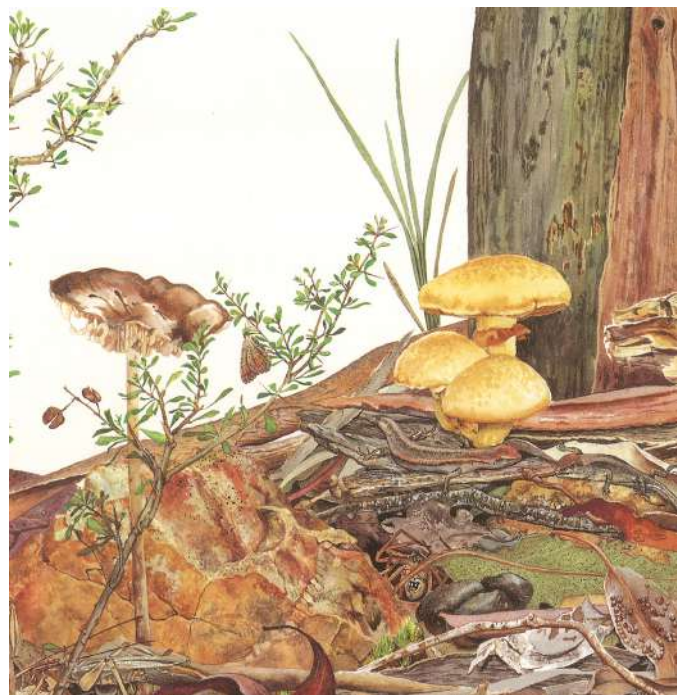


Illustration from Leaf Litter (Image: Rachel Tonkin).

Multicultural

Julie Brennan

I am fascinated by some of the amazing things that Nature has created for us to enjoy, this includes fungi. Their beauty and diversity excite me, as do the environments in which they grow. I started to collect images I found on Pinterest, with a view to using these as inspiration for my felt-making practice. Quite a large collection accumulated before an opportunity presented itself and I began creating.

I was invited to participate in a sculpture exhibition at the Eurobodalla Regional Botanic Gardens on the NSW south coast, 13-19 October 2017. It was titled *Up the Garden Path*. The theme was about connection to the landscape – which might relate to culture, identity, and metaphysics, amongst other things. My contribution was part of the indoor display.

Having studied microbiology at university many years ago, the word fungi was associated with culture in my mind, which led to the idea of calling my piece *Multicultural*. I would use the extraordinary variety of colour, shape and texture of these beautiful forms to make reference to the multicultural society in which we live. These felt forms were inspired by the fungi rather than being designed to be totally accurate representations (including scale). I'm claiming artist's licence.

The fantastic variety of the fungi I selected to work with presented me with some challenges. Problem solving is one of the parts of the creative process that I particularly enjoy, and over my eleven years of felt-making, I have accumulated lots of techniques to choose from. I have mainly used wool (commercially dyed wool tops) and silk fibre. Other materials and techniques were occasionally employed such as dipping the felt into dyed wax (for the ink cap), and knitting (for the veiled lady).

Some pieces needed wire (which was later inserted into dry florist foam) in order to stand, others have lead sinkers incorporated into their base to stabilise them. Diluted PVA was used in a couple of pieces to stiffen the silk skirts. There is also the occasional stitch and even a dab of craft glue.

For the chanterelle I used a shibori technique of gathering the felt with needle and thread. For the *Morchella rielana* I experimented with a drill, and

later a soldering iron (burned wool smells awful!), before settling upon good old pointy scissors and a barbed felting needle to create and finish shaping the holes.



A felted Chanterelle (Image: Julie Brennan).

For the spores on the stinkhorn varieties black acrylic paint (slightly diluted with water) was extruded through a syringe. This was much more controllable than applying hot wax with a tjanting (batik tool) as I had originally planned.



A felted Stinkhorn (Image: Julie Brennan).

Along this fascinating journey I discovered there are so many common names for a single species! I learned about which varieties are edible and about

the various ways of dispersing spores.

For the exhibition I created seventeen different species. They were displayed together in a shallow box made from decomposing timber and lined with 25 bricks of dry florist foam covered with soil and mosses and lichens.

I photographed them individually before completing the exhibit, as it was a better way of capturing the detail of each. After the exhibition I re-potted each into individual ceramic containers. They are currently for sale at various prices and displayed at the Artisans Nest, Bodalla. Enquiries welcome.



Felted fungi (Image: Julie Brennan).

<http://www.juliebrennanfelt.com>

Fungi

Cecily Falkingham

FUNGI

The stage is set
for the emergence
of a miracle

water oozes, trickles, gushes
a cornucopia
of colour

soil soaked, enriched
re-activates
its treasures

thrusting
from earth's
dark recesses

heaving its way
upwards
to salvation

lighting our way
to the joys
of Autumn

and a bright new day ...

ERRATA

Adelaide 2017 events corrected Acknowledgement:

Shanelle (Bush Classroom), Heather (Heather Whiting Coordinator of Vale Park Our Patch) and I (Rose Dow) were very inspired by Sapphire's 2016 visit to Upper Sturt where the seed was planted 12 months ago. We decided to apply for a grant, knowing we had support from The Adelaide Studies Fungal Group (ASFG) and other organisations interested in promoting Citizen Science (Discovery Circle). The Vale Park Our Patch team gave Heather and I some great advice, but really it was Heather's grant writing experience and her 20 year association with Vale Park Primary that resulted in us receiving a Natural Resources Mount Lofty Ranges and Adelaide through (NR MLRA) community grant (\$5000) to bring Sapphire back to SA. Steph Cole has been especially supportive and provided us with free resources for interested attendees at the Public Talk. Jasmin is also co-hosting and coordinating Sapphire's visit with the Murray Darling Basin team. She has generously provided Sapphire's accommodation in their bush retreat and has also been there to guide and encourage me.

Records

Photos: this is the number of photos retained by Fungimap

	Records	Photos			
Australia (by email)			Mary-lou Lew	1	2
Gina Barnett	1	1	Andi Mellis	5	5
Patrice Baxter	2	2	Claire Reemst	1	3
Jonas Bellchambers	1	3	Christine Rigg	7	8
Hilary Blackburn	1	1	QLD		
Wayne Boatwright	2	3	Fflur Collier	2	1
Kirsty Campbell	1	1	Diane Garvie	3	3
Matthew Cornish	1	1	Sue Higgins	1	1
Louis Delamoire	1	1	Rod Hobson	2	2
James Douch	9	9	Ray Palmer	9	11
Michelle Fox	1	1	Adam Richardt	1	3
Jan Gillett	3	3	Bethany Salter	1	2
Anne Jackson	1	1	Steph Taylor	1	2
Sam Jacobs	1	1	SA		
Vicki Jaeger	4	4	Adelaide Fungal Studies Group	99	0
Jenn Joy	1	1	Natural Resources SA Murray-Darling Basin		
John Kirby	1	1		1	2
Susan Kopittke	1	1	Brian Saunders	89	0
Peter Krisch	4	5	Liz Thompson	1	2
Jacqueline Landre	1	1	TAS		
Deirdre Lemerle	1	1	Alan Mills	1	0
Runa Lindblom	1	2	VIC		
Helen Macilwain	1	1	Robert Bender	1	1
Catherine Marciniak	3	1	David Cameron	1	1
Wayne Martin	27	42	Wendy Cook	62	0
Grace McConachy	1	1	John Eichler	73	13
Cath McGrath	11	1	Field Naturalists Club of Victoria	266	0
Merle McIntyre	1	2	Geelong Field Naturalists Club	7	0
Natalie Melna	1	2	Sally Green	8	0
Stephen Menzies Warroo	1	1	Joy Hick	2	2
Ken Monod	1	1	Eileen Laidlaw	86	105
Gayle Osborne	1	1	Ivan Margitta	149	3
Nellie Pavlica	3	6	Kate McClive	1	2
Barb Piercey	2	1	Malcolm McKinty	63	83
Pascale Pitot	1	2	Sapphire McMullan-Fisher	11	0
Marie Rancon	1	1	Helen Mill	1	2
Ben Revell	1	1	Martin O'Brien	1	1
Vanessa Ryan	143	195	Graham Patterson	35	5
Rod Seppelt	2	3	Win Pietsch	5	0
Warren Simmons	1	2	Alison Pouliot	4	2
Mary Suters	1	1	Nick Ritar	2	1
Louise Wealands	1	1	Neil Tucker	48	73
Thea Yates	1	2	Lenka Vanderboom	1	1
NSW			Torbjorn von Strokirch	26	28
Matt Allworth	1	1	WA		
Norm Clarke	7	6	Angie Bussell	1	2
Fiona Duggan	6	13	Elaine & Peter Davison	1	1
Tony Good	1	1	Geraldine Janicke	1	2
Barry Kemp	17	17	Peter Metcalfe	1	1
Lyndy Landers	2	2	Katrina Syme	128	0
			Dougal Wallace	1	1

Acknowledgements

Principal Sponsor

Royal Botanic Gardens Victoria provides significant in-kind assistance to Fungimap Inc. through hosting the Fungimap office at their Melbourne Gardens site and providing IT and administrative support for Fungimap staff and volunteers.



We greatly appreciate the substantial support from our regular donors Frances Guard, Blanche Higgins and Susan Nelles. Thanks to these and anonymous individuals and groups who made donations to Fungimap from March 2018 to September 2018: ANGAIR, Bev Robinson and Jenny Talbot, Dave and Lyn Munro, Eileen Collins, Elaine Davison, Lukah Dykes, Lyn Allison, Natasha Nicholls, Peter Mills, Tim Cannon and Valerie La May.

Sponsor a species

We are delighted that species have been sponsored by: Anna Povey, Faye Vyner, Frances La Fontaine, John and Janice Carpenter, Kay Proudley, Lyn Allison, Malcolm McKinty, Martin Rieger, Matthew Smith, Michelle Fox, Tiffany Harding, and Pamela Catcheside and the Adelaide Fungal Studies Group. If you would like to sponsor a species please check <https://fungimap.org.au/get-involved/sponsor-a-species/>. We recognise the great efforts of our volunteer team producing the second edition of Fungi Down Under: Pam Catcheside, Tom May and Sarah Lloyd.

Thanks to our project partners, volunteers and supporters. We thank Alison Pouliot for the donation of copies of the fold out brochures 'Fungi of the Box Ironbark Forests & Woodlands of Central Victoria,' Natural Resources SA Murray-Darling Basin for some of their 'Find our Fungi' booklets and Sarah Lloyd for her slime mould publications.

Adelaide events 2017 & 2018

For the Adelaide 2017 events, apologies for the omission from Fungimap Newsletter 58 of acknowledgement for the funding support from Natural Resources Mount Lofty Ranges and Adelaide (NR MLRA). Please see acknowledgement text box on Page 17.

For the fungal education events in the Adelaide Hills in June 2018, Fungimap appreciates these individuals and groups for their support: Jasmin Packer, Nicola Barnes, Kim Arnott, Renate Faast and the team at Natural Resources SA Murray-Darling Basin. We are also grateful to the Botanic Gardens & State Herbarium of South Australia for donating two boxes of 'Larger fungi of South Australia' by C.A. Grgurinovic and to Pam and David Catcheside who transported them from Adelaide to Melbourne.

Volunteers

We farewell our volunteer Luke Vaughan and welcome our new volunteers Meghna Bhatt, Jess Bamford, Caine Barlow, Ema Corro, and Jane Dennithorne. Thanks always to our regular volunteers: Wendy Cook, Graham Patterson, Ang Little and Katrina Syme. We are grateful for the efforts of our management committee: Roz Hart, Jasmin Packer, Sara Romberg, Paul George, and particularly Lyn Allison who updated our website.

This newsletter was edited and compiled by Katrina Syme, Ema Corro, Tom May, Sapphire McMullan-Fisher and Christina Hall.

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