



Barry Lingham, CC-BY-SA

Bruce Fuhrer ©

Lost fungi

Help us find our uncommon
Victorian fungi



SJM McMullan-Fisher CC-BY-SA



This project was funded with the support of
the Victorian Government and assisted by
Fungimap volunteers.

Contents

Fungi are important			2
Putting Victoria’s fungal biodiversity on the map			3
Lost fungi			4
Help us record our Lost fungi			7
Rich Survey Data Helps Conservation			8
Agarics		Corals	
<i>Amanita austroviridis</i> group	9	<i>Phaeoclavulina abietina</i>	31
<i>Arrhenia aff. chlorocyanea</i>	11	Pins	
<i>Asterophora mirabilis</i>	13	<i>Chlorovibrissea bicolor</i>	33
<i>Cortinarius metallicus</i>	15	Crusts	
<i>Cortinarius canarius</i>	17	<i>Hypocreopsis amplexans</i>	35
<i>Hygrocybe</i> sp. ‘Warrandyte JCR2’	19	Morels	
<i>Mycena roseoflava</i>	21	<i>Morchella esculenta</i>	37
Truffle-like Fungi		Lichens	
<i>Agaricus melanosporus</i>	23	Lost Lichens	29
Toothed fungi			
<i>Beenakia dacostae</i>	25		
<i>Auriscalpium</i> sp. ‘Blackwood’	27		
Polypores			
<i>Laccocephalum hartmannii</i>	29		
Please Take Care			41
Acknowledgements			42



McMullan-Fisher SJM 2019 Version 4 Lost fungi.
Fungimap CC-BY.

Fungi are important



Fungi are a megadiverse kingdom of the natural world, playing vital ecosystem roles as interconnected, symbiotic partners of plants, as food for animals and as nutrient recyclers. However:

- distribution data for Australian fungi is patchy
- just half of ~3000 of the known Victorian macrofungi species are formally described and only 3 are currently protected
- data collection events such as 'bioblitzes' rarely record fungi
- volunteer groups often lack the knowledge and tools to identify and report fungal observations



Photographers taking pictures of the rare Stemless Earpick (above, SJM McMullan-Fisher CC-BY-SA)

Putting Victoria's fungal biodiversity on the map

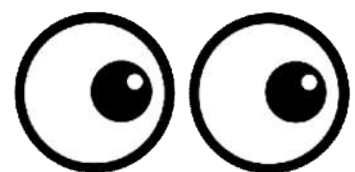
This project has several parts, including information about recognizable fungi. For more information on this part go to the project page <https://fungimap.org.au/cva-project/>

The 'Lost fungi' guide part of the project will address some of the shortcomings in our knowledge about the distribution of species understood to be rare and uncommon in Victoria. While providing assistance to local groups in recording and mapping these. The project covers all the Victorian Catchment Management regions.

Fungimap has compiled profiles for fifteen 'Lost Fungi', distilled from a larger list of likely rare and threatened fungi across our Victoria. The list was compiled from suggestions provided by from local mycologists and fungi groups and from data identified from Atlas of Living Australia. Included are the five fungal and three lichen species identified in the *Advisory list of rare or threatened 'plants' in Victoria – 2014*.

We have funding to profile the first fifteen of these likely rare and threatened fungi. Fungi are only now being considered as part of biodiversity conservation efforts so this list will likely grow and change as research continues.

In the long term, Fungimap hopes that all fungi across Australia will have their distribution mapped and any likely extinction threats formally assessed. Based on this information we hope that people will act to conserve their local fungi.



So keep looking for your local fungi.

Lost fungi



Big
Image

Some fungi naturally occur infrequently, or in low numbers or from only a single site or just a few. These uncommon fungi are at greater risk than common fungi. So to help conservation efforts we need to record both when they are seen but also when we have been to likely habitat or a known site where they have occurred in the past and record their absence.

Because our ‘Lost fungi’ are uncommon or rare we know less about these fungi because we have seen them less often. This also means we know less about their habitat, substrate preferences.

When you don’t see ‘Lost fungi’ in places that they have been found before, so called “Absence data” is important to record. Taking images when you are lucky enough to see these fungi is vital, please take habitat shots too.

The current list of the lost fungi by region follow on the next page.

For any fungi you think might be *Lost fungi* please use the Biocollect project ‘Seeking lost fungi Victoria’ at <https://biocollect.ala.org.au>

Alternatively you can send us **chatty emails or letters** with images and details of when and where you have been out looking for fungi and saw or did not see the list of our lost fungi list on our website.

Lost Agarics



Name	Other names	Glenelg Hopkins	Mallee	Wimmera	Corangamite	Goulburn Broken Port Phillip & Westernport	North Central	West Gippsland	East Gippsland	North East
<i>Amanita austroviridis</i> group	Green-gilled Amanita, including <i>Amanita chlorophylla</i>				Y			Y	Y	
<i>Arrhenia</i> aff. <i>chlorocyanea</i>	Blue-grey Navel	Y	Y		Y	Y				
<i>Asterophora mirabilis</i>	Grey Jockey, <i>Nyctalis mirabilis</i>				Y	Y		Y		
<i>Cortinarius canarius</i>	Canary Skinhead, <i>Dermocybe canaria</i>			?	Y	Y	Y			
<i>Cortinarius cramesinus</i>	Orange Skinhead, including <i>Cortinarius austrocinnabarinus</i> , <i>Dermocybe cramesina</i>				Y	Y	Y	?		
<i>Cortinarius perfoetens</i>	Stinking Rozites, <i>Rozites foetens</i>					Y	Y		Y	
<i>Cortinarius metallicus</i>	Steel-blue Rozites, <i>Rozites metallica</i>					Y	Y	Y	?	
<i>Cortinarius roseolilacinus</i>	Rosy Rozites, <i>Rozites roseolilacina</i>	Y		Y						
<i>Cortinarius symeae</i>	Symes' Rozites, <i>Rozites symeae</i>							Y	?	
<i>Entoloma austroroseum</i>	Rosy Pinkgill					Y				
<i>Hygrocybe saltorivula</i>	Jumping Creek Waxcap					Y				
<i>Hygrocybe</i> sp. 'Warrandyte JCR1'	Wombat Waxcap					Y				
<i>Hygrocybe</i> sp. B 'Warrandyte JCR2'	Warrandyte Waxcap					Y				
<i>Mycena leaiana</i> var. <i>australis</i>	Orange-gilled Bonnet				Y	Y	Y		Y	

<https://fungimap.org.au/cva-project/>

Compiled 1 Aug 2019

Lost Fungi



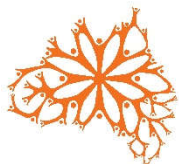
Name	Other names	Gleneig Hopkins	Mallee	Wimmera	Corangamite	Goulburn Broken Port Phillip & Westernport	North Central	West Gippsland	East Gippsland	North East
<i>Phaeoclavulina abietina</i>	Green-staining Coral, <i>Ramaria abietina</i>				Y	Y				
<i>Phaeoclavulina ochracea</i>	Delicate Coral, <i>Ramaria ochracea</i>				Y	Y				
<i>Chromocyphella muscicola</i>	Pale Moss-cap				Y	Y	?	Y		
<i>Laccocephalum hartmannii</i>	Chestnut Polypore		Y	Y	Y	Y	Y	Y	Y	
<i>Claustula fischeri</i>	Bunyip Egg									
<i>Auriscalpium</i> spp.	Ear Pick						Y			
<i>Auriscalpium</i> sp. 'Blackwood'	Stemless Earpick, 'Jack Cann', 'greyorum'					Y	Y			
<i>Beenakia dacostae</i>	Beenak Long Tooth				Y	Y		Y		
<i>Phellodon</i> spp.	Velvet Tooths							Y		
<i>Sarcodon</i> spp.	Flesh Tooths					Y				
<i>Sarcodon</i> sp. 'wombat'	Wombat Tooth					Y				
<i>Agaricus erythrosarx</i>	Blushing Arid Truffle						Y			
<i>Agaricus melanosporus</i>	Arid Darkspore Truffle, <i>Endoptychum melanosporum</i>						Y			
<i>Morchella esculenta</i>	Common Morel	Y		Y	Y	Y	Y	Y		
<i>Vibrissea dura</i>	Brown-headed Pin				Y	Y		Y	Y	
<i>Chlorovibrissea bicolor</i>	Two-tone Vibrissea				Y	Y		Y		
<i>Chlorovibrissea melanochlora</i>	Dark-green Pin				Y	Y		Y		
<i>Ionomidotis australis</i>	Hydra Cup, <i>Claussenomyces australis</i>				Y	Y		Y		
<i>Hypocreopsis amplexans</i>	Tea-tree Fingers, <i>Hypocreopsis</i> sp A., Claspings Hypocreopsis					Y		Y		

Help us record our *Lost fungi*

In this booklet we have covered seven Agarics, eight other fungi shapes and three Lichens.

There are a number of *Lost Fungi* that have not yet had their information compiled. We are interested in knowing of other likely rare and threatened Australian Fungi.

We hope that you will get to know and maybe recognise our *Lost Fungi*. Rare fungi could turn up anywhere in likely habitat, so keep your eyes open when you are out and about.



**Australian
Citizen Science
Association**

BioCollect
ADVANCED FIELD DATA COLLECTION



The Biocollect project takes data on the list of lost fungi see our website. Preliminary distributions by Victorian region are included on the website <https://fungimap.org.au/cva-project/>

You need to have registered with the Atlas of Living Australia (ALA) to add data to our project. Note the user name you choose is public so you may want to choose a “public” name. Once you are logged in go to **Search citizen science projects** and in the search box look for **Fungi**, then choose **Seeking lost fungi Victoria**.

Please read the **About** tab and click the green **Get Started** button. This should join you up and take you to the Surveys section where you can **Add a record**. There is useful information under **Resources** tab including this and the Tea-tree Fingers identification booklets.

Rich Survey Data Helps Conservation

We don't know much about the *Lost fungi*. So please record images and descriptions of the fungal fruiting bodies themselves, their substrate and any host organisms like plants or invertebrates and their environment.

- **Images are the basis for recording data**
 - Photo-monitoring is important
 - Habit images and notes help us understand context and change over time
- **Zero or absence data**
 - When you don't see 'Lost fungi' in places that they have been found before, so called "Absence data" is important to record. We hope you will record the lost fungi from your region that you don't see every fungi survey or at least from sites where they have been recorded before.
- And of course we always want you to share your **"found" sightings.**



Lost Fungi are rarely seen so please record what you can about them when you are lucky enough to see them.





Green-gilled Amanitas

Amanita austroviridis group

There are two named green spored and gilled Amanita in Australia *Amanita austroviridis* and *A. chlorophylla*, it is not yet known if these are the same or similar species.

Fruit-body Description¹: Pileus (Cap) Diameter to 90 mm or more; at first convex, then flat convex or centrally depressed; covered with pale olive-green velar remnants; margin appendiculate. Lamellae (Gills) Attachment adnexed, becoming free; closely spaced; colour deep olive-green; margins paler to almost white. Stipe (Stem) Central; generally up to 120 mm long and 20 mm thick; with fine fibrillose hairs and a bulbous base; colour off-white to pale green. Annulus fragile, membranous, often present as fragments; buff to pale green. Volva absent. Spore Print green.

Microscopic Features¹: Basidiospores 9–11 × 5–7 μm, elongate, smooth. Basidia four-spored, 45–55 × 11–15 μm, clavate. Clamp connections present.

Notes¹: This mycorrhizal basidiomycete; found growing singly or in small groups on sandy soils in coastal scrubland, usually in association with *Casuarina* trees.

References:

Bougher NL and Syme K 1998 Fungi of Southern Australia. University of Western Australia Press: Nedlands. p. 158

Grey P and Grey E 2005 Fungi down under: the Fungimap guide to Australian fungi. Fungimap: South Yarra, Victoria. p. 18

Hubregtse¹, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at <http://www.fncv.org.au/fungi-in-australia/>



Green-gilled Amanitas
(*Amanita austroviridis* group,
Barry Lingham)

Look alikes:

Green-gilled Parasol (*Chlorophyllum molybdites*, right Katrina Syme) is another large Agaric that has a green spore print but the gills are more a leaden, grey-green and stem is tall and skinny.



Blue-grey Navel *Arrhenia* aff. *chlorocyanea*

This small mushroom is blue-grey to pale grey, usually found in a moss or algal mat. This is most likely an un-named Australian species with similarity to the northern hemisphere Verdigris Navel (*A. chlorocyanea*), which is more often darker green-blue, thicker gills and usually more symmetrical.

Fruit-body Description: Cap 2-18 mm diam., irregularly infundibuliform to flat with a depressed center, margins upturned but often just inrolled, blue-grey to pale grey, dry, translucent striate across the cap, usually with an upturned cap margin and depressed centre in older specimens. Younger specimens tend to be flat with margins just upturned. Gills adnate to sub-decurrent, close, typically similar colour to cap but paler, with more short gills at margin. Stem central to eccentric 1-4 mm wide up to 15 mm tall, dry, smooth often with pale bloom at the base. White spore print.



Blue-grey Navel (*Arrhenia* aff. *chlorocyanea*, above John Eichler and below Eileen Laidlaw)

References:

iNaturalist 2019 Species pages for *Arrhenia chlorocyanea*. Accessed 11 april 2019

<https://www.inaturalist.org/taxa/354693-Arrhenia-chlorocyanea>

Encyclopaedia of Life 2019 Species pages for *Arrhenia chlorocyanea*. Accessed 11 april

2019 <https://eol.org/pages/191071>

Look alike:

Other grey to blue-grey gilled fungi like Waxcaps, *Lichenomphalias*, and *Omphalinas*. Entolomas have pink spore prints and are often larger. *Mycena interrupta* maybe recognised as this is on wood and has a basal disc. *Hygrocybe griseoramosa* also found in moss mats but has lilac tints rather than blue-grey.

Pixie's Parasol (*Mycena interrupta*,
Paul George)



Entoloma sp. (Paul George)



Fawny Blue (*Entoloma albidocoeruleum*, Paul George)



Grey Jockey

Asterophora mirabilis

This very small parasitic species has a silvery-grey to bone coloured cap and stem and light brown gills. Found in the cool temperate rainforests of Victoria and Tasmania. This is unusual as it lives on the remains of other fungi the Brittle Gills which are fungi that belong to the family Russulaceae, these old fruit bodies maybe blackened or almost gone, so can appear to be on the ground.

Fruit-body Description²: Cap diameter up to 30 mm; convex, broadly convex to almost plane; surface dry; colour brownish to greyish, covered in a flattened layer of fine silvery grey fibrils. Gills attachment adnate with decurrent tooth; moderately crowded; colour light brown. Stem central; generally up to 35 mm long and 3 mm thick; same colour as pileus; covered in a flattened longitudinal layer of fine silvery grey fibrils, often grows in caespitose colonies. Spore Print white.

Microscopic Features²: Basidiospores $5-6 \times 3-4 \mu\text{m}$, ellipsoidal, smooth. Basidia four-spored, $19-23 \times 5-7 \mu\text{m}$, clavate.

References:

¹*Grey P and Grey E 2005 Fungi down under: the Fungimap guide to Australian fungi. Fungimap: South Yarra, Victoria. p. 18

²*Hubregtse¹, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at

<http://www.fncv.org.au/fungi-in-australia/>

*Text adapted from references.



Grey Jockey (*Asterophora mirabilis*,

John Eichler)



Grey Jockey (*Asterophora mirabilis*, Torbjorn von Strokirch)

Look alikes:

The combination of characteristics make this dull coloured species recognisable, particularly the combination of small size, often clumped (caespitose) stems with fine distinctly longitudinal fibrils and the remains for the host fungus.





Steel-blue Rozites

Cortinarius metallicus

This large purple-grey, often slimy capped mushroom has a large distinctive ring and veil fragments on the cap which are unusual for this genus. Found in rainforest amongst leaf litter of Myrtle Beech (*Nothofagus cunninghamii*).

Fruit-body Description²: Cap diameter to 140 mm or more; initially convex or parabolic, with age expanding to plane with a broad umbo, margin translucent striate, eroded, becoming radially wrinkled with age; surface smooth, glutinous, sometimes with patches (remnants of the universal veil); colour initially uniformly bluish grey; with age fading to pale grey and central region becoming tan to yellowish brown; brown colour then expanding towards the margin; markedly hygrophanous. Gills attachment adnexed with small decurrent tooth; crowded; colour at first cream with a slight greenish tinge, gradually becoming tan as spores mature. Stem central; generally up to 150 mm long and 15 mm thick; stout, swollen towards the base, has white mycelium at the base; surface dry, shiny, has longitudinal fibrils; colour white, stains brownish. Annulus white, smooth to striate, membranous, becoming rust-brown as it collects spores. Spore Print brown.

Microscopic Features²: Basidiospores 9.5–12 × 7.5–8.5 µm, broad ellipsoidal (almond-shaped), coarsely ornamented, warty. Basidia four-spored, 32–41 × 10–14 µm, clavate. Clamp connections present.

References:

¹* Grey P and Grey E 2005 Fungi down under: the Fungimap guide to Australian fungi. Fungimap: South Yarra, Victoria. p. 18

²* Hubregtse¹, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at <http://www.fncv.org.au/fungi-in-australia/>

*Text adapted from references.



Steel-blue Rozites (*Cortinarius metallicus*, David Catchside)

Look alikes:

There are many slimy purple-grey *Cortinarius* including *Cortinarius rotundisporus* but these have smaller wispy rings called a cortina. The Rozites group have the larger more distinctive ring.



Elegant Blue Webcap (*Cortinarius rotundisporus*, Paul George)





Yellow Skinhead

Cortinarius canarius

Cortinarius canarius is readily identified by its bright yellow colour, stout and dry fruit-body. Found in wet forests and rainforests and mycorrhizal partners are likely to be Eucalypts and *Nothofagus* spp.

Fruit-body Description¹: Cap diameter to 60 mm or more; when young hemispherical becoming convex, centre broadly umbonate; surface dry, minutely to coarsely fibrillose; colour bright yellow. Chemical test application of KOH solution produces a red to red-brown colour reaction. Gills attachment sharply adnexed, sometimes with a decurrent tooth; crowded; colour at first golden yellow, becoming yellow-brown as spores mature. Stem Central; generally up to 80 mm long and 30 mm thick; stout, slightly bulbous with root-like base; surface dry, smooth; colour yellow. Cortina membranous to thick, cobweb-like, yellow, leaving an annulus or collapsing to 1 to 3 robust fibrillose zones towards the base of the stipe; usually stained yellow-brown from spore deposit. Spore Print brown.

Microscopic Features¹: Basidiospores $7.5\text{--}8.5 \times 4\text{--}5 \mu\text{m}$, ovoid, minutely rough with projections at apex. Basidia four-spored, $20\text{--}35 \times 6\text{--}8 \mu\text{m}$, clavate. Clamp connections present.

References:

¹*Hubregtse¹, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at <http://www.fncv.org.au/fungi-in-australia/>

*Text adapted from references.



Yellow Skinhead (*Cortinarius canarius*, Geoff Lay)

Lookalikes

Another bright yellow species is *Cortinarius sinapicolor* (Malcom McKinty below right), this has sticky cap and stem. There are other dry and brown or dull that may have bright gills, or cap or stem like *Cortinarius clelandii* (TimmiT, below left).





Warrandyte Waxcap

Hygrocybe sp. 'Warrandyte JCR2'

This conical orange Waxcap is found amongst moss mats in Burgan thickets along the upper Yarra river. Only known from this area so far. With a slightly sticky cap and stem, young specimens that have a fluffy yellow stem covering are most recognisable.

Fruit-body Description¹: Pileus 10–20 mm diam., obtusely conical to conical, smooth or very finely squamulose in dry conditions, dry, bright scarlet, fading a little with age; margin even to subcrenulate and striate, yellowish. Lamellae broadly adnate, often with a decurrent tooth, thick, distant, buff-pink; margins even, concolorous. Stipe 30–40 × 3–4 mm, cylindrical, smooth, with a fine yellowish-pruinose layer ±covering the stipe surface, becoming more scattered and flocculose with maturity, dry, hollow, orange-yellow but sometimes pink-tinted.

Microscopic Features¹: Basidiospores ellipsoidal to obovoid or subcylindrical, 8.5–9.7–11.0 × 5.0–5.7–6.0 μm, hyaline; subcylindrical spores occasionally with small but distinct constrictions. Cheilocystidia and Pleurocystidia absent. Hymenophoral trama regular, consisting of cylindrical and inflated moniliform elements 30–100 × 5–27 μm, thin-walled, hyaline; oleiferous hyphae sometimes present, highly refractive, branching, often contorted, 4.0–8.5 μm diam.; clamp connections present. Pileipellis a cutis of cylindrical but somewhat inflated hyphae 3–9 μm diam., thin-walled, hyaline, sometimes weakly gelatinised; oleiferous hyphae; clamp connections present. Stipitipellis a cutis of cylindrical hyphae 2.5–5.0 μm diam., thin-walled, hyaline; clamp connections present. Caulocystidia present as hyphal fascicles up to 100 μm high, consisting of tangled or contorted cylindrical hyphae 3–5 μm diam., thin-walled, hyaline, rounded at the apices; clamp connections present.



Warrandyte Waxcap
 (*Hygrocybe* sp. 'Warrandyte
 JCR2', © Bruce Fuhrer)

References:

Fuhrer, B. (2005). Field Guide to Australian Fungi, 2nd revised edn. Bloomings Books, Melbourne.

¹Young, A.M. (2005). Fungi of Australia: Hygrophoraceae, ABRS, Canberra and CSIRO Publishing, Melbourne.

Look alike

With over twenty known orange Waxcaps and many unknown, the species requires careful examination including microscopic characters to confirm identification.

Some unknown red and orange Waxcaps (John Eichler)



Sunrise Bonnet

Mycena roseoflava

This small pink and yellow mushroom, the stem relatively short is often attached to the side of wood, usually with a slightly swollen stem base. Grows on standing and fallen dead wood, including twigs. This rare in Victoria where it has only found only in wetter forests and rainforests but is more common Tasmania.

Fruit-body Description^{1*}: Pileus 2-10 mm diam., pink fading yellowish, hemispherical with a shallow central umbilicus, indistinctly striate, subfibrillose. Gills adnate to slightly decurrent, moderately distant. Stipe 5-10 x 1-2 mm, ochraceous to yellow, central to excentric, straight or curved, smooth to minutely floccose.

Microscopic Features¹: Spores globose, 6-8 μm diam., amyloid, thin walled. Hymenophoral trama and tissue of pileus pseudo-amyloid, Cheilo- and pleurocystidia ornamented.

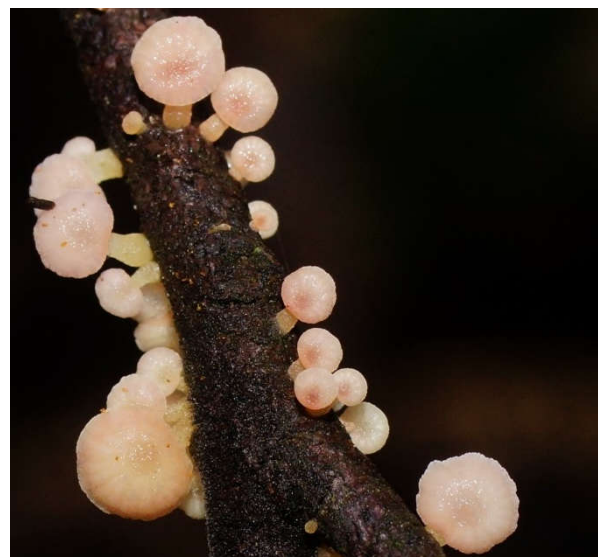
References:

^{1*}Stevenson, G. 1964 The Agaricales of New Zealand: V. *Kew Bulletin* 19(1): 1-59.

^{2*}T.E.R:R.A.I.N. 2019 Taranaki Educational Resource: Research, Analysis and Information Network. Accessed 11 April 2019 <http://www.terrain.net.nz/friends-of-te-henui-group/fungi-te-henui/mycena-roseoflava-rosy-mycena.html>

*Text adapted from references.

Upper surface of Sunrise Bonnet
(*Mycena roseoflava*, Reiner Richter)





Underside of Sunrise Bonnet (*Mycena roseoflava*, Reiner Richter)

Look alike

There are other pink laterally attached mushrooms like *Scytinotus longinquus* (syn. *Panellus longinquus*) but this has a sticky cap and thicker stem. Also Little Stinker (*Marasmiellus affixus*) but this typically smells bad and has a bleached mat and sometimes algae across the substrate.

Little Stinker (*Marasmiellus affixus*,
Torbjorn von Strokirch)

Scytinotus longinquus (Richard
Hartland)



Truffle like (Sequestrate)



Arid Darkspore Truffle

Agaricus melanosporus

There are two named Arid *Agaricus* Truffles for Australia so far these are *A. erythrosarx* and *A. melanosporus*, there are likely more species than this to be discovered. Microscopic examination are needed for most identifications.

***A. melanosporus* Fruit-body Description**¹: Sporocarps emergent, solitary to gregarious. Pileus 15–28 mm high 3 10–23(–28) mm diam, subglobose to planoconvex, light cream to pale brown, smooth to finely fibrillose, becoming brittle when dried. Context fleshy when fresh, compact, white, no color change. Hymenophore pale brown to dark purple-brown, sublamellate to elongated labyrinthine; moist becoming powdery. Stipe 5–16 mm long 3 3–6 mm diam, percurrent or truncated, pale cream, fibrous, context pale with no staining reactions, protruding shortly below excavated hymenophore. Odor not recorded.

Microscopic Features¹: Spores (6–)7–8 3 (5–)6–7 mm, mean 7.4 3 6.7 mm, Q 5 1.0–1.3, globose to subglobose, some slightly asymmetric, pale yellowish brown to brown in KOH, non-dextrinoid. Basidia 15–22 3 5–9 mm, elongate clavate to cylindrical; sterigmata four. Pileipellis a cutis, 24–42 mm wide, of subparallel, interwoven, hyaline hyphae 2–5 mm diam and scattered inflated elements 7–14 3 5–10 mm, overlying a context, 45–80 mm wide, of loosely interwoven hyaline hyphae, 2–5 mm diam. Clamps not observed.

References:

¹Lebel, T. and Syme, A. (2012). Sequestrate species of *Agaricus* and *Macrolepiota* from Australia: new combinations and species, and their position in a calibrated phylogeny. *Mycologia* **104**, 496–520.

*Text adapted from references.



Arid Blushing Truffle (*Agaricus erythrosarx*, Malcolm McKinty)

Look alikes:

Agaricus melanosporus and *A. erythrosarx* but so far *Longula texensis* (syn. *Agaricus deserticola*) is NOT known from Australian. *Agaricus erythrosarx* above resembles *A. melanosporus* below both macro- and microscopically. Both species have large pale sporocarps with scattered vinaceous fibrils on the surface, a sublamellate hymenophore that becomes pulverant, reddening pileal flesh and small spores. Differences include the red-orange staining reaction of the hymenophoral trama and reddening of the stipe context in *A. erythrosarx* and the lack of color changes in *A. melanosporus* (some dingy brown stains at base of stipe), and narrower basidia (5–9 mm vs. 9.5–14mm) and slightly larger spores in *A. melanosporus*.

As there maybe other unknown species all sightings should be shared.

Arid Darkspore Truffle (*Agaricus melanosporus*, ©Joy Clusker)





Beenak Long Tooth

Beenakia dacostae

This is a small, irregularly shaped stalked spine fungus. The teeth are initially white, becoming olive-brownish as spores mature. The thin stem is woody and often coloured pale brown with spores; with white mycelium at the base. Commonly found growing on dry, woody debris or rotten branches in wet eucalypt forests.

Fruit-body Description^{1,2*}: Cap has a diameter to 25 mm; round to kidney-shaped, ageing flat to wavy; white, cream to ochre, drying to yellow-brown; smooth, cottony with soft matted hairs; margin often lobed. Central, off-centre or lateral stem; length to 30 mm, diameter to 3 mm, often poorly developed; slightly curved; white, yellow-brown at apex; woody, smooth, cottony with soft hairs.

Basal mycelium white, matted. Teeth are decurrent; length to 10 mm; slender, tapering to a point; crowded; pale olive-brown with maturity.

References:

Hubregtse^{1*}, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at <http://www.fncv.org.au/fungi-in-australia/>

Grey^{2*} P and Grey E 2005 Fungi down under: the Fungimap guide to Australian fungi. Fungimap: South Yarra, Victoria. p. 18

Text adapted from references*.



Beenak Long Tooth (*Beenakia dacostae*, left Geoff Lay and right Jurrie Hubregtse)

Look alikes:

There are other Toths that are paler and with a stem. These include species of *Hydnum*, some yet to be named but include the common Wood Hedgehog (*Hydnum repandum*). May also be confused with paler species of *Phellodon*, *Hydnellum* and *Auriscalpium*.



Phellodon sp. (V and C Ryan)



Wood Hedgehog (*Hydnum repandum*, Ian Bell)





Stemless Earpick

Auriscalpium sp. 'Blackwood'

This small brown laterally attached fungus has relatively long brown teeth, is fleshy in texture, but not gelatinose. Found growing from the stringy bark of the Narrow-leaved Peppermint Gum (*Eucalyptus radiata*).

Despite searches on other stringy barks in Victoria so far this is only known from a single trees each in two populations: one in the Wombat State Forest and a new population from June 2019 in the Dandenong Ranges. So is exceedingly rare with just two known populations. Preliminary taxonomic work suggests that it is a new species (Claus 2018).

Fruit-body Description^{1*}:

This very rare distinctive fungus is readily identified by its small semicircular to shell-shaped fruit-body and distinctive long spines. It usually grows on the bark of the Narrow-leaved Peppermint Gum (*Eucalyptus radiata*).

References:

Claus B 2018 Please don't pick your ears! Fungimap Newsletter 59: 7-8.

^{1*}Hubregtse, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at <http://www.fncv.org.au/fungi-in-australia/>

Global Fungi Red List Initiative *Auriscalpium* sp.

'Blackwood'http://iucn.ekoo.se/iucn/species_view/1000204/ (accessed 5 Aug 2019)

*Text adapted from references.



Exciting news a second population of was found in the Dandenong's in June 2019.



Stemless Earpick (*Auriscalpium* sp. 'Blackwood',
Jurrie Hubregste left and SJM McMullan-Fisher)

Look alikes:

In Victoria the most similar fungus is the laterally attached, Toothed Jelly Fungus (*Pseudohydnum gelatinosum*), this has a distinctly gelatinous texture. There are other species of *Auriscalpium*, but so far these have long often central stems.



Toothed Jelly Fungus (*Pseudohydnum gelatinosum*, Lyn Allison)



Chestnut Polypore *Laccocephalum hartmannii*

When mature this large fleshy polypore has stem and the rich, velvety red-brown cap and stem, often cracks when dry to expose bright mustard-yellow flesh. The under-surface are pores that are minute and cream coloured when young but age to a dirty cream colour.



Eileen Laidlaw

Fruit-body Description¹ : Annual, centrally or eccentrically stipitate, solitary or in groups of 3-4, either on wood or directly developing from a terrestrial pseudosclerotium; pileus circular to reniform, convex, 5-15 cm in diameter, up to 1 cm thick, upper surface reddish-brown with orange periphery, finely velutinate, concentrically areolate when old; pore surface cream to orange, pores angular, brittle, 3 to 6 per mm; context white to cream, up to 1.5 cm thick, corky, with resinous zones; stipe 4 cm long, up to 3 cm thick, single to bifurcate, orange to brick-coloured, even or finely velutinate, with a cortex.

Notes: These emerge from storage organs (see above) usually buried under ground, amongst litter but occasionally have been known to fruit upon tree trunks (see opposite bottom image right) . They appear to be triggered into fruiting by drought or mechanical disturbance. This and other fungi that produce storage organs are called stonemaker fungi (*Laccocephalum* and *Neolentinus* and *Pleurotus tuber-regium*).

References:

Cooke¹ MC 1883 Australian fungi, *Grevillea* 12: 8-21.

*²Grey P & Grey E 2005 Fungi Down Under – the Fungimap Guide to Australian Fungi, Fungimap.

*Text adapted from references.



Chestnut Polypore
(*Laccocephalum hartmannii*,
Eileen Laidlaw)

Look-alikes:

Other Stonemaker fungi (do not have mustard coloured flesh. *Amauroderma* species, these are tougher and pores often stain when touched. Large boletes like *Phlebopus marginatus* have softer and yellow pores are often much larger stem.



Salmon Gum Bolete (*Phlebopus marginatus*, Eileen Laidlaw)



Green-staining Coral

Phaeoclavulina abietina

This coral shaped fruit-body is small, multi-branched, yellowish, staining green all over. It grows in clusters, on the ground in deep litter. Due to the small-size and often yellow-green colour, this coral could easily be overlooked. Synonym *Ramaria abietina*.

Fruit-body Description¹: Size to 35 mm tall x 25 mm wide. Branches upright, slender, yellowish becoming green, axils (branch divisions) narrowly round. Branch tips bluntly pointed, yellowish becoming green. Stem to 15 mm long x 2 mm diameter, yellowish-green, white at base, arises from a white mycelial mat, white rhizomorphs present. Spore print yellow.

References:

¹Grey P, Grey E 2018 A Little book of Corals. <https://fungimap.org.au/little-book-of-corals-rev-3-released/>

*Text adapted from references.

Green-staining Coral
(*Phaeoclavulina
abietina*, Mark
Campobasso)





Green-staining Coral (*Phaeoclavulina abietina*, Ed Grey)

Look alikes

Sometimes the green-blue staining reaction are not as obvious so specimens appear yellow. There are other yellow *Ramaria* and *Phaeoclavulina* but these do not have a green-blue staining reaction.

Mustard-yellow Coral
(*Phaeoclavulina flaccida*, Carol Page).





Two-toned Pin

Chlorovibrissea bicolor

Chlorovibrissea bicolor, a tiny pin-shaped species has a round yellow head on a dark green stiff stem, which is attached to the substrate by a small basal disc. *C. melanochlora* is recognisable when it is an even dark green across the whole fruit body. Another pin, Brown-headed Pin (*Vibrissea dura*), is not green, rather has a brown head and pale stem.

Fruit-body Description^{1*}: A pin-shaped fruit-body up to 20 mm high; the head (pileus) of the fruit-body is fertile, globose or lobed, up to 5 mm diameter; colour yellow. Stipe up to 15 mm long, up to 1 mm thick; cylindrical or slightly tapering; surface smooth; colour dark green when fresh.

Notes^{2*}: There are three green Pins in Victoria: *Chlorovibrissea bicolor*, *C. melanochlora* and *C. tasmanica*. All *Chlorovibrissea* are rarely recorded and favour fruiting in very wet environments. *C. bicolor* differs from *C. tasmanica* in having a yellow head, a dark green, stiff stalk, larger asci with non-septate ascospores, and in the much shorter and short-celled hairs of the stalk; from *C. melanochlora* in not being totally green, in the smaller asci and ascospores and in the thinner tips to the paraphyses and from *V. dura* in having green pigmentation and smaller asci and ascospores.

References:

Beaton^{2*}, G.W.; Weste, G. 1977: Australian discomycetes: a new *Vibrissea* species. Transactions of the British Mycological Society 69: 323-325.

*Grey P and Grey E 2005 Fungi down under: the Fungimap guide to Australian fungi. Fungimap: South Yarra, Victoria. p. 18

Hubregtse^{1*}, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at <http://www.fncv.org.au/fungi-in-australia/>

*Text adapted from references.



Two-toned Pins (*Chlorovibrissea bicolor*,
Tim Cannon left and John Eichler right)

Look-alikes:

Chlorovibrissea melanochlora and *C. tasmanica* are both also green, but the latter has no images. So please record images and share any sightings under genus if species is in doubt. Microscopic characteristics of stem hair length and asci length are the definitive characters for identification.



Dark-green Pins (*Chlorovibrissea melanochlora*, John Eichler)





Tea-tree Fingers

Hypocreopsis amplexans

Found on falling or fallen branches of dead of tea-tree, paperbark and banksia in long-unburnt thickets. This rare fungus is a parasite on wood rot fungi. This firm-textured, brown, irregularly shaped species forms a raised mass of 'fingers' which clasps dead branches with light brown, finger-like lobes.

Fruit-body Description¹: *Hypocreopsis amplexans* grows up to 60 mm in length in a raised mass edged with irregular lobes up to 10mm wide. The lobes are brown with tips of paler yellowish-brown. White, powdery areas are often found on older specimens.

Notes: Please **do NOT collect nor disturb** Tea-tree Fingers (*Hypocreopsis amplexans*) or host species. At this point, we have not learned enough about the biology to know if collecting is detrimental to populations. *Hypocreopsis* is unusual, because it lives on other species of fungi, probably as a parasite - either on the fruit body or the mycelium; possibly both. As yet we know very little about how *Hypocreopsis amplexans* lives, which is why your help is so important.

It lives on wood-rotting fungi. The main host is thought to be the species of *Hymenochaete* shown below, which emerge as flat patches on the under surface of fallen logs and branches. It may also grow on species of *Phellinus* or other wood rot fungi.

References:

*¹McMullan-Fisher SJM 2018 How to identify and record information to help save Tea-tree Fingers. Fungimap <https://fungimap.org.au/tea-tree-fingers-project-photo-monitoring/>

*Text adapted from references.



Tea-tree Fingers, fresh above and older below (SJM McMullan-Fisher).

The fruit bodies of Tea-tree Fingers may persist for several seasons. Shown here is an image of a fruit body over a year old, the right hand portion of which appears to still be fertile - unlike the fruiting body below.



Look alikes

A word of caution! Some other organisms bear a resemblance to Tea-tree Fingers. For example very old fruit bodies look a bit like lichen.





Common Morel

Morchella esculenta group

Saprotrophic and mycorrhizal ascomycete; solitary or gregarious on the ground, or amongst litter and mulch. This name has been commonly used in Australia but further taxonomy may show that these are one or more Australian species.

Fruit-body Description^{1*}: Up to 120 mm or more tall, hollow, junction between fertile head and stipe well defined. Fertile head length up to 50 mm or more and 45 mm across; sub-conical, ovoid or subglobose with an irregular network of ridges and pits; the colour of the ridges is usually concolorous with the pits, but with age may become darker; the colour of the pits can range from light brown to dark greyish brown. Stipe up to 70 mm or more long and 20 mm or more thick; often irregular in shape, nearly smooth to coarsely wrinkled; surface appears to be covered in fine granules; colour whitish to light orange-yellow with age. Spore Print white.

References:

Du X-H, Zhao Q and Yang ZL (2015) "A review on research advances, issues, and perspectives of morels". Mycology Vol. 6(2), pp. 78–85

Hubregtse^{1*}, J CC-BY-NC-SA 2018 Fungi in Australia, Revision 2.1. Field Naturalists Club of Victoria Inc. E-published at <http://www.fncv.org.au/fungi-in-australia/>

*Text adapted from references.



Common Morel (*Morchella esculenta*,
John Eichler)

Look alikes

These sought-after species are *M. elata* (Black Morel), *Morchella conica* and the newly described *Morchella australiana*.

Notes: As this is considered an good edible, they are likely to be threatened by over collecting, so getting more data is important. Morels are yet to be successfully cultivated on a large scale, if you purchase them please support companies that follow sustainable harvest systems. Elsewhere it has been suggested that morels fruit abundantly in the two-three years following a forest fire but this has not typically been described from Australia where they are much less common.





Lost Lichens

While Lichens are mostly made up of fungal tissue they are a symbiosis that also includes algae and or cyanobacteria that do the photosynthesis.

Below are three lichens listed for protection under the Victoria Flora and Fauna Guarantee Act (FFG Act 1988). Despite this there are no new records nor collections in the last two decades.

Look alike: Lichens often need to be collected to be properly identified, as chemical tests and microscopic characters may need to be considered. There are many other Shield and Beard lichen species.

Despite these difficulties we invite you to keep your eyes out for them particularly in rocky high altitude areas and share images with our projects. On the opposite page there are images from scanned collections. In summary:

- Black-beard Lichen (*Usnea acromelana*) has been recorded from basalt and dolerite rocks. Last recorded in Victoria in Falls Creek 1977.
- Underdark Shield (*Xanthoparmelia suberadicata*) has been recorded from granite outcrops in the Baw Baw and Macedon Ranges Shires, and was last recorded in 1998.
- Victoria's Shield (*Xanthoparmelia victoriana*), on rocks and last recorded in 1984 in the Greater Bendigo area.



Herbarium collection scans of Underdark Shield (*Xanthoparmelia suberadicata*, above A), Black-beard Lichen (*Usnea acromelana*, below left ^A) and Victoria's Shield (*Xanthoparmelia Victoriana*, below right ^B), .
 Reproduced with permission from: ^A the Royal Botanic Gardens Victoria and ^B Centre for Australian National Biodiversity Research 2017.



Please Take Care

- Protect our bush by arriving with clean and dry equipment, including footwear and hats. So best to ***Arrive clean. Leave clean!***
 - Ideally Phytoclean or methylated spirits should also be used to clean boots and equipment between any sites you visit.
 - For vehicles do not drive on access tracks when it is wet.
 - Never go from infected sites to clean areas.
- Be mindful of rarity.
 - Do not collect all fruit bodies, leave some for spores.
 - Do not collect Lost Fungi or species you don't see often and abundantly.
 - Be careful about not disturbing or removing substrate.
- Have a Permit for collections
 - If collections are made ideally written proof like an email of land holders permission (for the Nagoya Protocol which is trying to prevent biopiracy).
 - Tea-tree Fingers (*Hypocreopsis amplexans*) and lichens: Black-beard Lichen (*Usnea acromelana*), Underdark Shield (*Xanthoparmelia suberadicata*) and Victoria's Shield (*Xanthoparmelia victoriana*) are protected species in Victoria under the Flora and Fauna Guarantee Act (FFG Act 1988) so a specific collection permit is needed.

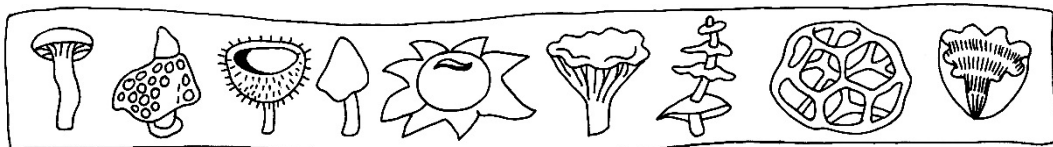


Acknowledgements

This project has been funded by the Victorian Government and assisted by Fungimap volunteers.

Thanks to everyone who has shown interest and support:

- All the photographers.
- Host groups for events and surveys: Friends of Wanderslore, Fungi group of the Field Naturalists Club of Victoria, Wombat Forestcare, The Strathbogie Ranges Conservation Management Network, Trust for Nature, Portland Field Naturalists' Club, Field Naturalists' of Ballarat, Kowree Farm Tree Group Landcare, Hindmarsh Landcare and Bendigo Field Naturalists Club.
- Ema Corro, John Eichler, Graham Patterson, Fran Guard, Katrina Syme, and Gudrun Evans.
- Royal Botanic Gardens Victoria, particularly Teresa Lebel, Tom May, Angharad Johnson, Nimal Karunajeewa and Val Stajsic.



Contact Fungimap



Fungimap actively seeks records and images of fungi. We recommend you start with the more easily recognisable, distinctive **recognisable** species which are pictured in the online field guide found on our website

<https://fungimap.org.au/fungi-down-under-100-target-species/>. Or share with our iNaturalist

project Fungimap Australia

<https://www.inaturalist.org/projects/fungimap-australia>



Sunrise Bonnet (*Mycena roseoflava*, Reiner Richter)

For information about 'Lost fungi' contact us by email **Fungimap@gmail.com**

