



Monument Hill Reserve, Kilmore

Preface

Mycology remains an emerging science in Australia, still lagging in scope and detail behind the broader works in this field undertaken in Europe and the Americas, as indeed with our collective understanding of Australian native animals and plants. As we seek to engage with this fascinating sector of our local ecology, it is important to remember that collecting mushrooms on public land is illegal in Victoria.



Cortinarius archeri as an immature cap.
Photo credit: © Alison Pouliot

Cortinarius archeri

Emperor Webcap/Emperor cortinar/Archer's cortinar.

Appearance: A striking deep violet with a glutinous sticky cap. The cap is convex with incurved margins, and ages to become light tan and dry, with wavy uncurved margins. This mushroom's flesh is thick and pale lavender in colour. The gills are brown and tinted lilac and are initially covered with a web-like veil called a cortina. *Cortinarius archeri* has a stout, sturdy, bulbous stem, with a sticky zig-zagged brown stained region under the cap. Three closely related Australian *Cortinarius* species appear very similar to *C. archeri*, and require microscopy to reliably distinguish.

Size: 60-80 mm tall, with a 100mm wide cap.

Activity: Summer-midwinter.

Distribution: Native to Australia, where it is one of the commonest webcaps, particularly in the south of the country. It has also been recorded in New Zealand.

Spore print: Rusty brown

Ecology: A mycorrhizal species associated strongly with eucalypts. *C. archeri* also grows in mixed forest, such as jarrah/sheoak woodland, where it is fairly common and forms relationships with other related tree genera. It also grows on suburban lawns. The fruiting caps usually appear in isolation, but sometimes grow in groups of 2-3. The species typically grows in bark or leaf litter on the ground and is commonly observed in recently burned areas.

Other traits: An odourless and mild tasting mushroom that is potentially poisonous. *C. archeri* appears superficially similar to the introduced gourmet Wood Blewit (*Lepista nuda*), presenting ongoing risks to the consumption of this species in Australia.

Taxonomy: *C. archeri* continues to undergo constant taxonomic revision with regards to its relatedness to other members of the genus, some of which are known to be dangerously poisonous.



Photo credit: © Alison Pouliot

Russula clelandii group

Appearance: Caps are initially dome-shaped before expanding to become flat with an indented centre. Colour may vary from deep red to purple but this normally dulls with age. The gills are small, tight and pure white, though become yellowish cream as they mature. *Russula clelandii* comprises a broad range of different colour forms. The stem is sturdy and white with a distinctive pink-dotted surface, often with shallow vertical grooves. This pinkness can be very pale in some of its forms. Its flesh is white and brittle, and the stem hollows with age and characteristically snaps like chalk when bent. The white

flesh does not discolour if exposed to air.

Size: Cap can be up to 90mm across, and the stem can reach 70mm.

Activity: May-July

Distribution: Found throughout southern and eastern Australia.

Spore print: pale cream or white.

Ecology: A very common species that grows in mixed eucalypt dominated woodlands, especially those dominated by *E. marginata* and *E. jarra*, with which it has a mutualistic relationship. *R. clelandii* grows on the ground in leaf litter, either singly or in small groups.

Other traits: Reportedly mild tasting, though inedible and easily confused with toxic species. Has been unsuccessfully investigated for cytotoxins as a potential cancer medicine.

Taxonomy: *R. clelandii* was described in 1987 and remains a species complex subject to ongoing revision and uncertainty.

Hypholoma australe

Brick Cap

Appearance: Dome-shaped terracotta-coloured caps that grow to become broadly convex; burnt orange in the centre and grading to light yellow around the margin. The surface of fresh specimens is covered with a sparse covering of fine white scales, which is especially evident around the margin. *Hypholoma australe*'s gills are lemon yellow and fade to grey with age. The scales on the cap wear off with age but the ones on the stem are larger and tend to persist, forming a banded pattern. *H. australe* has orange-yellow flesh. Appears identical to the introduced and more cosmopolitan *H. sublateritium*, to which it is very closely related, and microscopy is required to tell these two species apart.

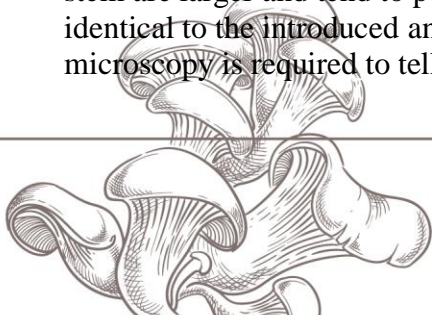




Photo credit: © Alison Pouliot

Size: Caps are 15–25mm diameter. Stems are up to 90mm high,

Activity: May-July in cool weather.

Distribution: Western Australia and southeastern Australia, including Tasmania.

Spore print: Purple/brown

Ecology: A common fungus found throughout eucalypt forests. A primary wood decomposer whose mycelial cords rapidly and densely infest tree-stumps. It can also infest the outer dead bark of healthy tree roots without attacking the tree itself. It generally fruits in large clusters, comprising up to 50 or more mushrooms, at the base of dead trees or understory shrubs, stumps and logs, or directly from the soil if feeding on buried wood. Up to 10 or more fruiting bodies may arise from the same node on the substrate, making it look as though the bases of the stems are joined together.

Other traits: No distinctive odour. Reported to have a mild and pleasant taste, though not considered edible, and easily confused with the toxic Sulphur Tuft (*H. fasciculare*). *H. australe*'s vigorous growth on woody media makes it an appealing species to commercial forestry, and it holds potential as an excluding control agent for commercial wood pathogens (Pearce et al, 1995)



Photo credit: © Alison Pouliot

Austropaxillus infundibuliformis

Appearance: An unusual looking member of the Bolete family, bearing gill structures resembling those of generic mushroom families. *Austropaxillus infundibuliformis* is a large tawny yellow mushroom with a flattened or convex cap and forked cream gills. The cap takes on a distinctive funnel shape as the mushroom matures.

Size: 65mm wide cap, with 4mm deep gills.

Activity. Grows in early autumn

Distribution. Eucalypt forests of southern Australia, ranging from Western Australia through to New South Wales.

Spore print: Brown. This same colour stains the stem if the mushroom is bruised or disturbed.

Ecology. A common mycorrhizal species associated with eucalypts, particularly Messmate Stringybark (*E. obliqua*)





Other traits: Odourless. A bitter tasting fungus with some visible similarity to both the edible chantarelle mushrooms, which are collected as gourmet food, and the potentially lethally poisonous Brown Roil-rim (*Paxillus involutus*), all introduced from Europe.



Photo credit: © Alison Pouliot

Pisolithus marmoratus

Appearance: An ovoid puffball that is initially pale coloured, before becoming brown-black, sometimes with black warts and gold mottling. The flesh is ochre or umber and stains black. *Pisolithus marmoratus* is highly variable but in general has a large, horse dung-like appearance.

Size: Up to 100 x 180mm, with a dense stem (20 x 15mm) that is typically buried in the soil.

Activity: May-July.

Distribution: Most common in Western Australia and New South Wales, but also occurs throughout southern Australia. *P. marmoratus* is one of a range of related species that has been spread around the world in the soil and roots of eucalypts, and now occurs in warm and dry environments throughout Europe, South America, Africa and Asia. It has also been recorded on New Zealand's volcanic plateau.

Spore print: Brown.

Ecology: A very common ectomycorrhizal species that stimulates and bolsters plant growth in its symbiotic tree species; which comprise eucalypts and various Myrtaceae. *P. marmoratus* often grows in pure sand in dry sclerophyll woodland, also commonly appearing in parks, gardens and roadsides. It is common in both temperate and tropical regions but has not been recorded in open desert.

Other Traits: This species may have been a traditional bush food in central Australia. As eucalypt seeds and nursery stock have been spread around the world over the past two hundred years, *P. marmoratus* has become established in plantations in many countries (Martin et al., 2002). The species is now actively used to inoculate plantations due to its holistic growth-inducing properties. It quickly dies if removed from its symbiont species.

Taxonomy: The complex, diverse and cryptic genus *Pisolithus* has received constant review, and it is likely that several species names currently in use will be changed.





Photo credit: © Alison Pouliot

Hexagonia vesparia

Wasp Nest Polypore

Appearance: An irregular, hoof-shaped bracket fungus that attaches broadly to its substrate. The young fungus is whitish, but darkens to cream or brown as it ages, and hardens to a woody texture. Its upper surface is mostly smooth, but often has irregular radial striations or bumps. *Hexagonia vesparia* is an especially conspicuous bracket fungus due to its very large honeycomb-like pores. The pores are off-white to pale brown, hexagonal and radially elongated and give the fungus a characteristic wasp nest appearance. Its flesh is pale brown and woody.

Size: 20-80mm in diameter.

Distribution: Australia-wide, though sparsely distributed in many areas. Also recorded in New Caledonia.

Spore print: White

Ecology: Wood recycler

Other traits: Odourless



Photo credit: © Alison Pouliot

Calocera* aff. *Sinensis

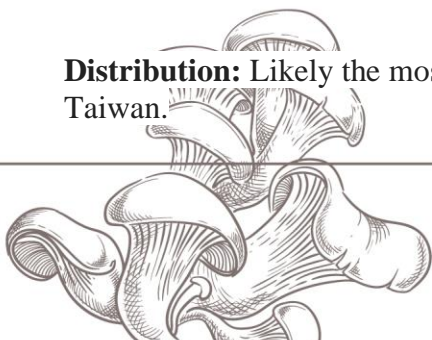
Informally called “Pretty Horn”, though this is just an English translation of its genus name.

Appearance: A soft, malleable fungus with a firm jelly-like consistency, composed of simple or branched erect spikes. Telling different species of *Calocera* apart reliably usually requires examination under a microscope, and various other species do occur in Australia.

Size: 15mm high, 2mm thick.

Activity: Autumn-winter, after rain.

Distribution: Likely the most common member of *Calocera*. Occurs in Australia, New Zealand, China and Taiwan.





Ecology: A common component in the complex associations of microorganisms that decompose wood in moist vegetative communities. *C. sinensis* grows on damp rotting logs, fallen branches and timber, appearing in dense clusters on both hardwood and softwood. In Asia it is also reported to grow on a broad variety of living trees and to cause brown rot.

Taxonomy. As of 2011, there was taxonomic uncertainty regarding the different species of *Calocera*, and their international distributions (Wu *et al*).



Photo credit: © Alison Pouliot

areas with protection from wind. Plasmoids feed upon and recycle organic matter and are themselves preyed upon by ants.

Other traits: Inedible

Taxonomy: Slime moulds are cryptic, widely distributed and poorly understood. *T. ferruginosa* is a species complex under revision and may turn out to comprise many similar species with smaller geographic ranges and different ecological habits.

***Tubifera ferruginosa* complex** Red Raspberry Slime Mould.

Description: Aggregate blobs of mould that resemble red raspberries. As it ages, it turns purple and then brownish, forming elongate cigar-like structures. As it dies it becomes brown and powdery.

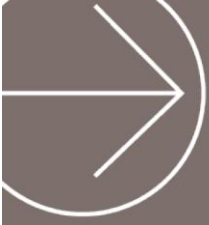
Size: Individual fruiting bodies are under 0.5 mm wide and can reach 3-5 mm high. A cluster is often about 15mm long.

Activity: Summer – Autumn

Distribution: *Tubifera ferruginosa* occurs across every continent in the world except Antarctica.

Ecology: Not a true fungus, *T. ferruginosa* is a slime mould with a life cycle transitioning from single-celled motile amoeba-like organisms (plasmoids) that congregate into a sessile mass to produce spores. These clusters (called pseudoaethalia) form on damp, decaying (often burnt) wood, typically in damp forested





Graham Jury

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