
FUNGI IN AUSTRALIA

J. Hubregtse

Part 7

A Photographic Guide to Non-gilled Fungi



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Nidula emodensis



Est. 1880

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CHAPTER 1

A PHOTOGRAPHIC GUIDE TO NON-GILLED FUNGI

This photographic guide to *Non-gilled fungi* (Agaricomycotina) contains species that have been described in detail in *Fungi In Australia* Parts 3 and 4. This morphologically diverse group of fungi has been placed in 10 broad morphological and textural categories to facilitate identification.



Boletes – this group has fleshy fruit-bodies, with a pileus and stipe, similar to agarics (gilled fungi), but the spore liberating surface underneath the pileus is pored rather than gilled. The fleshy fruit-body of a bolete is what distinguishes it from some stiped polypores, which also have a pored surface through which spores are liberated.



Coral and Club fungi – this group includes all fungi with fruit-bodies that form simple or branched clubs, as well as the more complex coral-like fungi. The fertile spore-bearing surface (hymenium) covers the outer branches. The stems of these fungi are usually not fertile.



Crust fungi – this large group of fungi includes all species that grow flat (resupinate), usually on wood. Although these fungi grow flat on wood their hymenial surface may be rough, warted, wrinkled, cracked, smooth, dentate (toothed), or pored. These species are very difficult to identify in the field, due mainly to the limited number of observable characteristics. To complicate this even more there are a large number of undocumented species.



Disc and Cup fungi – this group contains fungi that have disc or cup-shaped fruit-bodies. The bird's nest fungi have been included in this group. In the Basidiomycota – Agaricomycotina group of fungi there are very few cup- and disc-shaped species.



Gelatinous fungi – this group of fungi contains all the species that have soft gelatinous fruit-bodies. The majority of species in this group belong to the Dacrymycetes and Tremellomycetes.



Leathery fungi – this group of fungi includes fruit-bodies that have relatively thin tissue with a tough leathery consistency, and a smooth hymenial surface without any pores. Most of the fruit-bodies in this group occur on wood, and have a variety of forms. Some are fan-shaped, some have stipes and others have a bracket-like attachment.



Polypore and Bracket fungi – this group consists largely of woody brackets with a pored underside (hymenium). Included in this group are woody fruit-bodies that have a stipe, and bracket-like fruit-bodies with a leathery texture. All these species have a pored hymenium.



Puffball and Earth-star fungi – the common feature of this group is that their spore mass (gleba) is covered by a tough outer layer (peridium) forming a spore sac, which may sit flat on a sterile base, or have a stipe, or, like earth-stars, have a star-shaped saucer to sit in. In some species the spore sac erodes to liberate the spores, while in other species the spore sac has an opening at the apex (ostiole) through which the spores are liberated.



Spine – in this group the spore-bearing surface (hymenium) is on spine- or tooth-like projections instead of gills or pores. All non-gelatinous species that have spines longer than 1.5 mm have been included. There are some crust fungi that have small teeth (dentate) which are usually less than 1 mm in length; these are not included here, but are included in the crust fungi group.



Stinkhorn and Phalloid fungi – this group includes all fungi that produce their spores in a goeey, sticky, smelly mass (gleba). This smelly spore mass, often having a smell of rotting meat, attracts insects (e.g. flies), which act as the dispersal agents for the spores.

1.1 Boletes

Order: Boletales

Family: Boletaceae

Austroboletus lacunosus

Austroboletus cookei

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This bolete, found in mixed eucalypt forest, is readily recognised by its brownish suede-like pileus and deeply reticulated stipe. Its pored underside is initially whitish, becoming pinkish as spores mature. *Austroboletus occidentalis* is a similar Western Australian species, differentiated by microscopic features.

Order: Boletales

Family: Boletaceae

Boletellus emodensis

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This bolete can readily be identified by the shaggy, felty, fibrillose scales on its pileus. Its yellowish pores instantly turn blue-green when bruised. It grows on the ground in eucalypt forest and woodland.

Order: Boletales

Family: Boletaceae

Boletellus obscurecoccineus

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This bolete can be readily separated from other boletes with similar colours because it is the only one that has pale scales on its stipe. It grows on the ground in eucalypt forest and woodland.

Order: Boletales

Family: Boletaceae

*Chalciporus piperatus**Boletus piperatus*

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This small bolete is an introduced species, usually associated with conifers. Its flesh does not stain blue on bruising, and it tastes very hot and peppery. Its pores are relatively large, 1–2 per mm.

Order: Boletales

Family: Boletaceae

Fistulinella mollis

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This bolete can be identified by its soft texture, which is spongy to the touch, and its pinkish pore tissue, which is set back from the stipe. The species is usually found in eucalypt forest.

Order: Boletales

Family: Boletaceae

Gymnogaster boletoides

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This species is recognised by its small subglobose fruit-body, which consists largely of a bright yellowish fertile section with irregularly shaped chambers, a small reddish brown pileal disc on the apex, and a small reddish stipe below. The fertile region of the fruit-body stains greenish-blue immediately when bruised or cut.

Order: Boletales

Family: Boletinellaceae

Phlebopus marginatus

Phlebopus portentosus *Phaeogyroporus portentosus*
Boletus marginatus



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This large bolete grows on the ground near eucalypts, either as solitary specimens or in groups of two or three. It is probably Australia's largest terrestrial fungus, with some specimens exceeding a metre in diameter.

Order: Boletales

Family: Suillaceae

Suillus granulatus

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This exotic bolete is associated (mycorrhizal) with introduced species of pine (*Pinus* spp.). It is easily identified by its brown glutinous (slimy when wet) pileus from which the skin can easily be peeled, yellow pores and **no annulus** around its stipe.

Order: Boletales

Family: Suillaceae

Suillus luteus

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This exotic bolete is associated (mycorrhizal) with introduced species of pine (*Pinus* spp.). This species is easily identified by its brown glutinous (slimy) pileus, yellow pores, and the membranous annulus around its stipe.

1.2 Coral and Club fungi

Order: Russulales

Family: Auriscalpiaceae

Artomyces austropiperatus

Clavicornia piperata



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This delicate pale species occurs in clusters on decaying wood, and is readily identified by its distinctive branching pattern and peppery taste.

Order: Cantharellales

Family: Clavulinaceae

*Clavulina coralloides**Clavulina cristata*

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This white coral fungus grows on the ground, scattered to gregarious amongst leaf litter, usually in eucalypt forests. The fruit-body may be single or multi-branched; branches are usually smooth, with tips that have several short tooth-like projections (cristate).

Order: Cantharellales

Family: Clavulinaceae

*Clavulina rugosa**Clavaria rugosa*

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This white coral fungus is an introduced species that grows on the ground in association with exotic trees such as pine and spruce. The fruit-body may be single or multi-branched; branches are usually wrinkled and twisted.

Order: Cantharellales

Family: Clavulinaceae

Clavulina tasmanica

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This greyish coral fungus grows on the ground. It may be single or multi-branched, and may have fawn to mauve tips. It is readily identified by the furry, velvety coating on its branches.

Order: Russulales

Family: Hericiaceae

Hericium coralloides

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This beautiful delicate coral-like fruit-body, consisting of numerous brittle branches that are densely covered with numerous spines, grows in damp areas on dead wood from native and introduced trees. The fruit-body develops from a thick stem that is attached to the wood substrate.

Order: Gomphales

Family: Gomphaceae

*Ramaria filicicola**Ramaria sinapicolor* *Clavaria lorithamnus*

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This species is recognised by its whitish to pale buff fruit-body, upright stature and the multiple pointed apices. It is often found in mixed native woodland, but also in forests of *Pinus* spp.

Order: Gomphales

Family: Gomphaceae

*Ramaria lorithamnus**Ramaria sinapicolor* *Clavaria lorithamnus*

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This species grows in tufts on the ground in association with *Eucalyptus* trees. It is completely yellow, without any red or pink tints, and does not have a cauliflower-like appearance.

Order: Agaricales

Family: Clavariaceae

*Clavaria fragilis**Clavaria vermicularis* *Clavaria meuleri*

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This fragile white coral fungus usually grows in dense clusters on the ground amongst woody leaf litter. The fruit-bodies may grow up to 150 mm high and up to 5 mm thick. It is a cosmopolitan species found in both northern and southern hemispheres.

Order: Agaricales

Family: Clavariaceae

*Clavulinopsis amoena**Clavaria amoena*

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This fungus grows on the ground amongst leaf litter or moss, usually in damp sheltered areas. The fruit-bodies may grow up to 100 mm high and they are always bright yellow.

Order: Agaricales Family: Clavariaceae

*Clavulinopsis corallinorosacea**Clavaria corallinorosacea*

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This species is identified by the distinct change in colour between the base and the upper fertile portion. It grows on the ground amongst leaf litter or moss, usually in damp sheltered areas.

Order: Agaricales Family: Clavariaceae

Clavulinopsis sulcata complex*Clavulinopsis miniata* *Clavaria miniata*

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This species grows on the ground amongst leaf litter or moss, usually in damp sheltered areas. There is no distinct colour change between the base and the upper fertile portion.

Order: Agaricales

Family: Typhulaceae

Macrotyphula juncea

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This slender club fungus is readily identified by its shape. The fruit-bodies arise from small white mycelial mats attached to wet litter such as dead leaves, *Banksia* cones or decaying twigs.

Order: Agaricales

Family: Clavariaceae

*Mucronella pendula**Myxomycidium pendulum* *Mucronella alba*

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This small, beautiful spearhead-shaped species can be found hanging from a short stem on the undersides of, or in hollows of, rotting logs in wet forests. It grows in colonies.

Order: Agaricales

Family: Physalacriaceae

Physalacria australiensis

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Many of the species in the genus *Physalacria* have a simple fruit-body consisting of a whitish inflated bladder-like head on a shortish slender stipe, usually growing on decaying wood. This species has a head 3–10 mm diameter, with a stipe up to 6 mm long.

1.3 Crust fungi

Order: Russulales

Family: Stereaceae

Aleurodiscus sparsus

Acanthophysium sparsum *Stereum sparsum*

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This is a common crust fungus, colonising bark or decorticated wood of small dead eucalypt branches in wet native forests. When young, the patches can be tentatively identified by their finely fibrillose surface. As there are many species of white crust fungi, microscopic examination is required for positive identification.

Order: Polyporales

Family: Phanerochaeteceae

*Byssomerulius corium**Merulius corium* *Meruliopsis corium*

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This white crust fungus is identified by the reticulated or finely wrinkled pattern of the fertile surface and the shelving or upturned margin of the fruit-body. It is normally found on the underside of dead branches or twigs.

Order: Russulales

Family: Hericiaceae

Dentipellicula leptodon

Odontia oleifera *Dentipellis isidioides*
Hydnum leptodon *Dentipellis leptodon*



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This species can be tentatively identified by the relatively small fruit-bodies with long whitish slender spines. It grows in damp areas on rotting wood from native and introduced trees. This species can be confused with some *Steccherinum* species, but most of those are not white and their spines are usually shorter and more robust.

Order: Polyporales

Family: Meruliaceae

*Flavodon flavus**Irpeex flavus**Polystictus flavus**Polyporus flavus**Trichaptum flavum*

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This species can be recognised by its spore-bearing surface, which is yellowish and has largish pores when young, and later develops flattish columnar tooth-like structures. It usually forms large patches on bark or decorticated fallen wood.

Order: Agaricales

Family: Marasmiaceae

*Henningsomyces candidus**Lachnella candida* *Solenia candida*

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This species is recognised by its small white tubular fruit-bodies, usually found on the underside of decaying wood or bark. Not common.

Order: Polyporales

Family: Meruliaceae

*Phlebia subceracea**Acia subceracea* *Mycoacia subceracea*

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This species forms bright yellow patches on the underside of fallen wet decaying branches and twigs. It can be identified by the blunt spore-bearing spines, which can be readily observed using a hand lens.

Order: Geastrales

Family: Geastraceae

Sphaerobolus stellatus

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This diminutive fungus, which can easily be overlooked, is readily identified by the orange star-shaped “catapult” and single central “egg” or spore ball. This fungus disperses its spores by catapulting them a distance of up to 6 metres. It grows on moist decaying wood, dung and other organic debris.

Order: Hymenochaetales

Family: Schizoporaceae

*Xylodon australis**Hyphodontia australis*

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The main identifying features of this crust fungus are its distinctly cracked surface and light brown colour. It grows on dead wood, logs or branches.

1.4 Disc and Cup fungi

Order: Agaricales

Family: Chromocyphellaceae

Chromocyphella muscicola



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Chromocyphella muscicola appears to be an uncommon but widespread species worldwide. It is identified by its whitish, sessile, bell-shaped fruit-bodies up to 4 mm across, with a felty surface. The smooth (gill-less) spore-bearing surface becomes brownish with maturity. It is found in association with mosses on wood.

Order: Agaricales

Family: Agaricaceae

Cyathus olla

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This “Bird’s Nest Fungus” is usually found on woody debris. It is often gregarious and occasionally forms large colonies. The fruit-body at maturity is goblet-shaped with a flared rim, the inner surface is smooth silvery grey, and the outer surface is brownish to greyish.

Order: Agaricales

Family: Agaricaceae

Cyathus stercoreus

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This species is usually found on herbivore dung or on well-rotted litter. It is usually gregarious and occasionally forms large colonies. The inner surface of the cups is smooth and blackish, while the outer surface is brown and shaggy.

Order: Agaricales

Family: Agaricaceae

*Nidula emodensis**Cyathus emodensis**Nidula microcarpa**Crucibulum emodense*

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This group of species has a cup with a hairy outer surface, and a rim that is often fringed with pale hairs. There are two similar species, *Nidula emodensis* and *Nidula niveotomentosa*, the former with a bowl-shaped cup, and the latter with almost vertical sides to the cup.

1.5 Gelatinous fungi

Order: Auriculariales

Family: Auriculariaceae

Auricularia cornea

Auricularia polytricha

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This species is recognised by its gelatinous-textured ear-shaped fruit-body, which has a velvety upper surface and a smooth lower surface. It is found in tropical and subtropical rainforests, where it grows on dead wood to which it has a narrow attachment.

Order: Auriculariales

Family: Auriculariaceae

Auricularia delicata

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This common and distinctive tropical and subtropical rainforest fungus is identified by its flabby and jelly-like texture and deeply veined underside. It occurs on dead wood.

Order: Dacrymycetales

Family: Dacrymycetaceae

Calocera australis

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Calocera australis can be recognised by its small club-shaped (clavate) to spatula-shaped (spathulate) fruit-body which can grow up to 8 mm in height. Depending upon environmental conditions, the colour can vary from a pallid brownish-yellow to orange.

Order: Dacrymycetales

Family: Dacrymycetaceae

Calocera fusca

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Calocera fusca can be recognised by its size: its yellow to yellow-orange clubs can grow up to 25 mm or more in length, making this one of the larger *Calocera* species. It is found on wet rotting wood, such as branches or logs.

Order: Dacrymycetales

Family: Dacrymycetaceae

Calocera sinensis

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Calocera sinensis seems to be the most common member of this widely distributed genus. It is simple or branched and is of a firm-gelatinous consistency. It can be found growing in groups or clusters on moist rotting dead branches and logs of both hardwood and softwood. Members of this genus are very similar in morphology and usually require microscopic examination to separate them.

Order: Auriculariales

Family: Incertae sedis

*Ductifera sucina**Eridia sucina* *Gloeotromera sucina*

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This species is recognised by its clear, semi-translucent, dingy white fruit-bodies, often coalescing to form patches 100 mm or more long and up to 12 mm thick. There are many species of gelatinous fungi, so microscopic examination is recommended for a positive identification.

Order: Atractiellales

Family: Phleogenaceae

Helicogloea compressa

Dendrodochium compressum *Pleurocolla compressa*
Leucogloea compressa



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This fungus usually forms groups of small, whitish, firm gelatinous, hemispherical to cushion-like fruit-bodies (2–3 mm diameter), surrounded by a clear gelatinous layer. They are found on damp rotten wood.

Order: Dacrymycetales

Family: Dacrymycetaceae

Heterotextus miltinus

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This species colonises dead logs and twigs. The yellow bell-shaped gelatinous fruit-body has a narrow attachment to the substrate. On drying, its colour changes to orange-red. This species includes *Heterotextus peziziformis* (separated on microscopic characters).

Order: Septobasidiales

Family: Septobasidiaceae

Septobasidium clelandii

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This species is readily identified by the formation of blackish spines emerging from a gall (swelling) produced by the gall-forming female coccid bug *Callococcus leptospermi*, found predominantly on branches of *Leptospermum* species.

Order: Tremellales

Family: Tremellaceae

Tremella foliacea

Tremella frondosa *Tremella vinosa*
Tremella fimbriata *Tremella crispa*



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This species is usually found on rotting wood. The fruit-body consists of clumps of dark brown, translucent, soft gelatinous material in the form of irregular lobes. The spores are borne on the outer surface of the fruit-body.

Order: Tremellales

Family: Tremellaceae

Tremella fuciformis

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This species is usually found on rotting wood, where it is parasitic on other fungi that are using the rotting wood. The fruit-body consists of clumps of white, translucent, soft gelatinous material in the form of lobed or convoluted folds. The spores are borne on the outer surface of the fruit-body.

Order: Tremellales

Family: Tremellaceae

*Tremella mesenterica**Tremella lutescens*

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This bright orange jelly fungus grows on rotting wood, where it is parasitic on other fungi that are using the rotting wood. The spores are borne on the outer surface of the fruit-body. Although frequently solitary, sometimes large colonies do occur.

1.6 Leathery fungi

Order: Cantharellales

Family: Cantharellaceae

Craterellus cornucopioides



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This species is hard to spot amongst the forest leaf litter, but once found its distinctive trumpet shape makes it readily identifiable. The inside of the 'trumpet' is usually dark brown to almost black, but occasionally yellowish specimens have been found. There are also gilled species in this genus.

Order: Polyporales

Family: Meruliaceae

*Cymatoderma elegans**Cymatoderma lamellatum* *Cymatoderma elegans* var. *lamellatum*

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This elegant goblet-shaped fungus grows on dead wood. It is relatively common in tropical rainforests, but can be found in most rainforest regions. The fruit-bodies are very tough and leathery, which means that they can persist for some time, quite often collecting forest debris.

Leathery

Order: Polyporales

Family: Meruliaceae

*Podoscypha petalodes**Stereum floriforme* *Podoscypha petalodes* subsp. *floriformis*

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This small attractive funnel-shaped fungus with a leather-like texture usually forms rosetted colonies on decaying wood. It is often found at the base of trees, or growing on the ground above buried wood.

Order: Boletales

Family: Amylocorticiaceae

*Podoserpula pusio**Craterellus pusio* *Craterellus multiplex*

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This very attractive fungus grows on or near rotting wood, or on humus. It has soft flesh, and its usually pinkish stipe supports tiers of chamois-like lobes that have a wrinkled lower surface.

Order: Russulales

Family: Stereaceae

*Stereum hirsutum**Thelephora hirsuta**Stereum ochraceum**Thelephora subzonata**Stereum rameale**Stereum amoenum**Stereum complicatum**Stereum kalchbrenneri*

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This is a common, thin, fan-shaped leathery bracket colonising dead hardwood. The upper surface of the pileus is densely hairy, yellowish to yellow-orange with brownish concentric bands. The underside is smooth.

Leathery

Order: Russulales

Family: Stereaceae

*Stereum illudens**Stereum archeri* *Lloydella illudens**Stereum pannosum* *Xylobolus illudens**Sterem spiniferum*

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This is a common, thin, fan-shaped bracket colonising dead wood. The upper surface of the pileus is brown and hairy and has concentric bands. The underside is violet to brownish-violet, may have a whitish bloom due to spore production, and has a white margin.

Leathery

Order: Russulales

Family: Stereaceae

*Stereum ostrea**Stereum fasciatum* *Stereum leichhardtianum**Stereum concolor* *Stereum lobatum*

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This is a common, thin, fan-shaped bracket colonising dead wood in wet native forests. Its bright colour (bright orange to orange-brown) with light and dark coloured concentric bands, yellow undersurface and leathery texture, make this fungus readily identifiable.

1.7 Polypore and Bracket fungi

Order: Polyporales

Family: Steccherinaceae

Austeria citrea

Antrodiella citrea *Tyromyces citreus**Polyporus citreus*

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This polypore is identified by its bright yellow pileus and whitish to very pale yellow pored surface. It grows on decaying wood, often on dead twigs, usually in damp sclerophyll forest.

Order: Polyporales

Family: Meripilaceae

*Grifola colensoi**Polyporus colensoi* *Polyporus multiplex*

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This species grows on decaying wood, usually at the base of *Eucalyptus* trees. It is readily recognised by its large fruit-body, which is made up of numerous overlapping greyish brown fan-shaped lobes (pilei) that are attached to a central base.

Order: Polyporales

Family: Ganodermataceae

Amauroderma rude

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The distinctive feature of this polypore is that the whitish pore area readily stains red when bruised. This red stain slowly turns black with age. The pileus has concentric brown rings and a woody texture. It grows on very rotten, often buried, wood.

Order: Hymenochaetales

Family: Hymenochaetaeae

*Coltricia australica**Coltricia oblectans* *Coltricia cinnamomea**Polyporus oblectans*

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This little polypore, up to 50 mm across, is recognised by its brownish pileus with a surface patterned by radial hairs and concentric zones. It grows on the ground, usually on buried wood. Closely spaced fruit-bodies will commonly fuse together.

Order: Hymenochaetales

Family: Hymenochaetaeae

*Coltriciella dependens**Poria tasmanica**Coltricia dependens**Coltriciella tasmanica*

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Coltriciella dependens is a cosmopolitan species. In Australia it is usually found on the underside of burnt or rotting wood in native eucalypt forest. The brownish, furry pored fruit-bodies are readily identifiable.

Order: Agaricales

Family: Mycenaceae

Favolaschia calocera

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This small bright orange fungus is readily identified by its colour and pored underside. It can form large colonies on fallen dead wood. This fungus has been introduced into Australia and is classed as a pest species. It occurs naturally in Asia and Madagascar.

Order: Agaricales

Family: Mycenaceae

Favolaschia pustulosa

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This small white fleshy or jelly-like fungus is identified by the tiny domes on the surface, which are coincident with pores on the underside. It occurs on decayed wood in rainforest in southern Queensland.

Order: Agaricales

Family: Mycenaceae

Filoboletus manipularis

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This easily recognised common tropical fungus grows on decaying wood throughout most of Queensland. It grows in tufts from a common base and may form very large groups. It is also bioluminescent.

Order: Polyporales

Family: Polyporaceae

*Laccocephalum sclerotinum**Polyporus sclerotinus*

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This small hypogeous sclerotia-forming species, usually found in gravelly or sandy soils, can be recognised by its small reddish brown pileus, white pores and short stipe. It is often found on burnt soil after there has been a fire in eucalypt woodland.

Order: Polyporales

Family: Polyporaceae

*Lentinus arcularius**Favolus arcularius* *Polyporus arcularius*

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This species has a tough thin pileus that is usually depressed in the centre and covered with tiny scales. Underneath it has polygonal pores, which are easily recognised. It occurs on rotting wood in various forest habitats.

Order: Polyporales

Family: Polyporaceae

*Microporus xanthopus**Polyporus xanthopus**Coriolus xanthopus**Trametes xanthopus**Polystictus xanthopus*

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This distinctive funnel-shaped fungus, with a zoned inner surface and a white to creamy finely pored outer surface, grows on dead logs or branches in tropical Australia. The specific name *xanthopus* means “yellow foot”, referring to the yellowish disc of attachment.

Order: Agaricales

Family: Mycenaceae

*Panellus pusillus**Dictyopanus pusillus*

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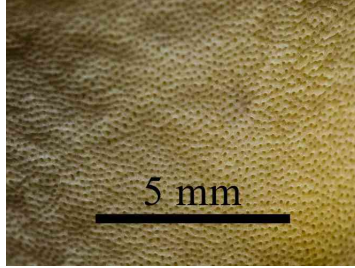
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This tiny fungus is readily identified by its large pores, about 3 per mm. It forms troops on fallen wood in wet eucalypt forest or rainforest, and is attached to the wood by a small disc. This species is classified as a gilled fungus and is related to *Panellus stipticus*.

Order: Polyporales Family: Polyporaceae

Polyporus melanopus complex*Picipes melanopus* *Polyporellus melanopus*

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This species grows on decaying wood, and is identified by its smooth, dark reddish-brown, tough leathery pileus, whitish to ochre-coloured spore-bearing surface with very small pores (5–8 per mm, best observed with a hand lens), and blackish stipe.

Order: Polyporales

Family: Polyporaceae

*Cerrena zonata**Irpea brevis* *Antrodiella zonata*

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This bracket forms colonies on dead wood. A characteristic feature of this species is that the fertile material on the lower surface looks like flattened teeth or curtains about 2–3 mm long.

Order: Agaricales

Family: Fistulinaceae

Fistulina hepatica

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This very distinctive bracket is attached to living or dead eucalypt wood by a short lateral stem. It has a rubbery texture, and when immature it is red to pink in colour. With age the cap becomes brownish and the pores tend to lose their colour. A distinctive feature is that the fruit-body consists of separate tubes.

Order: Polyporales

Family: Steccherinaceae

*Flaviporus brownii**Baeostratoporus braunii**Leptoporus braunii**Junghuhnia brownii**Polyporus rufoflavus*

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The fruit-bodies of this species can be found on dead wood such as fallen logs, where it grows solitary or in groups as resupinate patches, or bracket-like in multiple tiers. It can be readily identified by the sulphur-yellow of its finely pored hymenial surface, 8–10 pores per mm.

Order: Polyporales

Family: Fomitopsidaceae

*Fomitopsis lilacinogilva**Polyporus lilacinogilva* *Polystictus lilacinogilvus*
Trametes lilacinogilva

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The lilac pore surface makes this fungus very distinctive. It is usually found on fallen logs in eucalypt forests.

Order: Polyporales

Family: Ganodermataceae

Ganoderma australe

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This long-lived bracket fungus can grow to 500 mm or more on living or dead wood. The pileus is light to dark brown, with concentric ridges. Each year a new white pore surface is produced, and stains dark brown when bruised. This species includes *Ganoderma applanatum*, which can be separated on microscopic features.

Order: Polyporales

Family: Polyporaceae

*Hexagonia vesparia**Hexagonia gunnii* *Polyporus vesparius*
Osmoporus gunnii

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Among wood-rotting polypores this species is one of the more conspicuous, because of its more or less hoof-like shape and its large 1 to 3 mm wide, angular to elongated pores. Young fruit-bodies are whitish, becoming brownish with a woody texture when mature.

Order: Polyporales

Family: Fomitopsidaceae

*Laetiporus portentosus**Polyporus portentosus**Polyporus eucalyptorum**Piptoporus portentosus*

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This large hoof-shaped bracket is found throughout Australia, causing brown cubical rot in eucalypts. The flesh is firm when fresh, drying corky, and the texture is polystyrene foam-like.

Order: Polyporales

Family: Fomitopsidaceae

*Phaeolus schweinitzii**Coltricia schweinitzii*

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This fungus is found near the base of conifers, and is identified by its pileus, which has a yellow to orange margin, a woolly surface, and a brown central region. Its underside has mustard yellow pores. This exotic species is a root pathogen and is associated with the death of mature conifers.

Order: Polyporales

Family: Fomitopsidaceae

Postia aff. *caesia*

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This polypore can be found on dead conifer wood and hardwood, usually on fallen trunks and branches, as well as on stumps. It is white when young, bruising blue or blue-grey, often becoming bluish grey with age.

Order: Polyporales

Family: Fomitopsidaceae

Postia aff. *lactea**Tyromyces lacteus* sensu Cunningham

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This polypore is white and spongy when fresh, becoming light pinkish-brown and firm when dry. The fruit-bodies grow to about 50 mm wide, with a hairy upper surface and a white or pale cream pore surface. Found on logs, trunks and branches of a variety of native and introduced trees.

Order: Polyporales

Family: Fomitopsidaceae

*Postia pelliculosa**Oligoporus pelliculosus* *Tyromyces pelliculosus*

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This polypore can be found on fallen trunks and branches, as well as on stumps of *Eucalyptus* and *Nothofagus* spp. It has a shaggy hairy upper surface that can be either blackish or reddish dark brown. The pored surface is creamy white.

Order: Polyporales

Family: Meruliaceae

*Rigidoporus laetus**Coltricia laeta* *Polyporus laetus**Fomes laetus*

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The shelf-like fruit-bodies of this species are more than 5 mm thick, grow on decaying wood, and are most readily identified by the orange-rufous upper surface, and orange to pale orange pored lower surface.

Order: Polyporales

Family: Polyporaceae

*Ryvardenia campyla**Postia campyla**Polyporus campylus**Tyromyces campylus**Grifola campyla**Tyromyces falcatus*

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This distinctive multilayered bracket usually grows on dead wood, or occasionally on the trunks of living trees. The bracket is variable in shape and colour but it usually has a white margin, and clear or amber droplets frequently ornament its white pore surface.

Order: Polyporales

Family: Polyporaceae

*Ryvardenia cretacea**Postia cretacea**Piptoporus cretaceus**Polyporus cretaceus*

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This bracket usually grows on dead wood, or occasionally on the trunks of living trees. It is most readily recognised by its white pored lower surface, which usually exudes clear water droplets. Usually found in southern Australia on Myrtle Beech or Mountain Ash.

Order: Polyporales

Family: Polyporaceae

*Trametes coccinea**Polyporus coccineus**Pycnoporus coccineus**Polystictus semisanguineus*

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A common fungus found on dead wood. The colour fades as the fruit-bodies age. The top left-hand image shows the upper surface and the top right-hand image shows the brightly coloured lower surface.

Order: Polyporales

Family: Polyporaceae

*Trametes versicolor**Polyporus versicolor* *Coriolus versicolor**Polystictus versicolor*

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A common species that grows on dead wood. The pileus is relatively thin. The upper surface is smooth and velvety with many concentric zones, while the lower surface is whitish to cream with very small pores.

Order: Polyporales

Family: Polyporaceae

*Tyromyces pulcherrimus**Aurantiporus pulcherrimus* *Polyporus pulcherrimus*

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The bright red colour of this bracket makes it very conspicuous. It grows on dead or living trees, and usually colonises Myrtle Beech *Nothofagus cunninghamii* or snow gums.

1.8 Puffball and Earth-star fungi

Order: Agaricales

Family: Agaricaceae

Battarrea stevenii

Battarrea phalloides *Battarrea muelleri**Battarrea laciniata*

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This species is readily recognised by its long (up to 300 mm), fibrous rust-brown stipe, and similarly coloured spore sac. Mature fruit-bodies are woody and can persist for months, and are normally found on dry sandy soils.

Order: Boletales

Family: Calostomataceae

Calostoma fuscum

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This species occurs solitary or in groups on the forest floor, usually amongst leaf litter or moss. The fruit-body may be up to 100 mm tall. The puffball is quite smooth once it has discarded its well formed protective cap.

Order: Boletales

Family: Calostomataceae

Calostoma rodwayi

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This species occurs solitary or in groups on the forest floor, usually amongst leaf litter or moss in Myrtle Beech *Nothofagus cunninghamii* forests. The fruit-body may be up to 40 mm tall. The puffball has a warty surface, and its protective cap is not as well formed as that of *Calostoma fuscum*.

Order: Agaricales

Family: Agaricaceae

*Lycoperdon pyriforme**Lycoperdon pyriforme*

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This pear-shaped species is common in eucalypt forests, where it usually occurs in colonies on decaying wood. It is one of two Australian puffball species found on wood, the other being *Lycoperdon subincarnatum*, which is spherical in shape.

Order: Agaricales

Family: Agaricaceae

*Lycoperdon subincarnatum**Morganella subincarnata*

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This species grows on rotting wood or woody debris. It is one of two Australian puffball species found on wood, the other being *Lycoperdon pyriforme*, which is pear-shaped.

Order: Boletales

Family: Sclerodermataceae

Pisolithus albus

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This fungus is very common in roadside gravel adjacent to eucalypts. The spores form in sacs, as shown in a cross-section in the top right-hand image, and are spread when the fruit-body erodes. The genus *Pisolithus* is currently under review, which may result in the change of some species' names.

Order: Boletales

Family: Sclerodermataceae

*Scleroderma albidum**Scleroderma radicans**Scleroderma flavidum* forma *macrosporum**Scleroderma tuberoideum*

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Separating species in this genus is difficult: microscopic examination is usually required. *Scleroderma albidum* is relatively common in eastern Australia and can usually be identified by its thick pale scaly exterior, dull dark brown gleba (spore mass) which is usually exposed through a stellate opening, and smallish stem-like base.

Order: Boletales

Family: Sclerodermataceae

*Scleroderma cepa**Scleroderma flavidum*

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Separating species in this genus is difficult: microscopic examination is usually required. *Scleroderma cepa* is relatively common in eastern Australia and can usually be identified by its thick peridium (external skin), usually more than 2 mm thick, mouse-grey gleba (spore mass) which is usually exposed through a stellate opening, and absence of a stipe, but if there is a stipe it is very small.

Order: Boletales Family: Sclerodermataceae

*Scleroderma verrucosum**Lycoperdon verrucosum* *Scleroderma maculatum**Scleroderma nitidum* *Scleroderma capensis**Scleroderma tenerum*

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Separating species in this genus is difficult: microscopic examination is usually required. *Scleroderma verrucosum* is relatively common in eastern Australia and can usually be identified by its thin yellowish scaly leathery exterior, olive-brown to dingy grey gleba (spore mass) and stem-like base.

Order: Boletales

Family: Diplocystidiaceae

Astraeus hygrometricus

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This species is readily identified by the by the tessellated (cracked) surface on the star rays. It grows in woodlands, clearings, or gardens, in association with exotic trees. The star arms tend to distend with humidity, and close inwards when dry.

Order: Geastrales

Family: Geastraceae

*Geastrum fornicatum**Geastrum fenestratum*

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This distinctively shaped earthstar, which from some angles bears a resemblance to the human figure, grows on the ground in dry woodlands and mallee scrub.

Order: Geastrales

Family: Geastraceae

*Geastrum tenuipes**Geastrum pectinatum* var. *tenuipes*

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This species is recognised by its grey spore sac, which has a “beaked” mouth at its apex, furrowed striations on its base, and sits on a prominent pedicel (stalk). The light brown star-like section (exoperidium) can have 6 to 12 star-like rays. It is found on the ground amongst leaf litter.

Order: Geastrales

Family: Geastraceae

*Geastrum triplex**Geastrum indicum*

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This common species of earth-star, which can vary in colour from very pale brown to dark pinkish brown, can be identified when the fruit-body matures, because the rays of the star (the exoperidium) bend back under the fruit-body, and split to form a collar or cup around the base of the spore sac. This species grows on the ground amongst leaf litter.

1.9 Spine fungi

Order: Russulales Family: Auriscalpiaceae

Auriscalpium sp. “eucalypt earpick”



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This very rare distinctive fungus is readily identified by its small semicircular to shell-shaped fruit-body and distinctive long spines. It has been found on the bark of living Narrow- and Broad-leaved Peppermint Gums.

Order: Gomphales

Family: Clavariadelphaceae

Beenakia dacostae

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This irregularly shaped stalked spine fungus is usually found on the ground in the dry debris under fallen logs in wet eucalypt forest. The teeth are initially white, becoming brownish as spores mature. The stipe is woody, with white mycelium at the base.

Spine

Order: Thelephorales

Family: Bankeraceae

Hydnellum sp.

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This species grows on the ground amongst leaf litter in eucalypt forest. It resembles *Phellodon niger* but differs in colour.

Order: Cantharellales

Family: Hydnaceae

Hydnum aff. repandum

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The pileus of this species has a smooth or slightly felty surface, and is usually centrally depressed. The colour is pale yellow to yellow-brown. This fungus grows on the ground in eucalypt woodlands.

Spine

Order: Cantharellales

Family: Hydnaceae

Hydnum crocidens

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This species is recognised by its white to creamy white fruit-body and non-decurrent spines. It grows on the ground in association with *Leptospermum* spp.

Order: Thelephorales

Family: Bankeraceae

Phellodon niger

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The pileus of this species has a tough leathery texture; it is blackish in the centre, concentrically zoned, and its margin is normally white. It grows in clusters on the ground in heathland and forest.

Order: Auriculariales Family: Auriculariaceae

Pseudohydnum gelatinosum

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This species grows on wet rotting wood, sometimes solitary but usually in clusters. Its flesh is translucent and has a gelatinous texture. The colour of the pileus can range from light grey to dark brown.

Spine

1.10 Stinkhorn and Phalloid fungi

Order: Phallales

Family: Phallaceae

Aseroë rubra



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This species appears on forest litter, compost, or woodchip mulch. The spores are contained in a slimy mass at its centre. Flies are attracted to this fungus when the spores mature, as it then starts to produce an odour of decaying meat or sewage.

Order: Phallales

Family: Phallaceae

*Clathrus archeri**Anthurus archeri*

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This attractive looking fungus appears to hatch from an egg, and produces its spores in a foul-smelling olive-brown slime on the inside of the arms. The spores are dispersed by insects, which are attracted to the slime.

Order: Phallales

Family: Phallaceae

*Ileodictyon gracile**Clathrus gracilis*

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This species grows on forest litter, compost, woodchip mulch and on lawns. The immature fruit-body is egg-shaped, and bursts to release the rapidly expanding spherical frame. The brown spore mass (gleba) covers parts of the frame, and it has a foul smell. This species belongs to the Stinkhorn group.

Order: Phallales

Family: Phallaceae

Mutinus aff. albo truncatus

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This small, fragile stinkhorn arises from a small egg-like sac on dead wood or woody mulch in wet forest. The gleba, which contains the spores, forms a brownish region at the apex of the fruit-body. This gleba can be washed off by rain, leaving behind a golden yellow to orangey yellow fertile zone, as shown in the last photo.

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