

Polypores of British Columbia (Fungi: Basidiomycota)

2017



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(Fungi: Basidiomycota)

James Ginns



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On the cover *Trametes versicolor*

ABSTRACT

Nearly 200 species of polypores (*Fungi: Basidiomycota*) are accepted as part of the mycoflora of British Columbia, Canada. The lifestyle of the pathogenic polypores causes significant loss of timber value, especially in old-growth stands. The killing of trees affects species composition, stand density and structure, and the direction and rate of forest succession. Most polypores are saprobes and play a highly beneficial role by contributing to nutrient recycling through the decay of woody debris in forests. The rotted debris promotes growth of tree seedlings and other plants and increases the biodiversity of the forests.

A main purpose of this report is to ease the identification of polypore specimens through a step-by-step reduction of the number of probable names for an unnamed collection. This is accomplished in three ways. First, several series of comprehensive keys lead the user to names of genera and species. Next, the user compares their unnamed specimen with colour photographs of the basidiomata. Finally, the user confirms the identification with a detailed account of each genus or species that includes its known habitats and geographical distribution. The description emphasizes features of fresh basidiomata, such as condition, colour, and size, and also notes critical microscopic characters.

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INTRODUCTION

Polypores are a variable group of fungi—morphologically, genetically, physiologically, and ecologically. Many polypore species are not closely related to any of the others, resulting in a diversity that is emphasized by the approximately 200 species in British Columbia, which are classified in 81 genera and 18 families. The basidiomata (fruiting bodies, also called “shelves,” “brackets,” and “conks”) vary in colour, texture, size, and shape but are typically larger than a few centimetres in diameter. A fungus, with some exceptions, is a polypore if the basidioma has pores on the lower surface; is of a firm, leathery, or woody texture; and grows on wood. A few species that lack pores (e.g., *Echinodontium tinctorium*) produce the hymenium, the thin layer where the basidiospores are formed, on spines. A few other species (e.g., *Albatrellus* spp.) were traditionally included with the polypores even though the basidiomata arise from the ground and lack a woody texture.

Ecologically, the British Columbia polypores are predominately saprobes (fungi that use dead organic matter as food) and inhabit dead wood, such as logs, fallen branches, and processed wood (lumber, poles, etc.), or the dead heartwood in live trees. A few species are pathogenic and cause root rot or rot the sapwood of live trees. Finally, about 10 species are known or presumed to form ectomycorrhizae with the root tips of live conifers.

Purpose

The purpose of this report is to facilitate the naming of collections of polypores. Once a specimen is named, associated data, such as geographic distribution, host trees, and ecological niches, are preserved in herbaria databases. Then, these data are used to characterize the forest types occupied by the polypores of British Columbia and to plan biological surveys.

Scope

Detailed descriptions are included for the approximately 200 species of polypores known to occur in British Columbia. In addition, comments and comparisons are included for about 20 species that have been reported from adjacent provinces, states, and territories and probably occur in British Columbia.

Effect on Wood

Ninety-five percent of British Columbia’s polypores have mycelium (an aggregation of hyphae), which grows into wood and exude enzymes to break down (decay) the wood, and basidiomata, which attach to wood, such as branches, trunks, stumps, and roots.

Wood has three major elements: (1) lignin, (2) cellulose, and (3) hemiceluloses. If enzymes produced by a fungus destroy the cellulose fibres, the residue is principally brittle, brown lignin; the resulting decay is known as “brown rot.” If the enzymes destroy mainly the lignin, the residue is largely partially degraded cellulose; the resulting fibrous and pale decayed wood is called “white rot.” Nevertheless, different polypores remove the cellulose and lignin at different rates, indicating a continuum from brown to white rots.

The type of rot correlates so well with other taxonomically significant generic characters that current taxonomic schemes accept that all species of a genus cause the same type of rot. For example, all species of *Antrodia* are associated with a brown rot, and all species of *Trametes* cause white rots.

Cultural Significance

The basidiomata of several polypores have been used for religious and medicinal purposes. For example, *Fomitopsis officinalis* has an important spiritual and medicinal role for First Nations of the Pacific Northwest. Basidiomata, carved into spirit figures by shamans, were considered to have supernatural powers and were used in rituals for curing the sick. The images were placed at the heads of shaman graves to guard the site and protect the shaman's spirit (Blanchette 1997).

In Alberta and adjacent provinces, carved *Haploporus odorus* ornaments on sacred robes, in scalp necklaces, and in medicine bundles have sacred powers attributed to them (Blanchette 1997). These ornaments were worn in battle because they were believed endowed with supernatural power.

Basidiomata were used in smudging to purify an area before a sacred ceremony or healing ritual, and to "call" helpful spirits or "chase out" harmful influences. Necklaces of *H. odorus* "beads" were worn by older persons to ward off illness. *Haploporus odorus* basidiomata were used as a styptic on wounds, and an infusion was drunk to stop diarrhoea and treat dysentery (Blanchette 1997).

Sterile conks of *Inonotus obliquus*, commonly called "chaga," are pulverized and drunk as a tea. This tea is claimed to promote good health and reduce the effects of several internal diseases and symptoms. *Trametes versicolor* is advertised as a remedy for various maladies.

Economic Impact

Wood decay fungi cause billions of dollars in losses worldwide each year by destroying wood in forest trees that could be used for timber, by attacking urban shade trees, and by causing decay in buildings and other wood in service (Blanchette 2015). Wood products commonly decayed are utility poles, pilings, guard rails, and mine timbers (Gilbertson and Ryvarden 1986).

Most wood decay fungi are polypores. A few polypores are pathogenic and kill trees, thus reducing the yield in commercial forestry operations. The prominent pathogenic polypores are those that cause root rots (i.e., *Heterobasidion annosum* species complex, *Onnia tomentosa*, *Phaeolus schweinitzii*, and *Phellinidium weiri*). Financial losses caused by *Heterobasidion annosum* species complex in the European Union were an estimated 790 million euros per year (Garbelotto and Gonthier 2013).

Other polypores survive for decades within live trees by decaying the heartwood. This lifestyle causes loss of timber value, especially in old-growth stands. Logs with extensive heart rot are left in the forest, as significant waste results when these logs are sawn. *Porodaedalea pini* and *Phellinus tremulae* are the major causes of volume losses in conifers and hardwoods, respectively (Gilbertson and Ryvarden 1986).

Today's forest management plans recommend harvesting trees before the development of significant heart rot. As a result, the losses attributed to heart rot in live trees should decline, along with niches for cavity-dependent wildlife.

Most polypores are saprobes and play a highly beneficial role by decaying woody debris (dead trees, fallen branches, logs, and stumps) in the forests. The rotted woody debris promotes growth of tree seedlings and other plants and increases the biodiversity of the forests.

Ecological Impact

Polypores have a significant impact in forest ecosystems. The two major biomass components (the amount of living organisms) of forest soils are (1) mycorrhizal fungi and (2) wood decay fungi. The major role of the wood-rotting polypores is to reduce the volume of dead wood in the forests and, as such, they are important recyclers of carbon. Through their ability to enzymatically digest wood, the polypores return tons of carbon to the atmosphere each year.

Brown rot residues are very stable and are important organic components in forest soils. Soils with a high content of brown rot residue have greatly increased water-holding capacity, are major sites of ectomycorrhizal development and nonsymbiotic nitrogen fixation, have a high cation exchange capacity, have a favourable acid pH, and minimize fluctuations in soil temperatures.

By killing trees, the root-rot polypores create openings in forest stands. These openings are colonized by herbs, shrubs, and tree species not attacked by the root-rot species. The result is an increase in the biodiversity of the forest stand.

Decaying trees also provide shelter to animals. For example, woodpeckers, nuthatches, and owls either nest in cavities they excavate in heart-rotted stems or in holes created by the rotting of dead branches in live trunks. The wood-boring beetles, a large group with many species in various families, have larvae or adult forms that depend on partially decayed wood as food.

HOW TO USE THIS REPORT

The main focus of this report is the naming of collections of polypores. This process of identification involves comparing the features of a collection with pictures or descriptions of named species. It begins in the field when the polypore is fresh because some polypores have features that change significantly on drying. The major changes that occur on drying are discolouration, shrinking, loss of odour, and staining on bruising.

Collecting

The steps involved in naming a specimen begin in the forest.

Equipment Several tools are available to remove a basidioma from logs, trunks, stumps, or branches. A hatchet is favoured by some collectors. My preferences are a 3 cm wide wood chisel and, to hammer the chisel, a 25 cm long piece of a hardwood branch approximately 4 cm in diameter, a gardener's 20 cm folding saw, or a 17 cm sheath knife. A camera, GPS unit, 10–20× hand lens, and a 7 × 12 cm note pad, as well as several sizes of kraft paper bags are useful, if not essential.

Data recording Temporary labels written at the collecting site generally include the following information.

1. A tentative identification of the polypore.
2. The type of substrate; for example, conifer or hardwood, spruce or birch, on log, stump, live tree, or fallen branch.
3. Forest type; for example, hemlock/cedar or old growth.
4. Locality.
5. Unique collection number.

6. Date.
7. Colour, odour, taste, texture, discolouration on bruising, size, and unusual features of fresh basidiomata.
8. Type of decay, such as brown cubical rot, white rot, pocket rot, or laminated rot.

Handling of basidiomata Remove a specimen from the substrate carefully to preserve the point of attachment. If the basidioma is fragile, support the fungus to remove the basidioma and the substrate beneath it in one piece. Include pieces of the wood and the decay to allow confirmation of the host and decay. Transport the basidioma and label in a paper bag that is big enough to fold the top over. Do not mix specimens: use one bag for each specimen. If retaining the specimen for study or preservation in a herbarium, thoroughly dry the specimen as soon as possible to prevent mould growth and the deterioration of delicate tissues and cells (e.g., basidia and cystidia). The basic type of dryer is an electric heater with a fan; popular are fruit dehydrators with stacking shelves. Protect the dried polypores from destruction by insects. Storing in boxes or bags with a few moth balls is usually adequate and zip-lock bags provide a tight seal.

Microscopic Study

Because several species have confusingly similar macroscopic features, microscopic study may be necessary to satisfactorily name a specimen. The following equipment and procedure are recommended.

Equipment Microscope that magnifies at least to 1000 \times , immersion oil, glass slides, cover slips of #1 thickness.

Mounting media Potassium hydroxide 2–5% solution, Melzer's reagent, distilled water.

Procedure If possible, study the specimen while fresh before cells shrink and become agglutinated. Place a small part of the fungus in a drop of mounting medium on a glass slide—the smaller the piece of fungal tissue on the slide, the better. Place a cover slip over the tissue. Blot any excess mounting solution to make the layer of tissue as thin as possible. Examine under microscope. Phase contrast helps define cells with thin walls.

Identification

The process of identifying an unnamed fungus or collection, among the 200 polypores in this report, is streamlined with the use of dichotomous “keys.” This type of key offers the user a series of choices or alternatives that outline important distinguishing features. The choices are usually in pairs such as “Is the fungus black?” versus “Is the fungus white?” The choice that best matches your fungus will lead to another pair of choices. Each choice reduces the number of descriptions that require consultation to get to a name. The choices are brief or quite detailed. Nevertheless, such keys do have limitations. Using keys can be frustrating, especially if your fungus does not obviously fit into either of the pair of choices. This may occur when the collection is too young or too old or “not typical,” all the variations in the species are not included, or the actual choices may be at fault.

When the number of possible names is reduced to one or a few, the next step is to compare the sample with detailed genus or species descriptions and photographs of species.

Each description uses a standardized format to characterize the pertinent features of a genus or species, allowing for easy comparisons with similar species. The descriptions emphasize the distinctive significant features, particularly the field characters, needed to identify unnamed collections. Descriptions incorporate the following information.

Standard Format for Descriptions

Current scientific name These names and abbreviations of authors' names follow *Index Fungorum* (Kirk [editor]; see: www.indexfungorum.org).

Synonyms A synonym (abbreviated "syn.") is simply an alternative scientific name for a fungus. The citing of a synonym or synonyms tells you that other scientific names have been used for this fungus. Two kinds of synonyms are used. One kind occurs when a name is transferred to another genus; for example, *Poria albobrunnea* would become a synonym of *Antrodia albobrunnea* with such a transfer. A second type of synonym occurs when we recognize that two or more species names have been applied to the same fungus; for example, the fungus labelled *Poria dichroa* was recognized as the same fungus currently named *A. albobrunnea*, and therefore the name *Poria dichroa* is listed as a synonym of *A. albobrunnea*.

The synonyms included in this report are pertinent to the British Columbia polypore flora. Some synonyms are names used by Gilbertson and Ryvarden (1986, 1987) in *North American Polypores* that differ from the current scientific name. These synonyms are listed to allow easy access to the detailed descriptions and illustrations in *North American Polypores*.

Common names (English names) Common names are included if used in the North American literature. A few well-known polypores have several common names, but no attempt was made to include all common names for a species. Many of the species do not have a common name.

Habitat Ecologically, the polypores are referred to as the "wood rots." Preferred substrates are the wood of hardwoods (angiosperms) and conifers (gymnosperms). Most polypores colonize dead trees, logs, fallen branches, and processed wood such as mine timbers, lumber in buildings, and fence posts. The polypores inhabiting dead wood, such as *Piptoporus betulinus*, are saprophytes (i.e., organisms that obtain nutrition from dead tissues). Other polypores colonize live roots or the trunks of live trees and are pathogenic.

A few species produce basidiomata that arise from the ground (e.g., *Phaeolus schweinitzii* and species of *Albatrellus*). Some of these ground-dwelling species are ectomycorrhizal; others are pathogenic if attached to live roots (e.g., species of *Heterobasidion*), or saprobes if attached to dead roots. Habitats can be described broadly, such as by the ecosystem, or at a relatively finer scale, such as "on the bark of dead branches in the lower crown of live spruce."

Common and technical names of trees known to be substrates is limited to records for British Columbia. Refer to Gilbertson and Ryvarden (1986) for lists of substrates found throughout North America.

Geographic range Although some geographic ranges can be described in general terms, such as "widespread," in a province with diverse topography and forest ecosystems such general terms are of limited value. In this report, geographic ranges are based on collections, and since polypore collection

in British Columbia has been sparse and random, the range of each species is incomplete. Range data are based on literature reports, such as Fernando et al. (1999) and Wood (1986) and in online databases. Extensive use was made of E-Flora BC's interactive maps (Klinkenberg [editor] 2013), which are based on the collections in British Columbia's major herbaria. Collection information available in online databases was also consulted. See, for example:

- the University of British Columbia Herbarium (Berbee [curator]: www.biodiversity.ubc.ca/museum/herbarium/fungi/index.html);
- the Pacific Forestry Centre's Forest Pathology Herbarium (Callan [curator]: <http://cfs.nrcan.gc.ca/herbarium>); and
- the United States Department of Agriculture's Systematic Botany and Mycology Laboratory Fungal Databases (Farr and Rossman [curators]: <http://nt.ars-grin.gov/fungaldatabases>).

I especially appreciate having prepublication access to Agriculture and Agri-Food Canada's National Mycological Herbarium Polypore Database (Redhead [curator]).

For most British Columbia polypores, the databases contain relatively few records. Specific localities where a species was found are included; it is hoped that this will stimulate sampling of the often-vast areas of the province from which polypore data is lacking.

In addition to specific localities in British Columbia, the occurrence of each species in the western provinces and states is given, with the names presented using the following abbreviations: Alberta (AB), British Columbia (BC), Manitoba (MB), Northwest Territories (NT), Saskatchewan (SK), Yukon Territory (YK), Alaska (AK), Arizona (AZ), California (CA), Colorado (CO), Idaho (ID), Montana (MT), New Mexico (NM), Oregon (OR), Utah (UT), Washington (WA), and Wyoming (WY). These data are primarily from Gilbertson and Ryvarden (1986, 1987).

Descriptions of the basidiomata The descriptions are of species unless more than one species occurs in a genus. In this case, a description of the genus precedes the descriptions of individual species. The genus description should be carefully consulted because it includes features common to all species in the genus and these common features are not always repeated in each species description. Most terms, particularly those relevant to the polypores, and in bold in the descriptions, are defined in the Glossary.

Each description begins with a paragraph on the macroscopic features of the basidiomata and includes: dimensions (Figure 1); shapes (Figures 2 and 3); pileus surface colours and textures; context thickness, colour and texture; and features of the pore layer.

The second paragraph describes only the significant microscopic features and includes characterization of the hyphae (Figures 4 and 5), basidia, basidiospores (Figure 6), and any sterile cells in the hymenium, especially the various types of cystidia (Figure 7) and setae (Figure 8).

The description section concludes with notes that highlight distinguishing features and compare the polypore with similar species. Mention is also made of polypores in adjacent provinces, states, and territories but not yet reported in British Columbia.

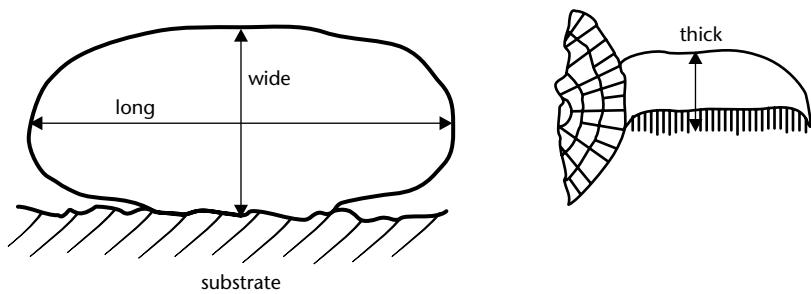


FIGURE 1 *Dimensions of basidiomata.*

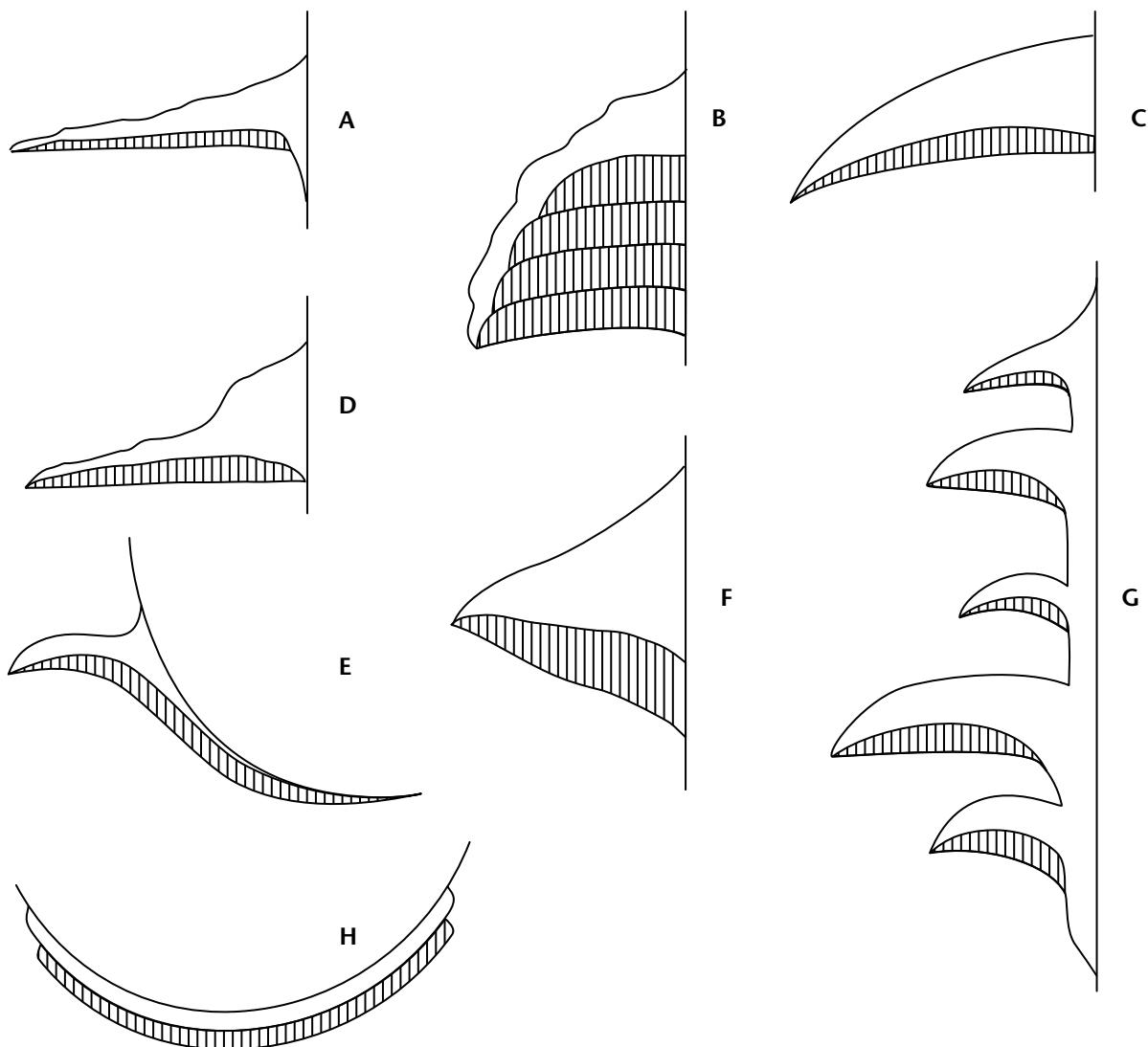


FIGURE 2 *Common shapes of basidiomata (vertical sections): (A) applanate; (B) hoof-like; (C) convex; (D) applanate with a distinct hump next to the substrate; (E) reflexed; (F) triquetrous; (G) imbricate; and (H) effuse.*

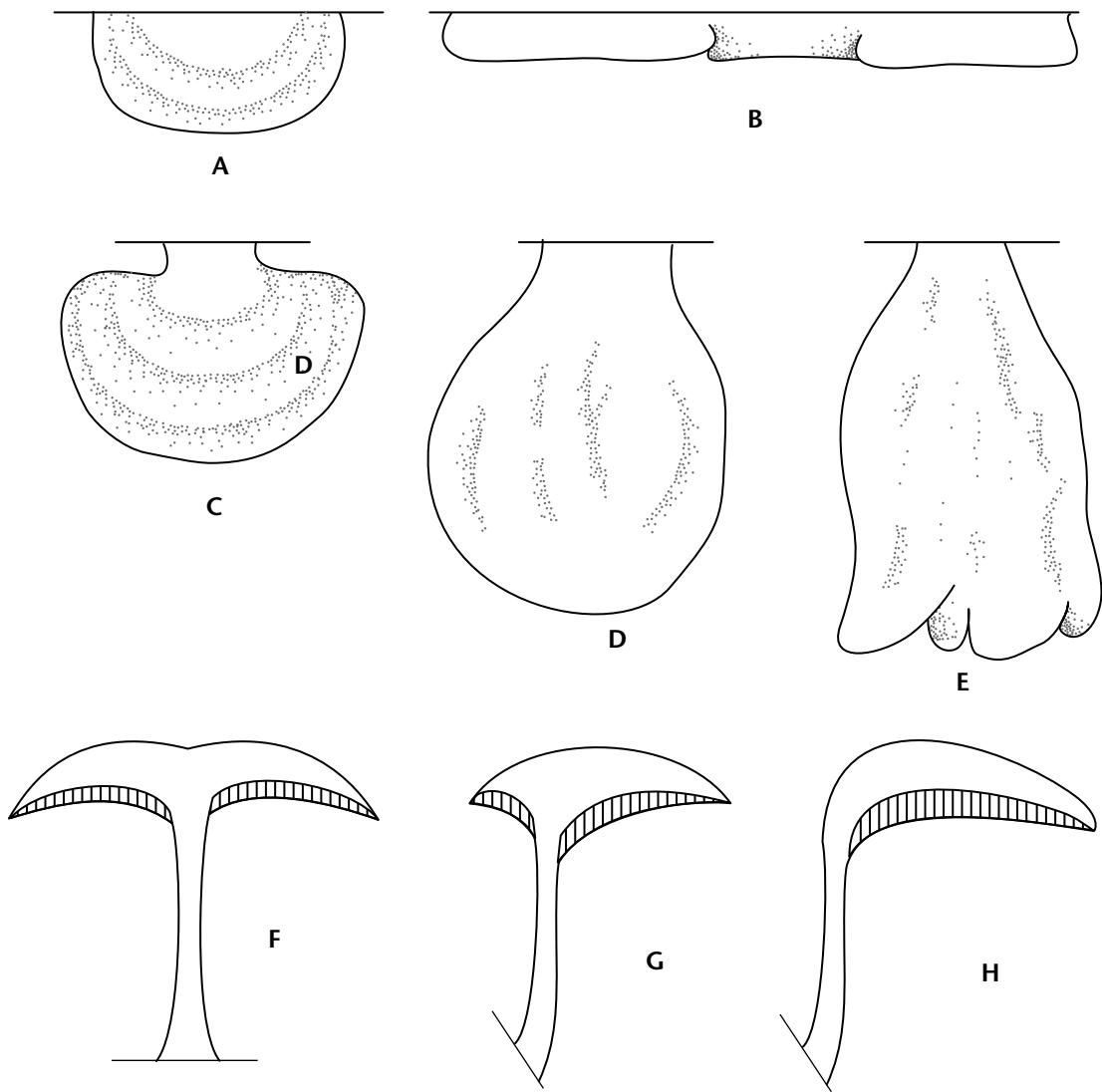


FIGURE 3 *Common shapes of basidiomata (as viewed from above) and positions of stipes: (A) broadly attached; (B) broadly attached, elongated; (C) dimidiate; (D) flabelliform; (E) spathulate; (F) central stipe; (G) excentric stipe; and (H) lateral stipe.*

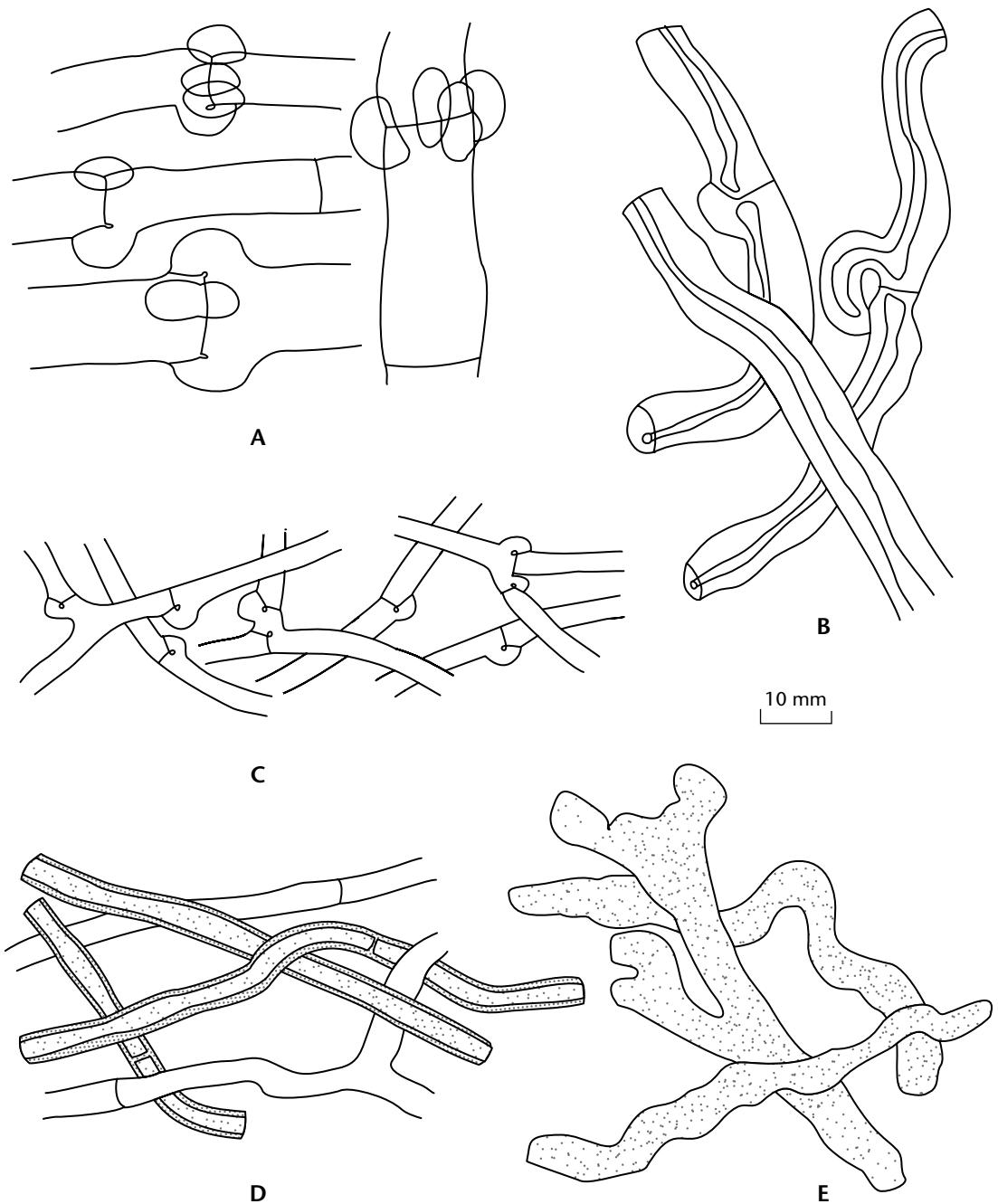


FIGURE 4 Common types of hyphae: (A) thin walled with verticillate clamp connections; (B) thick walled with clamp connections; (C) thin walled with clamp connections; (D) thin and thick walled with simple septa; and (E) thin walled with oily contents (gloeoplerous hyphae).

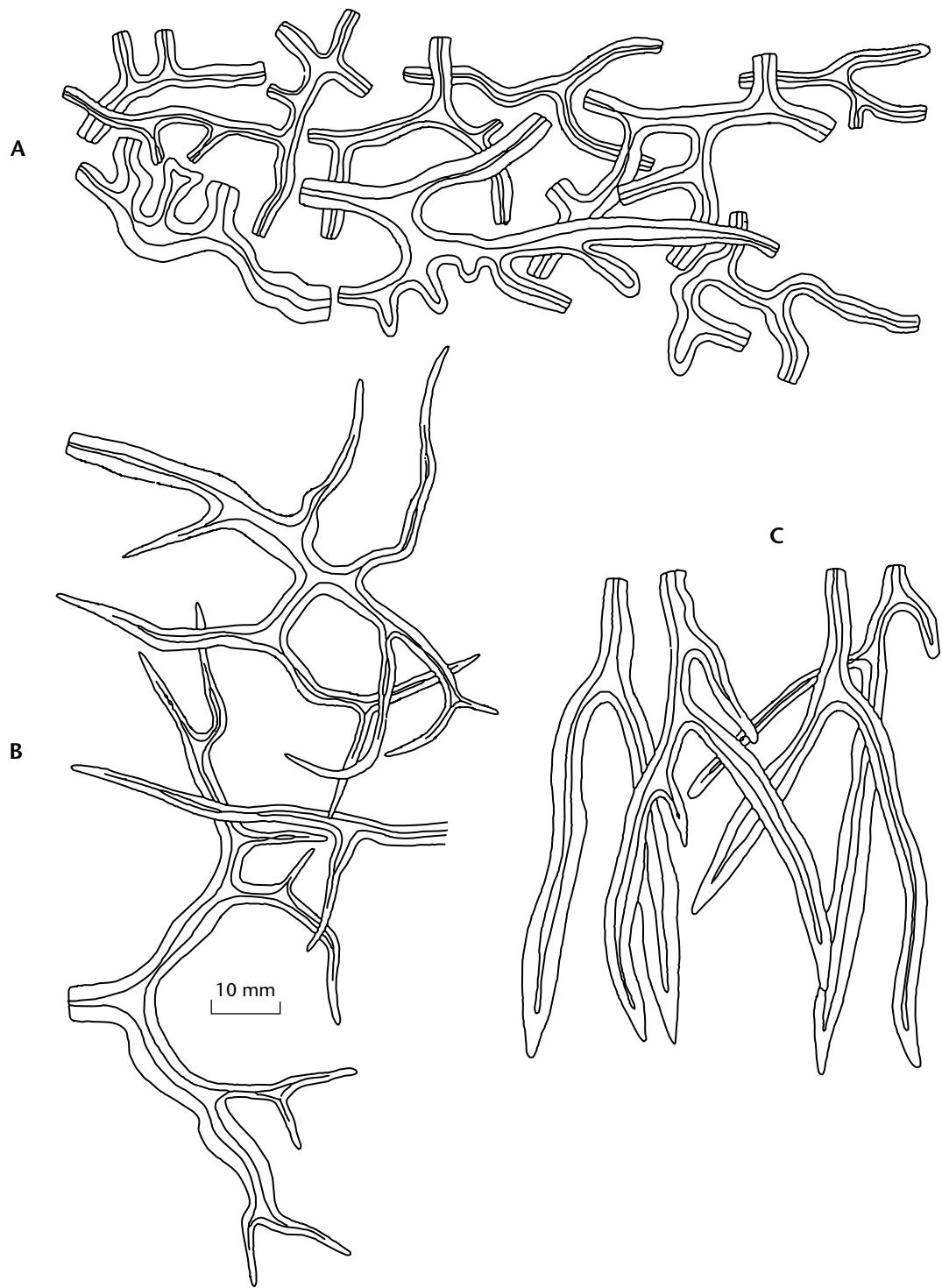


FIGURE 5 Types of binding hyphae: (A) very frequently branched; (B) dendritic branching habit; and (C) lance-like apices that penetrate into the hymenium.

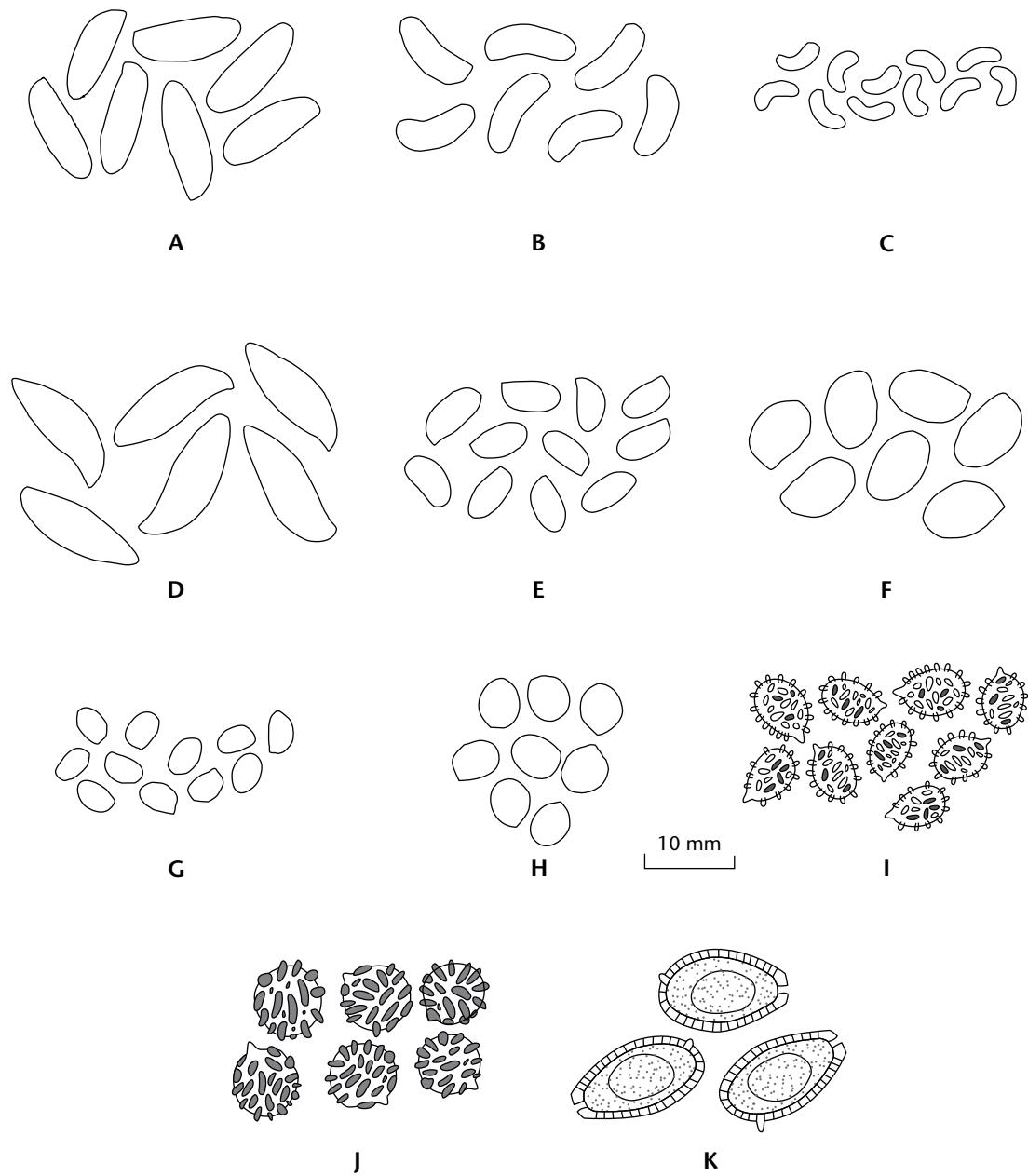


FIGURE 6 *Basidiospore shapes and ornamentation:* (A) cylindrical; (B) allantoid; (C) lunate; (D) fusoid, narrowly ellipsoid; (E) oblong; (F) broadly ellipsoid; (G) subglobose; (H) globose; (I) spiny; (J) amyloid ridges; and (K) brown, thick walled, truncated apex with germ pore and small, saucer-like depressions on the surface.

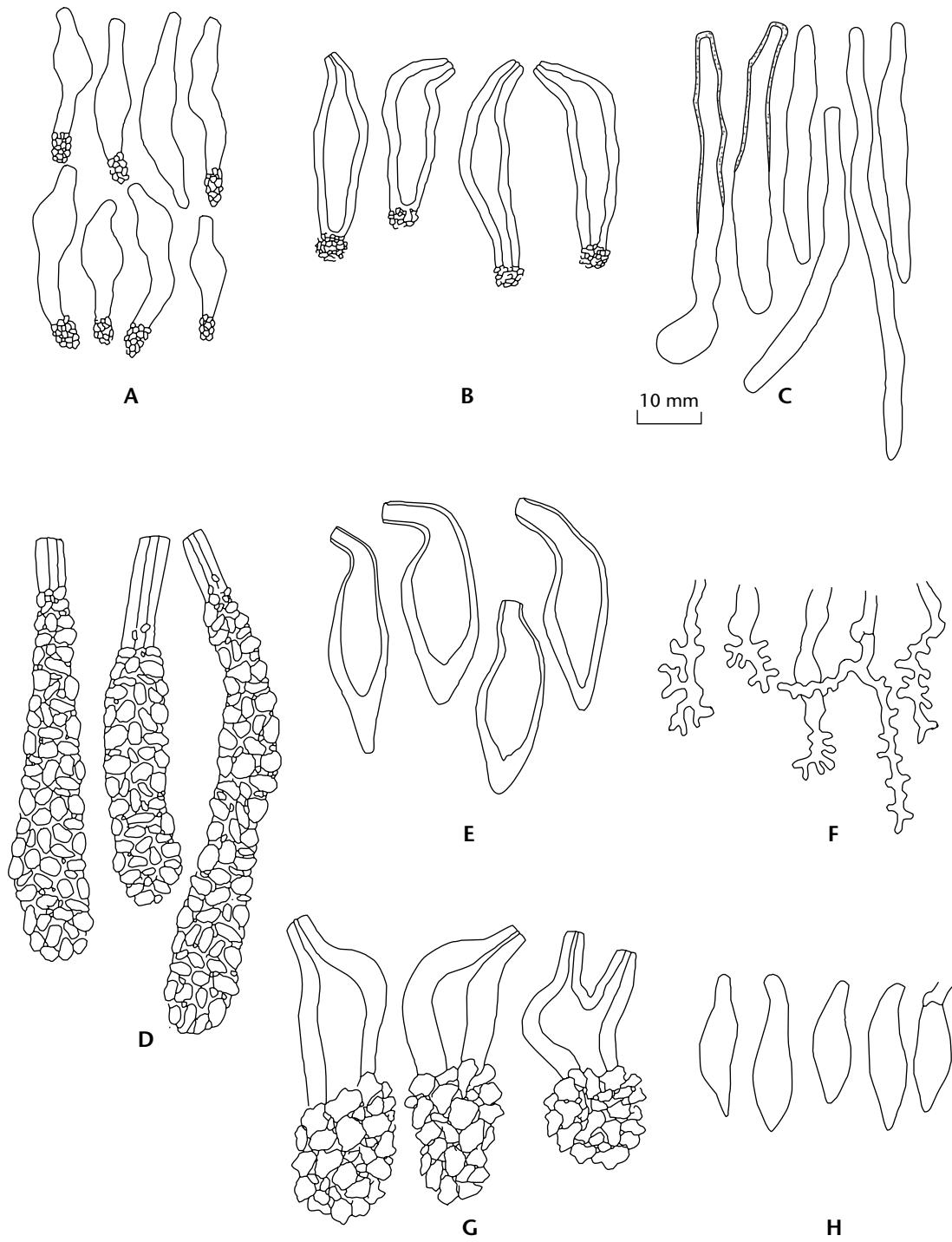


FIGURE 7 Types of cystidia, cystidioles, and dendrohyphidia: (A) thin walled, apically encrusted; (B) thick walled, apically encrusted; (C) cylindrical; (D) thick walled, coarsely encrusted; (E) ventricose; (F) dendrohyphidia; (G) apically coarsely encrusted; and (H) fusoid cystidioles.

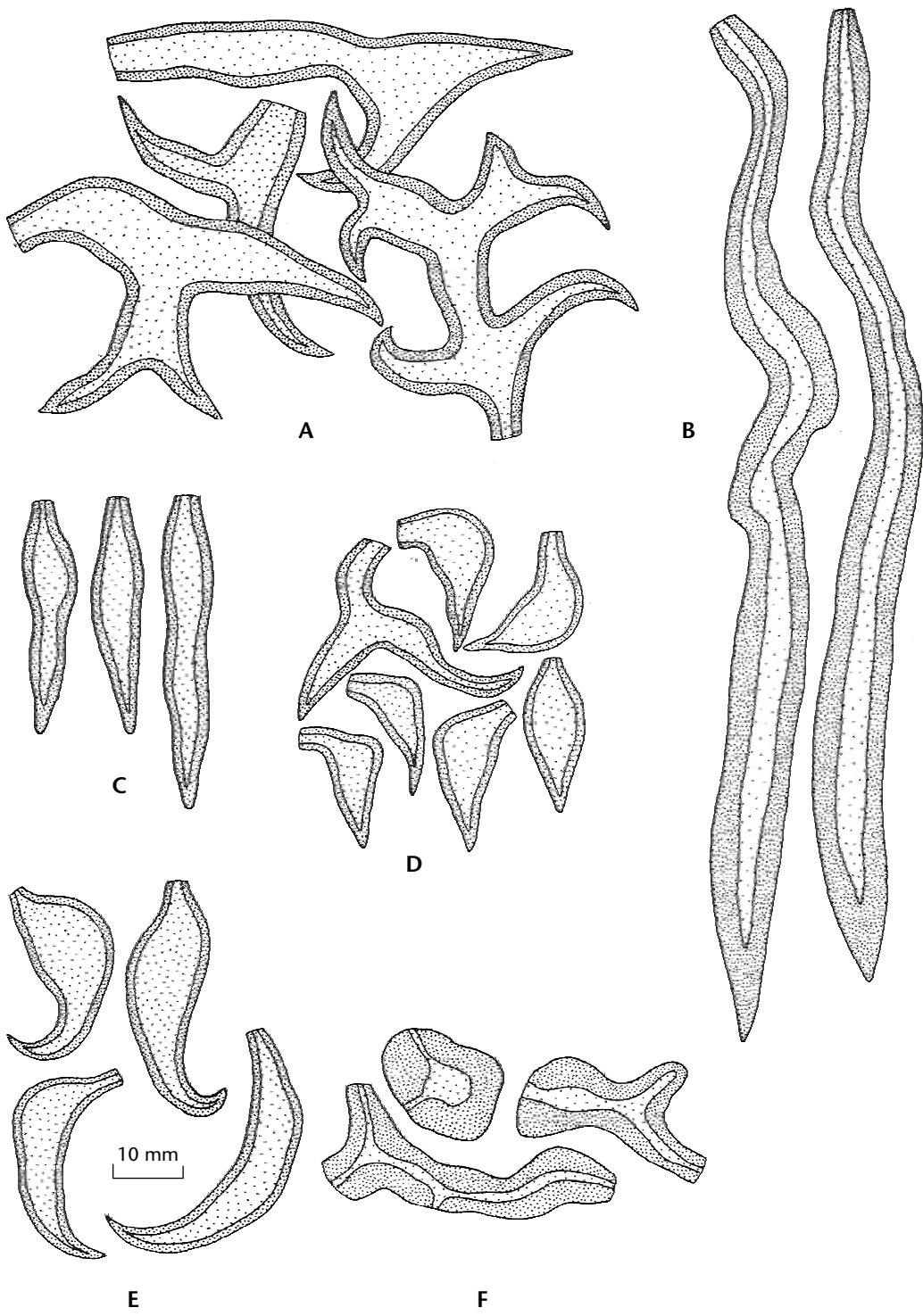


FIGURE 8 *Types of setae and sclerids: (A) branched setal hyphae; (B) setal hyphae; (C) subulate; (D) ventricose; (E) hooked apices; and (F) sclerids.*

TAXONOMY

For more than a century, polypore taxonomy was an arrangement of species based mainly on the physical appearance of the basidiomata (fruiting bodies). Polypores, especially species with large basidiomata, were sorted into genera, orders, and families based primarily on the position of the hymenium. Does the hymenium line pores, cover the surface of spines and gills, or coat a smooth layer of mycelium? The circumscription of polypore groups was altered as the physical features were more carefully analyzed and as the deemed taxonomic value of characters changed. The fleshy, poroid boletes were segregated from the woody, poroid *Fomes* and *Polyporus* types. As a result, new families and genera were named, and species were placed in the hierarchy accordingly. In the 1950s, the North American polypores were distributed among nine genera (Overholts 1953); by 1987, the species were arrayed in 96 genera (Gilbertson and Ryvarden 1986, 1987).

About 100 years ago, mycologists began using microscopes, and a new set of characters, including basidiospores, hyphae, and cystidia, were employed to sort the polypores into new groupings. As the quality of microscopes improved, more taxonomic arrangements were proposed. Remember that the polypores themselves did not change; what changed was the way we examined them. New technologies and methods of analysis, such as studies of chemical composition, genetics (mating studies), and DNA sequencing with molecular phylogenies, have resulted in many, sometimes radical-appearing, changes in polypore taxonomy. It became obvious that the same hymenial morphology (pores, spines, gills, etc.) had evolved in different, often only distantly related, groups.

In the future, polypore taxonomy will evolve as collecting in unusual habitats yields new species, as techniques are refined, and as a greater percentage of the species are sequenced.

The taxonomic diversity of the British Columbia polypores and the current thinking on their phylogenetic relationships is shown by the grouping of the genera into orders and families (Table 1). This arrangement is by no means definitive and changes in the circumscription of both species and genera will happen. The scheme follows, with a few exceptions, the checklist of the 492 species of North American polypores (Zhou et al. 2016).

TABLE 1 *Taxonomic arrangement of the orders, families, and genera of British Columbia polypores. Use of the symbol "?" indicates a tentative placement.*

Order	Family	Genus
Atheliales	Atheliaceae	<i>Byssoporia</i>
Auriculariales	?family	<i>Aporpium</i>
Boletales	Serpulaceae	<i>Meruliporia</i>
Gloeophyllales	Gloeophyllaceae	<i>Gloeophyllum</i>
Hymenochaetales	Hymenochaetaceae	<i>Coltricia, Fomitiporia, Fuscoporia, Inocutis, Inonotopsis, Inonotus, Mensularia, Onnia, Phellinidium, Phellinopsis, Phellinus, Phellopilus, Porodaedalea, Pseudoinonotus</i>
	Schizophoraceae	<i>Hyphodontia, Oxyporus, Schizopora</i>
Polyphorales	Fomitopsidaceae	<i>Amylocystis, Anomoloma, Antrodia, Auriporia, Climacocystis, Fomitopsis, Ischnoderma, Laetiporus, Phaeolus, Piptoporus, Pycnoporellus</i>
	?Fomitopsidaceae	<i>Anomoporia</i>
	Ganodermataceae	<i>Ganoderma</i>
	Meripilaceae	<i>Grifola, Physisporinus, Rigidoporus</i>
	Meruliaceae	<i>Abortiporus, Bjerkandera, Gelatoporia, Gloeoporus, Irpex, Junghuhnia, Xanthoporus</i>
	Phanerochaetaceae	<i>Antrodiella, Ceriporia, Ceriporiopsis</i>
	Polyphoraceae	<i>Cerrena, Coriolopsis, Cryptoporus, Daedaleopsis, Datronia, Dichomitus, Diplomitoporus, Fomes, Hapalopilus, Haploporus, Lenzites, Leptoporus, Osteina, Perenniporia, Polyporus, Postia, Pycnoporus, Sarcoporia, Skeletocutis, Spongipellis, Trametes, Trichaptum, Tyromyces, Wolfiporia</i>
	?Polyporaceae	<i>Trametopsis</i>
Russulales	Albatrellaceae	<i>Albatrellus, Jahnoporus, Polyporoletus</i>
	Bondarzewiaceae	<i>Bondarzewia, Heterobasidion, Wrightoporia</i>
	?Scutigeraceae	<i>Neoalbatrellus</i>
	Echinodontaceae	<i>Echinodontium</i>
Thelephorales	Bankeraceae	<i>Boletopsis</i>
Trechisporales	Hydnodontaceae	<i>Porpomyces, Trechispora</i>

KEYS TO GENERA AND SPECIES

- 1a Basidioma with a stipe; on the ground or on wood Key A
1b Basidioma lacking a stipe; typically on wood 2
2a Basidioma context tan to brown Key B
2b Basidioma context not tan to brown 3
3a Basidioma context pink, red, purple, or orange Key C
3b Basidioma context white, grey, buff, cream, or yellow 4
4a Basidioma with a pileus Key D
4b Basidioma effuse (lacking a pileus) Key E

Key A
Basidioma with a Stipe; on the Ground or on Wood

- 1a Context brown; hyphae lacking clamp connections 2
1b Context white to cream except one species with a pink tint; generative hyphae of most species with clamp connections 4
2a Pore surface greenish brown; pileus surface initially orange, becoming brown with a broad yellow margin; pores round to daedaleoid, 1–3 per millimetre, some larger; stipe up to 5 cm thick; context generally 1.0–1.5 cm thick *Phaeolus schweinitzii*
2b Pore surface pale buff, golden, cinnamon to dark brown, lacking greenish tints; pileus surface pale buff, yellowish brown, pale cinnamon, brown, deep brown, or deep reddish brown; pores round to angular, 2–4 per millimetre; stipe 0.6–2 cm thick; context less than 1.0 cm thick 3 (Hymenochaetaceae)
3a Pileus typically 10–15 cm diameter; pileus surface pale buff, yellowish brown to reddish brown, tomentose to glabrous; context generally 0.2–1.0 cm thick, duplex, rusty brown; stipe generally 1–2 cm thick; basidiospores hyaline; setae present *Onnia*
3b Pileus less than 10 cm diameter; pileus surface brown to rusty brown, often silky, velvety, shiny, zonate; context up to 0.2 cm thick; stipe generally less than 1 cm thick; basidiospores pale golden yellow to yellow brown; setae lacking *Coltricia*
4a On stumps, logs, or trunks of live and dead trees 5
4b On the ground 9
5a Pileus surface a smooth, shiny, reddish brown, hard, lacquer-like crust; spore print brown; on conifers *Ganoderma*
5b Pileus surface lacking a lacquer-like crust, either roughened with brown scales or smooth; spore print white; on hardwoods and conifers 6
6a On dead conifers *Postia*
6b On stumps or trunks of living and dead hardwoods 7
7a Pileus surface typically pale buff with brown scales; margin acute; basidiospores 14–18 µm long *Polyporus squamosus*
7b Pileus surface white to grey, lacking scales; margin often broadly rounded; basidiospores 4–6 µm long 8

- 8a On dead trunks and logs of birch (*Betula* spp.); margin a broadly rounded curb around the pore surface; pores round to angular *Piptoporus betulinus*
- 8b On dead poplars (*Populus* spp.); margin thin, acute; pores radially elongated *Trametes gibbosa*
- 9a Pore surface yellow 10
- 9b Pore surface not yellow 11
- 10a Pileus surface orange *Laetiporus*
- 10b Pileus surface ochreous to pale yellow brown *Xanthoporus syringae*
- 11a Pileus and (or) pores typically with lilac and (or) green tints 12
- 11b Pileus and pores lacking lilac and green tints 13
- 12a Pileus surface smooth, velvety; basidiospores subglobose, wall thick with internal cavities *Polyporoletus sylvestris*
- 12b Pileus surface with distinct squamules; basidiospores broadly ellipsoid to tear-drop shape, wall thin *Albatrellus ellisi*
- 13a Basidioma usually solitary, funnel-shaped in vertical section, often misshapen with pores on all surfaces, up to 20 cm diameter, tough-leathery; pileus surface near white to tan; pore surface white to pallid, bruising pale rufous; chlamydospores in context; gloeocystidia in hymenium and trama *Abortiporus biennis*
- 13b Basidioma not with the above combination of characters 14
- 14a Basidioma multipileate (with many pilei arising from a common base) 15
- 14b Basidioma with one pileus or with a few arising from the same base 17
- 15a Pileus surface yellow; odour mild *Polypus*, see *Albatrellus avellaneus*
- 15b Pileus surface pale grey brown, pale lavender grey to dark brown; odour pleasant, nutlike 16
- 16a Pileus surface velvety, tan to grey brown, sometimes dark brown; context generally more than 5 mm thick; tube layer exuding a white, acrid latex when fresh; generative hyphae lacking clamp connections; basidiospores globose to subglobose, 5–7 µm wide, wall ornamented with short, amyloid ridges *Bondarzewia mesenterica*
- 16b Pileus surface smooth or finely fibrous to rough, pale lavender grey to grey brown, sometimes dark brown; context 3–5 mm thick; tube layer lacking latex; generative hyphae with clamp connections; basidiospores ellipsoid to ovoid, 4.0–4.5 µm wide, wall smooth *Grifola frondosa*
- 17a Basidioma fleshy, brittle; basidiospores 4–8 µm long 18
- 17b Basidioma leathery, flexible; basidiospores 6–18 µm long 20
- 18a Pileus surface white, pale blue, orangeish tan, yellowish green; basidiospores ellipsoid, broadly ellipsoid, ovoid, subglobose, 4–5 × 2.8–4.2 µm, walls hyaline, smooth *Albatrellus*
- 18b Not with this combination of characters 19

- 19a Pileus surface grey brown, purplish brown, brown, finely velvety or of fine fibres; odour pleasant, nutlike; tube layer exuding a white, acrid latex when fresh; basidiospores globose to subglobose, $6-8 \times 5-7 \mu\text{m}$, ornamented with short, amyloid ridges *Bondarzewia mesenterica*
- 19b Pileus surface dull grey to blackish grey to brown with an olivaceous tint, glabrous; odour not distinctive, not nutlike; tube layer lacking latex when fresh; basidiospores subglobose or oblong, $5-7 \times 4-5 \mu\text{m}$, walls hyaline to pale brown, ornamented with prominent rounded warts *Boletopsis grisea*
- 20a Basidiomata typically with several pilei; odour pleasant, nutlike; taste mild; tube layer exuding a white, acrid latex when fresh; clamp connections lacking; basidiospores globose to subglobose, $6-8 \times 5-7 \mu\text{m}$, ornamented with short, amyloid ridges *Bondarzewia mesenterica*
- 20b Basidiomata typically with a single pileus; odour mild or of iodine; taste mild or bitter; tube layer lacking latex; clamp connections present; basidiospores cylindrical, some slightly curved to narrowly ellipsoid, $7-17 \times 3.0-8.0 \mu\text{m}$, smooth 21
- 21a Stipe surface pale yellow, black or brown, glabrous or finely hairy; odour mild; taste mild; binding hyphae present; basidiospores cylindrical, some slightly curved, $7-16 \times 3-8 \mu\text{m}$ *Polyporus*
- 21b Stipe surface typically brown and velvety; odour sometimes of iodine; taste bitter; binding hyphae lacking; basidiospores narrowly ellipsoid, $12-17 \times 4.5-5.5 \mu\text{m}$ *Jahnoporus hirtus*

**Key B Basidioma
Lacking a Stipe;
Context Tan to Brown**

- 1a Basidioma effuse 2
- 1b Basidioma pileate 6
- 2a Basidioma brown to black; context staining permanently black in KOH; generative hyphae with simple septa; setae and (or) setal hyphae present in most species Key F (Hymenochaetaceae)
- 2b Basidioma tan, pale yellowish brown to cinnamon, not staining permanently black in KOH; generative hyphae with clamp connections or simple septa; setae and setal hyphae lacking 3
- 3a Generative hyphae with simple septa, mostly $5-23 \mu\text{m}$ diameter 4
- 3b Generative hyphae with clamp connections, $2-5 \mu\text{m}$ diameter 5
- 4a Basidioma firm, fibrous to corky; basidiospores cylindrical to narrowly ellipsoid, $8-11 \times 2.5-4.0 \mu\text{m}$ *Wolfiporia cocos*
- 4b Basidioma soft; basidiospores oblong to short cylindrical; $3.5-5.0 \times 1.5-2.0 \mu\text{m}$ *Ceriporia excelsa*
- 5a Basidioma pale brown; skeletal hyphae present; cystidia lacking; basidiospores $7-10 \mu\text{m}$ long *Antrodia malicola*
- 5b Basidioma tan to pale buff; skeletal hyphae lacking; cystidia present; basidiospores $3.5-5.0 \mu\text{m}$ long *Hyphodontia latitans*
- 6a Pileus surface a smooth, hard crust 7
- 6b Pileus roughened or finely to coarsely hairy; not a thin, hard crust 8

- 7a Basidiospores 12–20 × 4–7 µm, wall hyaline, thin; generative hyphae with clamp connections *Fomes fomentarius*
- 7b Basidiospores 6–17 × 4–8 µm, wall brown, thick with internal cavities; generative hyphae with clamp connections *Ganoderma*
- 7c Basidiospores 4–8 (–10) × 1–5 (–7) µm, wall hyaline or pigmented, thin or if thick then lacking cavities in the wall; generative hyphae with simple septa Key F (Hymenochaetaceae)
- 8a Basidioma lamellate *Gloeophyllum*
- 8b Basidioma poroid 9
- 9a Basidioma soft, spongy, staining vivid violet to purplish in KOH; context pale cinnamon; generative hyphae with clamp connections; setae and setal hyphae lacking; basidiospores ellipsoid, 3.5–5.0 × 2.0–2.5 µm, walls hyaline *Hapalopilus nidulans*
- 9b Basidioma not with this set of characters 10
- 10a Basidioma staining permanently black in KOH; generative hyphae with simple septa; setae and (or) setal hyphae present in most species; basidiospores 4–8 (–10) × 1–5 (–7) µm, walls hyaline or pigmented Key F (Hymenochaetaceae)
- 10b Basidioma staining temporarily black in KOH; generative hyphae with clamp connections; setae and setal hyphae lacking; basidiospores 7–16 × 2.5–5.0 µm, walls hyaline 11
- 11a Pileus surface hirsute or bearing stiff, straight hairs; pores large, 0.3–2 per millimetre; basidiospores 10–16 µm long *Coriolopsis*
- 11b Pileus surface finely hairy, tomentose to glabrous; pores 1–4 per millimetre; basidiospores 7–11 (–13) µm long 12
- 12a On conifers; context sepia, umber brown, bright rusty brown to dark brown; pores 1–2 per millimetre *Gloeophyllum*
- 12b On hardwoods; context pale yellowish brown; pores 2–4 per millimetre *Antrodia malicola*

**Key C Basidioma
Lacking a Stipe;
Context Red, Pink,
Purple, or Orange**

- 1a Basidioma with teeth or spines *Echinodontium tinctorium*
- 1b Basidioma with pores 2
- 2a Basidioma red throughout *Pycnoporus cinnabarinus*
- 2b Basidioma pink, purple, or orange 3
- 3a Basidioma effuse 4
- 3b Basidioma pileate 7
- 4a Basidioma orange 5
- 4b Basidioma pinkish buff, pinkish tan to cinnamon 6
- 5a Pores large, greater than 1 mm diameter; basidiospores 9–14 µm long *Pycnoporellus alboluteus*
- 5b Pores small, 7–9 per millimetre; basidiospores 4–6 µm long *Ceriporia spissa*
- 6a Pores 2–5 per millimetre; hyphae 2–15 µm diameter; basidiospores 1.5–2.5 µm wide *Ceriporia*
- 6b Pores 5–7 per millimetre; hyphae 3.0–8.5 µm diameter; basidiospores 3.5–5.0 µm wide *Rigidoporus crocatus*

- 7a Pileus surface pale salmon orange to bright orange; pore surface bright yellow..... *Laetiporus*
- 7b Pileus surface other colours; if pileus surface orange then pore surface not bright yellow..... 8
- 8a Basidioma firm to hard and woody, pink throughout; context and tubes not staining in KOH *Fomitopsis*
- 8b Basidioma soft, fragile; context and tubes staining violet, purple, or red in KOH..... 9
- 9a Basidioma tissues staining red in KOH; basidiospores $6-9 \times 2.5-4.0 \mu\text{m}$ *Pycnoporellus fulgens*
- 9b Basidioma tissues staining violet to purple in KOH; basidiospores $3.5-5.0 \times 2.0-2.5 (-3) \mu\text{m}$ *Hapalopilus nidulans*

**Key D Basidioma
Lacking a Stipe,
Pileate**

- 1a Basidioma with lamellae 2
- 1b Basidioma with toothlike to spiny projections or with sinuous to daedaleoid pores..... 5
- 1c Basidioma with round to angular pores 20
- 2a On conifers..... 3
- 2b On hardwoods..... 4
- 3a Lamellae lavender to purple, up to 3 mm deep; basidiospores allantoid, $6-7 \times 2.0-2.5 \mu\text{m}$ *Trichaptum laricinum*
- 3b Lamellae white, cream to ochreous, up to 12 mm deep; basidiospores allantoid, $5-6 \times 2-3 \mu\text{m}$ *Lenzites betulina*
- 4a Lamellae buff to brown, up to 10 mm deep; basidiospores allantoid, $7-11 \times 2.0-2.5 \mu\text{m}$ *Daedaleopsis confragosa*
- 4b Lamellae white, cream to ochreous, up to 12 mm deep; basidiospores allantoid, $5-6 \times 2-3 \mu\text{m}$ *Lenzites betulina*
- 5a Hymenium on the surface of teeth and (or) spines 6
- 5b Hymenium lining sinuous and (or) daedaleoid pores 8
- 6a Teeth and (or) spines purple to violaceous, fading to pale buff..... *Trichaptum*
- 6b Teeth and (or) spines white to cream, cinnamon buff 7
- 7a On dead hardwoods; pileus surface white or milk-white, appressed tomentose with a thin layer of fibrils; context up to 2 mm thick; cystidia numerous; generative hyphae simple septate *Irpex lacteus*
- 7b On dead conifers and hardwoods; pileus surface pinkish buff to cinnamon buff or clay, hirsute to strigose; context up to 10 mm thick; cystidia lacking; generative hyphae with clamp connections *Trametopsis cervina*
- 8a Pore surface bright purple, becoming ochreous... *Trichaptum abietinum*
- 8b Pore surface white, cream, pale brown, ochreous buff, pale cinnamon, umber brown 9
- 9a Pileus surface coarsely hispid *Coriolopsis trogii*
- 9b Pileus surface glabrous, finely hairy, tomentose to hirsute..... 10
- 10a Basidiospores short, $4-7 \mu\text{m}$ long..... 11

- 10b Basidiospores long, 7–14 µm long 13
- 11a Pileus surface pale brown to grey, typically green related to algal growth, hirsute to nearly glabrous; context with a black line separating its two layers *Cerrena unicolor*
- 11b Pileus surface white or greyish white to pale brown, finely tomentose, matted tomentose or glabrous; context lacking a black line 12
- 12a Chlamydospores in the context; gloeocystidia in both hymenium and trama *Abortiporus biennis*
- 12b Chlamydospores and gloeocystidia lacking *Trametes gibbosa*
- 13a Pileus surface pale brown to black 14
- 13b Pileus surface grey, white to cream 17
- 14a Context with a black line beneath the surface tomentum *Datronia mollis*
- 14b Context lacking a black line beneath the surface tomentum 15
- 15a On conifers; basidiospores 3.5–7.0 µm wide *Antrodia*
- 15b On hardwoods; basidiospores 2–4 µm wide 16
- 16a Basidiospores allantoid, 7–11 × 2.0–2.5 µm *Daedaleopsis confragosa*
- 16b Basidiospores cylindrical, ellipsoid to broadly ellipsoid, 7–10 × 2.5–4.0 µm *Antrodia malicola*
- 17a Basidiospores ellipsoid to broadly ellipsoid, 5–7 µm wide *Antrodia heteromorpha*
- 17b Basidiospores cylindrical, allantoid to narrowly ellipsoid, 2–5 µm wide 18
- 18a Basidiospores allantoid, 2.0–2.5 µm wide *Daedaleopsis confragosa*
- 18b Basidiospores allantoid, cylindrical to narrowly ellipsoid, 2.5–5.0 µm wide 19
- 19a Context up to 3 mm thick; basidiospores cylindrical, straight, 10–14 × 3.5–5.0 µm *Antrodia albida*
- 19b Context generally 3–10 mm thick; basidiospores allantoid, 7–9 × 2.5–3.0 µm *Trametopsis cervina*
- 20a (1c) Basidioma on other polypore basidiomata *Antrodiella*
- 20b On dead birch (*Betula* spp.) pileus surface grey, glabrous; margin prominent, forming a rounded curb around the pore surface *Piptoporus betulinus*
- 20c On hardwoods and conifers; pileus surface and margin variable but not as above 21
- 21a On dead conifers; pore surface covered by a leathery membrane, except for a ~5 mm diameter hole next to the bark *Cryptoporus volvatus*
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- 22b Pore surface pink or with a pink tint 23
- 22c Pore surface white, cream, grey to black 24

- 23a Pileus surface and context white; tubes gelatinous *Gelatoporia dichroa*
- 23b Pileus surface and context tinted pink; tubes firm, woody *Fomitopsis*
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- 25c Fresh pore surface not staining; pileus surface cream to buff; basidiospores cylindrical to ellipsoid, 9–12 µm long, walls smooth *Trametes suaveolens*
- 26a Pileus surface dark reddish brown, dark brown to black 27
- 26b Pileus surface white, cream, grey, pale brown 30
- 27a Spore print brown *Ganoderma*
- 27b Spore print white 28
- 28a Pileus surface typically appearing varnished with a broad dark reddish brown band next to the margin *Fomitopsis pinicola*
- 28b Pileus surface not appearing varnished, lacking a broad, dark reddish brown band next to the margin 29
- 29a On hardwoods; basidiospores narrowly ellipsoid, 8–13 × 3–6 µm, walls smooth *Datronia*
- 29b On live and dead conifers; basidiospores subglobose to ovoid, 4.5–6.5 × 3.5–4.5 µm, walls minutely spiny *Heterobasidion*
- 29c On dead conifers; basidiospores allantoid, 5–7 × 1.5–2.0 µm, walls smooth *Ischnoderma resinosum*
- 30a Basidioma bruising reddish brown 31
- 30b Basidioma not bruising reddish brown 34
- 31a Basidiospores brown, not dextrinoid; hymenial cystidia lacking *Ganoderma*
- 31b Basidiospores hyaline, not dextrinoid; hymenial cystidia with thick, amyloid walls *Amylocystis lapponica*
- 31c Basidiospores hyaline, dextrinoid or not dextrinoid; hymenial cystidia lacking 32
- 32a Basidiospores dextrinoid *Sarcoporia polypora*
- 32b Basidiospores not dextrinoid 33
- 33a Chlamydospores in context; gloeocystidia in both hymenium and trama *Abortiporus biennis*
- 33b Chlamydospores and gloeocystidia lacking *Postia*
- 34a Spore print brown; basidiospore walls brown, thick with internal cavities *Ganoderma*
- 34b Spore print white; basidiospore walls hyaline, thin 35
- 35a Pore surface grey to black 36
- 35b Pore surface white, cream, brown, some reddish brown 39

36a	Pileus surface with concentric, multicoloured bands	<i>Trametes</i>
36b	Pileus surface lacking multicoloured bands	37
37a	Pileus surface of coarse, stiff, upright hairs; basidiospores 8–16 × 2.5–5.0 µm	<i>Coriolopsis</i>
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38a	Skeletal hyphae numerous; clamp connections sparse, difficult to find.....	<i>Trametes</i>
38b	Skeletal hyphae lacking; clamp connections numerous	<i>Bjerkandera</i>
39a	Septa simple	40
39b	Septa with a single clamp connection.....	41
40a	On dead conifers, causing a brown rot; cystidia lacking; basidiospores allantoid, 5–6 × 1.5–2.0 µm	<i>Leptoporus mollis</i>
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41b	Cystidia lacking	44
42a	Walls of hyphae and cystidia amyloid.....	<i>Amylocystis lapponica</i>
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44b	Taste mild.....	46
45a	Basidioma texture chalky, perennial (tubes in horizontal layers); skeletal hyphae present	<i>Fomitopsis officinalis</i>
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46a	Basidioma texture fleshy; context lacking skeletal hyphae	47
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47a	Basidiospores broadly ellipsoid to subglobose, 6–9 × 4.5–7.0 µm	<i>Spongipellis</i>
47b	Basidiospores cylindrical to ellipsoid, 2.5–6 × 1.5–3.0 µm.....	48
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50a	Pores 6–10 per millimetre; basidiospores 3–5 × 0.5–1.8 µm	<i>Skeletocutis</i>
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51a	Pores 5–8 per millimetre; basidiospores 2.5–3.5 × 2.0–3.0 µm.....	<i>Antrodiella</i>

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53b	Basidioma lacking an odour of anise	54
54a	Basidiospores 5–7 µm diameter	<i>Antrodia heteromorpha</i>
54b	Basidiospores 2–5 µm diameter	55
55a	Pileus surface covered with stiff hairs, hirsute.....	<i>Coriolopsis</i>
55b	Pileus surface with fine, matted hairs to glabrous	56
56a	Basidiospores 3–5 µm diameter	<i>Antrodia</i>
56b	Basidiospores 2.0–2.5 µm diameter	<i>Daedaleopsis confragosa</i>
57a	On conifers.....	58
57b	On hardwoods.....	60
58a	Pores 4–5 per millimetre	<i>Dichomitus squalens</i>
58b	Pores 1–4 per millimetre	59
59a	Pileus surface finely tomentose to glabrous; pores round, 2–3 per millimetre; basidiospores cylindrical and straight to narrowly ellipsoid	<i>Antrodia serialis</i>
59b	Pileus surface hirsute to strigose; pores radially elongated, daedaleoid, 1 per millimetre; basidiospores cylindrical and slightly curved	<i>Trametopsis cervina</i>
60a	Basidiospores mostly 4–5 µm diameter	61
60b	Basidiospores 2–4 µm diameter	62
61a	Pileus surface densely hirsute to coarsely hispid, soft to the touch; hyphal walls thick, yellow to yellowish brown	<i>Coriolopsis</i>
61b	Pileus surface finely tomentose to glabrous, smooth; hyphal walls thick, hyaline	<i>Trametes suaveolens</i>
62a	Context pale brown	63
62b	Context white to cream.....	65
63a	On conifers.....	<i>Antrodia serialis</i>
63b	On hardwoods.....	64
64a	Basidiospores allantoid, 2.0–2.5 µm diameter	<i>Daedaleopsis confragosa</i>
64b	Basidiospores cylindrical to broadly ellipsoid, 2–4 µm diameter	<i>Antrodia</i>
65a	Context duplex with a black line separating the two layers.....	<i>Trametes hirsuta</i>
65b	Context homogeneous, lacking a black line	66
66a	Pores 4–5 per millimetre; some thick-walled hyphae 5–7 µm diameter; skeletal hyphae lacking; binding hyphae predominate, dendritic	<i>Dichomitus squalens</i>
66b	Pores 1–4 per millimetre; thick-walled hyphae up to 5 µm diameter; skeletal hyphae present; binding hyphae lacking or not dendritic.....	67

- 67a Pores 1–2 per millimetre; pore edges split to form teeth *Trametopsis cervina*
 67b Pores 2–4 per millimetre; pores round to angular 68
 68a Pileus inflexible, woody; basidiospores 6–10 µm long... *Antrodia serialis*
 68b Pileus flexible, leathery; basidiospores 6–8 µm long..... *Trametes*

Key E Basidioma Lacking a Stipe, Effuse	1a Pore surface yellow to greenish yellow..... 2
	1b Pore surface white, grey, pale greyish blue, salmon pink, tan, brown, rarely pale yellow 6
	2a Basidiospores allantoid, 0.7–1.5 µm wide 3
	2b Basidiospores cylindrical, ellipsoid, ovoid to broadly ellipsoid, 2.5–5.0 µm wide 4
	3a On hardwoods, causing a white rot; pore surface typically pale olive yellow, not cracked; skeletal hyphae lacking..... <i>Gelatoporia pannocincta</i>
	3b Primarily on conifers, causing a brown rot; pore surface yellow, cracked; skeletal hyphae amyloid <i>Antrodia xantha</i>
	4a Cystidia numerous, ventricose, 20–55 × 12–25 µm, walls thickened, apices typically crystalline encrusted <i>Auriporia aurea</i>
	4b Cystidia lacking 5
	5a Basidiospores broadly ellipsoid, 3–5 × 2.5–3.5 µm, walls amyloid <i>Anomoloma albolutescens</i>
	5b Basidiospores ellipsoid, ovoid to broadly ellipsoid, some truncated, 4.5–7.5 × 3–5 µm, some walls thick and faintly to intensely dextrinoid <i>Perenniporia</i>
	5c Basidiospores ovoid, some narrowing toward the base, not truncated, 4–5 × 2.0–2.5 µm, walls thin, neither amyloid nor dextrinoid <i>Antrodia alpina</i>
	6a Basidioma with hymenium covering spines, teeth, or lamellae or lining sinuous to daedaleoid pores 7
	6b Basidioma with hymenium lining round to angular pores 8
	7a Generative hyphae with clamp connections; basidiospores ellipsoid, 4.0–6.5 × 3.0–4.5 µm, typically containing one large oil drop <i>Schizopora</i>
	7b Hyphae lacking clamp connections; basidiospores cylindrical, some slightly curved, 5–7 × 2–3 µm, lacking an oil drop <i>Irpea lacteus</i>
	8a Basidiospores with ornamented walls..... 9
	8b Basidiospores with smooth walls..... 11
	9a Basidiospores 3.5–4.5 × 2.5–3.5 µm; skeletal hyphae lacking..... <i>Trechispora mollusca</i>
	9b Basidiospores 4.5–6.5 × 3.5–4.8 µm; skeletal hyphae dextrinoid 10
	10a Basidioma stiff, over 3 mm thick; pores 4–5 per millimetre; hyphae 3.0–5.5 µm diameter..... <i>Heterobasidion</i>
	10b Basidioma pliable, up to 3 mm thick; pores 2–3 per millimetre, hyphae 1.2–4.0 µm diameter..... <i>Wrightoporia lenta</i>

- 11a Basidioma principally on boards and timbers in buildings and mines; basidiospore walls brown to yellowish brown, dextrinoid *Meruliporia incrassata*
- 11b Basidioma in the forests; basidiospore walls hyaline, dextrinoid only in some species of *Diplomitoporus* and *Perenniporia* 12
- 12a On *Populus*; pore surface pale pinkish brown; basidia with two longitudinal septa *Aporpiun caryae*
- 12b On conifers and hardwoods; pore surface of various colours (principally white to cream, rarely pale pinkish brown); basidia lacking internal septa 13
- 13a Basidiospore and (or) hyphal walls amyloid or dextrinoid 14
- 13b Basidiospore and hyphal walls neither amyloid nor dextrinoid 20
- 14a Basidiospore walls amyloid or dextrinoid; hyphal walls neither amyloid nor dextrinoid 15
- 14b Basidiospore walls neither amyloid nor dextrinoid; hyphal walls amyloid or dextrinoid 17
- 15a Basidiospore walls dextrinoid *Sarcoporia polyspora*
- 15b Basidiospore walls amyloid 16
- 16a Strands white to yellow; basidiospores 3–5 µm long *Anomoloma*
- 16b Strands rare, white to pale violet brown; basidiospores 5–7 µm long *Anomoporia bombycina*
- 17a Hyphae amyloid 18
- 17b Hyphae dextrinoid 19
- 18a Causing a brown rot; pore surface white, cream, or pale pinkish buff; skeletal hyphae not swelling in KOH *Antrodia*
- 18b Causing a white rot; pore surface with a distinct grey tint; skeletal hyphae swelling in KOH *Diplomitoporus lindbladii*
- 19a Basidiospores allantoid, 5–7 × 1.5–2.0 µm *Diplomitoporus lindbladii*
- 19b Basidiospores ellipsoid, ovoid to broadly ellipsoid, some truncated, 4.5–7.5 × 3–5 µm *Perenniporia*
- 20a (13b) Clamp connections lacking 21
- 20b Clamp connections present 27
- 21a Cystidia present in the hymenium *Oxyporus*
- 21b Cystidia lacking in the hymenium 22
- 22a Pore surface bruising dull red 23
- 22b Pore surface not bruising dull red 24
- 23a Pore surface white, watery white to cream; basidiospores 5–6 µm long *Physisporinus sanguinolentus*
- 23b Pore surface pinkish cream to pinkish brown; basidiospores 3.5–5.5 µm long *Rigidoporus crocatus*
- 24a Basidiospores broadly ellipsoid to subglobose, 4–5 × 3–4 µm *Byssoporia terrestris*
- 24b Basidiospores allantoid, cylindrical, cylindrical–ellipsoid, narrowly ellipsoid to oblong, 3.5–11.0 × 1.5–4.0 µm 25

- 25a Basidiospores less than 6 µm long *Ceriporia* and *Gloeoporus*
 25b Basidiospores greater than 7 µm long 26
 26a Pores 3–4 per millimetre; pore surface appearing netlike;
 basidiospores 7.0–9.5 µm long; generative hyphae 3–7 µm
 diameter; skeletal hyphae lacking *Ceriporia reticulata*
 26b Pores 1–2 per millimetre; pore surface becoming spiny or
 resembling flattened teeth; basidiospores 8–11 µm long;
 generative hyphae 3–23 µm diameter; skeletal hyphae
 present *Wolfiporia cocos*
 27a Skeletal hyphae lacking 28
 27b Skeletal hyphae present 38
 28a Cystidia (including cystidioles) present 29
 28b Cystidia lacking 32
 29a Basidiospores allantoid, up to 1.0 µm wide 30
 29b Basidiospores not curved, oblong to ellipsoid, 2–4 µm wide 31
 30a On conifers; pores 1–3 per millimetre; pore surface
 cream to tan *Hypodontia latitans*
 30b On hardwoods, particularly poplars (*Populus* spp.); pores
 6–8 per millimetre; pore surface pale olive yellow, some
 ivory to lemon yellow *Gelatoporia pannocincta*
 31a Cystidia ventricose (broadest at the midpoint), 6–10 µm
 diameter *Postia sericeomollis*
 31b Cystidia with a narrow (± 3 µm diameter) stemlike base and
 a subglobose apex up to 6 µm diameter *Schizophora radula*
 32a Tube layer white or with a pink tint, rubbery, easily peeling
 from the context *Gelatoporia*
 32b Tube layer not tinted pink, not rubbery, and not separating
 from the context 33
 33a Basidiospores allantoid to cylindrical, 1–3 µm diameter 34
 33b Basidiospores ovoid, broadly ellipsoid to subglobose,
 2–5 µm diameter 35
 34a Basidiospores $4.5\text{--}5.5 \times 1.0\text{--}1.5$ µm *Gelatoporia subvermispora*
 34b Basidiospores $5.5\text{--}7.0 \times 2.0\text{--}2.5$ µm *Postia placenta*
 34c Basidiospores $8\text{--}12 \times 2\text{--}3$ µm *Postia mappa*
 35a Basidiospores small, $2.5\text{--}3.5 \times 2.0\text{--}2.5$ µm *Porpomyces mucidus*
 35b Basidiospores larger, $5\text{--}7 \times 3.5\text{--}5.0$ µm 36
 36a On hardwoods, primarily on *Populus* spp. *Ceriporiopsis aneirina*
 36b On conifers 37
 37a Pores large, mostly 1–4 mm diameter *Postia angulipora*
 37b Pores smaller, 3–4 per millimetre *Physisporinus rivulosa*
 38a (27b) Encrusted cystidia present *Junghuhnia*
 38b Encrusted cystidia lacking 39
 39a Hyphae at the pore mouths densely encrusted with
 spiny crystals *Skeletocutis*

39b	Hyphae at the pore mouths not encrusted	40
40a	Basidiospores 7–14 µm long	41
40b	Basidiospores up to 8 µm long	43
41a	Pores 0.5–3 per millimetre	<i>Antrodia</i>
41b	Pores 4–5 per millimetre	42
42a	Pore surface white to cream, becoming brown to almost black; basidiospores 7–10 × 2.5–3.5 µm	<i>Dichomitus squalens</i>
42b	Pore surface pale pinkish buff; basidiospores 10–13 × 4.5–6.0 µm	<i>Datronia stereoides</i>
43a	Basidiospores with parallel sides, cylindrical to allantoid	44
43b	Basidiospores narrowly ellipsoid, oblong, or broadly ellipsoid	50
44a	Basidiospores 1–2 µm wide	45
44b	Basidiospores 2–3.5 µm wide	47
45a	Pores 1–5 per millimetre	<i>Antrodia</i>
45b	Pores 5–7 per millimetre	46
46a	Causing a white rot; skeletal hyphae swell in KOH; basidiospores allantoid	<i>Skeletocutis lenis</i>
46b	Causing a brown rot; skeletal hyphae not swelling in KOH; basidiospores cylindrical and straight to narrowly ellipsoid	<i>Antrodia sitchensis</i>
47a	Context staining blue black in Melzer's; hyphal walls amyloid	<i>Antrodia carbonica</i>
47b	Context and hyphal walls not staining in Melzer's	48
48a	Basidiospores small, 3.5–4.0 × 2.0–2.5 µm	<i>Antrodiella romellii</i>
48b	Basidiospores larger, 4.5–7.0 × 2.0–3.5 µm	49
49a	Basidiospores allantoid	<i>Diplomitoporus crustulinus</i>
49b	Basidiospores cylindrical and straight to oblong ellipsoid	<i>Antrodia crassa</i>
50a	(43b) Causing a white stringy rot with black flecks; walls of skeletal and binding hyphae dextrinoid	<i>Perenniporia subacida</i>
50b	Causing a brown rot; walls of skeletal hyphae not dextrinoid	<i>Antrodia</i>

**Key F Basidioma
Lacking a
Stipe; Poroid
Hymenochaetaceae**

1a	On the ground	2
1b	On conifers	3
1c	On hardwoods	19
2a	Pileus surface shiny and concentrically zonate; setae lacking; basidiospores 6–10 µm long, walls pigmented, weakly dextrinoid	<i>Coltricia</i>
2b	Pileus surface soft-velvety to glabrous, not concentrically zonate; setae present; basidiospores 5.0–6.5 µm long, walls hyaline, not dextrinoid	<i>Onnia</i>
3a	Pileus present, including reflexed basidioma	4
3b	Pileus lacking (basidioma effuse)	11

4a	Basidiospores dextrinoid	5
4b	Basidiospores not dextrinoid	6
5a	Setae common in the hymenium, tips curved	<i>Pseudoinonotus dryadeus</i>
5b	Setae lacking or tips straight	<i>Fomitiporia</i>
6a	Setal hyphae present	7
6b	Setal hyphae lacking	8
7a	Pore surface reddish brown; setae in the hymenium	<i>Fuscoporia ferruginosa</i>
7b	Pore surface brown, yellowish brown, purplish brown to dark brown; setae lacking (confusingly, setal hyphae in the trama may curve into the hymenium and the tips project beyond)	<i>Phellinidium</i>
8a	Basidiospores allantoid, cylindrical or narrowly ovoid.....	9
8b	Basidiospores ellipsoid to subglobose.....	10
9a	Basidiospores narrowly ovoid with a distinct acute apex, 7–10 µm long; context with black lines	<i>Phellopilus nigrolimitatus</i>
9b	Basidiospores cylindrical or allantoid, 4–8 µm long; context lacking black lines.....	<i>Fuscoporia</i>
10a	Setae 20–30 × 5–6 µm, apices straight; basidiospores 4–5 × 3.0–3.5 µm	<i>Fuscoporia gilva</i>
10b	Setae 25–60 × 7–14 µm, apices straight; basidiospores 4–7 × 3.5–5.0 µm	<i>Porodaedalea</i>
10c	Setae 50–80 × 12–20 µm, apices curved; basidiospores 5.0–6.5 × 3–4 µm	<i>Onnia leporina</i>
11a	(3b) Setae present in the hymenium	12
11b	Setae lacking or rare.....	16
12a	Setal hyphae present	<i>Fuscoporia</i>
12b	Setal hyphae lacking	13
13a	Basidiospores broadly ellipsoid to subglobose	14
13b	Basidiospores allantoid, ovoid to ellipsoid	15
14a	Pores 1–3 per millimetre; setae 25–60 µm long.....	<i>Porodaedalea</i>
14b	Pores 4–5 per millimetre; setae 20–25 µm long	<i>Fomitiporia repanda</i>
15a	Context with black lines; basidiospores ovoid, 7–10 µm long	<i>Phellopilus nigrolimitatus</i>
15b	Context lacking black lines; basidiospores allantoid to ellipsoid, 4–8 µm long.....	<i>Fuscoporia</i>
16a	Basidiospores globose to subglobose, walls thick, dextrinoid	<i>Fomitiporia</i>
16b	Basidiospores allantoid to ellipsoid, walls thin, not dextrinoid.....	17
17a	Setal hyphae present	<i>Phellinidium</i>
17b	Setal hyphae lacking	18
18a	Setae rare; basidiospores 4.0–5.5 × 3.0–4.5 µm.....	<i>Fomitiporia repanda</i>

- 18b Setae lacking; basidiospores $6.0-8.5 \times 4.5-5.5 \mu\text{m}$ *Inonotopsis subiculosus* 20
- 19a (1c) Setae lacking 20
- 19b Setae present 21
- 20a Basidioma typically with a granular core; sclerids present; basidiospores ellipsoid, walls thin, pigmented, not dextrinoid *Inocutis rheades*
- 20b Basidioma lacking a core; sclerids lacking; basidiospores broadly ellipsoid to globose, walls thick, hyaline, dextrinoid *Fomitiporia*
- 21a Setae with curved or hooked tips 22
- 21b Setae with straight tips 24
- 22a Setal hyphae on pileus surface with much-branched apices; basidiospore walls pigmented, not dextrinoid *Inonotus cuticularis*
- 22b Setal hyphae lacking; basidiospore walls hyaline, dextrinoid 23
- 23a Basidiospores subglobose, $6-8 \times 5-7 \mu\text{m}$, walls dextrinoid *Pseudoinonotus dryadeus*
- 23b Basidiospores narrowly ellipsoid to ovoid, $5.0-6.5 \times 3.0-4.5 \mu\text{m}$, walls faintly dextrinoid *Mensularia radiata*
- 24a Setal hyphae in trama 25
- 24b Setal hyphae lacking 26
- 25a Basidiospores $5-10 \times 4.0-6.5 \mu\text{m}$, walls pigmented *Inonotus*
- 25b Basidiospores $5-7 \times 3.0-3.5 \mu\text{m}$, walls hyaline *Fuscoporia ferruginosa*
- 26a Basidiospores cylindrical to allantoid *Fuscoporia*
- 26b Basidiospores ellipsoid to globose 27
- 27a Basidiospores $3-5 \times 2.5-3.5 \mu\text{m}$ 28
- 27b Basidiospores $4.5-8.5 \times 4-7 \mu\text{m}$ 30
- 28a Basidiospores $3-4 \times 2.5-3.0 \mu\text{m}$, walls hyaline to pale gold *Phellinus laevigatus*
- 28b Basidiospores $4-5 \times 2.5-3.5 \mu\text{m}$, walls hyaline 29
- 29a Only on *Prunus*; basidioma effuse *Phellinus prunicola*
- 29b On numerous hardwood species; basidioma sessile to reflexed *Fuscoporia gilva*
- 30a Basidioma with a granular core in the context next to the substrate; basidiospore walls thick *Phellinus*
- 30b Basidioma lacking a granular core; basidiospore walls either thin or thick 31
- 31a Basidiospores $6.0-8.5 \times 5.5-7.0 \mu\text{m}$, walls thick, dextrinoid *Fomitiporia robusta*
- 31b Basidiospores $3.0-6.5 \times 2.5-6.0 \mu\text{m}$, walls either thin or thick, not dextrinoid *Phellinopsis* and *Phellinus*

ABORTIPORUS MURRILL

***Abortiporus biennis*
(Bull.) Singer**



Habitat/range: Typically on the ground arising from buried roots (perhaps both live and dead roots), also on hardwood and conifer logs, causing a white rot. In BC, known from southern Vancouver Island (west of Parksville and Mount Douglas Park in Victoria). Elsewhere in western North America, known from WA, OR, CA, and AZ.

Basidiomata pileate, variable in size and shape, funnel shape in vertical section, up to 20 cm diameter, tough-leathery, sessile or some stipitate, sometimes distorted (see photograph below left) usually solitary; **stipe** short, relatively stout; **pileus** circular when stipitate, dimidiate, or misshapen with pores on all surfaces; **pileus surface** near white to tan, sulcate, matted tomentose, sometimes weakly zonate; **context** up to 1 cm thick, duplex (may be obscure in fresh specimens), upper layer pallid, fibrous, relatively soft, core layer cream, firm, woody; **tubes** up to 6 mm long; **pore surface** white to pallid, bruising pale rufous; **pores** angular to daedaleoid, 1–3 per millimetre, edges thick, entire, becoming thin and lacerate.

Hyphal system monomitic. **Hyphae** 2.0–5.5 μm diameter with clamp connections; **chlamydospores** in the context, subglobose to broadly ellipsoid, 5.0–8.5 μm diameter, walls hyaline, smooth, thickened; **gloeocystidia** in the hymenium and trama, clavate or cylindrical with constrictions, up to $70 \times 10 \mu\text{m}$, walls thin, hyaline, contents refractive; **basidia** clavate, 14–17 \times 7.0–7.5 μm , four sterigmate; **basidiospores** broadly ellipsoid, 4.0–6.8 \times 3.5–5.0 μm , wall slightly thickened, hyaline, smooth, neither amyloid nor dextrinoid.

Notes: The presence of both gloeocystidia and chlamydospores distinguishes *A. biennis* from similar polypores.



ALBATRELLUS GRAY

Habitat: On the ground, presumably attached to roots.

Basidiomata annual, medium to large, single or in clusters with 2–4 stipes joined at the base; **stipe** typically central; **pileus** typically 3–15 cm diameter, plane to convex, white, tan, yellow, pale green, pale blue; **context** firm, fleshy (not leathery or woody), white to cream; **tubes** 3–4 mm deep, white, staining yellow or green; **pore surface** white, staining yellow or green; **pores** angular, round, infrequently irregular, 0.5–4 per millimetre, decurrent, edges becoming thin and lacerate.

Hyphal system monomitic. **Hyphae** (4–) 8–15 (–30) μm diameter with clamp connections and (or) simple septa, walls hyaline, thin, smooth, amyloid in some species; **cystidia** lacking; **basidia** clavate, slenderly clavate to nearly cylindrical, 17–37 \times 6–8 μm but 40–67 \times 7–11 μm in *A. ellisii*; **basidiospores** typically broadly ellipsoid, in some species subglobose, in other species teardrop shape, walls hyaline, thin, smooth, weakly amyloid in two species.

Notes: The species of *Albatrellus* stand apart from most polypores. All the species have a stipe and the context is relatively soft, not woody hard. Presumably, most species are ectomycorrhizal but only *A. ovinus* has been shown to be mycorrhizal in laboratory inoculations. Dried basidiomata of several species develop necropigments (the basidiomata become red or orange red several months after drying). The context hyphae in most species become relatively broad, a feature more typical of agarics. The walls of the hyphae and basidiospores in several species are amyloid.

The North American species can be segregated into several groups based on morphological features. Audet (2010) distributed the North American species among 10 genera.

- 1a Pileus scaly; pileus, pores and stipe staining green when bruised; basidiospores 8–10 \times 5.4–7.2 μm *A. ellisii*
- 1b Pileus not scaly; pileus, pores, and stipe not staining green when bruised; basidiospores less than 6 \times 5 μm 2
- 2a Pileus tinted blue 3
- 2b Pileus lacking blue tints 4
- 3a Pileus less than 5 cm diameter; context up to 1 mm thick; pore surface with or without blue tints; hyphae with simple septa; basidiospores not amyloid *Neoalbatrellus subcaeruleoporus*
- 3b Pileus greater than 5 cm diameter; context greater than 1 mm thick; pore surface without blue tints; hyphae with clamp connections; basidiospores weakly to obviously amyloid *A. flettii*
- 4a Pileus apricot to pale orange tan; clamp connections present; basidiospores amyloid 5
- 4b Pileus differently coloured; clamp connections present or lacking; basidiospores not amyloid 6
- 5a Pileus surface pinkish buff to pale orange *A. confluens*

- 5b Pileus surface initially blue grey, becoming pale apricot to pale orange tan and typically mottled with blue grey *A. flettii*
- 6a Pore surface yellow, bruising pale brown *Xanthoporus syringae*
- 6b Pore surface white or ivory, bruising yellow.....7
- 7a Pileus initially white, becoming pale pinkish grey to tan, developing obvious yellow tints, smooth; basidiospores $5.0\text{--}5.6 \times 3.6\text{--}4.2 \mu\text{m}$ *A. avellaneus*
- 7b Pileus grey, greyish white, staining yellow, smooth, becoming pale tan, cracked, and rimose; basidiospores $4.0\text{--}4.8 \times 3.2\text{--}3.6 \mu\text{m}$ *A. ovinus*

Albatrellus avellaneus
Pouzar

Habitat/range: In the late autumn, on the ground especially along the Pacific coast under *Tsuga heterophylla* and *Picea sitchensis*; from Haida Gwaii (Kroeger et al. 2012), Vancouver Island, and two collections from Manning Park. Elsewhere in western North America, known from WA, OR, and CA.



Basidiomata, solitary, odour none or faintly anise-like, taste none or somewhat bitter; **stipe** central, $5\text{--}9 \times 1\text{--}2 \text{ cm}$, solid, surface white, pallid to grey, becoming mottled with rusty to ochreous spots; **pileus** $4\text{--}10 \text{ cm}$ diameter, circular to somewhat flabelliform (fan-shaped), broadly convex to centrally depressed; **pileus surface** white to avellaneous (pale pinkish grey), becoming mottled with yellow tints, dry, dull, smooth, appressed tomentose to rather scurfy to slightly squamulose; **context** $0.2\text{--}1 \text{ cm}$ thick, white, staining yellow when cut; **tubes** decurrent, $3\text{--}4 \text{ mm}$ deep, white, staining yellow; **pore surface** white, staining yellow; **pores** angular, $2\text{--}3$ per millimetre, edges becoming thin and lacerate.

Hyphae ($4\text{--}8$) $15\text{--}30 \mu\text{m}$ diameter with simple septa; **basidiospores** broadly ellipsoid, some subglobose, $5.0\text{--}5.6 \times 3.6\text{--}4.2 \mu\text{m}$, walls hyaline, thin, smooth.

Notes: One of a few polypores that is ectomycorrhizal (Kroeger et al. 2012). Basidiomata might be confused with young basidiomata of *A. ovinus*; *A. ovinus* differs in having the pileus surface grey, greyish white to pale ivory, pale cream to pale tan, that stains yellow and smaller basidiospores. Basidiomata

of *Polypus dispansus* (Lloyd) Audet are multipileate with clusters up to 35 cm diameter and composed of numerous golden yellow, petal-shaped pilei with stipes arising from a common base. It occurs on the ground in Idaho and eastern Washington, is associated with various live conifers from *Abies* to *Thuja*, and causes a brown cubical rot. It has not been found in British Columbia.



Polypus dispansus



Polypus dispansus

***Albatrellus confluens*
(Alb. & Schwein.)
Kotl. & Pouzar**

Habitat/range: On the ground under conifers. In BC, known from Aleza Lake (Prince George area), Wells Gray Park, Manning Park, Hope, and Vancouver Island (Courtenay and Jordan River). Widespread elsewhere in western North America; known from WA and MT to NM and CA.



Basidiomata stipitate, solitary to gregarious, sometimes confluent; **odour** pleasant, aromatic; **taste** cabbage-like; **stipe** central to lateral, 6–10 cm long, 2–3 cm thick, solid, smooth, white or cream to pinkish buff; **pileus** 5–10 (–26) cm broad, circular, or frequently irregular in outline; **pileus surface** pinkish buff, fading to pale orange, smooth, glabrous or suede-like; **context** white to cream, fleshy, tough to brittle, up to 2 cm thick; **tubes** 2–7 mm deep, decurrent; **pore surface** white or cream; **pores** 1–4 per millimetre, angular or round, edges becoming thin and lacerate.

Hyphae 4–15 μm diameter with clamp connections; **basidiospores** broadly ellipsoid, $4\text{--}5 \times 2.8\text{--}3.6 \mu\text{m}$, walls weakly amyloid.

Notes: In fresh basidiomata only the blue tint of *A. flettii* distinguishes it from *A. confluens*; however, the blue fades, and naming pale basidiomata seems problematic. Some reports of *A. confluens* in western North America may have been based on faded specimens of *A. flettii*.

***Albatrellus ellisii*
(Berk.) Pouzar**

Greening goat's foot,
Scaly yellow polypore

Habitat/range: On the ground under *Pseudotsuga menziesii* and *Tsuga*. In BC, known from Courtenay, Robert's Creek, Vancouver, and Yoho National Park. Elsewhere in western North America, known from WA and ID to AZ and CA.



Basidiomata stipitate, solitary or with several stipes arising from a common base, all surfaces, especially the pore surface, staining green where bruised; **stipe** excentric to lateral, $8\text{--}10 \times 4\text{--}5 \text{ cm}$, yellow; **pileus** $10\text{--}20\text{ (}-30\text{) cm}$ broad, fan-shaped, or spatulate (spoon-shaped) or depressed; **pileus surface** scaly, the colour a mixture of green, yellow, lavender to dark brown; **context** white, staining bluish lavender when cut, fleshy, brittle, up to 2 cm thick; **tubes** decurrent, 2–5 mm deep, more or less cream; **pore surface** white, yellow in age; **pores** large, 0.5–1.0 mm diameter, irregular in shape, edges usually uneven.

Hyphae 4–17 μm diameter with clamp connections, walls mostly 1–4 μm thick, not amyloid to weakly amyloid; **basidiospores** $8\text{--}10 \times 5.4\text{--}7.2 \mu\text{m}$, ellipsoid to ovoid (nearly teardrop-shaped).

Notes: *Albatrellus pes-caprae* (Pers.) Pouzar (Goat's foot) is very similar to *A. ellisii* and occurs infrequently in western North America (Washington, Oregon, and California) but has not been found in British Columbia. The brown pileus and lack of green staining in *A. pes-caprae* distinguishes it from *A. ellisii*. *Albatrellus skamanius* (Murrill) Pouzar (from southern Washington; has not been found in British Columbia) is distinguished by its yellow pores and glabrous to suede-like, brown pileus surface.

Albatrellus flettii

Pouzar

Flett's polypore

Habitat/range: On the ground. Widely scattered in BC from Haida Gwaii and Hazelton/Smithers area south to Glacier National Park and Manning Park to southern Vancouver Island. Elsewhere in western North America, known from AK to NM.



Basidiomata stipitate; **stipe** 6–10 cm long, 2–3 cm thick, solid, smooth, white; **pileus** 5–10 (–26) cm broad, circular, or frequently irregular in outline; **pileus surface** pale blue, greenish blue, fading to pale orange with blue tints, smooth, glabrous or suede-like; **context** white, fleshy, tough to brittle, over 2 mm thick; **tubes** 2–7 mm deep, decurrent; **pore surface** white, becoming apricot to salmon; **pores** 1–4 per millimetre, angular or round.

Hyphae 4–15 µm diameter with clamp connections; **basidiospores** 4–5 × 2.8–3.6 µm, broadly ellipsoid, walls weakly to obviously amyloid.

Notes: Reported to be ectomycorrhizal (Kroeger et al. 2012). The blue tints of the pileus fade, apparently on exposure to sunlight and (or) in aging. Although similar in habitat, size, and general appearance, *A. ovinus* has a white or ivory to grey pileus, lacking blue tints. *Albatrellus confluens* has a pinkish buff pileus that lacks blue tints (see comparison under *A. confluens*).

Albatrellus ovinus

(Schaeff.) Murrill

Sheep polypore

Habitat/range: On the ground in coniferous forests, mycorrhizal, at least with spruce (*Picea* spp.). Widely scattered in the southern half of BC from Smithers and Crooked River (100 km north of Prince George) to the BC/WA border. Widespread elsewhere in western North America.



Basidiomata stipitate, typically with clusters of 3–5 stipes arising from a common base; **stipe** central to excentric, rarely lateral, 3–8 × 1–3 cm, solid; **pileus** 4–12 (–15) cm broad, circular to oval; **pileus surface** smooth, suede-like, or glabrous, in age cracked and rimose, colour varying from grey, greyish white to pale ivory, pale cream to pale tan, staining yellow; **margin** regular or lobed; **context** 5–15 mm thick, white, fleshy, brittle when fresh; **tubes** 1–3 mm deep, decurrent; **pore surface** white or ivory, bruising yellow; **pores** round, then angular, 2–4 per millimetre, edges thick, entire, becoming thin, fimbriate, or lacerate.

Hyphae 4–13 µm diameter with simple septa; **basidiospores** 4.0–4.8 × 3.2–3.8 µm, ovoid.

Notes: Two other species of *Albatrellus* have basidiomata that resemble those of *A. ovinus*. *Albatrellus avellaneus* is initially white and develops obvious yellow tints, prefers the Pacific coast under western hemlock and Sitka spruce, fruits in the late autumn, and has basidiospores 5.0–5.6 × 3.6–4.2 µm, larger and not overlapping the basidiospore sizes in *A. ovinus*. *Albatrellus subrubescens* (Murrill) Pouzar differs in having pores that bruise orange yellow and basidiospores with amyloid walls. It has not been found in British Columbia but occurs in Alaska, California, Northwest Territories, and Washington. Although similar in habitat, size, and general appearance, *A. flettii* initially has a greyish blue pileus that becomes pinkish buff to pale orange brown.

AMYLOCYSTIS SINGER

Amylocystis lapponica (Romell) Singer

Habitat/range: On conifer logs, especially *Picea glauca* and *P. sitchensis*, often developing near melting snowbanks, causing a brown cubical rot. In BC, known from Haida Gwaii, Prince George area, near Nakusp, Cathedral Lakes Park, Vancouver, and southern Vancouver Island. Widespread elsewhere in western North America.



Basidiomata annual, sessile or reflexed; **taste** slightly bitter (anise-like); **pileus** dimidiate, up to 15 cm wide; **pileus surface** pale buff, bruising dark reddish brown, tomentose to hispid, zonate; **context** pale buff, corky, up to 2 cm thick, staining brown where exposed; **tubes** up to 4 mm deep; **pore surface** white, bruising brown to dark reddish brown; **pores** angular, 3–4 per millimetre, edges thin, entire, becoming lacerate.

Hyphal system monomitic. **Hyphae** 4–10 µm diameter with clamp connections, walls 1–3 µm thick, with amyloid segments; **cystidia** abundant, broadest at the midpoint, spindle-shaped, 30–45 × 5–9 µm, walls thickened, amyloid, the apex typically encrusted with small granules; **basidiospores** cylindrical, 8–11 × 2.5–3.5 µm, walls hyaline, smooth, neither amyloid nor dextrinoid.

Notes: The wet, spongy texture in combination with the cream colour are good field characters. The descriptions of *Amylocystis lapponica*, *Leptoporus mollis*, *Postia fragilis*, *P. lateritia*, and *Sarcoporia polyspora* are similar. Their basidiomata are white to pale buff, pileate, and stain reddish brown when bruised or on drying. All occur on conifers and cause a brown rot. Collections can be named when a few microscopic characteristics (Table 2) are evaluated.

TABLE 2 *Distinguishing Amylocystis lapponica from four similar species*

Name	Basidiospore sizes and shape	Clamps	Cystidia
<i>Amylocystis lapponica</i>	8–11 × 2.5–3.5 µm, cylindrical	Yes	Walls thickened, amyloid
<i>Leptoporus mollis</i>	5–6 × 1.5–2 µm, allantoid	None	None
<i>Postia fragilis</i>	4–5 × 1.0–1.5 µm, allantoid	Yes	None
<i>Postia lateritia</i>	4.5–6.3 × 1.0–1.8 µm, allantoid	Yes	None
<i>Sarcoporia polyspora</i>	5–7 × 2.5–4.0 µm, ellipsoid to cylindrical	Yes	None

ANOMOLOMA NIEMELÄ & K.H. LARSS.

Habitat: On well-rotted conifer wood, causing a white rot.

Basidiomata effuse, annual, from a few centimetres to over a decimetre in diameter, soft to brittle, easily separable from the substrate, up to 3 mm thick; **margin** wide, white to cream, fimbriate, typically with strands; **hyphal strands** prominent, white to yellow; **context** white or yellow, soft, 1 mm thick; **tubes** up to 2 mm deep; **pore surface** white, cream to distinctly yellow; **pores** round, angular and irregular, 2–4 per millimetre, edges thin.

Hyphal system monomitic. **Hyphae** 2.5–5.0 µm diameter with clamp connections, frequently branched, with occasional swellings to 15 µm diameter, walls thin to slightly thickened; **cystidia** lacking; **basidia** clavate, 12–22 × 4–7 µm, four sterigmate; **basidiospores** ellipsoid to broadly ellipsoid, 3–5 × 2.5–5 µm, walls hyaline, smooth, amyloid.

Notes: The distinct features of *Anomoloma* are the effuse basidiomata, hyphal strands, and association with a white rot. These features and molecular phylogenies supported the placement of the species in a distinct clade (Niemelä et al. 2007).

- 1a Pore surface cream to pale chrome yellow, strands yellow *A. albolutescens*
- 1b Pore surface and strands white to cream *A. myceliosum*

***Anomoloma
albolutescens*
(Romell) Niemelä &
K.H. Larss.**

Syn. *Anomoporia
albolutescens* (Romell)
Pouzar

Habitat/range: On conifers, causing a white rot. In BC, known from collections on *Abies lasiocarpa* at Aleza Lake and Ahbau (east of Prince George), on *Pseudotsuga menziesii* at Mount Newton (Victoria), and on *Tsuga heterophylla* at Revelstoke. Elsewhere in western North America, known from AK, AB, WA, ID, OR, and CO but rare.



Basidiomata effuse, annual, small to large, up to 3 mm thick, soft, brittle, separable; **margin** white, typically wide, fimbriate; **strands** yellow; **context** yellow, ± 1 mm thick; **tubes** up to 2 mm deep; **pore surface** cream to pale chrome yellow, darkening to distinctly yellow; **pores** round, becoming angular, 2–4 per millimetre, edges thin.

Hyphae 2.5–5.0 μm diameter with clamp connections, occasionally swollen to 15 μm diameter, walls thin to slightly thickened; **basidiospores** broadly ellipsoid, 3–5 \times 2.5–3.5 μm , walls smooth, amyloid.

Notes: Contrary to previous reports, this species does not cause a brown rot (Niemelä et al. 2007). *Byssoporia terrestris* can look similar, but its hyphae have simple septa with scattered clamp connections, and basidiospores with slightly thickened walls.

***Anomoloma myceliosum*
(Peck) Niemelä & K.H.**

Larss.

Syn. *Ceriporiopsis myceliosa* (Peck)

Ryvarden & Gilb.,

Anomoporia myceliosa
(Peck) Pouzar

Habitat/range: On well-rotted conifer wood, causing a white rot. In BC, known from collections on *Abies amabilis* on Vancouver Island (Niemelä 1994), on *Tsuga heterophylla* at Revelstoke, on *Pinus* at Penticton, and reported on *Picea sitchensis* but specific locality not given (Shaw 1973). Widespread in western North America, known from AB to WA south to CO and CA.

Basidiomata effuse, annual, soft to brittle, easily separable from the substrate, medium to large, up to 3 mm thick; **margin** wide, white to cream, fimbriate; **strands** usually present, white; **context** white, soft, 1 mm thick; **tubes** up to 2 mm deep; **pore surface** white to cream; **pores** round, becoming angular and irregular, 2–4 per millimetre, edges thin.



Hyphae 2.5–4.0 μm diameter with clamp connections, frequently branched, walls thin, hyaline; **basidiospores** ellipsoid, 3.5–4.5 \times 2.5–3.0 μm , walls hyaline, smooth, amyloid.

Notes: *Porpomyces mucidus* has similar macroscopic features, but its basidiospores are not amyloid.

ANOMOPORIA POUZAR

***Anomoporia bombycinia* (Fr.) Pouzar**

Habitat/range: On conifers, causing a brown cubical rot. In BC, on *Pseudotsuga menziesii* east of Youbou (Vancouver Island) and an unidentified conifer (Lombard and Gilbertson 1965) but specific locality not given. Widespread elsewhere in western North America, known from AK to NM.

Basidiomata effuse, annual, in 2–3 cm diameter patches to widely effuse, soft, up to 3 mm thick; **margin** white to pale violet brown, cottony to fimbriate; **strands** rare; **context** white to pale brown, soft, up to 1 mm thick; **tubes** up to 2 mm deep; **pore surface** cream to lavender; **pores** round, becoming angular and irregular, 2–4 per millimetre, edges thin.

Hyphal system monomitic. **Hyphae** much branched, 2–6 µm diameter with clamp connections, walls thin; **cystidia** lacking; **basidia** clavate, 12–18 × 5–7 µm, four sterigmate; **basidiospores** broadly ellipsoid, 5–7 × 3–5 µm, wall hyaline, thin, smooth, amyloid.



ANTRODIA P. KARST.

Habitat: On dead conifers and hardwoods, causing a brown cubical rot.

Basidiomata sessile, reflexed, effuse, several species widely effuse, several species forming nodules, annual or perennial, up to 1.4 cm thick, adnate to separable, soft to hard, tough, corky; **taste** in several species bitter; **margin** white, cream, pale brown, or reddish brown, narrow to wide, tomentose, cottony, finely fimbriate; **strands** in some species; **pileus** typically elongated and narrow, some imbricate, tough, flexible; **pileus surface** ochreous, pale brown, cinnamon brown, becoming greyish or blackish brown, finely tomentose, glabrous; **context** thin, white or cream, except pale brownish yellow in *A. malicola* and pale brownish yellow in *A. serialis*, soft, cottony, fibrous, tough, corky, friable, up to 0.4 cm thick; **tubes** white to cream, tan, yellowish brown, resinous in two species, up to 1 cm deep; **pore surface** white, cream, pale pinkish buff, tan, pale cinnamon brown, pale reddish brown, greyish brown, distinct yellow, cracked into squares in one species; **pores** round to angular, 0.5–7 per millimetre or sinuous to labyrinth-like, 1–2 mm wide, edges entire, thick, rarely thin.

Hyphal systems dimitic. **Generative hyphae** 2–6 µm diameter with clamp connections, walls thin to thick, amyloid in several species; **skeletal hyphae** 2–8 µm diameter, walls amyloid in several species; **cystidioles** fusoid, some with an attenuated apex, 10–42 × 3.0–6.5 µm, walls hyaline to pale yellow, thin; **basidia** clavate, 12–40 × 4–11 µm, four sterigmate, except some two sterigmate in *A. sitchensis*; **basidiospores** allantoid, cylindrical, oblong, narrowly ellipsoid to broadly ellipsoid, 3.5–14 × 1–7 µm, walls hyaline, smooth, neither amyloid nor dextrinoid.

Notes: All species share an effuse to reflexed habit and are associated with a brown rot. The context is white or cream in all except two species. The core species of *Antrodia* are usually recognized by their tough, corky, white to pale brown basidiomata with large pores (~1–3 per millimetre), and relatively large (6–14 µm long), narrowly ellipsoid to cylindrical basidiospores.

- | | | |
|----|--|-----------------------|
| 1a | Pore surface yellow or various shades of brown | 2 |
| 1b | Pore surface white to cream | 7 |
| 2a | Pore surface yellow | 3 |
| 2b | Pore surface brown | 4 |
| 3a | Pores 5–7 per millimetre; skeletal hyphae amyloid | <i>A. xantha</i> |
| 3b | Pores 2–4 per millimetre; skeletal hyphae not amyloid | <i>A. alpina</i> |
| 4a | On hardwoods; context pale yellowish brown | <i>A. malicola</i> |
| 4b | On conifers; context white to cream, often with a brown or cinnamon hyphal layer next to the substrate or adjacent to the pileus surface | 5 |
| 5a | Pores round to angular and 3–5 per millimetre | <i>A. albobrunnea</i> |
| 5b | Pores mostly sinuous and mostly 1–4 per millimetre | 6 |
| 6a | Taste bitter; basidioma strictly effuse; basidiospores 4–6 × 1–2 µm | <i>A. sinuosa</i> |

- 6b Taste mild; basidioma effuse, reflexed or sessile;
basidiospores $8-12 \times 3.0-4.5 \mu\text{m}$ *A. variiformis*
- 7a On hardwoods 8
- 7b On conifers 11
- 8a Pores 3–6 per millimetre; basidiospores $4.5-7.0 \times 2.5-3.5 \mu\text{m}$ *A. crassa*
- 8b Pores 0.5–3 per millimetre; basidiospores $10-14 \times 3.5-7.0 \mu\text{m}$ 9
- 8c Pores 1–4 per millimetre; basidiospores $4-9 \times 1-4 \mu\text{m}$ 10
- 9a Basidiospores $3.5-5.0 \mu\text{m}$ wide *A. albida*
- 9b Basidiospores $5-7 \mu\text{m}$ wide *A. heteromorpha*
- 10a Pores 1–4 per millimetre; context ~1 mm thick;
basidiospores $4-6 \times 1-2 \mu\text{m}$ *A. sinuosa*
- 10b Pores 3–4 per millimetre; context less than 1 mm thick;
basidiospores $5-8 \times 2-3 \mu\text{m}$ *A. oleracea*
- 10c Pores 2–3 per millimetre; context 1–4 mm thick;
basidiospores $6-10 \times 2-4 \mu\text{m}$ *A. serialis*
- 11a Basidioma pileate, including reflexed 12
- 11b Basidioma effuse 14
- 12a Basidiospores $6-10 \times 2-4 \mu\text{m}$ *A. serialis*
- 12b Basidiospores $10-14 \times 3.5-7.0 \mu\text{m}$ 13
- 13a Basidiospores $3.5-5.0 \mu\text{m}$ wide *A. albida*
- 13b Basidiospores $5-7 \mu\text{m}$ wide *A. heteromorpha*
- 14a Pores 1–4 per millimetre 15
- 14b Pores 2–7 per millimetre 17
- 15a Basidioma soft-fibrous, typically with strands; taste mild;
basidiospores broadly ellipsoid, $5-8 \times 3-4 \mu\text{m}$ *A. vaillantii*
- 15b Basidioma tough; strands lacking; taste bitter; basidiospores
allantoid, $4-6 \times 1-2 \mu\text{m}$ *A. sinuosa*
- 15c Basidioma tough; strands lacking; taste mild to slightly bitter;
basidiospores straight, cylindrical, narrowly ellipsoid,
 $5-14 \times 2.5-7.0 \mu\text{m}$ 16
- 16a Basidiospores $6-10 \mu\text{m}$ long *A. serialis*
- 16b Basidiospores $10-14 \mu\text{m}$ long 13(above)
- 17a Strands present; taste mild; basidioma readily separating from
the wood, soft, cottony-fibrous 18
- 17b Strands lacking; taste weakly to distinctly bitter; basidioma
separable or adnate, soft to hard 19
- 18a In forest habitats; context white with a brown layer next to
the substrate; basidiospores allantoid, $5-7 \times 1.5-2.0 \mu\text{m}$ *A. albobrunnea*
- 18b In forest habitats; context white; basidiospores ellipsoid,
 $5-7 \times 2-3 \mu\text{m}$ *A. gossypium*

- 18c Principally in buildings and mines; context white;
basidiospores broadly ellipsoid, $5-8 \times 3-4 \mu\text{m}$ *A. vaillantii*
- 19a Context with a brown layer next to the substrate;
taste mild..... *A. albobrunnea*
- 19b Context lacking a brown layer; taste weakly to distinctly bitter 20
- 20a Basidiospores $2.0-3.5 \mu\text{m}$ wide 21
- 20b Basidiospores $1-2 \mu\text{m}$ wide 22
- 21a Basidioma tough and corky; hyphae amyloid;
cystidioles lacking..... *A. carbonica*
- 21b Basidioma soft; hyphae not amyloid; cystidioles typically
numerous, fusoid..... *A. crassa*
- 22a Hyphal walls not amyloid 23
- 22b Some hyphal walls thick, weakly to distinctly amyloid 24
- 23a Basidiospores oblong to narrowly ellipsoid, $3.5-5.0 \times$
 $1.5-2.0 \mu\text{m}$ *A. sordida*
- 23b Basidiospores allantoid, $4-6 \times 1-2 \mu\text{m}$ *A. sinuosa*
- 24a Margin white; pore surface yellow, in age nearly white to
pale cream and cracked; basidiospores allantoid,
 $1.0-1.5 \mu\text{m}$ wide..... *A. xantha*
- 24b Margin resinous, reddish brown; pore surface cream to
pale pinkish buff and not cracked; basidiospores cylindrical,
some slightly curved, $1.5-2.0 \mu\text{m}$ wide *A. sitchensis*

***Antrodia albida*
(Fr.) Donk**

Habitat/range: On hardwoods, infrequently on conifers, causing a brown rot. In BC, known from two collections on *Alnus* in Kelowna and *Populus* in Quesnel. Elsewhere in western North America, known from AK and YT south to CA and NM.



Basidiomata annual, pileate, reflexed or effuse; **pileus** rarely over 3 cm wide,
tough, some as numerous imbricate pilei 8 cm or more wide with decurrent
pores; **pileus surface** white to cream, matted tomentose, becoming zonate
with concentric, alternating glabrous zones; **context** white, tough, rarely

over 3 mm thick; **tubes** white, up to 1.5 cm deep; **pore surface** white, cream to ochreous; **pores** variable, round to angular, 1–3 per millimetre, on vertical surfaces sinuous and so elongated as to appear lamellate.

Generative hyphae 2–5 μm diameter, walls thin to thick; **skeletal hyphae** 3–6 μm diameter; **basidiospores** cylindrical to narrowly ellipsoid, 10–14 \times 3.5–5.0 μm .

Notes: The large basidiospores of *A. albida* and *A. heteromorpha* distinguish them from other *Antrodia* species on hardwoods. *Antrodia heteromorpha* is distinguished by its context, which is typically 3–6 mm thick, and its basidiospores, which are 5–7 μm wide.

***Antrodia albobrunnea*
(Romell) Ryvarden**

Habitat/range: On conifers, causing a brown rot. In BC, known from Haida Gwaii and Kootenay National Park. Elsewhere in western North America, known from AK and YT to AZ and typically in high-elevation forests.



Basidiomata effuse, some widely effuse, up to 4 mm thick, some reviving a second season, soft, separable; **margin** typically wide, cottony; **strands** on some basidiomata, white to pale brown; **context** white to ochreous with a cinnamon layer next to the substrate, cottony, up to 1 mm thick; **tubes** white to pale brown, up to 3 mm deep; **pore surface** white, becoming pale reddish brown, often mottled; **pores** round to angular, 3–5 per millimetre, edges typically thin.

Generative hyphae 2–5 μm diameter, walls hyaline but brown next to the substrate; **skeletal hyphae** 2–5 μm diameter; **basidiospores** allantoid, 5–7 \times 1.5–2.0 μm .

***Antrodia alpina*
(Litsch.) Gilb. &
Ryvarden**

Habitat/range: On a *Pseudotsuga menziesii* log on Vancouver Island (Cowichan Lake). Elsewhere in western North America, on confirs in MT, ID, and OR.

Basidiomata effuse, perennial, soft, drying brittle, chalky or crumbly, up to 15 mm thick, tissues pale pink to purplish red in KOH; **taste** bitter; **margin** white, narrow; **context** white, distinct from tube layers; **tubes** near white to cream, stratified, each layer up to 2 mm thick; **pores** round to angular, 2–4 per millimetre, pore mouths thin and typically lacerate; **pore surface** bright yellow.

Generative hyphae 3–5 μm diameter with clamp connections, walls hyaline, thin; **skeletal hyphae** predominate, 3–5 μm diameter, walls not amyloid; **cystidioles** scattered, 12–15 \times 4–5 μm , fusoid, with acute apices, not projecting; **basidiospores** ovoid, some narrowing toward the base, 4–5 \times 2.0–2.5, walls hyaline, neither amyloid nor dextrinoid.

Notes: *Antrodia xantha* is also yellow and of a similar texture, but it differs in having 5–7 pores per millimetre, weakly amyloid skeletal hyphae, allantoid basidiospores, the dried pore surface often cracked into squares, and tissues that do not stain weakly pink in KOH.

***Antrodia carbonica*
(Overh.) Ryvarden
& Gilb.**

Habitat/range: On conifers, causing a brown cubical rot, sometimes decaying power poles and mine timbers. Widespread south of 51°N in BC; elsewhere in western North America, known from WA, ID, and MT south to AZ and NM.



Basidiomata infrequently perennial, widely effuse, tough, corky, adnate, up to 1.5 cm thick; **taste** weakly bitter; **margin** typically abrupt, white, becoming pale brown, narrow; **context** white, amyloid, thin, cottony to fibrous, up to 0.5 cm thick; **tubes** white, up to 1 cm deep; **pore surface** white to cream; **pores** round to angular, 3–5 per millimetre, edges thin to thick, entire.

All hyphae have amyloid walls; **generative hyphae** 3–4 μm diameter; **skeletal hyphae** 5–8 μm diameter; **basidiospores** cylindrical to narrowly ellipsoid, 5.0–6.5 \times 2–3 μm .

Notes: Microscopically, the amyloid walls of all hyphae are distinctive. Some skeletal hyphae have frequent branches, and they could be interpreted as binding hyphae.

***Antrodia crassa*
(P. Karst.) Ryvarden**

Habitat/range: On conifers and hardwoods, causing a brown rot. In BC, known on *Pinus contorta* in Kelowna, on *P. monticola* and *Populus* sp. in Quesnel, and reported on *Pseudotsuga menziesii* (Shaw 1973). Elsewhere in western North America, known from AK, WA, and MT.



Basidiomata effuse to widely effuse, perennial, up to 2 cm thick, soft, separable; taste bitter; **margin** white, smooth, narrow; **context** white, friable, thin, indistinct; **tubes** white to pale yellow, appearing resin-soaked, each layer up to 2 mm deep, young layers distinct, old layers friable; **pore surface** white to cream; **pores** round, 3–6 per millimetre.

Generative hyphae 2–5 µm diameter, **skeletal hyphae** sinuous, 3–5 µm diameter; **cystidioles** typically numerous, fusoid, up to 18 µm tall, walls hyaline to pale yellow; **basidiospores** broadly cylindrical to oblong ellipsoid, 4.5–7.0 × 2.5–3.5 µm.

Notes: Microscopic preparations of basidioma tissues often contain numerous oily globules. *Antrodia sordida* also has them, but its basidiospores are only 1.5–2.0 µm wide and skeletal hyphae have weakly amyloid walls.

***Antrodia gossypium*
(Speg.) Ryvarden**

Syn. *Polyporus destructor*
Fr. var. *resupinatus*
Bourdot & Galzin

Habitat/range: On conifers, causing a brown rot. In BC, known from three collections in the southwestern quadrant on *Abies grandis* in Ardmore (Vancouver Island) and on *Pseudotsuga menziesii* in Haney and Vancouver. Elsewhere in western North America, known only from AZ and CO.



Basidiomata typically widely effuse, annual, up to 5 mm thick, separable, soft to cottony; **margin** white, wide; **strands** in some basidiomata, white; **context** white, soft, fibrous, thin; **tubes** white, becoming darker, appearing resin-soaked, up to 3 mm deep; **pore surface** white to cream, becoming darker yellow; **pores** angular, 3–6 per millimetre.

Generative hyphae 3–6 μm diameter, predominate in the trama; **skeletal hyphae** 3–5 μm diameter, predominate in the context; **basidiospores** ellipsoid, 5–7 \times 2–3 μm , often containing small oil drops.

Notes: Macroscopically, *A. vaillantii* is similar, but it differs in being much softer and having basidiospores 3–4 μm wide.

***Antrodia heteromorpha*
(Fr.) Donk**

Habitat/range: On conifers and hardwoods, causing a brown cubical rot. Widespread in the southern half of BC and elsewhere in western North America.



Basidiomata sessile, reflexed, or effuse, some nodulose, usually covering large patches, adnate; **pileus** up to 3 cm wide, 10 cm long, commonly imbricate; **pileus surface** white to cream, becoming pale sordid brown, finely tomentose, becoming glabrous or some with tufts of hyphae, zonate; **margin** white, distinct, typically narrow; **context** corky, tough, white, 3–6 mm thick; **tubes** up to 30 mm deep; **pore surface** cream or pallid; **pores** 0.5–2 per millimetre, angular, sinuous or labyrinth-like, edges thick, becoming dentate.

Generative hyphae 2–4 μm diameter, walls thin to thick; **skeletal hyphae** 3–7 μm diameter; **cystidioles** variable in frequency, pointed; **basidiospores** 10–13 \times 5–7 μm , ellipsoid to broadly ellipsoid, in profile typically with a slightly concave surface just above the apiculus.

Antrodia malicola
(Berk. & M.A. Curtis)
Donk

Habitat/range: On hardwoods, causing a brown rot. In BC, known from two collections on southern Vancouver Island: one at Observatory Hill, Victoria, and the other on *Arbutus menziesii* at Metchosin. Elsewhere in western North America, known from AB, WA, MT, WY, and AZ.



Basidiospores of *Antrodia malicola*

Basidiomata effuse, reflexed, rarely sessile, typically annual, tough to corky, separable; **pileus** typically elongated and projecting up to 1.5 cm out from the substrate, some nodulose, some imbricate; **pileus surface** pale brown aging to greyish brown to blackish brown, finely tomentose in aging to tufted then glabrous; **context** pale yellowish brown, 1–2 mm thick; **tubes** pale yellowish brown or paler, up to 5 mm deep; **margin** distinct, sharp to rounded; **pore surface** pale cinnamon to pale brown; **pores** round, angular or sinuous, 2–4 per millimetre, some labyrinth-like, up to 4 mm long and 1 mm wide.

Generative hyphae 2–4 µm diameter, walls thin to slightly thick; **skeletal hyphae** predominate in the context, 2–5 µm diameter; **binding hyphae** rare, confined to the context, 2–3 µm diameter; **basidiospores** cylindrical, ellipsoid to broadly ellipsoid, 7–10 × 2.5–4.0 µm, typically slightly concave on the surface above the apiculus.

Notes: The pale brown colour distinguishes *A. malicola* from the other *Antrodia* species in British Columbia, except *A. serialis* is brownish yellow. Microscopically, in the context the rare hyphae is frequently branched and these are interpreted as binding hyphae.

Antrodia oleracea
(R.W. Davidson &
Lombard) Ryvarden

Habitat/range: On hardwoods. In BC, known only on *Arbutus menziesii* in Victoria. Elsewhere in western North America, known only from AZ.

Basidiomata effuse, some widely effuse, up to 3 mm thick, soft, drying brittle and chalky; **taste** bitter; **margin** white, sometimes wide, typically finely fimbriate; **context** less than 1 mm thick, white, cottony; **tubes** brittle with patches appearing waxy or resin-soaked; **pore surface** white, when dry pale brown to clay; **pores** 3–4 per millimetre, angular, walls thin, edges even.

Generative hyphae 2–4 µm diameter, walls thin; **skeletal hyphae** rare in the trama, common in the context, 2–4 µm diameter, lacking branches, straight, walls thick, some the walls so thick that the lumen is obscured; **basidiospores** cylindrical to narrowly ellipsoid, some slightly curved, 5.0–7.5 (–8) × 2–3 µm, some with oil-like inclusions, walls hyaline, thin, not amyloid.

***Antrodia serialis*
(Fr.) Donk**

Habitat/range: On conifers and hardwoods, causing a brown cubical rot. Widespread in the southern half of BC and on Haida Gwaii. Widespread elsewhere in western North America.



Basidiomata effuse, some narrowly reflexed and nodulose, frequently imbricate, separable, often in patches 15–20 cm diameter on the cut ends of logs, or in larger patches on lower surfaces of logs and branches; **taste** slightly bitter; **pileus surface** ochreous to pale cinnamon brown, finely tomentose, becoming glabrous; **context** white to pale brownish yellow, tough, 1–4 mm thick; **tubes** pale brownish yellow, up to 5 mm deep (deeper if on nearly vertical surfaces, and tending also to be split down one side); **pore surface** white to pale brown, some with red tints caused by contaminating moulds; **pores** 2–3 per millimetre, round, edges thick.

Generative hyphae 2–4 µm diameter; **skeletal hyphae** predominate, 2–5 µm diameter; **basidiospores** cylindrical to narrowly ellipsoid, 6–10 × 2–4 µm.

Notes: *Antrodia serialis* often grows on the ends of cut logs, from which it is practically impossible to remove except in small pieces. The larger basidiospores (8–12 × 3.0–4.5 µm) of *A. variiformis* distinguish it from *A. serialis*. *Antrodia albida* also has pores 2–3 per millimetre and when on conifers can be confusingly similar to *A. serialis*, but *A. albida* has wider basidiospores. Basidiomata on hardwoods can be confusingly similar to *A. oleracea*. In *A. oleracea*, skeletal hyphae are rare in the trama.

***Antrodia sinuosa*
(Fr.) P. Karst.**

Habitat/range: On conifers, infrequently on hardwoods, causing a brown cubical rot. On Haida Gwaii and widespread in the southern half of BC. Elsewhere in western North America, known from AK and AB south to AZ and NM.



Basidiomata typically widely effuse, annual, separable, up to 3 mm thick; taste bitter; **margin** white, indistinct to narrow; **context** white, tough, cotty, ~1 mm thick; **tubes** white, up to 5 mm deep; **pore surface** white to tan; **pores** angular to sinuous, 1–4 per millimetre, edges entire to dentate.

Generative hyphae 2.0–4.5 μm diameter; **skeletal hyphae** 2–5 μm diameter; **cystidioles** fusoid, 12–20 \times 4–5 μm , not projecting; **basidiospores** allantoid, 4–6 \times 1–2 μm .

Notes: The distinguishing features are the irregular, often dentate pore edges and their pale brown colour when dry.

***Antrodia sitchensis*
(D.V. Baxter) Gilb. &
Ryvarden**

Habitat/range: On conifers, causing a brown cubical rot. Known from a few collections on *Picea* and *Tsuga* from Haida Gwaii to the Prince George area and south to the BC/WA border. Elsewhere in western North America, known from AK and AB south to AZ and NM.



Basidiomata effuse, sometimes perennial, hard, separable, up to 6 mm thick; **taste** resinously bitter; **margin** indistinct to narrow, white to reddish brown, tomentose, in age appearing waxy or resin-like; **context** cream, dense, paler than tubes; **tubes** stratified, each layer up to 4 mm deep, becoming resin-like; **pore surface** cream to pale pinkish buff; **pores** round, 5–7 per millimetre.

Generative hyphae indistinct, 2–4 μm diameter; **skeletal hyphae** interwoven in the trama, 2–5 μm diameter, walls faintly to distinctly amyloid; **cystidioles** scattered, fusoid, 18–24 \times 5–6 μm ; **basidia** clavate, 16–20 \times 6–7 μm , four sterigmate and some two sterigmate; **basidiospores** cylindrical (some slightly curved) to narrowly ellipsoid, 4.0–5.5 \times 1.5–2.0 μm .

Notes: In the field, the resinous, reddish-brown margin and association with a brown rot are distinctive. Microscopic sections of basidiomata often have numerous, amorphous resinous deposits. The similar *A. crassa* differs in having basidiospores 2.5–3.5 μm wide and numerous cystidioles.

Antrodia sordida
Ryvarden & Gilb.

Habitat/range: On conifers, causing a brown rot. Known from two collections, one on *Abies amabilis* in Franklin River (Port Alberni area of southern Vancouver Island) and on *Pinus monticola* in Begbie Creek (Revelstoke area). Also reported on *Picea sitchensis* in BC (Shaw 1973). Elsewhere in western North America, known from WA and OR.

Basidiomata widely effuse, perennial, up to 7 mm thick, adnate; **taste** bitter; **margin** white, narrow, cottony; **context** white, soft, friable, thin, becoming indistinct; **tubes** stratified, each layer up to 2.5 mm deep; **pore surface** white to pale cream; **pores** round to angular, 4–6 per millimetre, edges entire, becoming thin.

Generative hyphae 2–4 μm diameter, walls thin to thick; **skeletal hyphae** 2–5 μm diameter, walls faintly dextrinoid; **cystidioles** fusoid, imbedded, inconspicuous, 3–5 μm diameter; **basidiospores** oblong to narrowly ellipsoid, 3.5–5.0 \times 1.5–2.0 μm .

Notes: Microscopic preparations of the basidiomata often have numerous, irregularly shaped oil drops. The crumbly texture of the basidiomata resembles that of *A. crassa*, but the latter has basidiospores 2.5–3.5 μm wide and numerous cystidioles.

Antrodia vaillantii
(DC.) Ryvarden

Habitat/range: On conifers, principally in greenhouses, mines, and basements, or on damp discarded lumber, causing a brown cubical rot. In BC, known from Summerland, Penticton, Vancouver, and the Victoria area. Elsewhere in western North America, known from WA and ID south to AZ.

Basidiomata widely effuse, annual, up to 4 mm thick; **margin** white to cream; **strands** white, typically broad; **context** white, soft, cottony, 1–2 mm thick; **tubes** white, soft, cottony; **pore surface** white to cream; **pores** round to angular, 2–4 per millimetre.



Antrodia radiculosa

Generative hyphae 2–6 µm diameter; **skeletal hyphae** 2–5 µm diameter, predominate in context and strands; **basidiospores** broadly ellipsoid, 5–8 × 3–4 µm.

Notes: The distinctive features are the white- to cream-coloured basidiomata, relatively large basidiospores, and the strands. *Antrodia radiculosa* (Peck) Gilb. & Ryvarden, which occurs in Washington, Idaho, and Montana but has not yet been found in British Columbia, is similar but its yellow to orange yellow pore surface is distinctive.

***Antrodia variiformis*
(Peck) Donk**

Habitat/range: On conifers, especially species of *Picea* and *Tsuga*, infrequently on hardwoods, causing a brown rot. Widespread and scattered in the southern half of BC. Elsewhere in western North America, known from AK and YT south to CO.



Basidiomata rarely sessile, typically reflexed or effuse (some covering large areas of the lower surface of logs), up to 4 mm thick; **pileus** rarely over 1 cm wide, when reflexed typically elongated and short, tough, flexible, separable; **pileus surface** cinnamon brown, finely tomentose, becoming greyish brown, glabrous with scattered, small tufts; **context** up to 1 mm thick, often duplex with a cream layer next to the tubes and a cinnamon layer next to the substrate or pileus surface, typically with a thin, black line next to the substrate

or at the base of the pileus; tubes up to 3 mm deep, trama tan; pore surface white, cream to tan, becoming pale cinnamon brown or greyish brown; pores typically sinuous to labyrinth-like, 1–2 mm wide, some round to angular, 1–2 per millimetre.

Generative hyphae 2–5 µm diameter, walls typically slightly thickened; skeletal hyphae 2–6 µm diameter; at the base of the context in some basidiomata, some skeletal hyphae are significantly branched; cystidioles fusoid, some with an attenuated apex, 28–42 × 4.0–6.5 µm; basidiospores cylindrical to narrowly ellipsoid, 8–12 × 3.0–4.5 µm.

Notes: The similar *A. serialis* differs in having smaller pores (2–3 per millimetre) and smaller basidiospores, 6–10 × 2–4 µm.

***Antrodia xantha*
(Fr.) Ryvarden**

Habitat/range: On conifers, occasionally on hardwoods, causing a brown cubical rot. Widespread in the southern half of BC and one collection in the north at Muncho Lake (58°N). Widespread elsewhere in western North America.



Basidiomata widely effuse, annual, up to 5 mm thick, when on a vertical surface forming numerous nodules, adnate, soft; taste bitter; margin narrow, white; context thin, white, soft; tubes white to cream, up to 5 mm deep; pore surface typically a distinct yellow, fading to cream and cracked into squares; pores round, 5–7 per millimetre, edges entire, thick.

Generative hyphae 2–4 µm diameter; skeletal hyphae predominate, 3–6 µm diameter, walls faintly amyloid; cystidioles fusoid, 10–14 × 3–4 µm, not projecting; basidiospores allantoid, 4–5 × 1.0–1.5 µm.

Notes: The bright yellow colour and typical cracking of dry basidioma, the amyloid skeletal hyphae, and the allantoid basidiospores are the distinctive features. *Antrodia alpina* differs in having 2–4 pores per millimetre and its tissues stain pale pink to purplish red in KOH. *Diplomitoporus rimosus* (Murrill) Gilb. & Ryvarden occurs on live and dead *Juniperus* in Idaho but has not yet been found in British Columbia; it is distinguished by its host preference, association with a white rot, tubular cystidia, and lack of amyloid walls in the skeletal hyphae.

Habitat: On hardwoods and conifers, causing a white rot, plus *A. semisupina* has been collected on basidiomata of species of *Fomes*, *Fomitopsis*, and *Trichaptum*.

Basidiomata annual, sessile to fan-shaped and then substipitate, reflexed, effuse, small, soft, waxy, leathery, confluent, dense and semi-translucent, up to 5 mm thick; **pileus** soft to tough, often imbricate with many narrow pilei fused laterally, individuals rarely over 2 cm wide; **margin** white to cream, finely tomentose; **pileus surface** white to yellow, becoming sordid brown to grey, zonate, tomentose to velutinous, becoming strigose with radiating strands of agglutinated hyphae and small warts; **context** white, dense, up to 2 mm thick; **tubes** straw yellow, up to 3 mm deep; **pore surface** white, cream, pale yellow, ochreous or brown; **pores** round to angular, 5–8 per millimetre, edges thin.

Hyphal systems dimitic and trimitic. **Generative hyphae** 2–5 µm diameter with clamp connections; **skeletal hyphae** straight, occasionally branched, 2–5 µm diameter; **binding hyphae** frequently branched, 1–3 µm diameter; **cystidia** lacking; **cystidioles** only in *A. canadensis*, fusoid, 12–15 × 5–6 µm; **basidia** clavate, 9–15 × 3–6 µm, four sterigmate; **basidiospores** ellipsoid, oblong-ellipsoid, ovoid, or broadly ellipsoid, 2.5–4.0 × 2–3 µm, walls hyaline, thin, neither amyloid nor dextrinoid.

- | | | |
|----|--|----------------------|
| 1a | On basidiomata of other polypores | <i>A. semisupina</i> |
| 1b | On wood | 2 |
| 2a | Basidioma effuse..... | <i>A. romellii</i> |
| 2b | Basidioma pileate (including reflexed) | 3 |
| 3a | On conifers; pileus up to 6 cm wide; context typically with dark, resinous lines; fusoid cystidioles scattered in the hymenium | <i>A. canadensis</i> |
| 3b | On hardwoods; pileus rarely over 2 cm wide; context lacking dark, resinous lines; cystidioles lacking | <i>A. semisupina</i> |

***Antrodiella canadensis*
(Overh.) Niemelä**

Syn. *Antrodiella overholtsii*
Ryvarden & Gilb.

Habitat/range: On conifers, causing a stringy white rot. In BC, known from one collection on a *Picea sitchensis* log at China Beach, Jordan River, on Vancouver Island. Elsewhere in western North America, known from WA, ID, MT, and OR.

Basidiomata sessile to fan-shaped and then substipitate, annual, often imbricate, up to 6 cm wide × 6 cm long × 0.8 cm thick; **taste** sweet; **pileus** soft but tough; **pileus surface** white to yellow, becoming sordid brown to grey, tomentose to velutinous, becoming strigose with radiating strands of agglutinated hyphae and small warts; **context** white, homogeneous, then dense, pale straw yellow with dark, resin-like lines; **tubes** fragile, straw yellow, darker than context; **pore surface** white, then cream to ochreous or brown; **pores** angular, 5–6 per millimetre, edges thin.

Hyphal system dimitic. Generative hyphae predominate, 3–5 µm diameter, walls thin to thick; skeletal hyphae agglutinated, 2–5 µm diameter, walls thick, sometimes so thick that the lumen is obscured; cystidioles fusoid, 12–15 × 5–6 µm; basidiospores ellipsoid, ovoid, or broadly ellipsoid, 2.5–3.0 × 2.0–2.5 µm.

***Antrodiella romellii*
(Donk) Niemelä**

Habitat/range: On conifers, occasionally on *Populus*, causing a white sap rot. Reported from BC, but specific localities not given (Gilbertson and Ryvarden 1986). Elsewhere in western North America, known from AB to WA and south to AZ.



Basidiomata effuse, annual, leathery, small, confluent, up to 4 mm thick; **margin** white or creamy white, finely tomentose, often with a faint silky lustre; **context** white, up to 1 mm thick; **tubes** up to 2 mm deep; **pore surface** cream to pale buff; **pores** angular, 6–8 per millimetre.

Hyphal system trimitic. Generative hyphae 2–3 µm diameter, walls thin; skeletal hyphae 2–4 µm diameter; binding hyphae branched, 1–3 µm diameter; basidiospores oblong-ellipsoid, 3.5–4.0 × 2.0–2.5 µm.

Notes: Although many features are similar, *A. semisupina* differs in having pileate basidiomata and it rarely inhabits conifers.

***Antrodiella semisupina*
(Berk. & M.A. Curtis)
Ryvarden**

Habitat/range: On hardwoods, rarely on conifers, causing a white rot; also growing on basidiomata of polypores in the genera *Fomes*, *Fomitopsis*, and *Trichaptum*. In BC, known from Vancouver Island (Victoria on *Fomitopsis* and Cowichan Lake) and from unspecified hosts and localities (Lowe and Gilbertson 1961; Gilbertson and Ryvarden 1986). Elsewhere in western North America, known from MT, ID, and OR.

Basidiomata annual, sessile, reflexed, rarely effuse, small, soft, waxy, up to 5 mm thick; **pileus** often imbricate with many narrow pilei fused laterally, individuals rarely over 2 cm wide; **margin** white to cream; **pileus surface** white

to yellow, zonate, matted velutinous; **context** white, dense, up to 2 mm thick; **tubes** up to 3 mm deep; **pore surface** cream to pale yellow, becoming somewhat darker; **pores** round to angular, 5–7 per millimetre, edges thin.

Hyphal system trimitic. **Generative hyphae** sparse, 2–4 μm diameter, walls thin; **skeletal hyphae** predominate, straight, not, or occasionally branched, 2–5 μm diameter; **binding hyphae** frequently branched, 2–3 μm diameter; **basidiospores** ellipsoid, 2.5–3.5 \times 2–3 μm .

Notes: Generative hyphae are difficult to find in dried basidiomata.



APORPIUM BONDARTSEV & SINGER

Aporpium caryae
(Schwein.) Teixeira &
D.P. Rogers

Habitat/range: On dead hardwoods, especially *Populus balsamifera* ssp. *trichocarpa*, causing a white rot. In BC, known from Quesnel, Nelson, and Squamish areas. Elsewhere in western North America, known from YT, WA, ID, CO, and CA.

Basidiomata effuse, annual; **margin** white to pale buff, tomentose, up to 1 mm wide; **context** pale buff, up to 0.5 mm thick; **tubes** up to 3 mm deep; **hyphal pegs** present; **pore surface** pale pinkish brown, often mottled, bruising pale reddish brown; **pores** round, 3–5 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2–3 µm diameter with clamp connections; **skeletal hyphae** predominate, 2–4 µm diameter, walls thick; **cystidia** lacking; **basidia** clavate, cruciately septate, ~8–9 × 5–8 µm, sterigma ~12 µm long; **basidiospores** allantoid, 5.5–6.0 × 2.0–2.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The pale pinkish brown colour of the pore surface and association with dead hardwoods are distinctive.



AURIPORIA RYVARDEN

***Auriporia aurea* (Peck) Ryvarden**

Habitat/range: On conifers causing a brown cubical rot. In BC, known from one collection on *Abies lasiocarpa* at Aleza Lake. Elsewhere in western North America, infrequently collected in AB, SK, OR, and NM.

Basidiomata effuse, annual, yellow throughout, up to 4 mm thick; **margin** fimbriate, narrow; **context** soft, subgelatinous, up to 1 mm thick; **tubes** up to 3 mm deep; **pores** round to angular, 2–4 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2–4 µm diameter with numerous clamp connections; **skeletal hyphae** 2.0–3.5 µm diameter; **trama** weakly amyloid; **cystidia** numerous, ventricose, 20–55 × 12–25 µm, projecting up to 15 µm, walls thickened, the apices typically crystalline encrusted; **basidiospores** ellipsoid to cylindrical, 5.0–8.5 × 3–4 µm, neither amyloid nor dextrinoid.

Notes: The yellow basidiomata, prominent encrusted cystidia, and skeletal hyphae are distinctive. *Auriporia pileata* Parmasto was collected in 2010 in the eastern foothills of Alberta's Rocky Mountains (J. Ginns collection no. 11875), but it has not been found in British Columbia or elsewhere in North America. *Auriporia pileata* has pileate basidiomata, allantoid basidiospores, 5 × 1.0–1.5 µm, and lacks skeletal hyphae.

BJERKANDERA P. KARST.

Habitat: On hardwoods, rarely on conifers, causing a white rot.

Basidiomata effuse, reflexed, or pileate, tough, 1–10 cm wide × 3–15 cm long × 0.1–2.0 cm thick; **pileus** solitary or numerous and imbricate, sessile, dimidiate; **pileus surface** cream to buff, fading to white, tomentose to glabrous, smooth, sometimes faintly zonate; **context** buff, soft-fibrous, up to 1.5 cm thick; **tubes** smoky grey, up to 4 mm deep; **pore surface** buff, grey, smoky grey to black; **pores** round to angular, 2–7 per millimetre.

Hyphal system monomitic. **Generative hyphae** 3–7 µm diameter with frequent clamp connections, walls thin to moderately thick; **cystidia** lacking; **basidia** clavate, 12–25 × 4–6 µm, four sterigmate; **basidiospores** cylindrical or narrowly ellipsoid, 5–7 × 2.0–3.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Pore surface grey to black; pores 6–7 per millimetre; context up to 6 mm thick *B. adusta*
- 1b Pore surface typically much paler, buff to pale smoky grey; tubes separated from the context by a dark line; pores 2–5 per millimetre; context typically 6–15 mm thick *B. fumosa*

Bjerkandera adusta

(Willd.) P. Karst.

Smoky polypore

Habitat/range: On hardwoods, rarely on conifers, causing a white rot. Widespread in BC from the Dawson Creek area south to the BC/WA border and east of the Coast Mountains, except for several collections in the Vancouver/Victoria areas. Widespread and common in western North America.



Basidiomata pileate, sessile, reflexed, or effuse, tough; **pileus** 1–6 cm wide × 3–10 cm long × 0.1–0.8 cm thick, often imbricate; **pileus surface** cream to buff, tomentose to glabrous, sometimes faintly zonate; **context** pale buff, up to 6 mm thick; **tubes** smoky grey, distinct from the context, up to

1 mm deep, lacking a dark line at the base of the tube layer; **pore surface** grey to black; **pores** round to angular, 6–7 per millimetre, edges thin, entire.

Hyphae 3–5 μm diameter with frequent clamp connections, walls thin to moderately thick; **basidiospores** cylindric or narrowly ellipsoid, 5–6 \times 2.5–3.5 μm .

Notes: The contrast between the grey to black tube layer and the white context is a good field character.

***Bjerkandera fumosa*
(Pers.) P. Karst.**

Habitat/range: On hardwoods, causing a white rot of the sapwood. In BC, known from Quesnel and Vancouver Island. Elsewhere in western North America, known from WA, ID, MT, OR, and CA.



Basidiomata reflexed or pileate, 2–10 cm wide \times 3–15 cm long \times 0.5–2.0 cm thick; **pileus** sessile, dimidiate, solitary, or imbricate; **pileus surface** buff, tomentose to glabrous, smooth; **context** buff, soft-fibrous, up to 1.5 cm thick; **tubes** pale smoky grey, up to 4 mm deep, separated from the context by a dark line; **pore surface** buff to pale smoky grey; **pores** round to angular, 2–5 per millimetre, edges thick, becoming thin, entire.

Hyphae 3–7 μm diameter with clamp connections, walls thin to moderately thick; **basidiospores** cylindrical to narrowly ellipsoid, 5–7 \times 2.0–3.5 μm .

Notes: Basidiomata of *B. adusta* are more common and typically smaller, the context is thinner, the pores are smaller, and the dark line between the tubes and the context is less distinct.

BOLETOPSIS FAYOD

***Boletopsis grisea*
(Peck) Bondartsev
& Singer**

Syn. *Boletopsis subsquamosa* sensu Gilb.
& Ryvarden, 1986

Habitat/range: On the ground in coniferous forests, especially under pines, presumably ectomycorrhizal. Scattered across BC from Revelstoke south to the BC/WA border with two northern collections from Hazelton and Smithers. Elsewhere in western North America, it is uncommon and known from WA, ID, MT, OR, and CA.



Basidiomata solitary, stipitate, relatively large; **stipe** central to lateral, 4–8 cm long, 1–3 cm thick, cylindrical, solid, firm, surface dull, matte; **pileus** 5–15 (–20) cm broad, round to irregular in outline, convex; **pileus surface** dull grey to blackish grey to brown with an olivaceous tint, glabrous, smooth to scaly; **margin** entire to undulating, down-curved, becoming plane; **context** 1–3 cm thick, firm, fleshy, white, darkening where bruised, drying black; **tubes** 2–8 mm deep; **pore surface** white, becoming pale grey, decurrent; **pores** 1–4 per millimetre, angular, edges thin.

Hyphal system monomitic. **Generative hyphae** 3–20 µm diameter with clamp connections, walls hyaline, thin to slightly thickened; **basidia** clavate, up to 43×10 µm, four long sterigmata; **basidiospores** subglobose, 5–7 µm diameter or oblong, 5–6 × 4–5 µm, irregular in outline, walls hyaline to pale brown, ornamented with prominent rounded warts, neither amyloid nor dextrinoid.

Notes: The fleshy, predominately grey, bolete-like basidiomata, and unusual basidiospores, characterize this species. *Boletopsis smithii* K.A. Harrison, from Washington but not yet found in British Columbia, is distinguished by its dull orange pileus surface.

Bondarzewia mesenterica
(Schaeff.) Kreisel
Syn. *B. montana*
(Quél.) Singer
Bondarzew's polypore

Habitat/range: On the ground at the base of live conifers, especially species of *Larix*, causing a white stringy heart rot of roots and butts, usually at higher elevations. Attached to roots or subterranean base of the trunk by a sclerotium-like stipe (Redhead and Norvell 1993). Kroeger et al. (2012) categorized it as ectomycorrhizal. In BC, known from Haida Gwaii to Terrace, south to the Victoria/Vancouver areas. Elsewhere in western North America, known from WA, ID, MT, OR, and CA.



Basidiomata pileate with a stipe, simple or multipileate, up to 25 cm wide; **odour** pleasant, nutlike, edible; **taste** mild or rather bitter when old; **stipe** 4–12 cm long, 2–5 cm thick, central to lateral, gnarled; **pileus** one or several arising from a common base, fan-shaped, each 6–25 cm broad; **pileus surface** grey brown, purplish brown, brown, velvety; **context** white to cream, 0.3–2 cm thick, firm but brittle; **tubes** 2–6 mm deep, when fresh a cut surface exudes a white, acrid latex; **pore surface** white to cream; **pores** decurrent, large, 0.5–2.0 mm diameter, angular, irregular, edges thin, becoming lacerate.

Hyphal system dimitic. **Generative hyphae** 4–8 µm diameter with simple septa, walls thin, **skeletal hyphae** in the context 3–8 µm diameter, walls thick; **cystidia** lacking; **basidia** clavate or narrowly clavate, 40–55 × 10–12 µm, four sterigmate; **basidiospores** globose to subglobose, 6–8 × 5–7 µm diameter, walls ornamented with short, amyloid ridges (Figure 6j, page 11).

Notes: The relatively large size and the latex oozing from cuts of the tube layer are good field characters. Reports of *B. berkeleyi* (Fr.) Bondartsev & Singer on conifers in western North America may have been based on misidentified specimens of *B. mesenterica* (*B. berkeleyi* is on hardwoods predominately in eastern North America and only rarely reported in western North America).

Byssoporia terrestris
**(DC.) M.J. Larsen
& Zak**

Habitat/range: On the lower surfaces of rotted logs and fallen branches of conifers; ectomycorrhizal. Reported in BC, but specific localities not given (Gilbertson and Ryvarden 1986). Elsewhere in western North America, known from AB and WA south to CA and AZ.



Basidiomata effuse, annual, soft, easily separating from the substrate, up to 3 mm thick; **margin** white to pale yellow, fimbriate; **strands** typically present; **context** thin, cottony, paler than pore surface; **tubes** up to 3 mm deep; **pore surface** colour variable, pale yellow, orange, pale bluish green with purple patches, pale brown; **pores** angular to somewhat daedaleoid, 2–3 per millimetre.

Hyphal system monomitic. **Generative hyphae** simple septate with scattered clamp connections, 2.0–4.5 μm diameter but up to 11 μm diameter in the strands, walls with scattered segments encrusted with granules, some hyphal cells in the strands with short branches that have walls irregularly thickened; **cystidia** lacking; **basidia** clavate, 15–25 \times 5–6 μm , four sterigmate; **basidiospores** broadly ellipsoid to subglobose, 4–5 \times 3–4 μm , walls smooth, slightly thickened, neither amyloid nor dextrinoid.

Notes: The distinctive features are the pale yellow to pale bluish green, soft basidiomata and the broadly ellipsoid to subglobose, slightly thick-walled basidiospores.

Habitat: On hardwoods and conifers, causing a white rot.

Basidiomata effuse, annual, typically in patches a few centimetres in diameter but up to a decimetre in diameter, adnate or separable, up to 3 mm thick, fragile, soft; **margin** white, pinkish tan or purplish, narrow to relatively wide, thin, minutely tomentose to cottony, fimbriate; **context** white, pinkish tan, purple to cinnamon, up to 1 mm thick, soft, cottony; **tubes** white, pinkish or tan, pale to dark brownish purple, up to 2 mm deep; **pore surface** of various colours, cream, rosy pink, pale orange, bright orange, cinnamon, or sordid brown with a green tint, soft, dull, waxy; **pores** round, angular to sinuous, 2–5 per millimetre or 7–9 per millimetre in *C. spissa*, originating on the context as saucer-shaped depressions that coalesce to form a continuous hymenial surface.

Hyphal system monomitic. **Generative hyphae** 2–15 µm diameter with simple septa and in *C. excelsa* with rare single to verticillate clamp connections, branches frequent and diverging at a right angle, walls thin to slightly thickened; **cystidia** lacking; **basidia** clavate, 12–23 × 4–8 µm, four sterigmate; **basidiospores** allantoid, cylindrical-ellipsoid to oblong, 3.5–9.5 × 1.5–3.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: There is considerable variation in colours within species, and colours overlap between species.

- 1a Pore surface white to tan, or brown with a green tint 2
- 1b Pore surface pink, purple, orange to reddish brown 4
- 2a Basidiospores oblong to short cylindrical,
4.0–5.0 × 2.0–2.5 µm *C. tarda*
- 2b Basidiospores allantoid or cylindrical and slightly curved..... 3
- 3a Basidiospores 4.0–6.0 × 1.5–2.0 µm *C. viridans*
- 3b Basidiospores 5.0–8.0 × 2.0–3.5 µm..... *C. reticulata*
- 4a Pore surface orange..... *C. spissa*
- 4b Pore surface pink, purple, lilac, to reddish brown 5
- 5a Basidiospores allantoid, 4.5–8.0 µm long 6
- 5b Basidiospores oblong to short cylindrical, 3.5–5.0 µm long..... 7
- 6a Basidiospores 4.5–6.0 × 1.0–1.5 µm *Gloeoporus taxicola*
- 6b Basidiospores 5.0–8.0 × 2.0–2.5 µm *C. purpurea*

- 7a Hyphae up to 15 μm diameter.....*C. excelsa*
 7b Hyphae 3–6 μm diameter*C. tarda*

***Ceriporia excelsa*
(S. Lundell) Parmasto**

Habitat/range: On hardwoods, rarely on conifers, causing a white rot. Reported from BC but specific localities not given (Gilbertson and Ryvarden 1986). Elsewhere in western North America, known from AK, WA, MT, OR, CA, AZ, and NM.



Basidiomata effuse, sometimes widely effuse, annual, soft, separable, thin; **margin** narrow, white to pinkish tan or purplish, arachnoid or floccose; **context** white, pinkish white, or tan, up to 1 mm thick; **tubes** white, pinkish, or tan, up to 0.5 mm deep; **pore surface** pink to reddish orange, to lilac, dull; **pores** round to angular, 2–3 per millimetre, edges thick, becoming thin, lacerate.

Hyphae 5–15 μm diameter with simple septa and rare single to verticillate clamp connections, often slightly swollen at the septum, branches often in whorls, walls thin to slightly thickened; **basidiospores** oblong to short cylindrical, 3.5–5.0 \times 1.5–2.0 μm .

***Ceriporia purpurea*
(Fr.) Donk**

Habitat/range: On hardwoods and conifers, causing a white rot. In BC, on *Alnus rubra* at Langford (Victoria area), hardwood at Princeton, *Pinus ponderosa* at Penticton, and *Populus tremuloides* at Revelstoke. Elsewhere in western North America, known from AB and SK south to CA and NM.

Basidiomata effuse, typically in patches a few centimetres in diameter, annual, separable, ~1–2 mm thick; **margin** white, minutely tomentose, cottony, narrow to wide; **context** white, very thin; **tubes** pale to dark-brownish purple, up to 1 mm deep; **pore surface** cream, pink, dark red to vinaceus, some bruising reddish, soft, waxy; **pores** round to angular, 3–4 per millimetre, edges even, finely granulose.



Hyphae 2–6 μm diameter with simple septa, walls thin to moderately thick, branches frequent; **basidiospores** allantoid, 5–8 (–9) \times 2.0–2.5 μm .

***Ceriporia reticulata*
(Pers.) Domański**

Habitat/range: On hardwoods, usually *Populus*, infrequently on conifers, causing a white rot. In BC, known from Cowichan Lake and Jordan River on southern Vancouver Island. Elsewhere in western North America, known from AB to WA south to CA and NM.



Basidiomata effuse, typically in small patches, annual, fragile, separable, up to 1 mm thick; **margin** greyish white, white, cream, pinkish to pale orange, thin, arachnoid to cottony, fimbriate; **context** thin, cottony, white to pinkish white; **pore surface** appearing netlike, greyish white to white, cream, pinkish to pale orange; **pores** round to irregular, 3–4 per millimetre.

Hyphae 3–7 μm diameter with simple septa, loosely woven, branches frequent and diverging at a right angle, walls thin; **basidiospores** allantoid, 7.0–9.5 \times 2.0–3.5 μm .

***Ceriporia spissa*
(Schwein.) Rajchenb.**

Habitat/range: On hardwoods, occasionally on conifers, causing a white rot. In BC, known from one collection on a rotting *Arbutus* log in Victoria (Observatory Hill). Elsewhere in western North America, known from ID, WA, OR, CA, and AZ.



Basidiomata effuse, annual, large, typically adnate, only 1–2 mm thick, fertile areas in patches surrounded by sterile, pinkish buff mycelium; **margin** typically sterile; **context** pinkish buff, soft, thin; **pore surface** bright orange, becoming reddish brown when dried; **pores** round to angular, 7–9 per millimetre.

Hyphae 2.0–3.5 μm diameter with simple septa, frequently branched, branches diverge at a right angle, trama hyphae parallel, densely packed, agglutinated, walls slightly thickened; **basidiospores** allantoid, 4–6 \times 1.5–2.0 μm .

Notes: *Ceriporia spissa* is distinguished by its effuse, bright orange basidiomata and relatively small, allantoid basidiospores, 4–6 \times 1.5–2.0 μm . Thin sections of the tube layer in KOH often produce a white exudate. Microscopically, some hyphal segments are encrusted with an amorphous, pale yellow substance.

***Ceriporia tarda*
(Berk.) Ginns**

Habitat/range: On hardwoods and conifers, causing a white rot. In BC, known from two collections on *Abies lasiocarpa* at Aleza Lake. Elsewhere in western North America, known from CO, CA, AZ, and NM.



Basidiomata effuse, annual, large, typically adnate, up to 1 mm thick; **margin** rather wide, thinning out; **context** white to cream, soft, thin; **pore surface** rosy pink to cream; **pores** round to angular, 3–5 per millimetre.

Hyphae 3–6 μm diameter with simple septa and rare clamp connections, occasionally swollen at a septum, branches diverge at a right angle; **basidiospores** oblong to short-cylindrical, 4–5 \times 2.0–2.5 μm .

Ceriporia viridans
(Berk. & Broome)
Donk

Habitat/range: On well-rotted dead hardwoods, rarely on conifers, causing a white rot. In BC, on *Populus trichocarpa* at Cinema, *Betula occidentalis* at Naramata, and *Alnus* and *Salix* species in the Victoria area. Elsewhere in western North America, known from AK to NT south to CA and NM.



Basidiomata effuse, annual, up to 3 mm thick, soft; **margin** narrow, white; **context** white to cinnamon, up to 1 mm thick; **pore surface** of varied colours, typically cream to cinnamon or sordid brown with a green tint; **pores** round to sinuous, 3–5 per millimetre, sometimes larger and more irregular.

Hyphae 2–10 μm diameter with simple septa, branches frequent, diverging at right angles, walls thin to slightly thickened; **basidiospores** cylindrical and generally slightly curved, 4–6 \times 1.5–2.0 μm .

CERIPORIOPSIS DOMAŃSKI

***Ceriporiopsis aneirina* (Sommerf.) Domański**

Habitat/range: Primarily on *Populus*, infrequently on other hardwoods, causing a white rot with the wood often becoming laminated. In BC, from Quesnel to Clinton, and at Shuswap Lake, the Kaslo area, and the Victoria area. Widespread elsewhere in western North America.

Basidiomata effuse, annual, large, tough, adherent, up to 4 mm thick; **margin** near white to pale tan, glabrous to finely tomentose, up to 2 mm wide; **context** near white, tough, up to 1 mm thick; **tubes** near white, up to 3 mm deep; **pore surface** white, cream to tan, some with a pink tint, rough; **pores** round to angular, 1–3 per millimetre, edges thin, entire to fimbriate.

Hyphal system monomitic. **Generative hyphae** 2.0–5.5 µm diameter with clamp connections, frequently branched, walls thin, hyaline; **basidiospores** broadly ellipsoid, 5–7 (–9) × 3.5–5.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.



CERRENA GRAY

Cerrena unicolor

(Bull.) Murrill

Mossy maze polypore

Habitat/range: On hardwoods, causing a white rot. Relatively common in the southern half of BC, with two northern records from Dawson Creek and Liard Hot Springs. Widely distributed in western North America.



Basidiomata reflexed, sessile, rarely effuse, annual, up to 1.3 cm thick; **pileus** dimidiate, applanate, up to 10 cm wide, firm, rather flexible, often imbricate; **pileus surface** pale brown to grey, often green related to algal growth, hirsute to nearly glabrous, zonate; **context** up to 3 mm thick, duplex, upper layer soft, hairy, grey to dark brown with a black line separating it from the corky, pale grey to pale brown inner layer; **tubes** up to 1 cm deep; **pore surface** ivory to pale buff, grey; **pores** daedaleoid, variable, 3–4 per millimetre, some larger, edges thick, tomentose, becoming thin, lacerate.

Hyphal system trimitic. **Generative hyphae** 2–4 µm diameter with clamp connections; **skeletal hyphae** 2.5–5.0 µm diameter; **binding hyphae** 2–4 µm diameter; **cystidia** lacking but some narrowly clavate, 4–6 µm diameter, hyphal apices occur at the pore mouths; **basidia** clavate, 20–25 × 5–6 µm, four sterigmate; **basidiospores** ellipsoid to narrowly ellipsoid, 5–7 × 2.5–4.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The hirsute pileus, black line in the context, and daedaleoid pores are distinctive. See species account for *Trametes versicolor*; Table 4 contrasts several similar polypores.

***Climacocystis borealis*
(Fr.) Kotl. & Pouzar**

Habitat/range: On live and dead conifers, causing a white mottled rot in live roots and tree butts. In BC, on *Abies lasiocarpa*, *Picea glauca*, and *P. sitchensis* from Haida Gwaii, the Prince George area, Revelstoke, and Manning Park. Widely distributed in western North America.



Basidiomata annual, soft and watery, developing in autumn; **pileus** fan-shaped or sessile, often imbricate, up to 15 cm wide × 15 cm long × 4 cm thick; **pileus surface** white to pale cream, flat to slightly convex, tomentose to hirsute; **context** white to cream, occasionally tan, up to 2 cm thick, duplex with a dense layer adjacent to the tubes; **tubes** up to 1.5 cm deep; **pore surface** white to cream; **pores** angular or irregular, 1–2 per millimetre, edges thin.

Hyphal system monomitic. **Generative hyphae** up to 8 µm diameter, commonly branched, walls thin to thick; **cystidia** numerous, fusoid, up to 50 × 12 µm, embedded or projecting slightly, walls distinctly thickened over the apical half, many with a few granules on the surface near the apex; **basidia** clavate, 15–25 × 4–5 µm, four sterigmate; **basidiospores** ellipsoid to broadly ellipsoid, 4.5–6.5 × 3.0–4.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

COLTRICIA GRAY

Habitat: On the ground in hardwood and coniferous forests; ectomycorrhizal.

Basidiomata stipitate, small to medium, rarely more than 10 cm diameter, up to 6 mm thick; **stipe** 2–7 cm long, 1–10 mm diameter, cylindrical or flattened, somewhat broader at the base, central, infrequently excentric, solid, surface satiny-shiny, velvety, bright red brown, or brown; **pileus** plane, centrally depressed or slightly convex, 3–10 cm broad, circular in outline; **margin** lobed or entire and then sometimes incised; **pileus surface** velvety, silky, appressed-fibrillose, shiny to glossy, sometimes dull, typically concentrically zonate, brown, deep reddish brown, rusty brown to dull brown, some weather to grey; **context** 1–3 mm thick, not duplex, thin, brown, rusty to reddish brown, fibrous, xanthochroic; **tubes** 1–3 mm deep, brown to deep reddish brown; **pore surface** yellow brown, brown, or reddish brown, sometimes grey, edges thin; **pores** 2–4 per millimetre, angular to round.

Hyphal system monomitic. **Generative hyphae** 2–10 μm diameter with simple septa, walls hyaline, thin or thickened, golden yellow to rusty brown; **setae, setal hyphae, and cystidia** lacking; **basidia** clavate, 15–30 \times 5–7 μm , four sterigmate, except some two sterigmate in *C. cinnamomea*; **basidiospores** narrowly ellipsoid to broadly ellipsoid, 6–10 \times 3.5–7.0 μm , walls pale yellowish brown to golden yellow, thin or thickened, smooth, weakly dextrinoid.

- 1a Basidiomata typically in hardwood forests, rarely over 4 cm diameter; pileus surface shiny; context up to 1 mm thick; stipe up to 6 mm diameter; basidiospores 4.5–7.0 μm wide *C. cinnamomea*
- 1b Basidiomata typically in coniferous forests, generally 3–10 cm diameter; pileus surface dull; context 1–3 mm thick; stipe generally 10 mm diameter; basidiospores 3.5–5.5 μm wide *C. perennis*

Coltricia cinnamomea

(Jacq.) Murrill

Fairy stool, Shiny cinnamon polypore

Habitat/range: On the ground, typically in hardwood forests. Widespread in BC, known from a few collections scattered across the province. Elsewhere in western North America, known from MT, OR, CA, CO, and AZ.

Basidiomata stipitate; **stipe** usually central, 3–4 cm long, 2–6 mm diameter, cylindrical or flattened, somewhat broader at the base, surface satiny-shiny, bright red brown; **pileus** plane or centrally depressed, round, rarely more than 4 cm diameter, up to 5 mm thick; **margin** lobed or entire and then incised; **pileus surface** velvety, shiny to glossy, concentrically zonate, brown to deep reddish brown; **context** rusty to reddish brown, fibrous, up to 1 mm thick; **tubes** up to 2 mm deep, brown to deep reddish brown; **pore surface** reddish brown, edges thin; **pores** angular, 2–4 per millimetre.



Coltricia montagnei

Hyphae 2–10 μm diameter, walls hyaline and thin or golden yellow to rusty brown and thickened; basidiospores broadly ellipsoid, $6–10 \times 4.5–7.0 \mu\text{m}$, walls golden yellow, thin to thickened, weakly dextrinoid.

Notes: The antler-like hyphal tips on the pileus surface of *C. perennis* are lacking in *C. cinnamomea*. *Coltricia montagnei* (Fr.) Murrill is known only from Oregon in western North America. It is distinguished by a poroid lower surface or by concentrically arranged lamellae, and by thicker basidiomata and basidiospores up to $14 \mu\text{m}$ long.

***Coltricia perennis*
(Fr.) Murrill**

Habitat/range: On the ground in coniferous forests, typically on sandy soil along paths and lanes or in openings, ectomycorrhizae formed in pure culture synthesis with jack pine (*Pinus banksiana*) (Danielson 1984). In BC, known from Dawson Creek, Clearwater, and Revelstoke south to the BC/WA border. Elsewhere in western North America, known from AB and WA south to NM and AZ.



Basidiomata stipitate, small to medium; **stipe** central, infrequently excentric, 2–7 cm long, 1–10 mm thick, solid, surface velvety, brown; **pileus** circular in outline, funnel-shaped or flat or slightly convex, 3–10 cm broad; **pileus surface** appressed-fibrillose, often silky and shining, sometimes dull, usually concentrically zonate, pale cinnamon to deep brown, some weather to grey; **context** 1–2 mm thick, not duplex, brown; **tubes** 1–3 mm deep, brown; **pore surface** yellow brown to brown or sometimes grey; **pores** 2–4 per millimetre, angular to round.

Hyphae 4–8 μm diameter with simple septa, walls thin to thick, hyaline to rusty brown, hyphae on pileus surface with distinctive dichotomously branched apices (appearing antler-like), walls thickened, yellowish brown, 3–8 μm diameter; **basidiospores** 6–10 \times 3.5–5.5 μm , narrowly ellipsoid to ellipsoid, walls pale yellowish brown, smooth, weakly dextrinoid.

Notes: Because of its colour and terrestrial, stipitate habit, *C. perennis* might be confused with *Onnia tomentosa*, but the latter has setae and much larger and thicker basidiomata.

CORIOLOPSIS MURRILL

Habitat: On hardwoods, preferring logs and stumps of *Populus* and *Salix* species, causing a white rot.

Basidiomata annual, pileate, reflexed, rarely effuse, corky or tough, flexible; pileus up to 7 cm wide \times 10 cm long \times ~2 cm thick, sessile, semicircular, often laterally confluent, often imbricate; **pileus surface** cream buff, ochreous buff, pale brown, brown, becoming dirty grey, some zonate, densely hirsute to coarsely hispid, soft to the touch; **context** white to cream buff, yellowish brown to dark brown, rarely up to 1 cm thick, duplex, upper layer soft, spongy, lower layer firm, corky; **tubes** walls near white to near grey, trama brown up to 1 (~2) cm deep; **pore surface** greyish brown, grey, ochreous buff; **pores** angular to labyrinth-like, occasionally radially elongated, 0.3–2 per millimetre.

Hyphal system trimitic. **Generative hyphae** 2–4.5 μm diameter with clamp connections; **skeletal hyphae** 2.5–6 μm diameter, walls golden brown; **binding hyphae** 2.0–4.5 μm diameter, walls pale yellowish brown; **cystidia** lacking; **basidia** clavate, 20–40 \times 5.5–9.0 μm ; **basidiospores** cylindrical, 8–16 \times 2.5–5.0 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The combination of large-diameter pores, coarsely hairy (bristly) pileus surface, and large basidiospores separate these species from nearly all other polypores in British Columbia.

- 1a Context yellowish brown to dark brown; pores 0.3–1 per millimetre; basidiospores 10–16 \times 3–5 μm *C. gallica*
- 1b Context white to pale cream; pores 1–2 per millimetre; basidiospores 8–12 \times 2.5–4.0 μm *C. trogii*

***Coriolopsis gallica* (Fr.) Ryvarden**

Habitat/range: On hardwoods, preferring species of *Populus* and *Salix*, rarely on conifers, causing a white rot. In BC, from Quesnel to the Penticton area, and Campbell River on Vancouver Island. It is widespread elsewhere in western North America.



Basidiomata pileate, annual, broadly sessile, up to 7 cm wide × 10 cm long × 2.5 cm thick; **pileus** semicircular or elongated, often imbricate, corky to tough; **pileus surface** densely hirsute to hispid, brown, pale brown, becoming dirty grey, sometimes zonate; **context** thin, rarely up to 1 cm thick, yellowish brown to dark brown, initially staining black in KOH but fading; **tubes** up to 1.5 cm deep, walls near white to near grey, trama brown; **pore surface** greyish brown to grey; **pores** typically angular and 0.3–1 per millimetre, some radially elongated and averaging 1 mm wide, edges thin.

Generative hyphae 2.0–4.5 µm diameter with clamp connections; **skeletal hyphae** 2.5–6.0 µm diameter, walls golden brown, **binding hyphae** woven, 2.5–4.5 µm diameter, walls pale yellowish brown; **basidiospores** cylindrical, 10–16 × 3–5 µm.

Notes: Both *C. gallica* and *C. trogii* occur on black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) stumps and slash. *Coriolopsis trogii* is paler in colour with the pore surface ochreous buff, and tubes and context white.

***Coriolopsis trogii*
(Berk.) Domański**

Syn. *Trametes trogii*
Berk.

Habitat/range: On hardwoods, preferring *Populus* and *Salix* species, causing a white rot. In BC, known from one collection on *Arbutus menziesii* on Valdes Island. Elsewhere in western North America, known from AK and AB south to CA and NM.



Basidiomata sessile, annual, reflexed, rarely effuse, tough, flexible; **pileus** 2.5 cm wide × 5 cm long × 1.6 cm thick, semicircular, often laterally confluent; **pileus surface** cream buff to ochreous buff, coarsely hispid; **context** white to cream buff, up to 7 mm thick, duplex, upper layer soft, spongy, lower layer firm, corky; **tubes** white, up to 9 mm deep; **pore surface** ochreous buff; **pores** angular to labyrinth-like, 1–2 per millimetre, edges thin, lacerate.

Generative hyphae 2–4 µm diameter; **skeletal hyphae** 3–6 µm diameter; **binding hyphae** 2.0–3.5 µm diameter; **basidiospores** 8–12 × 2.5–4.0 µm, cylindrical.

CRYPTOPORUS (PECK) SHEAR

***Cryptoporus volvatus* (Peck) Shear** Veiled polypore

Habitat/range: On trunks of conifers that have recently died, basidiomata develop in spring, persisting into autumn, causing a greyish-coloured white rot of the sapwood. In BC, known from Haida Gwaii and Fort St. John south to the BC/WA border. Widespread elsewhere in western North America.



Basidiomata typically 10 or more on a trunk, sessile, 1–4 cm wide, nearly subglobose, attached to the bark by a hyphal cord emerging from a beetle tunnel; **pileus surface** on new basidiomata shiny, thin, varnish-like, soon cracking and sloughing off, cream to pale yellow brown, smooth, glabrous, by autumn faded to white; **context** ±1 cm thick, corky, tough, white or pallid; **margin** forming a continuous, leathery membrane or veil that covers the pore layer except for a ~5 mm diameter hole next to the bark; **tube layer** by autumn destroyed by beetles; **pores** round, 3–4 per millimetre, 2–5 mm deep, edges even to lacerate; **pore surface** white to beige, often obscured by a dense, pale pink spore deposit.

Hyphal system trimitic. **Generative hyphae** 3–7 µm diameter with clamp connections, inflated at branches to 15 µm; **skeletal hyphae** 2.5–8.0 µm diameter, **binding hyphae** 1.5–2.5 µm diameter; **cystidia** lacking; **cystidioles** fusoid, 20–28 × 5–7 µm; **basidia** clavate, 24–27 × 9–11 µm, four sterigmate; **basidiospores** 8–12 × 3–5 µm, cylindrical, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The opening or hole on the lower surface of each basidioma is a distinctive field character. Beetles, perhaps attracted by odour, carry basidiospores to recently dead or dying trees and construct a brood tunnel, within which the basidiospores germinate and the resultant mycelium permeates the sapwood.

DAEDELEOPSIS J. SCHRÖT.

Daedaleopsis confragosa
(Bolton) J. Schröt.
Thin-walled maze
polypore

Habitat/range: On hardwoods, especially *Salix* and *Betula* species, causing a white rot. Widespread in the southern third of BC and in the Prince George area. Elsewhere in western North America, known from YT, AB, WA, MT, AZ, and NM.



Basidiomata variable, sessile or reflexed, sometimes imbricate; **pileus** dimidiate, 2–10 cm wide × 3–15 cm long × 0.5–5 cm thick, tough, corky; **pileus surface** variable grey, beige, brown, nearly black, soft-velvety to glabrous; **context** up to 2.5 cm thick, pale buff to brown, leathery, zonate; **tubes** tinted pale pink, up to 2.5 cm deep; **pore and lamellae surfaces** whitish, beige to pale brown; **lamellae** buff to pale brown; **pores** 0.5–1.5 mm diameter, round, radially elongated, daedaleoid to lamellate.

Hyphal system trimitic. **Generative hyphae** 2–6 µm diameter with clamp connections; **skeletal hyphae** 4–7 µm diameter; **binding hyphae** 2.0–4.5 µm diameter; **cystidia** lacking; **dendrohyphidia** in the hymenium with 3–8 short, acute branches in the apical 30 µm, walls thick, hyaline; **basidia** narrowly clavate, 30–45 × 4–5 µm, four sterigmate; **basidiospores** allantoid, 7–11 × 2.0–2.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: An extremely variable polypore, especially in the colours, and the size and shape of the pores. Some actively growing, light-coloured, young specimens stain dull vinaceous red where bruised.

DATRONIA DONK

Habitat: On hardwoods and conifers, causing a white rot.

Basidiomata pileate, reflexed or effuse, annual, leathery; **pileus** up to 2.5 cm wide \times 6 cm long \times 1 cm thick, elongated or dimidiate to broadly attached, tough; **pileus surface** near white, brown, becoming dark brown to black, typically concentrically zonate, tomentose to radially strigose, velutinate becoming glabrous; **context** up to 3 mm thick, duplex, pale buff to pale brown with a thin black line separating the darker tomentum on the surface; **tubes** cork to buff, up to 7 mm thick; **pore surface** white, buff to pale brown, pale pinkish buff to umber brown; **pores** round, somewhat angular, hexagonal, or daedaleoid, 1–5 per millimetre, edges thick, entire, granulose at 30 \times magnification.

Hyphal system trimitic. **Generative hyphae** 2.0–4.5 μm diameter with clamp connections; **skeletal hyphae** 2–4 μm diameter, walls pale yellow, pale greenish brown but dark brown in the pileus surface layer; **binding hyphae** 2–3 μm diameter, walls pale yellow; **cystidia** lacking; **cystidioles** only in *D. mollis*, fusoid, 25–45 \times 4–5 μm ; **dendrohyphidia** around the pore mouths in *D. mollis* and *D. stereoides*, 1.5–3.0 μm diameter with numerous short branches near the apex; **basidia** narrowly clavate, clavate or broadly clavate, 20–45 \times 5.0–8.5 μm , four sterigmate; **basidiospores** cylindrical to narrowly ellipsoid, 8–13 \times 3–6 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a On conifers..... *D. stereoides*
- 1b On hardwoods..... 2
- 2a Pores 1–2 per millimetre, angular to daedaleoid..... *D. mollis*
- 2b Pores 4–5 per millimetre, round to hexagonal 3
- 3a Basidioma effuse..... *D. stereoides*
- 3b Basidioma pileate or reflexed 4
- 4a Pores hexagonal; pore mouths granulose; context with a black line separating the dark tomentum adjacent to the pileus surface from the pale brown layer adjacent to the tube layer; dendrohyphidia present; basidiospores 4.5–6.0 μm wide *D. stereoides*
- 4b Pores round or slightly angular; pore mouths not obviously granulose; context uniformly pale yellow brown to pale brown; pileus surface a black crust; dendrohyphidia lacking; basidiospores 3.0–3.5 μm wide *D. scutellata*

***Datronia mollis*
(Sommerf.) Donk**

Habitat/range: On hardwoods, causing a white rot. In BC, known from a single northern collection at Cinema to scattered sites on southern Vancouver Island and the Vancouver area. Elsewhere in western North America, known from AK and AB south to CO.



Basidiomata reflexed, occasionally effuse or sessile, annual, leathery; **pileus** up to 2.5 cm wide \times 6 cm long \times ~0.6 cm thick; **pileus surface** dark brown to black, strigose to glabrous, concentrically zonate; **context** up to 1 mm thick, pale buff with a thin black line beneath the dark brown surface tomentum; **tubes** up to 3 mm deep; **pore surface** buff to umber brown; **pores** angular to daedaleoid, 1–2 per millimetre, some over 1 mm wide, edges thin, lacerate.

Generative hyphae 2.5–4.0 μm diameter with clamp connections; **skeletal hyphae** 2.5–4.0 μm diameter, pale greenish yellow in lower context, darker brown above the black line; **binding hyphae** 2–3 μm diameter; **cystidioles** fusoid, 25–45 \times 4–5 μm ; **dendrohyphidia** on the pore edges, 1.5–3.0 μm diameter with numerous short branches near the apex; **basidiospores** cylindric to narrowly ellipsoid, 10–12 \times 3.0–4.5 μm .

Notes: The black line beneath the tomentum and large, irregular pores distinguishes *D. mollis* from other provincial species of *Datronia*. *Fuscocerrena portoricensis* (Fr.) Ryvarden occurs in Washington on *Alnus rhombifolia* but has not yet been found in British Columbia. It resembles *D. mollis* in having a dark brown pileus surface, large pores, and dendrohyphidia but differs in having smaller basidiospores (5–7 \times 2.0–2.5 μm). Each of the squares in the scale is 1 \times 1 cm.

***Datronia scutellata*
(Schwein.) Domański**

Habitat/range: On hardwoods, especially *Alnus* species, causing a white rot. In BC, known from four collections at Roberts Creek, and one each from Cowichan Lake (Vancouver Island) and West Vancouver. Elsewhere in western North America, known from WA, ID, MT, OR, AZ, and NM.

Basidiomata pileate or reflexed, annual; **pileus** dimidiate to broadly attached, tough, up to 1.5 cm wide \times 3 cm long \times 1 cm thick; **pileus surface** whitish, becoming dark brown to black, velutinate becoming glabrous with a distinct black crust; **context** 1–3 mm thick, dense, buff to pale brown; **tubes** up to



7 mm deep, cork to buff; **pore surface** white, buff to pale brown; **pores** round to somewhat angular, 4–5 per millimetre, edges often indistinctly granulose.

Generative hyphae 2.5–4.0 μm diameter with clamp connections; **skeletal and binding hyphae** 2.5–4.0 μm diameter, walls pale yellow; **dendrohyphidia** lacking; **cystidioles** fusoid, 20–26 \times 7–8 μm ; **basidiospores** cylindrical, 8–12 \times 3.0–3.5 μm .

Notes: This polypore is distinguished by its small size, black pileus, white to pale brown pore surface, and large basidiospores.

Datronia stereoides
(Fr.) Ryvarden

Habitat/range: On hardwoods and conifers, causing a white rot. In BC, known in the north from Cottonwood (near Quesnel), Blue River, Celista (Salmon Arm area), and Clinton south to Princeton. Elsewhere in western North America, widespread but uncommon, known from AK, AB, SK, MT, ID, CO, CA, and AZ.



Basidiomata reflexed or effuse, annual; **pileus** up to 3 mm thick, elongated or dimidiate; **pileus surface** brown, typically zonate, tomentose to radially strigose; **context** up to 2 mm thick, pale brown, duplex with a thin black line beneath the darker tomentum on the surface; **tubes** up to 1 mm deep; **pore surface** pale pinkish buff; **pores** round to hexagonal, 4–5 per millimetre, edges thick, entire, granulose at 30 \times magnification.

Generative hyphae 2.0–4.5 μm diameter with clamp connections; **skeletal hyphae** 2–4 μm diameter, occasionally branched, walls pale greenish brown in the context, dark brown in the pileus surface layer; **binding hyphae** 2.0–3.5 μm diameter, walls hyaline to pale greenish brown; **cystidioles** fusoid, $\pm 30 \times 6\text{--}8 \mu\text{m}$; **dendrohyphidia** around the pore mouths, 1.5–2.0 μm diameter with numerous short branches near the apex; **basidiospores** cylindrical to narrowly ellipsoid, $10\text{--}13 \times 4.5\text{--}6.0 \mu\text{m}$.

DICHOMITUS D.A. REID

Dichomitus squalens (P. Karst.) D.A. Reid

Habitat/range: On live and dead conifers, rarely on hardwoods, causing a white pocket rot. Widespread from Quesnel south to the BC/WA border. Widespread elsewhere in western North America.



Basidiomata typically annual, sessile, reflexed, some effuse and then several decimetres in diameter; **pileus** up to 3 cm wide \times 7 cm long \times 1.4 cm thick, sometimes imbricate; typically triquetrous, tough, corky; **pileus surface** white to cream, becoming brown to almost black, finely tomentose, becoming glabrous; **context** white, dense, up to 4 mm thick; **tubes** white to pale tan, up to 10 mm deep; **pore surface** white to pale tan; **pores** round to angular, 4–5 per millimetre, edges thin.

Hyphal system dimitic. **Generative hyphae** 1.5–4.0 μm diameter with clamp connections, walls thin; **binding hyphae** predominate, up to 7 μm diameter, the apical portion dendritic (frequently branched with branches tapering to a fine tip); **cystidia** lacking; **cystidioles** fusoid, 20–30 \times 5–7 μm ; **basidia** clavate, 15–22 \times 6–8 μm , four sterigmate; **basidiospores** cylindrical to narrowly ellipsoid, 7–10 \times 2.5–3.5 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: *Dichomitus campestris* (Quél.) Domański & Orlicz occurs in Idaho but has not yet been found in British Columbia. Its distinguishing features are the effuse, cushion-shaped basidiomata with steep, typically black margins, relatively large pores (1–3 per millimetre), and basidiospores 9–19 μm long.

DIPLOMITOPORUS DOMAŃSKI

Habitat: On conifers and hardwoods, causing a white rot.

Basidiomata effuse, annual, soft to tough, separable, up to 8 mm thick; **margin** white to pale yellowish brown, narrow to wide; **context** white to pale straw yellow, soft, then denser and firmer or cottony, up to 3 mm thick; **tubes** pale yellow, resinous, up to 5 mm deep; **pore surface** typically pale grey, cream to very pale straw yellow, rarely white; **pores** round, angular or somewhat sinuous, 3–5 per millimetre, edges thin, entire to dentate.

Hyphal systems dimitic and trimitic. **Generative hyphae** 2.0–5.5 µm diameter with clamp connections; **skeletal hyphae** 2–8 µm diameter, rarely branched, walls thick, hyaline, in *D. lindbladii* both swelling and dissolving in KOH, as well as being either dextrinoid or amyloid; **binding hyphae** rare, 2–4 µm diameter; **cystidioles** fusoid, 15–20 × 4–7 µm; **basidia** clavate, 15–20 × 4–6 µm, four sterigmate; **basidiospores** allantoid, 5.0–7.0 × 1.5–2.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Pore surface colour cream to pale straw yellow; skeletal hyphae neither amyloid nor dextrinoid *D. crustulinus*
- 1b Pore surface grey; skeletal hyphae dextrinoid or amyloid *D. lindbladii*

***Diplomitoporus crustulinus* (Bres.) Domański**

Habitat/range: On conifers, preferring *Picea* and *Abies* species, rarely on hardwoods, presumably causing a white rot. Scattered in central and southern BC east of the Coast Mountains, except for one collection east of Lindeaman Lake (near Chilliwack). Elsewhere in western North America, known from AK and AB south to AZ.



Basidiomata effuse, annual, up to 4 mm thick, tough, separable; **margin** narrow, white to pale yellowish brown; **context** thin, white to pale straw yellow, soft, then denser and firmer; **tubes** pale yellow, resinous, up to 3 mm deep; **pore surface** cream to very pale straw yellow; **pores** angular, 3–4 per millimetre, edges thin.

Hyphal system dimitic. **Generative hyphae** 2–4 μm diameter; **skeletal hyphae** predominate, 2–6 μm diameter; **cystidioles** scattered, fusoid, 15–20 \times 5–7 μm ; **basidiospores** allantoid, 5–7 \times 2.0–2.5 μm .

Diplomitoporus lindbladii
(Berk.) Gilb. & Ryvarden

Habitat/range: On conifers and hardwoods, causing a white rot. Widespread in the southern half of BC. Elsewhere in western North America, known from AB and WA south to CA and NM.



Basidiomata effuse, annual, soft to tough, separable, up to 8 mm thick; **margin** white, narrow or wide; **context** white, cottony, up to 3 mm thick; **tubes** up to 5 mm deep; **pore surface** typically pale grey, sometimes white; **pores** round, 3–5 per millimetre, edges thin, entire to dentate.

Hyphal system trimitic. **Generative hyphae** 3.0–5.5 μm diameter; **skeletal hyphae** 3–8 μm diameter, walls very thick, in some basidiomata weakly amyloid and in other basidiomata dextrinoid, swelling then dissolving in KOH; **binding hyphae** rare, 2–4 μm diameter; **cystidioles** fusoid, about 20 \times 4 μm ; **basidiospores** allantoid, 5–7 \times 1.5–2.0 μm .

Notes: The distinguishing features are the grey pore surface and relatively broad skeletal hyphae that dissolve in KOH. Collections from the Penticton area have dextrinoid skeletal hyphae and may represent a distinct variety.

ECHINODONTIUM ELLIS & EVERH.

Echinodontium tinctorium
(Ellis & Everh.) Ellis & Everh.
Indian paint fungus

Habitat/range: Mainly on live trunks of *Abies* and *Tsuga* species, causing a pale yellow laminated to stringy heart rot. *Echinodontium tinctorium* is the principal cause of heart rot and volume loss in mature hemlock and true firs (Allen et al. 1996). Widespread in BC, especially frequent in the moist forest zones. Widespread in western North America, from AK and AB south to AZ and NM.

Basidiomata perennial, typically arising beneath dead branches on live trunks, sessile; **pileus** hoof-like to applanate, up to 30 cm wide \times 40 cm long \times 20 cm thick; **pileus surface** typically black, rimose, hard; **context** brick red, hard, woody, up to 5 cm thick; **lower surface** poroid to daedaleoid at the margin, elsewhere coarse spines flattened to cylindric, becoming thick and rigid, woody, up to 1.5 \times 0.25 cm.

Hyphal system dimitic. **Generative hyphae** 2.5–6.0 μm diameter with clamp connections and simple septa; **skeletal hyphae** 3.0–6.5 μm diameter, walls reddish brown; **cystidia** numerous, ventricose to subulate, 25–65 \times 8–17 μm , walls reddish brown, thickened; **basidia** narrowly clavate, 35–45 \times 6.5–8.0 μm , four sterigmate; **basidiospores** ellipsoid, 6–8 \times 4.5–6.0 μm , walls thin, ornamented with minute, amyloid spines.

Notes: The toothed hymenial surface, brick red context and trama, and black, rimose pileus surface are distinctive.



FOMES (FR.) FR.

Fomes fomentarius

(L.) Fr.

Amadou, Horse's hoof,
Tinder conk

Habitat/range: On live and dead hardwoods, especially *Betula*, causing a white mottled rot. Scattered in the southern half of BC, with one northern collection at Fort Nelson. Widespread elsewhere in western North America.

Basidiomata perennial, hard, woody, typically several on a dead tree trunk; **pileus** 3–15 cm wide × 6–20 cm long × 2–15 cm thick, resembling a horse's hoof; **pileus surface** a hard crust ±1 mm thick, glabrous, smooth, not cracked, varying shades of grey; **margin** brown in growing basidiomata; **context** brown, darkening in KOH but soon fading to brown, soft-corky or punky, 2–25 mm thick; **tubes** stratified, each layer up to 6 mm deep; **pore surface** brown; **pores** round, 3–5 per millimetre, edges thick.

Hyphal system trimitic. **Generative hyphae** 2–4 µm diameter with clamp connections, walls thin, hyaline, some at the pore surface with walls moderately thick, encrusted; **skeletal hyphae** 3–8 µm diameter, walls thick, brown; **binding hyphae** 1.5–3.0 µm diameter, walls hyaline to brown; **sclerids** (contorted cells in the core) ~30–70 × 10–30 µm, walls thick, brown; **cystidia** lacking; **cystidioles** fusoid, 24–37 × 3.5–7.5 µm; **basidia** clavate or urniform, 23–25 × 7–9 µm, four sterigmate; **basidiospores** narrowly ellipsoid, 12–20 × 4–7 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: In the days before the invention of matches, pieces of *F. fomentarius* context were soaked in saltpeter solution until saturated, then dried carefully to form tinder, which a spark would ignite.



FOMITIPORIA MURRILL

Habitat: On live and dead hardwoods and conifers, causing a uniform white rot or a white pocket rot.

Basidiomata pileate, reflexed, and effuse, perennial, woody, hard; **pileus** applanate, hoof-like, triquetrous, 3–15 cm wide × 8–28 cm long × 3–20 cm thick; **pileus surface** pale yellowish brown, golden brown, tomentose, glabrous, crust-like and rimose, sulcate; **context** woody, yellowish brown to reddish brown, soft to woody, up to 3 cm thick, xanthochroic; **tubes** stratified, pale brown to golden brown; **pore surface** yellowish brown, greyish brown, dark reddish brown to purplish brown, dull; **pores** round to angular, 4–9 per millimetre.

Hyphal systems dimitic and, in *F. repanda*, trimitic. **Generative hyphae** 1–5 µm diameter with simple septa, walls hyaline to brown, thin to thick; **skeletal hyphae** 2–5 µm diameter with rare simple septa, walls thin to thick, pale yellowish brown to dark brown; **binding hyphae** 2.5–4.5 µm diameter, walls brown; **setae** in the hymenium of *F. repanda* and *F. robusta*, 18–37 × 5–8 µm; **cystidioles** in the hymenium of three species distinctive, clavate with an elongated, finger-like apex, 25–50 × 5–8 µm; **basidia** clavate to broadly clavate, 9.5–14.0 × 4.5–9.5 µm, four sterigmate; **basidiospores** broadly ellipsoid to globose, either 4.0–5.5 × 3.0–4.5 µm or 6.0–8.5 × 5.0–7.0 µm, walls hyaline, thick, dextrinoid or, in *F. repanda*, not dextrinoid.

- | | | |
|----|---|--------------------|
| 1a | Basidiomata on hardwoods..... | 2 |
| 1b | Basidiomata on conifers..... | 3 |
| 2a | Basidiomata effuse..... | <i>F. punctata</i> |
| 2b | Basidiomata pileate..... | <i>F. robusta</i> |
| 3a | Basidiomata pileate..... | <i>F. repanda</i> |
| 3b | Basidiomata effuse..... | 4 |
| 4a | Basidiospores 4.0–5.5 × 3.0–4.5 µm, walls not
dextrinoid | <i>F. repanda</i> |
| 4b | Basidiospores 6.0–8.5 × 5–7 µm, walls of some
dextrinoid | <i>F. tsugina</i> |

Fomitiporia punctata

(P. Karst.) Murrill

Syn. *Phellinus punctatus*

(P. Karst.) Pilát

Habitat/range: On hardwoods, causing a uniform white rot. In BC, known from an ornamental *Juglans sieboldiana* in Vernon. Also from Haida Gwaii to Prince George south to Upper Arrow Lakes and Victoria. Range uncertain in western North America owing to misidentifications of basidiomata as *F. punctata*.

Basidiomata widely effuse, perennial, woody, adnate; **margin** yellowish brown, tomentose, up to 2 cm wide, receding, becoming black and rimose; **context** golden brown, becoming dark reddish brown, up to 2 mm thick; **tubes** golden brown, each layer up to 6 mm deep; **pore surface** yellowish to greyish brown, dull, smooth; **pores** round, 6–8 per millimetre, edges thick, entire, minutely tomentose.

Generative hyphae 2.5–5.0 µm diameter, walls hyaline, thin to moderately thick; **skeletal hyphae** 2.5–5.0 µm diameter, walls dark brown, thin to thick; **cystidioles** clavate with an attenuated finger-like apex, ~ 26×6 µm; **basidiospores** subglobose to broadly ellipsoid, 6.5–8.5 × 5.5–7.0 µm, walls hyaline, slightly thickened, some dextrinoid.

Notes: Reports of *F. punctata* on conifers have been segregated under the name *F. tsugina*.

Fomitiporia repanda

(Overh.) Ginns

Syn. *Phellinus repandus*

(Overh.) Gilb.

Habitat/range: On conifers, causing a white pocket rot. In BC, known from Revelstoke, Vancouver, and southern Vancouver Island. Elsewhere in western North America, known from WA, ID, MT, and OR.

Basidiomata effuse, rarely pileate, perennial; **pileus** up to 3 cm wide × 8 cm long × 3 cm thick; **pileus surface** reddish brown to blackish, tomentose near the margin, becoming glabrous and crust-like, sulcate; **margin** bright yellow or yellowish brown, tomentose, up to 3 mm wide; **context** bright yellowish brown, very soft, spongy to corky, up to 4 mm thick; **tubes** paler than context, stratified, each layer up to 4 mm deep; **pore surface** pale yellowish or greyish brown, becoming dark reddish brown, typically rough; **pores** round to angular, 4–5 per millimetre, edges thin, lacerate.

Generative hyphae 2–4 µm diameter; **skeletal hyphae** 4–7 µm diameter, walls brown; **binding hyphae** 2.5–4.5 µm diameter, contorted, walls pale brown; **setae** rare, subulate or ventricose, 20–25 × 6–7 µm, scarcely projecting; **basidiospores** short-ellipsoid to subglobose, 4.0–5.5 × 3.0–4.5 µm, walls hyaline, thin, not dextrinoid.

Fomitiporia robusta
(P. Karst.) Fiasson &
Niemelä
Syn. *Phellinus robustus*
(P. Karst.) Bourdot &
Galzin

Habitat/range: On live and dead hardwoods and shrubs, causing a white heart rot. Rare in BC, known from live *Cytisus* at Sooke and Duncan on Vancouver Island, and at the base of a dead *Quercus garryana* on Saltspring Island. Elsewhere in western North America, known from CA and NM.

Basidiomata perennial, pileate, sessile or reflexed, hard, woody; **pileus** hoof-like to applanate, 12 cm wide \times 20 cm long \times 11 cm thick; **pileus surface** brown to nearly black, rimose, sulcate, glabrous; **context** shiny, yellowish brown, zonate, up to 3 cm thick with a core having white radial streaks; tubes distinctly stratified and up to 3 mm deep, pale brown, becoming whitish brown; **pore surface** yellowish brown to greyish brown; **pores** round, 7–9 per millimetre, edges entire.



Generative hyphae infrequent, 2.5–5.0 μm diameter with simple septa, walls hyaline, thin; **skeletal hyphae** rarely branched, 2.5–4.0 μm diameter with rare simple septa, walls thick, some brown; **setae** lacking or infrequent, subulate to ventricose, 18–37 \times 5–8 μm ; **cystidioles** typically numerous, 25–50 \times 5–8 μm , ventricose with an attenuated finger-like apex that narrows to 1 μm diameter, walls hyaline, thin, except slightly thickened at the base; **basidiospores** subglobose, 6.0–8.5 \times 5.5–7.0 μm , walls hyaline, thick, dextrinoid.

Notes: Reported from Alaska and British Columbia on conifers, but these reports may have been based on misidentifications.

Fomitiporia tsugina
Murrill

Habitat/range: On live and dead conifers, primarily species of *Tsuga*, causing a uniform white rot. Typically developing on the lower side of branches, especially where they emerge from the trunk. In BC, known from Haida Gwaii, Revelstoke, Makinson Flats (Nelson area), Vancouver area, and southern Vancouver Island (Nitinat and Oyster River). Elsewhere in western North America, known from AK and WA south to AZ and NM.



Basidiomata perennial, effuse to reflexed, 4–15 cm wide × 8–28 cm long × 8–20 cm thick, infrequently larger; **pileus** almost triangular (triquetrous) in vertical section; **pileus surface** pale yellowish brown, tomentose at the margin, becoming glabrous and rimose; **context** yellowish brown to reddish brown, woody, up to 2 cm thick; **tubes** distinctly stratified, often with a thin, white mycelial layer between strata, each layer up to 5 mm deep; **pore surface** greyish brown to purplish brown; **pores** round, 5–7 per millimetre, edges thick, entire.

Hyphal system dimitic. **Generative hyphae** much branched, 1.0–1.5 µm diameter, walls nearly hyaline, thick; **skeletal hyphae** 2–5 µm diameter, rarely septate, walls thick, mostly pale yellowish brown; **cystidioles** clavate with an elongated finger-shaped extension at the apex, up to 36 × 7 µm; **basidiospores** globose to subglobose, 6.0–7.5 × 5.0–6.5 µm, walls hyaline, intensely dextrinoid, moderately thick.

Notes: In North America, this fungus has been labelled “*Phellinus hartigii*.” Recent research revealed that European collections of *P. hartigii* (e.g., the name “*hartigii*” is based on European collections), are distinct from North American collections, and the conclusion is that *P. hartigii* does not occur in North America. The best name for the North American fungus is “*Fomitiporia tsugina*.” Effuse basidiomata of *F. tsugina* are very similar to basidiomata of *F. punctata*.

FOMITOPSIS P. KARST.

Habitat: On live and dead trunks and logs of conifers and hardwoods, causing a brown cubical rot.

Basidiomata sessile, reflexed, or infrequently effuse, perennial, woody, in two species pink throughout; **pileus** applanate, triquetrous or hoof-like, convex, medium to large; **pileus surface** tomentose becoming glabrous, initially a paper-thin, glabrous membrane, then crustose, rimose, resin-crusted, smooth, shiny or dull, often zonate, chalky white or tan, pale pink, reddish brown, or brownish black; **context** white, pallid, pink, pinkish brown, chalky and friable, corky to rigid, fibrous to woody, up to 12 cm thick; **tubes** stratified, each layer 3–20 mm deep; **pore surface** white, ivory, cream, pale pink, beige brown to brown with a pink tint; **pores** round to angular, 3–5 per millimetre.

Hyphal systems dimitic and trimitic. **Generative hyphae** 2–7 µm diameter with clamp connections; **skeletal hyphae** 2.5–6.0 µm diameter, rarely branched; **binding hyphae** 1.5–4.0 µm diameter; **gloeoplerous hyphae** only in *F. officinalis*, abundant in context, typically sinuous, infrequently branched, up to 13 µm diameter, contents intensely coloured in stains, such as phloxine or cotton blue; **sclerids** in the context, apparently disarticulated, swollen hyphal segments, up to 20 × 9 µm, walls hyaline, thick; **cystidioles** in several species, fusoid, ~4–5 µm diameter; **cystidia** only in *F. pinicola*, slenderly clavate with an elongated stipe, up to 150 × 10 µm, projecting through the hymenium up to 90 µm, walls hyaline, thin or thickened at the base; **basidia** clavate, 14–25 × 4.0–8.5 µm, four sterigmate; **basidiospores** cylindrical, straight, or curved, 5.0–7.5 × 1.5–2.5 µm or ellipsoid to broadly ellipsoid, 4–9 × 3.0–4.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- | | | |
|----|--|-----------------------|
| 1a | Basidiomata pink throughout | 2 |
| 1b | Basidiomata not pink..... | 3 |
| 2a | Basidiomata typically applanate and sessile, sometimes reflexed or effuse, preferring Douglas-fir forests; basidiospores cylindrical, curved, 1.5–2.0 µm wide..... | <i>F. cajanderi</i> |
| 2b | Basidiomata typically hoof-like and sessile, preferring higher-elevation spruce forests; basidiospores cylindrical, straight, 2–2.5 µm wide | <i>F. rosea</i> |
| 3a | Basidiomata on conifers..... | 4 |
| 3b | Basidiomata on hardwoods..... | 5 |
| 4a | Pileus surface chalky, white; context white, chalky, friable; taste very bitter | <i>F. officinalis</i> |
| 4b | Pileus surface a smooth, hard, yellow brown, dark red to black crust; context tough-fibrous or woody; taste mild or slightly acid | <i>F. pinicola</i> |
| 5a | On live or dead trees, typically on <i>Quercus</i> species | <i>F. spraguei</i> |
| 5b | On standing dead trees and logs of <i>Populus tremuloides</i> | 6 |
| 6a | Pileus surface near white, ochreous, buff to black; basidiospores 4–5 µm long..... | <i>F. ochracea</i> |

- 6b Pileus surface yellow brown, dark red to black, typically with a dark red band near the margin; basidiospores 6–9 µm long *F. pinicola*

Fomitopsis cajanderi
(P. Karst.) Kotl. &
Pouzar
 Rosy conk

Habitat/range: On live and dead conifers, especially *Pseudotsuga menziesii*, infrequently on hardwoods, causing a brown cubical rot. Widespread in the southern half of BC and reported once from northern BC (Liard Hot Springs). Widespread elsewhere in western North America.



Basidiomata perennial, applanate and sessile or reflexed or effuse; **pileus** typically 4 cm wide × ~6 cm long × up to 3 cm thick; **pileus surface** tomentose becoming crustose, pink becoming grey, brown to black; **margin** pink when growing; **context** pink, corky to rigid, up to 1 cm thick; **tubes** 0.5–3.0 mm deep; **pore surface** pink; **pores** round to angular, 3–5 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2–4 µm diameter with clamp connections; **skeletal hyphae** 2.5–6.0 µm diameter, walls pale brown; **cystidiales** fusoid, 15–18 × 3.5–5.0 µm, not projecting; **basidiospores** cylindrical, curved, 5–7 × 1.5–2.0 µm.

Notes: The similar *F. rosea* differs in its typically hoof-like and sessile basidiomata, a preference for higher-elevation spruce forests, and straight, slightly wider (2.0–2.5 µm) basidiospores.

Fomitopsis ochracea
Ryvarden & Stokland

Habitat/range: On logs and dead, standing trunks of hardwoods and conifers, causing a brown cubical rot. In BC, on *Populus* spp., but specific localities not given, and in Vancouver (Stanley Park) but substrate not specified. Elsewhere in western North America, known only from AB.

Basidiomata perennial, applanate to hoof-like, sessile or rarely reflexed, up to 20 cm wide × 30 cm long × 7 cm thick; **pileus surface** glabrous, smooth, sulcate, varying from near white or ochreous to dark brownish grey and black,



not boiling when heated with a flaming match; **margin** round; **context** cream to buff, woody, azonate, up to 4 cm thick; **tubes** 0.5–3.0 mm deep; **pore surface** cream to pale tan, not staining when bruised; **pores** round, 5–6 per millimetre, mouths even.

Hyphal system trimitic. **Generative hyphae** 2–5 µm diameter with clamp connections; **skeletal hyphae** 3–7 µm diameter, walls hyaline; **binding hyphae** rare, 1.5–4.0 µm diameter, walls thick to solid; **basidiospores** broadly ellipsoid, 4–5 × 3–4 µm.

Notes: Basidiomata have been mistakenly labelled *F. pinicola*. *Fomitopsis pinicola* differs in having (when mature) a reddish brown to nearly black pileus surface, often with a dark red band near the margin, a pileus crust that boils when heated with a flaming match, a fresh pore surface staining citric yellow when bruised, a distinct acrid, unpleasant odour, and ellipsoid basidiospores 6–9 µm long.

Fomitopsis officinalis
(Vill.) Bondartsev & Singer
Quinine conk, Larch polypore

Habitat/range: On live and dead conifers, especially *Larix occidentalis*, *Picea sitchensis*, and *Pseudotsuga menziesii*, causing a brown cubical rot. On Haida Gwaii (Kroeger et al. 2012), and scattered in southern BC from Revelstoke and Bridesville west to southern Vancouver Island (Cowichan Lake and Victoria). Widespread throughout western North America.

Basidiomata sessile, perennial, hoof-like becoming vertically elongated or columnar as tube layers accumulate, 40 cm or more tall; **taste** very bitter; **pileus** convex to hoof-like when young, up to 20 cm wide; **pileus surface** initially a paper-thin, glabrous membrane that soon wears away, then chalky white or tan, rimose; **context** white, chalky, friable, up to 10 cm thick; **tubes** conspicuously stratified, each layer 3–20 mm deep; **pore surface** white to beige brown; **pores** round to angular, 3–5 per millimetre but some up to 1 mm diameter, edges thick, entire, becoming lacerate.

Hyphal system dimitic. **Generative hyphae** 2.5–7.0 µm diameter with clamp connections; **skeletal hyphae** rarely branched, 3–6 µm diameter; **gloeoplerous hyphae** abundant in context, typically sinuous, infrequently branched, up



to 13 µm diameter, contents intensely coloured in stains, such as phloxine or cotton blue; **sclerids** in the context, apparently disarticulated, swollen hyphal segments, up to 20 × 9 µm, walls hyaline, thick; **basidiospores** ellipsoid, 4–5.5 × 3–4 µm.

Notes: The quinine-like taste caused people to attribute antimalarial properties to this fungus; in fact, it is mildly poisonous. Decades ago, the large (up to 1 m tall) cylindrical conks (sometimes called “agarikon”) occurring high on tree trunks were harvested by shooting them off the tree and then sold for their “medicinal” value. Recent laboratory screenings have shown extracts to have antiviral and antibacterial properties. The basidiomata occur in two forms, hoof-like and columnar. The former is the one usually found on large conifer slash, and the latter is usually seen high up on the trunk of a living tree. The presence of one conk between 6 and 12 m from the ground means that about half of the heartwood has been decayed, and the presence of two (or more) conks means that the entire heartwood has been destroyed.

Fomitopsis pinicola
(Sw.) P. Karst.
Red belted conk

Habitat/range: Predominately on dead conifers, rarely on hardwoods, causing a brown cubical rot. Common in the southern half of BC and a few records from the northern half, with the most northern from the Haines Highway area 8 km north of the AK/BC border. Relatively common and widespread elsewhere in western North America.

Basidiomata perennial, sessile, rarely reflexed or effuse, woody; odour when fresh distinct, acrid, unpleasant; **pileus** 4–30 cm wide × 6–40 cm long × 3–22 cm thick, applanate, triquetrous or hoof-like; **pileus surface** yellow brown, reddish brown to nearly black, often with a dark red band near the margin, smooth, glabrous, shiny or dull, often zonate, pileus crust boils when heated with a flaming match; **context** pallid to straw yellow, very tough, rigid, woody, up to 12 cm thick; **tubes** distinctly stratified, each layer 3–11 mm



deep; **pore surface** white to ivory, becoming cream, when fresh staining yellow if bruised; **pores** round, 3–5 per millimetre.

Hyphal system trimitic. **Generative hyphae** 2–5 µm diameter with clamp connections; **skeletal hyphae** straight, rarely branched, 3–6 µm diameter; **binding hyphae** 1.5–4.0 µm diameter; **cystidioles** fusoid, ~4–5 µm diameter; **cystidia** slenderly clavate with an elongated stem, up to 150 × 10 µm, projecting through the hymenium up to 90 µm, walls hyaline, thin or thickened at the base; **basidiospores** ellipsoid, 6–9 × 3.5–4.5 µm.

Notes: Basidiomata with a dark grey to black pileus should be compared with *F. ochracea*, *Heterobasidion irregulare*, and *H. occidentale*.

For over 60 years, *F. pinicola* in North America was thought of as a variable species. Recent studies have shown *F. pinicola* to be a species complex. One result has been the segregation of basidiomata lacking red tints on the pileus surface under the name *F. ochracea*.

Fomitopsis rosea
(Alb. & Schwein.)
P. Karst.

Habitat/range: On dead conifers, especially the species of *Picea* and *Pseudotsuga menziesii*, occasionally on *Populus*, causing a brown cubical rot. In BC, known from Aleza Lake (near Prince George), Blue River (east of Wells Gray Park), West Vancouver, and the southeastern coast of Vancouver Island. Widespread elsewhere in western North America, with a preference for higher-elevation spruce forests.

Basidiomata pink, sessile, perennial, woody; **pileus** hoof-like, up to 12 cm wide; **pileus surface** tomentose becoming glabrous, then rimose, pale pink becoming brownish black; **context** pinkish brown, fibrous to woody, up to 3 cm thick; **tube layer** stratified, overall up to 2 cm thick; **pore surface** pale pink to brown with a pink tint; **pores** round to angular, 3–5 per millimetre.



Hyphal system dimitic. **Generative hyphae** 2.0–3.5 µm diameter with clamp connections; **skeletal hyphae** 4–6 µm diameter, rarely branched; **basidiospores** cylindrical, straight, 5.5–7.5 × 2.0–2.5 µm.

Notes: The basidiomata of *F. cajanderi* are relatively thinner and the basidiospores are allantoid.

Fomitopsis spraguei
(Berk. & M. A. Curtis)
Gilb. & Ryvarden

Habitat/range: On live and dead hardwoods, especially *Quercus* species. Not yet found in BC but reported from WA and OR.



Basidiomata sessile, some reflexed, perennial, woody; **pileus** applanate, dimidiate, up to 7.5 cm wide × 9 cm long × 4 cm thick; **pileus surface** ivory white, grey to ochreous, azonate, even to rugose, matted coarse hairs to glabrous, some imbricate; **context** white, grey to ochreous, tough, corky, up to 3.5 cm thick; **tube layer** up to 0.5 cm thick; **pore surface** pallid, buff, or pale brown with a pink tint; **pores** round to angular, 3–6 per millimetre.

Hyphal system trimitic. **Generative hyphae** rarely branched, 2.5–5.0 µm diameter with clamp connections, walls thin; **skeletal hyphae** rarely branched, 3.5–5.0 µm diameter, walls hyaline; **binding hyphae** 2.2–3.5 µm, walls hyaline;

cystidioles fusoid, 18–22 × 4–7 µm, not projecting; **basidiospores** ovoid to broadly ellipsoid, 5.5–7.0 × 4–5 µm.

Notes: Basidiomata are annual but tough and persistent. *Fomitopsis meliae* (Underw.) Gilb. occurs in Washington and Montana but has not been found in BC. It can cause a heart rot of living peach (*Prunus persica*) trees. The basidiomata are dimidiate, sessile, up to 5 cm wide × 10 cm long × 3 cm thick. The basidiospores are cylindrical to narrowly ellipsoid, 6–8 × 2.5–3.0 µm and narrow to the apex.

FUSCOPORIA MURRILL

Habitat: On live and dead hardwoods and conifers, causing a white rot.

Basidiomata pileate, reflexed, or effuse, perennial, woody or tough to soft spongy; **pileus** dimidiate, medium to large; **pileus surface** dark yellowish brown, reddish brown to black, hirsute to tomentose to glabrous; **context** yellowish brown, corky, fibrous, ~1 mm to 2 cm thick, xanthochroic; **tubes** yellowish brown, stratified; **pore surface** yellowish brown, ferruginous, dark purplish brown; **pores** round to angular, 4–9 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2–5 µm diameter with simple septa, walls hyaline, pale yellowish brown to dark brown, thin; **skeletal hyphae** 2–7 µm diameter with rare simple septa, walls pale yellow, pale brown to dark reddish brown, thick; **setae** in the hymenium, 25–75 × 5–8 µm, narrowly subulate, subulate to somewhat ventricose; **setal hyphae** only in *F. ferruginosa*, 5–8 µm diameter, cylindrical, tapering to an acute tip, walls dark reddish brown, thick; **cystidia** lacking; **basidia** broadly clavate to clavate, 9–14 × 4.5–7.0 µm, four sterigmate; **basidiospores** cylindrical, allantoid, short-oblong, ovoid, or ellipsoid, 4–8 × 1.5–3.5 µm, walls hyaline, smooth, not dextrinoid.

- 1a Basidiomata pileate.....2
- 1b Basidiomata effuse.....3
- 2a Pileus surface reddish brown to black; pore surface yellowish brown; pores 4–7 per millimetre; basidiospores cylindrical, 1.5–2.0 µm diameter.....*F. viticola*
- 2b Pileus surface dark yellowish brown; pore surface dark purplish brown; pores 6–8 per millimetre; basidiospores ellipsoid to ovoid, 3.0–3.5 µm diameter.....*F. gilva*
- 3a Pore surface reddish brown; setal hyphae present; basidiospores ellipsoid to short-oblong, 5–7 × 3.0–3.5 µm*F. ferruginosa*
- 3b Pore surface yellowish brown; setal hyphae lacking; basidiospores cylindrical, some slightly curved, 5–8 × 1.5–2.5 µm.....4
- 4a Setae generally 45–75 µm long; basidiospores 1.5–2.0 µm diameter*F. viticola*
- 4b Setae up to 45 µm long; basidiospores 2.0–2.5 µm diameter*F. ferrea*

Fuscoporia ferrea
(Pers.) G. Cunn.

Syn. *Phellinus ferreus*
(Pers.) Bourdot & Galzin

Habitat/range: On hardwoods and less frequently on conifers, causing a uniform white rot. Widespread in BC, on the coast from Haida Gwaii and Tatshenshini-Alsek Park to Prince George, Yoho National Park, Vancouver Island, and the Vancouver area. Widespread elsewhere in western North America, from AK and NT to CA.



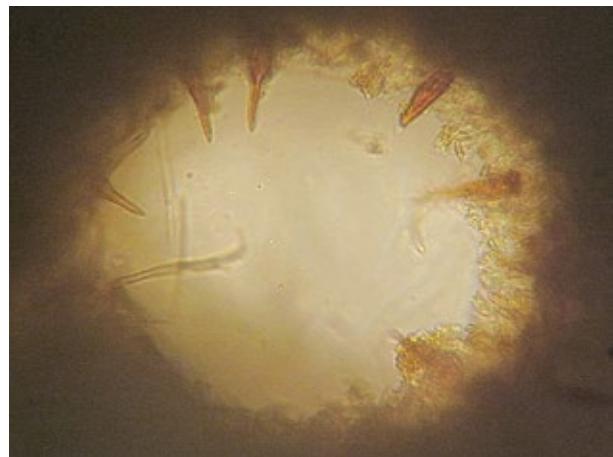
Basidiomata effuse, perennial, woody, adnate, up to 23 cm diameter, up to 15 mm thick; **margin** yellowish brown, tomentose, up to 2 mm wide; **context** yellowish brown, corky, up to 1 mm thick; **tubes** yellowish brown, rather distinctly stratified, each layer up to 3 mm deep; **pore surface** yellowish brown, often cracking extensively; **pores** round, 6–7 per millimetre, edges thick, entire.

Generative hyphae 2.0–4.5 μm diameter with rare simple septa, walls hyaline, thin; **skeletal hyphae** rarely branched, 2–3 μm diameter with rare simple septa, walls dark brown, thin to thickened; **setae** abundant, subulate to somewhat ventricose, 25–45 \times 6–7 μm (see photo below right); **basidiospores** cylindrical, 5.0–7.5 \times 2.0–2.5 μm .

Notes: The similar *F. ferruginea* differs in having a reddish brown pore surface, broader basidiospores (3.0–3.5 μm wide), longer setae (up to 65 μm long), and, typically, setal hyphae in the margin and context.



Pore surface of *Fuscoporia ferrea*



Setae projecting into pore of *Fuscoporia ferrea*

Fuscoporia ferruginosa
(Schrad.) Murrill
Syn. *Phellinus ferruginosus*
(Schrad.) Pat.

Habitat/range: On hardwoods and uncommon on conifers, causing a white laminated rot. In BC, scattered from Quesnel, Clinton, Revelstoke, Rosebery (Slocan Lake), the Vancouver area, and Victoria. Widespread elsewhere in western North America.



Basidiomata widely effuse, tough to soft-spongy, adnate; **margin** tawny, soft-spongy, up to 2 cm wide; **context** yellowish brown, soft-fibrous, up to 1.5 mm thick; **tubes** slightly darker than the context, up to 2 mm deep; **pore surface** reddish brown; **pores** round, 7–9 per millimetre, in some 2–3 per millimetre; **edges** thick, tomentose.

Generative hyphae 2–4 μm diameter, walls thin, hyaline; **skeletal hyphae** 2–5 μm diameter, walls pale yellow to pale brown, thick; **setae** abundant, mostly subulate, 25–65 \times 6–8 μm ; **setal hyphae** in the margin and context, cylindrical, tapering to an acute apex, 5–10 μm diameter, walls dark reddish brown, thick; **basidiospores** short-oblong to ellipsoid, 5–7 \times 3.0–3.5 μm .

Notes: The similar *F. ferrea* differs in lacking a yellowish brown pore surface and setal hyphae. *Phellinidium ferrugineofuscum* is restricted to conifers, has a bright yellowish brown context, setal hyphae that bend abruptly and project into the tubes, and cylindrical basidiospores, 4.0–5.5 \times 1.0–1.5 μm .

Fuscoporia gilva
**(Schwein.) T. Wagner
& M. Fisch.**
Syn. *Phellinus gilvus*
(Schwein.) Pat.
Oak conk, Mustard-yellow polypore

Habitat/range: On conifers and hardwoods, causing a uniform white rot. In BC, known from Blue River, Revelstoke, Invermere, Kootenay Lake, Kelowna, Whistler, the Vancouver area, and southern Vancouver Island. Widespread elsewhere in western North America.



Basidiomata perennial, typically reflexed, some sessile, others effuse and up to 30 cm diameter; **pileus** dimidiate or narrow and shelf-like, up to 11 cm wide \times 15 cm long \times 3 cm thick; **pileus surface** reddish brown to black, hirsute to almost glabrous, sulcate; **margin** pale reddish brown to pale yellow, tomentose to hirsute, acute or rounded; **context** yellowish brown, weakly zonate, corky-fibrous, up to 3 mm thick; **tubes** yellowish brown, each layer up to 5 mm deep, stuffed with white mycelium; **pore surface** yellowish brown; **pores** round to angular, 4–7 per millimetre, edges thick, entire.

Generative hyphae 2–3 μm diameter, walls pale yellowish brown to hyaline, thin; **skeletal hyphae** 2–3 μm diameter, rarely simple septate, walls thickened, brown; **setae** abundant, narrowly subulate, 25–75 \times 5–8 μm ; **basidiospores** cylindrical, some slightly curved, 5.5–8.0 \times 1.5–2.0 μm .

Fuscoporia viticola
(Schwein.) Murrill
Syn. *Phellinus viticola*
(Schwein.) Donk

Habitat/range: On live and dead hardwoods, rarely on conifers, causing a uniform white rot. In BC, known from one collection on *Abies* sp. at Victoria (Ginns and Macrae 1971). Elsewhere in western North America, known from WA, ID, MT, OR, CA, AZ, and NM.



Basidiomata perennial, sessile to slightly reflexed, some imbricate; **pileus** dimidiate, up to 7 cm wide \times 12 cm long \times 3 cm thick; **pileus surface** dark yellowish brown, tomentose to glabrous, typically rugose; **context** bright yellowish brown, zonate, fibrous, up to 2 cm thick; **tubes** bright yellowish brown, stuffed with white mycelium, total thickness up to 1 cm; **pore surface** dark purplish brown; **pores** round, 6–8 per millimetre, edges thick, entire.

Generative hyphae 3–5 μm diameter, walls thin, pale yellowish brown; **skeletal hyphae** rarely branched, 3–7 μm diameter, walls dark reddish brown, thick; **setae** abundant, subulate, 20–30 \times 5–6 μm ; **basidiospores** ellipsoid to ovoid, 4–5 \times 3.0–3.5 μm .

Habitat: On live and dead conifers, especially *Abies* and *Tsuga*, and hardwoods, causing a white butt and root rot.

Basidiomata annual or perennial, sessile, some stipitate, single or clustered, medium to large (up to 1 m wide), woody, spore print brown; stipe typically lateral, often vertical, up to 9 cm long, 5 cm diameter, surface a varnish-like crust, reddish brown to mahogany or nearly black; **pileus** applanate to hoof-like, dimidiate, flabelliform to reniform, occasionally imbricate; **pileus surface** a thin, varnish-like layer or a hard crust up to 1 mm thick, pale vinaceous to greyish brown, reddish brown to mahogany, grey to black, smooth to wrinkled; **context** white to cream to brown to dark purplish brown, soft and punky, fibrous, tough-corky, firm, zonate, infrequently over 8 cm thick; **tubes** brown, purplish brown, 0.4–2.0 cm deep; **pore surface** white, cream, or yellow, becoming brown when bruised and in age; **pores** round to angular, 2–6 per millimetre, edges thin to thick, smooth.

Hyphal system trimitic. **Generative hyphae** 2–5 µm diameter with clamp connections; **skeletal hyphae** 2–10 µm diameter, walls hyaline, pale brown, brown; **binding hyphae** dendritic, 2.0–5.5 µm diameter, walls hyaline; **cystidia** lacking; **basidia** clavate, broadly clavate to pyriform, 20–45 × 8–14 µm, four sterigmate, except some two sterigmate in *G. oregonense*; **basidiospores** ovoid with a truncate apex, 6–17 × 4–10 µm, walls thickened, composed of a brown inner layer that is separated from the hyaline outer by pillars or partitions that give the wall the appearance of having internal cavities, with an apical germ pore, neither amyloid nor dextrinoid.

Notes: The brown spore print, plus the unusual walls of the basidiospores, distinguishes the *Ganoderma* species from other provincial polypores. Reports of *G. lucidum* on conifers from western North America probably were based on misidentified specimens of either *G. oregonense* or *G. tsugae*.

- 1a On conifers; pileus surface reddish brown to black, covered with a lacquer-like, relatively thin crust; pileus surface a palisade of clavate hyphal ends, 9–15 µm diameter, walls thick, reddish brown, amyloid 2
- 1b On hardwoods; pileus surface pale vinaceous, grey, greyish brown, brown, or nearly black, covered with a hard, relatively thick crust; pileus surface not a palisade of clavate hyphal ends 3
- 2a Basidioma generally 20–100 cm wide × up to 40 cm long × 7–20 cm thick; pores 2–3 per millimetre; basidiospores 13–17 × 8–10 µm *G. oregonense*
- 2b Basidioma up to 20 cm wide × 30 cm long × 7 cm thick; pores 5–6 per millimetre; basidiospores 11.0–12.5 × 6.5–8.5 µm *G. tsugae*
- 3a Pore surface white to yellow; context dark purplish brown; basidiospores 11–12 × 7–8 µm *G. brownii*
- 3b Pore surface white; context brown becoming white in age; basidiospores 6–9 × 4–6 µm *G. applanatum*

**Ganoderma
applanatum
(Pers.) Pat.**
Artist's conk

Habitat/range: On live and dead hardwoods, infrequently on conifers, causing a mottled white heart rot, especially as a root and butt rot in *Populus tremuloides*. On Haida Gwaii (Kroeger et al. 2012), widespread in the southern half of BC and elsewhere in western North America.



Basidiomata perennial, sessile, applanate, rarely hoof-like, medium to large, hard, woody; **pileus** 3–30 cm wide × 5–50 cm long × 1–10 cm thick; **margin** when growing white to cream; **pileus surface** a hard crust, grey to black, often rusty brown related to a deposit of basidiospores; **context** rigid, tough-corky, brown then becoming white progressively from surface downward in older specimens, up to 5 cm thick; **tubes** 4–12 mm deep; **pore surface** white to cream, immediately turning brown where bruised or scratched; **pores** round, 4–6 per millimetre.

Generative hyphae 2–5 µm diameter with clamp connections; **skeletal hyphae** 3.0–6.5 µm diameter, apices dendritically branched, walls brown; **binding hyphae** few, indistinct, ~2–4 µm diameter; **basidiospores** 6–9 × 4–6 µm, ovoid with a truncate apex.

Notes: The similar *Ganoderma brownii* has thicker, darker flesh, often a yellow pore surface, and larger basidiospores than *G. applanatum*.

**Ganoderma brownii
(Murrill) Gilb.**

Habitat/range: On live *Aesculus hippocastanum*, live *Prunus cerasifera* var. *pissardii*, and an unidentified log, causing a white rot. In BC, known from three collections at Brentwood Bay and Victoria, both on southern Vancouver Island, and Roberts Creek (north of Vancouver). Elsewhere known only from CA on *Quercus* and deciduous shrubs.

Basidiomata perennial, sessile, up to 10 cm wide × 20 cm long × 5 cm thick; **pileus** applanate to hoof-like; **pileus surface** reddish brown, pale yellow, finely tomentose at the margin, then with a crust up to 1 mm thick, hard, horny, pale vinaceous to greyish brown; **context** dark purplish brown, fibrous, firm, zonate, 3–8 cm thick; **tubes** purplish brown, distinct from the context, up to 1.5 cm deep; **pore surface** white to yellow, bruising dark brown; **pores** round, 4–5 per millimetre, edges thick, entire.



Generative hyphae uncommon, 2.5–3.5 µm diameter with clamp connections; skeletal hyphae 2–10 µm diameter, walls pale brown; binding hyphae rare in context, common in trama, dendritic, 2.0–5.5 µm; basidiospores broadly ellipsoid with a truncate apex, 11–12 × 7–8 µm.

Notes: *Ganoderma applanatum* has a thinner, paler context, white pore surface, and smaller basidiospores.

Ganoderma oregonense
Murrill

Western varnish shelf

Habitat/range: On live and dead conifers, mainly species of *Abies* and *Tsuga*. In BC, known from Haida Gwaii and the southern half of Vancouver Island, eastward to Nakusp. Elsewhere in western North America, known from WA, ID, MT, OR, NV, and CA.



Basidiomata solitary, medium to large, sessile to laterally stipitate; **stipe** often only a few centimetres long, surface reddish to blackish mahogany, appearing varnished; **pileus** up to 40 cm wide × 100 cm long × 20 cm thick, semicircular to conchate or reniform, occasionally imbricate; **pileus surface** red brown or mahogany to black, paler at margin when growing; appearing varnished, smooth, glabrous, shining unless dusted with a brown deposit of basidi-

ospores, the varnish cracking when old; **context** 2–8 (–15) cm thick, white to straw yellow, soft and punky; **tubes** 1–2 cm deep, brown; **pore surface** pallid, brown when bruised and in age; **pores** round, 2–3 per millimetre, mouths entire, edges thin.

Generative hyphae 2.5–5.0 µm diameter with clamp connections; **skeletal hyphae** 3–5 µm diameter, rather commonly branched, walls hyaline; **binding hyphae** dendritic, 2.5–4.5 µm diameter, walls hyaline; **pileus surface** a palisade comprised of clavate hyphal tips, each up to 70×11 µm, walls thick, amyloid; **basidiospores** $13\text{--}17 \times 8\text{--}10$ µm, ovoid with a truncate apex.

Notes: The shining, varnish-like crust on the pileus is typical of *G. oregonense*, *G. lucidum* (Ling Chih, Reishi), and *G. tsugae*. *Ganoderma oregonense* and *G. tsugae* may be names for the same fungus (Gilbertson and Ryvarden 1986; Moncalvo et al. 1995); however, Gilbertson and Ryvarden distinguished them using the features listed in Table 3. *Ganoderma lucidum* is restricted to hardwoods and appears to be, at most, rare in the Pacific Northwest. Gilbertson and Ryvarden (1986) listed it from Oregon. There is one tentative British Columbia record of *G. lucidum* on *Quercus garryana* in Victoria. Very young specimens of *Fomitopsis pinicola* may be more or less completely “varnished,” but the varnish disappears as the basidioma ages. The very dense, hard context of *F. pinicola* is quite different from the light, soft-punky context of *G. oregonense* and *G. tsugae*.

TABLE 3 *Distinguishing Ganoderma oregonense from G. tsugae*

Name	Dimensions of basidiomata (cm)	Pores (per millimetre)	Size of basidiospores (µm)
<i>G. oregonense</i>	$40 \times 100 \times 20$	2–3	$13\text{--}17 \times 8\text{--}10$
<i>G. tsugae</i>	$20 \times 30 \times 6.5$	5–6	$11\text{--}12.5 \times 6.5\text{--}8.5$

Ganoderma tsugae
Murrill
Hemlock varnish shelf

Habitat/range: On live and dead conifers, causing a white butt rot. In BC, known from Haida Gwaii (Kroeger et al. 2012), from Victoria on *Tsuga heterophylla* (Nobles 1948), and on unidentified wood on Quadra Island and in Vancouver. Elsewhere in western North America, known from AZ and CA.



Basidiomata annual, sessile, or laterally stipitate, single or clustered, up to 20 cm wide \times 30 cm long \times 6.5 cm thick; **stipe** lateral, often vertical, up to 9 cm long and 5 cm diameter, surface varnished, reddish brown to mahogany or nearly black; **pileus** applanate, dimidiate, or flabelliform; **pileus surface** appearing varnished, reddish brown to mahogany, smooth to wrinkled; **context** cream to pale buff, slightly darker next to the tube layer, often with thin black lines just below the varnished surface, soft and spongy, up to 5 cm thick; **tubes** pale purplish brown, up to 1.5 cm deep; **pore surface** cream; **pores** round to angular, 5–6 per millimetre, edges smooth, thin to thick.

Generative hyphae 3–5 μm diameter with clamp connections; **skeletal hyphae** 3.0–8.5 μm diameter, walls hyaline; **binding hyphae** dendritic, 2–4 μm diameter, walls hyaline; **pileus surface** a palisade composed of clavate hyphal tips, each 9–15 μm diameter, walls thick, reddish brown, amyloid; **basidiospores** ovoid with a truncate apex, 11.0–12.5 \times 6.5–8.5 μm .

Notes: The basidiospore sizes are from Adaskaveg and Gilbertson's (1986) detailed study of *G. tsugae*. Table 3 gives the features that distinguish *G. oregonense* from *G. tsugae*.

GELATOPORIA NIEMELÄ

Habitat: On hardwoods and conifers, causing a white rot.

Basidiomata annual, effuse or pileate in one species and then typically imbricate; **pileus** rarely over 4 cm wide, up to 0.5 cm thick; **pileus surface** white to cream; **context** white, up to 4 mm thick in pileate basidiomata; **tubes** gelatinous but tough to rubbery, up to 3 mm deep; **pore surface** white, ivory to lemon yellow, pale olive yellow, or pale reddish grey then pale purplish brown; **pores** round to angular, 2–8 per millimetre, edges thin.

Hyphal system monomitic. **Generative hyphae** up to 7 µm diameter with clamp connections, walls hyaline, thin to thickened; **leptocystidia** in one species, fusoid, up to 42 µm tall; **basidia** clavate, 11–20 × 3–5 µm, four sterigmate; **basidiospores** allantoid, small, 3.5–5.5 × 0.7–1.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: Colour of the pore surface is the best field feature to distinguish the three species. Common to the three species are basidioma texture and small, allantoid basidiospores. When the genus *Gelatoporia* was proposed, two species were included, *G. subvermispora* and *G. pannocincta* (Niemelä 1985). Subsequently, *Gloeoporus dichrous* was transferred to *Gelatoporia* when a molecular phylogeny placed *G. dichrous* in a clade with *Gelatoporia pannocincta*, a strong indication that they belong in the same genus.

- | | | |
|----|---|-------------------------|
| 1a | Basidiomata pileate..... | <i>G. dichroa</i> |
| 1b | Basidiomata effuse..... | 2 |
| 2a | Pore surface white to pale cream; pores angular, 2–4 per millimetre..... | <i>G. subvermispora</i> |
| 2b | Pore surface pale olive yellow, some ivory to lemon yellow, pale reddish grey; pores round to angular, 4–8 per millimetre | 3 |
| 3a | Pore surface pale reddish grey, then pale purplish brown; pores round to angular 4–7 per millimetre | <i>G. dichroa</i> |
| 3b | Pore surface pale olive yellow, some ivory to lemon yellow; pores round to angular, 6–8 per millimetre | <i>G. pannocincta</i> |

Gelatoporia dichroa

(Fr.) Ginns

Syn. *Gloeoporus dichrous*

(Fr.) Bres.

Habitat/range: On hardwoods, infrequently on conifers, causing a white rot. In BC, known from Prince George, Kamloops, Lumby, West Kelowna, Penticton, Mission, and Vancouver. Widespread elsewhere in North America.

Basidiomata sessile, reflexed, sometimes effuse, soft; **margin** when effuse white, wide, byssoid, contrasting with the pore surface colour; **pileus** rarely over 4 cm wide × 10 cm long × 0.5 cm thick, typically imbricate; **pileus surface** white to cream, finely tomentose, then smooth or hispid; **context** pure white, densely cottony, up to 4 mm thick, with a thin, gelatinous line over the tubes; **tubes** gelatinous, rubbery, easily peeled from the context, up to 1 mm deep; **pore surface** pale reddish grey, then pale purplish brown; **pores** round to angular, 4–7 per millimetre, edges white, pruinose.



Hyphae up to 6 µm diameter with prominent clamp connections, walls thickened; cystidia lacking; basidia clavate, 14–20 × 3–4 µm, four sterigmate; basidiospores allantoid, 3.5–5.5 × 0.7–1.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The pale reddish grey, rubbery pore layer, the white, cottony context, white to cream margin, and pileus surface are the best field features of *G. dichroa*. This fungus (*G. dichroa*) was removed from *Gloeoporus* because the type species, *G. thelephoroides* (Hook.) G. Cunn., has simple septa, the hymenium is continuous, and it is in a clade distinct from *G. dichrous*. The pore edges (pore mouths) in *Gelatoporia dichroa* are sterile; that is, when mature the hymenium lines the pores and is not continuous from pore to pore.

***Gelatoporia
pannocincta*
(Romell) Niemelä**
Syn. *Ceriporiopsis
pannocincta* (Romell)
Gilb. & Ryvarden

Habitat/range: On hardwoods, preferring *Populus* species, causing a white rot. In BC, known from the Quesnel area, Armstrong, Enderby, Shuswap Lake, and on Vancouver Island (Bamberton). Elsewhere in western North America, from NT south to AZ and NM.

Basidiomata effuse, annual, large, separable, pliable, soft-rubbery; **taste** slightly bitter; **margin** white to cream, soft, floccose, fimbriate, up to 4 mm



wide; **context** near white, soft, up to 2.5 mm thick with a distinct rather dark, gelatinous line adjoining the tubes; **tubes** distinct, pale yellow or pale green, up to 2.5 mm deep; **pore surface** typically pale olive yellow, also ivory to lemon yellow, glancing, smooth; **pores** round to angular, 6–8 per millimetre.

Hyphae 3–7 μm diameter with clamp connections, walls thin; **cystidia** fusoid, 17–42 \times 3.0–5.5 μm , projecting up to 25 μm , walls thin, not encrusted; **basidia** clavate, 11–18 \times 3.0–4.5 μm ; **basidiospores** allantoid, 3.5–4.5 \times 0.7–1.0 μm .

Notes: The distinctive features of fresh basidiomata are the gelatinous texture of the tube layer, the colour (pale yellow with a greenish tint) of the pores, the small pores, and the thin, gelatinous line at the base of the tube layer. Cystidia, reported in Gilbertson and Ryvarden (1986), may be lacking in some basidiomata. Neither Lowe (1966), who studied North American basidiomata, nor Eriksson (1958) and Domański (1972), who studied European basidiomata, describe them.

Gelatoporia
subvermispora
(Pilát) Niemelä
Syn. *Ceriporiopsis*
subvermispora (Pilát)
Gilb. & Ryvarden

Habitat/range: On *Abies lasiocarpa*, *Picea glauca*, *P. sitchensis*, and hardwoods, causing a white rot. Uncommon in BC; known from Haida Gwaii, Victoria, Manning Park, Princeton, Babine, Cinema, and Fyfe Lake. Elsewhere in western North America, known from AB, MT, CO, AZ, and NM.



Basidiomata effuse, annual, separable, soft, fleshy, up to 3 mm thick; **margin** narrow, white, finely fimbriate; **context** white, soft to tough, often with cartilaginous or resinous lines; **tubes** white, fragile, rather waxy, up to 3 mm deep; **pore surface** white to pale cream; **pores** angular, 2–4 per millimetre, edges thin, becoming lacerate.

Hyphae 2.5–5.0 μm diameter with clamp connections, walls hyaline, thin, the apex of hyphae at the pore edges crystalline encrusted; **cystidia** lacking; **basidiospores** allantoid, 4.5–5.5 \times 1.0–1.5 μm .

Notes: The species of *Skeletocutis* also have narrow, allantoid basidiospores and crystalline-encrusted hyphal tips in the pore mouths. *Skeletocutis* species differ in having either a dimitic or a trimitic hyphal system.

GLOEOPHYLLUM P. KARST.

Habitat: On hardwoods and conifers, sometimes on wood (e.g., boards, lumber, mine props, in buildings and mines), causing a brown rot.

Basidiomata pileate, effuse, occasionally reflexed, annual or perennial, often laterally confluent; **odour** in *G. odoratum* pleasant of anise; **pileus** sessile, semicircular, applanate, triquetrous, imbricate, sometimes in a rosette, leathery, tough; **pileus surface** ochreous, pale brown, warm sepia, umber brown, rusty brown, dark brown, then some becoming grey brown to black, finely velutinate to matted tomentose to nearly hispid, then glabrous and smooth or coarse and uneven, some zonate; **context** sepia, umber brown, bright rusty brown to dark brown, staining black in KOH except in *G. trabeum*, dense near the tubes, less dense toward the upper surface, up to 4 mm thick, fibrous, tough-leathery; **lamellae** 15–20 per centimetre at the margin; **tubes** and **lamellae** ochreous, pale brown to dark brown, up to 1 cm deep, tough-leathery; **pore surface** pale golden brown, grey brown to deep umber brown, ochreous and darkening when bruised, then yellowish brown to fulvous, paler than the context; **pores** round, angular, somewhat radially elongated, daedaleoid, 1–4 per millimetre, edges thin.

Hyphal systems dimitic and trimitic. **Generative hyphae** 2.5–5.0 µm diameter with clamp connections; **skeletal hyphae** predominate, straight, lacking branches, 3–6 µm diameter, walls thick, golden brown to rusty brown, **binding hyphae** in the context, rare, 1.5–4.5 µm diameter, walls thickened, often obscuring the lumen, pale yellow brown; **cystidia** and (or) **cystidioles** numerous, except lacking in *G. carbonarium*, fusoid, clavate with an acute apex, 20–40 × 4–8 µm, some up to 100 µm and cylindrical with an acute apex in two species, not or slightly projecting, walls thin and hyaline or slightly thickened below and pale golden yellow or brown; **basidia** narrowly clavate to clavate, 18–42 (–100) × 4.5–8.0 µm, four sterigmate; **basidiospores** cylindrical, some curved or slightly bent at the base, 6.5–12 × 3.0–4.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Basidiomata poroid 2
- 1b Basidiomata partly or entirely lamellate 4
- 2a Basidiomata effuse to reflexed, soft, flexible; typically on charred wood *G. carbonarium*
- 2b Basidiomata pileate, hard; uncommon on charred wood 3
- 3a Anise odour; basidiomata typically pulvinate to triquetrous or irregularly hoof-like shape, up to 6 cm wide × 15 cm long × 3 cm thick; pileus surface sulcate, coarse, uneven, matted tomentose to rather hispid, then glabrous; prefers *Picea* *G. odoratum*
- 3b Anise odour lacking; basidiomata generally smaller, up to 10 cm wide × 4 cm long × 1.5 cm thick, distinctly applanate, elongated along the substrate, rarely more than 1 cm thick; pileus surface typically smoother and more glabrous; prefers *Pinus* *G. protractum*

- 4a Basidioma lamellate (lacking pores); lamellae 15–20 per centimetre at the margin; pileus surface zonate, zones typically of different colours, yellow to rusty brown, weathering to grey, rough, hirsute, tufted *G. sepiarium*
- 4b Basidioma a mixture of lamellae and pores; lamellae thinner, ~40 lamellae per centimetre; pileus surface azonate to weakly zonate, warm sepia to umber brown, relatively smooth *G. trabeum*

Gloeophyllum carbonarium
(Berk. & M.A. Curtis)
Ryvarden

Syn. *Griseoporia carbonaria* (Berk. & M.A. Curtis) Ginns

Habitat/range: On charred conifers, causing a brown cubical rot. Uncommon, in BC, known from Valemount, Illecillewaet River, Enderby, and Vancouver Island (Cowichan Lake, Oyster River, Sayward). Widespread elsewhere in western North America.

Basidiomata effuse, occasionally reflexed, soft, pliable, easily detached from the substrate, some large, up to 10 cm diameter; **pileus** up to 1 cm wide; **pileus surface** tomentose to velutinate, soft, umber brown, weakly zonate; **context** up to 2 mm thick, rarely more, soft, dark brown, not permanently black in KOH; **tubes** dark brown, up to 5 mm deep; **pore surface** grey brown to deep umber brown; **pores** 1–3 per millimetre, round, angular, pentagonal, or elongated with a distinctive grey lining, edges thin.



Hyphal system dimitic. **Generative hyphae** 2–4 µm diameter with clamp connections; **skeletal hyphae** 2–4 µm diameter, walls thick, yellowish to rusty brown; **basidiospores** cylindrical, allantoid, 7.0–9.6 × 3.0–3.5 µm.

Notes: The curved basidiospores, clamp connections, and lack of setae distinguish *G. carbonarium* from the few *Phellinus* species having similar macroscopic features.

***Gloeophyllum
odoratum***
(Wulfen) Imazeki

Habitat/range: On conifers, especially *Picea*, sometimes on boards, lumber, and timbers, causing a brown rot. On Haida Gwaii (Kroeger et al. 2012) and widely scattered from Prince George south to Summerland and Vancouver. Elsewhere in western North America, known from WA, ID, MT, OR, CO, AZ, and NM.



Basidiomata perennial, sessile, firmly attached; **odour** of anise; **pileus** single, semicircular to hoof-like, nodulose on vertical surfaces, up to 6 cm wide \times 15 cm long \times 3 cm thick; **margin** distinct, broad, rounded; **pileus surface** typically with a few concentrically sulcate zones, coarse, uneven, matted tomentose to rather hispid, then glabrous, ochreous to pale brown, then dark brown to nearly black; **context** fibrous, hard, rusty brown to dark brown; **tubes** up to 15 mm deep, ochreous, paler than context and pore surface; **pore surface** cinnamon to dark brown; **pores** round to angular, occasionally sinuous, 1–2 per millimetre.

Hyphal system trimitic. **Generative hyphae** 2.5–4.0 μm diameter with clamp connections; **skeletal hyphae** predominate, 3–5 μm diameter, walls thick, pale yellowish brown; **binding hyphae** rare, 1.5–3.0 μm diameter, walls thick and obscuring the lumen; **cystidioles** indistinct, rare, narrowly fusoid, 20–30 \times 3–6 μm , typically collapsed when dry; **basidiospores** cylindrical, 7.5–11.0 \times 3.0–4.5 μm .

Notes: Most reports of *G. odoratum* before 1986 may have been misidentified specimens of *G. protractum*. Of the four British Columbia polypores having an anise odour, *Haploporus odorus*, *Ischnoderma resinosum*, and *Trametes suaveolens* have a white, buff to pale brown context. *Haploporus odorus* and *Trametes suaveolens* occur on hardwoods with a preference for live *Salix* trees.

***Gloeophyllum protractum*
(Fr.) Imazeki**

Habitat/range: Typically on decorticated conifer logs, especially *Pinus*, often in stand openings. Widespread in western North America.



Basidiomata perennial, distinctly elongated along logs, up to 4 cm wide × 10 cm long × 1.5 cm thick; **pileus** typically triquetrous, tough, leathery; **margin** acute; **pileus surface** concentrically sulcate zones, glabrous and semi-glossy, then often radially striate, slightly scropose, cracking near the base, ochreous to brown then grey to black; **context** fulvous to deep brown, leathery, up to 10 mm thick; **tubes** up to 10 mm deep; **pore surface** ochreous and darkening when bruised, then yellowish brown to fulvous; **pores** angular or somewhat radially elongated, 1–2 per millimetre, up to 3 mm long.

Hyphal system trimitic. **Generative hyphae** 2–4 µm diameter with clamp connections; **skeletal hyphae** 3.5–5.5 µm diameter, walls gold to pale rusty brown; **binding hyphae** rare, 1.5–3.0 µm diameter, walls pale yellow; **basidiospores** cylindrical, 8.5–11.0 (–12) × 3.0–4.0 (–4.5) µm.

Notes: Distinguished from *G. odoratum* by its lack of anise odour, thinner basidiomata, and the typically smoother and more glabrous pileus surface.

***Gloeophyllum sepiarium*
(Fr.) P. Karst.**

Rusty gill polypore,
Yellow-red gill polypore

Habitat/range: On conifers, occasionally hardwoods, causing a brown rot. This is one of the first fungi to colonize slash on recently logged conifer forests. It also grows on wooden decks, porch railings, untreated telephone poles, railroad ties, and mine timbers. Widespread and common throughout North America.

Basidiomata pileate, broadly sessile, perennial, 1–5 cm wide × 2–8 cm long × 0.5–1.0 cm thick, often laterally confluent; **pileus** semicircular, applanate, sometimes imbricate, sometimes in a rosette; **pileus surface** yellow, rusty brown, weathering to grey, zonate, zones typically of different colours, frequently wrinkled or furrowed; **context** 1–5 cm thick, tough-leathery, bright rusty brown; **lamellae** 15–20 per centimetre at the margin, up to 7 mm deep, brown, tough-leathery.



Hyphal system trimitic. **Generative hyphae** 2.5–4.0 μm diameter with clamp connections; **skeletal hyphae** predominate, up to 6.0 μm diameter, walls thick, yellow brown; **binding hyphae** rare, up to 4.5 μm diameter, walls thick, pale yellow brown; **cystidia** numerous, 20–40 \times 4–8 μm , scarcely or not projecting beyond the hymenium, walls brown, slightly thickened; **basidiospores** 8–13 \times 3–5 μm , cylindrical, some slightly bent at the base.

Notes: The brown context, tough and leathery lamellae, and bright brown to yellow brown pileus characterize this species. The rare *G. abietinum* (Bull.) P. Karst. has not been found in the forests of British Columbia but was cultured from untreated, packaged coniferous lumber at Surrey. Its basidiomata differ from *G. sepiarium* in having wavy (not straight) lamellae and having a dark to pale brown pileus surface.

***Gloeophyllum trabeum*
(Pers.) Murrill**

Habitat/range: On hardwoods and conifers, causing a brown rot. Also on decaying wood in buildings. In BC, apparently uncommon; known from Haida Gwaii (Kroeger et al. 2012), Taylor River near Tofino (Ginns and Macrae 1971), the Vancouver area, and Chilliwack. Widespread in North America.



Basidiomata sessile, perennial, elongated along cracks in the substrate, up to 3 cm wide \times 8 cm long \times rarely over 0.8 cm thick; **pileus** sometimes imbricate, leathery, tough; **pileus surface** warm sepia to umber brown, then grey brown, finely velutinate to matted tomentose, then nearly glabrous and smooth; **context** sepia to umber brown, dense near the tubes, gradually becoming less dense toward the upper surface, up to 4 mm thick; **tubes** or **lamellae** up to 4 mm deep; **pore surface** variable, poroid, daedaleoid, semi-lamellate; **pores** 2–4 per millimetre or \sim 40 lamellae per centimetre at the margin, edges thin, paler than the context.

Hyphal system trimitic. **Generative hyphae** with clamp connections, 2.5–5.0 μm diameter; **skeletal hyphae** predominate, straight, lacking branches, up to 6 μm diameter, walls thick, golden brown; **binding hyphae** sparse in older parts of the context, with few branches; **cystidioles** fusoid to clavate with an acute apex, up to 30 μm \times 4.0–5.5 μm , walls thin above, thickened below, hyaline to pale golden yellow; **basidiospores** cylindrical, 6.5–9.5 \times 3.0–4.5 μm .

GLOEOPORUS MONT.

Gloeoporus taxicola (Pers.) Gilb. & Ryvarden

Habitat/range: On conifers, causing a white rot. In BC, uncommon, reported only from Prince George, Armstrong, and Penticton. Widespread elsewhere in western North America.



Basidiomata effuse, annual, often large, up to 4 mm thick, tough, waxy, somewhat separable; **margin** white, wide, distinct; **context** white, fibrous, up to 2 mm thick; **tubes** up to 1 mm deep; **pore surface** reddish brown, deep purplish brown to dark brownish red, finely granulose; **pores** angular, 2–4 per millimetre.

Hyphal system monomitic. **Hyphae** up to 6 µm diameter with simple septa, walls thin to thickened; **cystidioles** fusoid, 15–30 × 3–4 µm; **basidia** clavate, 15–25 × 4–5 µm, four sterigmate; **basidiospores** allantoid, 4.5–6.0 × 1.0–1.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: A principal distinguishing feature of the genus *Gloeoporus* is “the continuous layer of basidia over the pore-edges” (Gilbertson and Ryvarden 1986). The pore surface in *Ceriporia purpurea* is paler with a more red tint. It is distinctly poroid (i.e., the pores have sterile mouths) and has larger basidiospores (5–8 [–9] × 2.0–2.5 µm).

***Grifola frondosa*
(Dicks.) Gray**

Hen of the woods,
Sheep's head

Habitat/range: On the ground, arising from roots of live and dead conifers and hardwoods, causing a white butt rot of live trees. In BC, known from Greenwood on unidentified wood, and two collections “on dead fir stump” in Victoria. Elsewhere in western North America, known from WA, ID, and MT.



Basidiomata stipitate, large, up to 40 cm broad, multipileate; **odour** pleasant, nutlike; **taste** edible and choice; **stipe** short, stout, up to 10 cm diameter, much branched at the base; **pileus** fan-shaped, each 2–8 cm wide, 10 mm thick, imbricate, confluent; **pileus surface** dull, glabrous to finely tomentose, pale lavender grey, becoming dark brown; **context** ivory white, 3–5 mm thick; **tubes** decurrent, up to 5 mm deep; **pore surface** ivory white; **pores** angular, 2–4 per millimetre, edges thin, lacerate.

Hyphal system dimitic. **Generative hyphae** 2.5–5.0 μm diameter with clamp connections; **skeletal hyphae** 2.5–6.0 μm diameter; **basidiospores** 6–7 \times 4.0–4.5 μm , ellipsoid to ovoid, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: Another polypore that produces large, multipileate basidiomata is *Meripilus sumstinei* (Murrill) M.J. Larsen. It differs from *G. frondosa* in lacking clamp connections. The only report of *M. sumstinei* from west of the Mississippi River is from Idaho (Weir 1914).

HAPALOPILUS P. KARST.

Habitat: On hardwoods and conifers, causing a white rot or a yellowish white stringy sap rot.

Basidiomata broadly sessile, reflexed or effuse, annual, soft, staining lavender to vivid violet to purplish in KOH; **pileus** typically convex, triquetrous, up to 10 cm wide \times 10 cm long \times 5 cm thick, soft, spongy, soggy; **pileus surface** cinnamon to ochreous, finely tomentose, then scrupose with matted small tufts of mycelium; **margin** narrow to wide, pale orange, byssoid, acute, entire; **context** thin when effuse or if pileate up to 4 cm thick, pale orange to pink, pale cinnamon, soft, fibrous; **tubes** orange, ochreous, up to 1 cm deep; **pore surface** bright orange, pink, ochreous to cinnamon brown; **pores** angular, 2–5 per millimetre, edges thin, entire.

Hyphal system monomitic. **Hyphae** 2–10 μm diameter with clamp connections, walls thin to moderately thick; **cystidia** lacking; **cystidioles** only in *H. nidulans*, fusoid, 18–22 \times 4–5 μm ; **basidia** clavate, 18–30 \times 5.0–6.5 μm , four sterigmate; **basidiospores** ellipsoid to oblong, 3.5–6.0 \times 2.0–2.5 (–3.0) μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Basidiomata pileate.....*H. nidulans*
1b Basidiomata effuse.....*H. salmonicolor*

Hapalopilus nidulans

(Fr.) P. Karst.

Cinnamon bracket

Habitat/range: On hardwoods and conifers, causing a white rot. Widely scattered in the southern half of BC. Elsewhere in western North America, known from WA, ID, AZ, and NM.



Basidiomata pileate, broadly sessile to reflexed, annual, vivid violet to purplish in KOH; **pileus** typically convex, triquetrous, up to 10 cm wide \times 10 cm long \times 5 cm thick, soft, spongy, soggy; **pileus surface** cinnamon to ochreous, finely tomentose, then scrupose with matted small tufts of mycelium; **margin** acute, entire; **context** pale cinnamon, soft, fibrous, up to 4 cm thick; **tubes** up to 1 cm deep, ochreous; **pore surface** ochreous to cinnamon brown; **pores** angular, 2–4 per millimetre, edges thin.

Hyphae up to 10 µm diameter with conspicuous clamp connections, frequently branched, walls distinctly thickened, segments encrusted with resinous patches and (or) polygonal crystals; cystidioles fusoid, 18–22 × 4–5 µm; basidiospores ellipsoid, 3.5–5.0 × 2.0–2.5 µm, walls hyaline, thin, smooth.

Hapalopilus
salmonicolor
(Berk. & M.A. Curtis)
Pouzar

Syn. *Postia salmonicolor*
(Berk. & M.A. Curtis)
M.J. Larsen & Lombard
Salmon bracket

Habitat/range: On conifers, causing a yellowish stringy sap rot. In BC, known from Kamloops and Naramata in the Southern Interior and on Vancouver Island at Oyster River and Victoria. Elsewhere in western North America, known from NT, WA, ID, MT, and AZ.

Basidiomata effuse, annual, soft, briefly lavender in KOH, rarely over 10 cm diameter, up to 0.8 cm thick; **margin** narrow to wide, pale orange, byssoid; **context** thin, pale orange to pink; **tubes** orange, up to 7 mm deep; **pore surface** bright orange, pink; **pores** angular, 3–5 per millimetre, edges thin, entire.

Hyphae 2–7 µm diameter with clamp connections, walls thin to moderately thick; **basidiospores** narrow ellipsoid to oblong, 3.5–6.0 × 2.0–2.5 µm.

Notes: *Ceriporia spissa* is similarly coloured but typically is brighter orange with 7–9 pores per millimetre, simple septa, and allantoid basidiospores.



HAPLOPORUS SINGER

***Haploporus odorus* (Sommerf.) Singer**

Habitat/range: On trunks of live *Salix* species, with single collections on *Alnus*, *Fraxinus*, and *Populus*, causing a white rot of the heartwood. In North America, restricted to western Canada from BC (Smithers, Vanderhoof, Fort St. John area, Prince George south to Cinema), south-central NT, northern AB, north-central SK, and southeastern MB.



Basidiomata sessile or reflexed, perennial, up to 6 cm wide × 15 cm long × 8.5 cm thick; **odour** of anise; **pileus surface** pale buff to dark dingy brown, finely tomentose to nearly glabrous; **context** pale buff, corky, up to 7 cm thick; **tubes** layered, pale buff, up to 1.5 cm thick; **pore surface** pale buff; **pores** round, 4–5 per millimetre, edges thick, entire.

Hyphal system trimitic. **Generative hyphae** 2.0–3.5 µm diameter with clamp connections; **skeletal hyphae** 3–5 µm diameter; **binding hyphae** 1.5–2.5 µm diameter; **cystidia** lacking; **basidia** clavate, typically with a short stem, 19–27 × 7–9 µm, four sterigmate; **basidiospores** broadly ellipsoid, 5–6 × 3.0–4.5 µm, walls weakly dextrinoid, ornamented with minute spines.

Notes: The odour is distinctive and detectable even when the basidiomata are metres away. Basidiomata of *Gloeophyllum odoratum*, *Ischnoderma resinosum*, and *Trametes suaveolens* also emit the odour of anise. *Gloeophyllum odoratum* and *Trametes suaveolens* have larger basidiospores (7.5–12 µm long) than *H. odorus*. *Gloeophyllum odoratum* is confined to conifers and has basidiospores cylindrical, 7.5–11.0 × 3.0–4.5 µm; *Ischnoderma resinosum* has a pore surface white to pallid, staining brown to fuscous where bruised, and basidiospores allantoid, 4–7 × 1.5–2 µm.

HETEROBASIDION BREF.

Heterobasidion annosum species complex

Habitat/range: On live and dead conifers, especially *Tsuga heterophylla*, occasionally on hardwoods, causing a white stringy rot that contains small black flecks. A root pathogen that causes significant tree mortality in BC, especially in second-growth, thinned stands of *T. heterophylla*. In Haida Gwaii (Kroeger et al. 2012) and widespread in the southern half of BC. Widespread elsewhere in western North America from AK to NM.



Basidiomata sessile, reflexed or effuse, annual or perennial, up to 9 cm wide \times 15 cm long \times 5 cm thick; **pileus** dimidiate, sometimes elongated horizontally along the substrate, sometimes imbricate; **pileus surface** sulcate, a thin, brown to blackish brown crust that is initially glabrous or covered with a tomentum becoming roughened and irregular; **margin** generally cream; **context** ivory, corky, up to 1 cm thick; **tubes** ivory, indistinctly stratified, each layer up to 3 mm thick; **pore surface** typically cream, staining dark reddish brown with Melzer's reagent; **pores** round to angular, 4–5 per millimetre, edges thick, entire, becoming thin, lacerate.

Hyphal system dimitic. **Generative hyphae** 2.5–5.0 μm diameter with simple septa; **skeletal hyphae** 3.0–5.5 μm diameter, occasionally branched, walls dextrinoid; cystidia lacking; **basidia** clavate, 16–22 \times 5–6 μm , four sterigmate; **basidiospores** subglobose to ovoid, 4.5–6.5 \times 3.5–4.5 μm , walls hyaline, thin, ornamented with minute spines (Figure 61, page 11), neither amyloid nor dextrinoid.

Notes: The cream-coloured pores and margin, as well as the sulcate, thin, brown to blackish brown crust on the pileus surface are good field characters. The white rot with small black flecks also occurs in *Junghuhnia zonata* and *Perenniporia subacida*. The dextrinoid staining of the skeletal hyphae in some basidiomata is hardly discernable and can take hours to develop.

Basidiomata of *Fomitopsis pinicola* having the pileus surface yellow brown to nearly black resemble *H. annosum*. *Fomitopsis pinicola* has a smooth, glabrous pileus surface and the crust boils when heated with a flaming match.

The names *Heterobasidion annosum* and *Fomes annosus* have been used in North America for over 60 years. Recent studies, especially employing molecular phylogenetics, concluded that several morphologically similar species have been mislabelled as *H. annosum*. The results indicate that *H. annosum* is restricted to Europe and two species segregated from the complex occur in British Columbia. Morphological differences between the two do exist, but these are variable and not distinctive. The following set of features should result in the accurate naming of most basidiomata occurring in British Columbia.

- 1a Basidiomata primarily on species of *Pinus* and *Juniperus*; pores about 10% or more radially elongated to somewhat daedaleoid; pore density 7.3 ± 0.12 pores per square millimetre..... *H. irregulare* Garbel. & Otrosina
- 1b Basidiomata primarily on species of *Abies*, *Tsuga*, and *Pseudotsuga*; pores round to elliptical with about 6% elongated to somewhat daedaleoid; pore density 8.6 ± 0.07 pores per square millimetre *H. occidentale* Otrosina & Garbel.

HYPHODONTIA J. ERIKSS.

Hypodontia latitans
(Bourdot & Galzin)

Ginns & Lefebvre

Syn. *Chaetoporellus*

latitans (Bourdot &

Galzin) Bondartsev &

Singer

Habitat/range: On conifers, preferring *Pinus* species, causing a white rot. In BC, known from one collection in Penticton where it was growing on the inner surface of loose bark of a 24 cm diameter *P. ponderosa* log. Elsewhere in western North America, known only from AZ and NM.



Basidiomata effuse, annual, soft, typically fertile to the margin; **margin** indistinct, finely granular, pruinose; **context** tan to pale buff, less than 1 mm thick; **tubes** cream buff, continuous with the context, up to 2 mm deep; **pore surface** cream to tan; **pores** angular to round, sometimes labyrinth-like, 1–3 per millimetre, edges entire, becoming lacerate.

Hyphal system monomitic. **Hyphae** 2–4 µm diameter with clamp connections, walls slightly thickened; **cystidia** numerous, cylindrical or broadest at the midpoint, 25–35 × 3.0–4.5 µm, projecting up to 10 µm, apex broadly rounded, walls thin, lacking encrustations; **basidia** clavate, 10–12 × 3.0–3.5 µm, four sterigmate; **basidiospores** allantoid, 3.5–5.0 × 0.5–0.8 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The effuse, thin basidiomata with a cream to tan pore surface, cylindrical cystidia, and relatively small allantoid basidiospores distinguish *H. latitans*.

Inocutis rheades

(Pers.) Fiasson &

Niemelä

Syn. *Inonotus rheades*

(Pers.) Bondartsev &

Singer

Habitat/range: On live and dead *Populus tremuloides*, causing a white rot.

In BC, known from two collections at Makinson Flats (Nelson area). Elsewhere in western North America, known from NT, ID, and MT, and only on *Populus*.

Basidiomata sessile or reflexed, annual, up to 5 cm wide × 8 cm long × 3 cm thick; **spore print** rusty brown; **pileus** applanate to hoof-like; **pileus surface** pale yellowish brown, tomentose, becoming glabrous and black; **context** fibrous, up to 2 cm thick, bright yellowish brown, lustrous, becoming darker and rusty brown, xanthochroic; **core** hard, brown with white flecks, granular; **tubes** concolourous with the context, up to 1 cm deep; **pore surface** pale yellowish brown, becoming dark reddish brown; **pores** angular, 2–4 per millimetre, edges thin, lacerate.



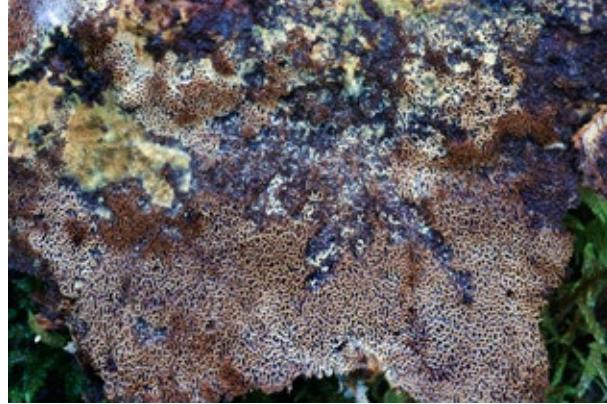
Hyphal system monomitic. **Hyphae** in the fibrous context either (a) parallel, 3–7 µm diameter, rarely branched, walls pale yellowish to dark reddish brown, thickened or (b) 2–4 µm diameter, much branched, walls pale to dark brown, moderately thick; hyphae in the core much branched, either 2–3 µm diameter with walls pale yellowish and moderately thick or up to 10 µm diameter, contorted or lobed with walls dark reddish brown and thick; **sclerids** in the granular core, contorted, up to 10 µm diameter, walls dark reddish brown, thickened; **cystidia**, **setae**, and **setal hyphae** lacking; **basidia** clavate, 14–16 × 5–6 µm, four sterigmate; **basidiospores** broadly ellipsoid to ovoid, 5–6 × 3.5–4.0 µm, walls pale golden brown, thickened, neither amyloid nor dextrinoid.

INONOTOPSIS PARMASTO

***Inonotopsis subiculosa* (Peck) Parmasto**

Syn. *Inonotus subiculosus*
(Peck) J. Erikss. & Å. Strid

Habitat/range: On conifers, causing a white rot. In BC, known from two collections on *Pseudotsuga menziesii* at Prince George. Elsewhere in western North America, known from AB, MT, and CO.



Basidiomata effuse, up to 10 cm diameter, annual, soft, cottony or felt-like, separable; **margin** yellowish brown, soft, loosely matted, fimbriate, up to 2 mm wide; **context** yellowish brown, very soft, cottony, up to 2 mm thick, xanthochroic; **tubes** paler yellowish brown than context, soft, up to 2 mm thick; **pore surface** yellowish brown; **pores** angular to sinuous, 1–3 per millimetre, edges thick, splitting (so some pores coalesce), tomentose, becoming lacerate.

Hyphal system monomitic. **Hyphae** 4–9 µm diameter with simple septa, walls pale yellowish brown to reddish brown, thin to thickened; **cystidia**, **setae** and **setal hyphae** lacking; **basidia** clavate, 14–20 × 6–8 µm, four sterigmate; **basidiospores** broadly ellipsoid to ovoid, 6.0–8.5 × 4.5–5.5 µm, walls hyaline, thin, neither amyloid nor dextrinoid.

INONOTUS P. KARST.

Habitat: On trunks of live and dead hardwoods, causing a white rot, with *I. obliquus* forming sterile conks.

Basidiomata pileate, reflexed and effuse, annual and perennial; **pileus** applanate, sometimes imbricate, up to 4 cm wide × 10 cm long × 1.8 cm thick; **pileus surface** yellowish brown, tomentose or radially fibrillose, becoming glabrous, nearly black, rimose, smooth or shallowly sulcate; **context** bright yellowish brown to reddish brown, firm, fibrous or corky, up to 1 cm thick, often with a dark brown layer beneath the surface tomentum that becomes the pileus surface when the tomentum weathers away, xanthochroic; **tubes** pale brown, golden brown to dark yellowish brown, often stuffed with white mycelium, up to 8 mm deep; **pore surface** pale brown, greyish brown, becoming dark reddish brown, glancing; **pores** round to angular, 3–8 per millimetre; **sterile conks** only in *I. obliquus*, medium to large, surface black, coarsely rimose.

Hyphal system monomitic. **Hyphae** 2.5–11.0 µm diameter with simple septa, walls thin to thickened, dark brown, pale yellow, pale brownish to nearly hyaline; **setae** in the hymenium, few to many, subulate to ventricose, 16–40 × 5–11 µm; **setal hyphae** in the trama and context or in *I. cuticularis* on the pileus surface; **basidia** broadly clavate, 9–21 × 5–12 µm, four sterigmate; **basidiospores** broadly ellipsoid to ovoid, 5–11 × 4.0–6.5 µm, walls pale to dark yellowish brown, thin or slightly thickened, neither amyloid nor dextrinoid.

- | | | |
|----|---|-----------------------|
| 1a | Basidiomata pileate..... | 2 |
| 1b | Basidiomata effuse..... | 3 |
| 2a | Pileus surface yellowish brown; branched setal hyphae
on the pileus surface | <i>I. cuticularis</i> |
| 2b | Pileus surface often covered with a yellow basidiospore
deposit; lacking setal hyphae on the pileus surface..... | <i>I. glomeratus</i> |
| 3a | On <i>Populus</i> , rarely on other hardwoods; basidiospores
5–7 µm long..... | <i>I. glomeratus</i> |
| 3b | On <i>Betula</i> ; basidiospores 9–11 µm long..... | <i>I. obliquus</i> |

***Inonotus cuticularis* (Bull.) P. Karst.**

Habitat/range: On hardwoods, causing a white rot. In BC, known from one collection on *Quercus garryana* in Victoria. Widely scattered in western North America from AK, WA, UT, AZ, and CA.

Basidiomata pileate, sessile, annual, dimidiate, up to 5 cm wide × 11 cm long × 1.8 cm thick; **spore print** bright yellowish brown; **pileus** applanate, sometimes imbricate; **pileus surface** yellowish brown, tomentose or radially fibrillose, becoming glabrous, nearly black, rimose, smooth or shallowly sulcate; **context** bright yellowish brown to reddish brown, firm, fibrous, up to 1 cm thick, often with a dark brown layer beneath the surface tomentum that becomes the pileus surface when the tomentum weathers away; **tubes** pale brown, often stuffed with white mycelium, up to 8 mm deep; **pore surface**



pale brown, glancing; pores angular, 4–5 per millimetre, edges thin, entire or fimbriate to granulose.

Hyphae (a) 5–11 μm diameter with simple septa, infrequently branched, walls thin to thickened, pale yellow or (b) 2.5–5.0 μm diameter with simple septa, frequently branched, walls thin to thickened, pale brown to nearly hyaline; setae in the hymenium, few to many, subulate to ventricose, 16–30 \times 6–11 μm , apex often curved, rarely project beyond the basidia, walls relatively pale, only moderately thick; **setal hyphae** on the pileus surface, abundant, typically much branched, apices often curved, up to 12 μm diameter, walls thickened, pigmented; **basidiospores** broadly ellipsoid to ovoid, 6–8 \times 4.5–5.5 μm , walls pale to dark yellowish brown.

Notes: Very few species have branched setal hyphae on the surface of the pileus.

***Inonotus glomeratus*
(Peck) Murrill**

Habitat/range: On live and dead hardwoods, causing a white rot. In BC, known from Cinema on *Populus balsamifera* ssp. *trichocarpa* and Summerland on *Populus* sp. Elsewhere in western North America, known from AB, ID, MT, OR, and WY.

Basidiomata effuse, covering up to 2 m on logs, to reflexed, often imbricate; **spore print** bright golden yellow; **pileus** up to 4 cm wide \times 10 cm long \times 1.7 cm thick; **pileus surface** yellowish brown, finely tomentose, becoming glabrous, often powdery and yellow related to a basidiospore deposit; **context** up to 1 cm thick, golden brown to dark yellowish brown, shiny when cut, fibrous-corky, often with a hard, black layer near the upper surface; **tubes** up to 7 mm deep, golden brown to dark yellowish brown with a darker line bordering the context; **pore surface** greyish brown, glancing; **pores** angular, 3–5 per millimetre, edges thin, tomentose, becoming lacerate.



Hyphae 3–7 µm diameter, rarely branched, walls thin to thickened, hyaline to pale yellowish brown; **setae** in the hymenium, abundant, subulate to ventricose, 16–28 × 5–9 µm, walls thickened, pigmented; **setal hyphae** in the trama and context, tapering to an acute tip, up to 250 (–500) × 7–15 µm, some projecting through the hymenium, walls dark reddish brown, thick; **basidiospores** broadly ellipsoid to ovoid, 5–7 × 4.0–5.5 µm, walls pale yellowish.

Inonotus obliquus
(Ach. ex Pers.) Pilát
Clinker polypore

Habitat/range: On live and dead species of *Betula*, causing a white rot of the sapwood. The presence of one sterile conk indicates 50–100% cull. Scattered from Kispiox in the north through the interior of BC. Elsewhere in western North America, known from YT, NT, AB, SK, ID, and MT.



Basidiomata effuse, annual, hard, brittle, separable, developing under the bark; **margin** fertile; **context** bright yellowish brown, corky, up to 3 mm thick; **tubes** becoming dark reddish brown, brittle, up to 3 mm deep; **pore surface** becoming dark reddish brown; **pores** round, 6–8 per millimetre, edges thick, becoming thin, lacerate; **sterile conks** up to 30 cm long, 15 cm diameter, perennial, black, rimose, very rough, hard, the surface flaking off in small cubes.

Hyphae 3.5–7.0 µm diameter, walls thin to moderately thick, dark brown; **setae** in the hymenium, numerous, subulate to ventricose, 16–40 × 5–7 µm; **setal hyphae** infrequent, in cottony mycelium near margins and in context, 7 µm diameter, cylindrical with the apical ± 30 µm tapering to an acute tip, walls thickened, brown; **basidiospores** broadly ellipsoid to ovoid, 9–11 × 5.5–6.5 µm, walls hyaline, pale yellow or pale brown, slightly thickened.

Notes: The sterile conks, also called clinkers, develop on living trunks. Because these conks persist for years, they are the most commonly seen feature of *I. obliquus*; the basidiomata develop only after the tree has died, are hidden under the bark, and are soon destroyed by beetles after the bark splits. A volume of literature exists on the medicinal values of chaga, the Russian name for the sterile conks. Laboratory studies on chaga extracts indicate possible potential in cancer therapy, as an antioxidant, in immunotherapy, and as an anti-inflammatory.

***Irpe*x lacteus**

(Fr.) Fr.

Milk-white toothed
polypore

Habitat/range: On dead hardwoods, causing a white rot. Widespread in the southern half of BC. Widespread elsewhere in western North America.



Basidiomata effuse, reflexed, occasionally sessile, poroid near the margin, toothed on the older areas; **pileus** narrow, elongated, ~1.5 cm wide × 1–4 cm long × 0.1–2.0 cm thick, often laterally confluent, often imbricate, typically leathery; **pileus surface** white or near white, appressed tomentose with a thin layer of fibrils; **context** white to faintly tan, soft-fibrous, up to 2 mm thick; **hymenium** covering flattened, irregular spines and lining the few pores at the growing margin, white to cream.

Hyphal system dimitic. **Generative hyphae** 2–4 µm diameter with simple septa; **skeletal hyphae** 2.5–6.0 µm diameter; **cystidia** numerous, apparently the tips of skeletal hyphae that project into and up to 40 µm beyond the hymenium, walls thickened, hyaline, granule-encrusted over the apical 60 µm; **basidia** clavate, 20–25 × 4–6 µm, four sterigmate; **basidiospores** 5–7 × 2–3 µm, cylindrical, some slightly curved, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The tooth-shaped projections on the lower surface, the lack of clamp connections, and the crystal-encrusted cystidia in the hymenium distinguish it from other polypores, including faded basidiomata of *Trichaptum* species that have lost their violet colour. The *Trichaptum* cystidia are much smaller and only capped with crystals, not encrusted.

Ischnoderma resinosum
(Schrad.) P. Karst.
Resinous polypore

Habitat/range: On dead hardwoods and conifers, especially *Tsuga* and *Abies*, causing a white rot. The rotted wood has an anise odour. Widespread in the southern half of BC. Elsewhere in western North America, known from AK, WA, ID, MT, OR, CA, CO, and AZ.



Pileus 3–15 cm wide × 7–25 cm long × 1–4 cm thick, applanate, semicircular to reniform; **odour** when present of anise; **pileus surface** at first a thin, golden-yellow tomentum that soon wears off, revealing an agglutinated, resinous, radially wrinkled, very dark-brown layer with the texture of fine sandpaper; **context** tough-fleshy becoming corky, pale beige when young, then pale brown; **tubes** 1–10 mm deep; **pore surface** white to pallid, staining brown to fuscous where bruised, dark brown when old; **pores** 4–6 per millimetre, round to angular.

Hyphal system dimitic. **Generative hyphae** 4–12 µm diameter with clamp connections, walls thick with a few thin, hyaline, except hyphal walls on the pileus surface are thickened and pigmented; **skeletal hyphae** in the trama, straight, 3–10 µm diameter, walls thick, sometimes obscuring the cell lumen, becoming faintly yellow; **cystidia** lacking; **basidia** clavate, 12–18 × 4.5–6.0 µm, four sterigmate; **basidiospores** 5–7 × 1.5–2 µm, allantoid, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The anise odour and dark-brown pileus surface are good field characters. Basidiomata of *Gloeophyllum odoratum*, *Haploporus odorus*, and *Trametes suaveolens* also emit the odour of anise.

JAHNOPORUS NUSS

***Jahnoporus hirtus*
(Cooke) Nuss**

Syn. *Polyporus hirtus*
Cooke

Bitter polypore,
Bitter iodine polypore

Habitat/range: On the ground, arising from coniferous roots, occasionally on stumps, presumably causing a white rot but data are lacking. In Haida Gwaii (Kroeger et al. 2012) and scattered across the southern half of BC. Elsewhere in western North America, known from WA, ID, OR, CA, CO, and AZ.



Basidiomata solitary, stipitate, occasionally several pilei from a branched stipe; **odour** fragrant, nutlike, some with an odour of iodine evident soon after picking; **taste** bitter; **stipe** central to lateral, up to 10×4 cm, up to 40% of the stipe buried, surface typically brown and velvety; **pileus** circular, up to 15 cm diameter; **context** white, firm, corky, up to 1 cm thick; **tubes** decurrent, up to 8 mm deep; **pore surface** white to pallid; **pores** angular, 1–2 per millimetre, edges thin, entire to lacerate.

Hyphal system monomitic. **Hyphae** with clamp connections, in the context 5–11 (–16) μm diameter, walls thick, hyaline, in the trama 2.5–4 μm diameter, walls thin, hyaline; **cystidia** lacking; **basidia** clavate, 32–43 \times 9–12 μm , four sterigmate, each up to 2.5 μm diameter; **basidiospores** narrowly ellipsoid, 12–17 \times 4.5–5.5 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The brown, velvety stipe, white pores, bitter taste, and (if present) iodine odour are sufficient to identify most collections of *J. hirtus*. *Polyporus radicatus* is similar in general appearance but differs in having a scurfy, elongated, rooting, blackish brown stipe, skeletal hyphae, and wider basidiospores (6–8 μm diameter).

Habitat: On hardwoods and conifers, causing a white rot.

Basidiomata effuse, annual, up to 20 cm diameter, separable or adnate, fragile to tough; **margin** ivory white, cream, pale ochreous buff, pale pinkish buff, finely tomentose, fimbriate, up to 1 cm wide, some with strands; **context** ivory white, cream to pale buff, pale pinkish buff, less than 5 mm thick, fibrous; **tubes** ivory white, pale pinkish buff, up to 5 mm deep; **hyphal pegs** typically abundant; **pore surface** ivory white, cream, pale buff to pinkish buff, ochreous buff to pinkish cinnamon, cinnamon, orange cinnamon to vinaceous cinnamon; **pores** round to angular, 1–8 per millimetre, edges thick, entire, becoming lacerate.

Hyphal system dimitic. **Generative hyphae** 2–8 µm diameter with clamp connections; **skeletal hyphae** 2–7 µm diameter; **cystidia** the apical portions of skeletal hyphae, some projecting up to 40 µm beyond the hymenium, abundant, sometimes uncommon, narrowly conical to subulate, slenderly clavate, clavate to fusoid, 8–15 µm diameter, walls thick, encrusted over the apical ~70 µm; **cystidioles** only in *J. luteoalba* fusoid, 13–27 × 4–5 µm; **basidia** clavate, 14–30 × 5–7 µm, four sterigmate; **basidiospores** cylindrical, straight to allantoid, 4.0–7.5 × 1–2 µm, or ovoid, ellipsoid, broadly ellipsoid, 3.5–5.0 × 2.0–3.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Basidiomata on hardwoods; basidiospores ellipsoid, broadly ellipsoid to ovoid, 2.0–3.5 µm wide 2
- 1b Basidiomata on conifers; basidiospores cylindrical, straight or allantoid, 1–2 µm wide 3
- 2a Strands lacking; pores 5–7 per millimetre; pore surface ochreous buff to pinkish cinnamon; basidiospores 2.0–2.5 µm wide *J. nitida*
- 2b Typically with strands in the margin; pores 2–5 per millimetre; pore surface pale buff to pinkish buff; basidiospores 3.0–3.5 µm wide *J. lacera*
- 3a Pore surface ivory white; basidiospores 5.0–7.5 µm long *J. zonata*
- 3b Pore surface cream to orange cinnamon; basidiospores 3.5–5.0 µm long 4
- 4a Pore surface orange cinnamon; basidiospores distinctly curved *J. collabens*
- 4b Pore surface cream; basidiospores straight to slightly curved *J. luteoalba*

Junghuhnia collabens
(Fr.) Ryvarden

Habitat/range: On conifers, causing a white pitted rot. In BC, known from the Prince George area south to Falkland. Elsewhere in western North America, known from AB, ID, MT, OR, CO, and AZ.



Basidiomata effuse, tough, up to 20 cm diameter; **margin** pale pinkish buff, finely tomentose, up to 2 mm wide; **context** pale pinkish buff, tough-fibrous, less than 1 mm thick; **tubes** pale pinkish buff, up to 5 mm deep; **hyphal pegs** typically present; **pore surface** cinnamon, orange to vinaceous cinnamon; **pores** round to angular, 3–4 per millimetre, edges thick, entire, becoming thin, lacerate.

Generative hyphae 2–6 (–8) μm diameter with clamp connections; **skeletal hyphae** 2–6 μm diameter; **cystidia** usually common, rare in some collections, slenderly clavate, apex obtusely rounded, 9–11 μm diameter, walls thick, encrusted over the apical $\sim 70 \mu\text{m}$; **basidiospores** allantoid, 3.5–5.0 \times 1.0–1.5 μm .

Junghuhnia lacera
(P. Karst.) Niemelä &
Kinnunen

Syn. *Junghuhnia separabilima* (Pouzar)
Ryvarden

Habitat/range: On hardwoods, causing a white rot. In BC but specific location(s) not given (Gilbertson and Ryvarden 1986). Rare elsewhere in western North America, known from WY, CO, and AZ.



Basidiomata effuse, annual, up to 5 cm diameter, fragile, separable; **margin** cream, fimbriate, some with strands; **context** ivory white, fibrous, less than 1 mm thick; **tubes** ivory white, up to 1 mm deep; **pore surface** pale buff to pinkish buff; **pores** angular, irregular, 2–5 per millimetre, edges thin, becoming lacerate.

Generative hyphae 1.5–5.0 μm diameter with clamp connections, **skeletal hyphae** 2–4 μm diameter; **cystidia** the apical portions of skeletal hyphae, some projecting up to 30 μm beyond the hymenium, abundant, clavate to fusoid, 8–15 μm diameter, walls thick, encrusted over the apical ~ 50 μm ; **basidiospores** ovoid to ellipsoid, 3.5–5.0 \times 3.0–3.5 μm .

Notes: *Junghuhnia fimbriatella* (Peck) Ryvarden occurs on hardwoods in Yukon, Alberta, and Washington but has not yet been reported from British Columbia. It has a cream to pale buff pore surface and smaller, ovoid to somewhat oblong basidiospores (3.0–3.5 \times 1.5–2.0 μm).

***Junghuhnia luteoalba*
(P. Karst.) Ryvarden**

Habitat/range: On conifers, causing a white, pitted, laminated rot. In BC, known only from Cinema and Bolean Lake. Elsewhere in western North America, known from AB, ID, MT, OR, CO, and AZ.



Basidiomata effuse, annual, up to 20 cm diameter, tough, adnate; **taste** mild; **margin** ivory white, thin, slightly fimbriate, up to 1 mm wide; **context** cream to pale buff, tough-fibrous, less than 1 mm thick; **tubes** cream to pale buff, up to 2 mm deep; **hyphal pegs** typically abundant; **pore surface** cream, darkening to yellow or orange; **pores** round to angular, 4–8 per millimetre, edges thin, lacerate.

Generative hyphae 2–4 μm diameter with clamp connections; **skeletal hyphae** 2–4 μm diameter; **cystidia** generally frequent, in some collections uncommon, narrowly clavate to fusoid, 9–14 μm diameter, walls thick, encrusted with relatively large, angular crystals; **cystidioles** fusoid, 13–27 \times 4–5 μm ; **basidiospores** cylindrical, some slightly curved, 4–5 \times 1.5–2.0 μm .

Junghuhnia nitida
(Fr.) Ryvarden

Habitat/range: On hardwoods, rarely on conifers, causing a uniform white rot. In BC, on *Populus* and *Alnus* at Cinema, Quesnel, Kootenay Lake, and on Vancouver Island at Cowichan Lake. Elsewhere in western North America, known from WA, ID, OR, and AZ.



Basidiomata effuse, up to 10 cm diameter, tough-fibrous; **margin** pale ochreous buff, finely tomentose, up to 2 mm wide; **context** cream to pale pinkish buff, fibrous, up to 1 mm thick; **tubes** cream to pale pinkish buff, up to 1 mm deep; **pore surface** of various colours, ochreous buff to pinkish cinnamon; **pores** angular, 5–7 per millimetre, edges thin, entire.

Generative hyphae 2–4 µm diameter with clamp connections; **skeletal hyphae**, 2–4 µm diameter; **cystidia** the apical portions of skeletal hyphae, some projecting up to 30 µm beyond the hymenium, conspicuous, numerous, cylindrical to clavate, 5–10 µm diameter, walls thick, encrusted over the apical ~ 40 µm; **basidiospores** broadly ellipsoid to ovoid, 4.0–4.5 × 2.0–2.5 µm.

Notes: The distinctive features are the pinkish cinnamon pore surface, abundant cystidia, and relatively wide basidiospores.

Junghuhnia zonata
(Bres.) Ryvarden

Habitat/range: On conifers, causing a white pocket rot with black flecks. In BC, known from two collections on *Pseudotsuga menziesii* at Victoria and *Tsuga heterophylla* at Agassiz. Elsewhere in western North America, known from WA, ID, MT, CA, and NM.

Basidiomata effuse, annual, up to 6 cm diameter, separable; **taste** slightly rancid; **margin** ivory white, finely tomentose, typically concentrically zonate and fimbriate, up to 1 cm wide; **context** ivory white, less than 5 mm thick, tough-fibrous; **tubes** ivory white, up to 4 mm deep; **pore surface** ivory white; **pores** angular, 1–2 per millimetre, edges thick, entire, becoming lacerate.

Generative hyphae 2.5–5.5 µm diameter with clamp connections; **skeletal hyphae** 2.5–7.0 µm diameter; **cystidia** abundant, narrowly conical to subulate, 40–70 × 8–14 µm, walls thick, encrusted just over the apex or nearly



over the entire length; **basidiospores** cylindrical, slightly to distinctly curved,
 $5.0\text{--}7.5 \times 1.5\text{--}2.0 \mu\text{m}$.

Notes: The rotted wood with black flecks is similar to the decays caused by *Heterobasidion annosum* and *Perenniporia subacida*. Basidiomata typically form on bark with a mycelial mat developing beneath the bark.

LAETIPORUS MURRILL

Basidiomata large, sessile or with lateral stipe, imbricate; **stipe surface** bright orange to salmon orange; **pileus** 3–30 cm wide × 4–30 cm long × 1–3 cm thick, convex, becoming plane or nearly so, fan-shaped, conchate, dimidiate, applanate; **pileus surface** pale salmon orange to bright orange, rugose, dry, appressed-fibrillose; **context** up to 2 cm thick, white, pale yellow or salmon, soft but rigid, somewhat fibrous when fresh, very brittle when dry; **tubes** yellow, 1–5 mm deep; **pore surface** sulphur yellow to pale lemon yellow; **pores** 2–5 (–7) per millimetre, round to angular.

Hyphal system trimitic. **Generative hyphae** up to 10 µm diameter with simple septa, walls thin to 1 µm thick; **binding hyphae** in the context, up to 15 µm diameter with the occasional simple septum, branches often dendritic; **skeletal hyphae** in the trama, 4–6 µm diameter with the occasional simple septum; **basidia** clavate to pyriform-clavate, 15 × 7.5 µm, four sterigmate; **basidiospores** broadly ellipsoid to broadly ovoid, 5.0–8.0 × 3.5–5.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: Key features of the genus are annual habit, bright colours (yellow, orange, and red), large basidiomata, production of brown rot, trimitic hyphal system, and lack of both clamp connections and cystidia. Previously, the name *Laetiporus sulphureus* (Bull.) Murrill was applied to specimens in western North America, and the fungus was considered to be variable, both morphologically and ecologically. Research in the past two decades revealed that *L. sulphureus* was a complex of several species and, in western North America, *L. conifericola* and *L. gilbertsonii* were segregated from the complex.

- 1a Basidioma on hardwoods; basidiospores 5.0–6.5 × 3.5–4.5 µm *L. gilbertsonii*
- 1b Basidioma on conifers; basidiospores 6.5–8.0 × 4–5 µm *L. conifericola*

Laetiporus conifericola

Burds. & Banik
Western chicken
polypore

Habitat/range: On large, living, and dead conifers. In BC, known from Haida Gwaii (Kroeger et al. 2012), Vancouver Island (Long Beach in Pacific Rim National Park Reserve to Sooke), the Vancouver area and Oliver. Elsewhere in western North America, known from AK, WA, ID, OR, NV, and CA.

Basidiomata imbricate, sessile or with lateral stipe; **stipe** bright orange to salmon orange; **pileus** 3–30 cm wide × 4–30 cm long × 1.0–2.5 cm thick, convex becoming plane or nearly so, fan-shaped, conchate, applanate; **pileus surface** pale salmon orange to bright orange, rugose, dry, appressed-fibrillose; **context** up to 1 cm thick, white, pale yellow, or salmon, soft but rigid, somewhat fibrous when fresh, very brittle when dry; **tubes** 1–4 mm deep, yellow; **pore surface** sulphur yellow to lemon yellow; **pores** 3–5 (–7) per millimetre, round.



Generative hyphae rarely branched, 3–5 µm diameter with simple septa, walls thin, hyaline, not dissolving in KOH; binding hyphae 4–12 µm diameter, typically with frequent dendritic branches, dissolving in KOH; skeletal hyphae 4–6 µm diameter, undulating, dissolving in KOH; basidia pyriform-clavate, 15 × 7.5 µm; basidiospores 6.5–8.0 × 4–5 µm, broadly ellipsoid to broadly ovoid, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Laetiporus gilbertsonii

Burds.

Habitat/range: On live and dead trunks and logs of hardwoods. In BC, on *Populus balsamifera* (presumably ssp. *trichocarpa*) and *Quercus garryana* on Vancouver Island (Oyster River and Victoria). Elsewhere in western North America, known from CA, OR, and WA.



Basidiomata dimidiate, imbricate, up to 15 cm wide × 20 cm long × 3 cm thick, sessile or laterally stipitate; **pileus surface** pale salmon orange, pale pinkish orange, in age tan to light brown; **stipe surface** pigmentation same as pileus surface; **context** pale yellow to near white, up to 2 cm thick; **tubes**

up to 5 mm deep; pore surface lemon yellow to pale lemon yellow; pores 2–4 per millimetre, round to angular, decurrent down stipe.

Generative hyphae up to 10 µm diameter with simple septa, walls thin, not dissolving in KOH; binding hyphae in the context, woven, 4–15 µm diameter with the occasional simple septum, walls 1–3 µm thick, dissolving in KOH; skeletal hyphae in the trama, 4–6 µm diameter, essentially parallel, undulating, with the occasional simple septum, walls 1.0–1.5 µm thick, dissolving in KOH; basidia clavate, 15 × 7.5 µm, four sterigmate; basidiospores broadly ellipsoid to broadly ovoid, 5.0–6.5 × 3.5–4.5 µm.

LENZITES FR.

Lenzites betulina

(L.) Fr.

Birch lenzites, Gilled
polypore

Habitat/range: On hardwoods, occasionally on conifers, causing a white rot. In BC on Vancouver Island, and in the Interior from Prince George south to Kaslo and Haney. Elsewhere in western North America, known from YT, AB, SK, WA, ID, MT, OR, and CA.



Basidiomata sessile, annual, tough, often several in a cluster; **pileus** dimidiate, applanate, corky to leathery, 2–8 cm wide × 2–12 cm long × 0.3–1.4 cm thick; **pileus surface** tomentose to hispid, concentrically zonate, white, becoming grey to cream; **context** white, fibrous, 0.1–0.2 cm thick; **lamellae** thin, radiating, some dichotomously branched, white, becoming cream to ochreous, darker than context, up to 1.2 cm deep.

Hyphal system trimitic. **Generative hyphae** with clamp connections, up to 5 µm diameter, walls thin to moderately thick; **skeletal hyphae** predominate in the tomentum, 3–7 µm diameter; **binding hyphae** numerous, up to 10 µm diameter, in the context branches thin, attenuated, in the trama lance-shaped straight; no **cystidia** arising in the hymenium but the lance-shaped, apices of binding hyphae that project into the hymenium resemble skeletocystidia; **basidia** clavate 15–20 × 5–6 µm, four sterigmate; **basidiospores** cylindrical to suballantoid, 5–6 × 2–3 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: See species account for *Trametes versicolor* in which Table 4 serves to contrast several similar polypores.

LEPTOPORUS QUÉL.

***Leptoporus mollis* (Pers.) Quél.**



Habitat/range: On dead conifers, causing a brown cubical rot. In BC, known from southern Vancouver Island, the Sechelt area, Manning Park, Penticton, and east to the New Denver area. Elsewhere in western North America, known from AB and WA south to CA and NM.

Basidiomata sessile, reflexed, rarely effuse, up to 6 cm wide × 9 cm long × 4 cm thick; **pileus** solitary, dimidiate, elongated; **pileus surface** pinkish white or pale reddish purple, becoming purplish brown, finely tomentose to glabrous, becoming rugose; **context** cream to pinkish buff, becoming pale pinkish brown, soft, felt-like, up to 0.7 cm thick; **tubes** up to 1 cm deep; **pore surface** white to pale reddish purple, becoming dark purplish brown; **pores** round to angular, 3–4 per millimetre, edges thick, entire.

Hyphal system monomitic. **Generative hyphae** 2.5–5.0 µm diameter with simple septa, branches common, diverging at a right angle, walls thin to thick; **cystidia** lacking; **basidia** clavate, 16–18 × 4–5 µm, four sterigmate; **basidiospores** allantoid, 5–6 × 1.5–2.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: Similar to some species of *Postia*, although all have clamp connections. The basidiospore sizes are from three Okanagan Valley collections. See Table 2, page 38, under *Amylocystis lapponica*, in which three similar species are compared with *L. mollis*.



***Mensularia radiata*
(Sowerby) Lázaro
Ibiza**

Syn. *Inonotus radiatus*
(Sowerby) P. Karst.

Habitat/range: On hardwoods, causing a white rot. In BC, known from one collection on a decorticated *Populus tremuloides* log near Terrace (Miller and Gilbertson 1969). Elsewhere in western North America, known from AK, WA, ID, MT, and OR.



Basidiomata sessile or reflexed, annual, sometimes imbricate; **pileus** dimidiate, up to 3 cm wide × 5 cm long × 1.7 cm thick; **pileus surface** yellowish brown to reddish brown, becoming nearly black, concentrically zoned, finely tomentose, becoming glabrous; **context** yellowish brown to reddish brown, lustrous, up to 1 cm thick, xanthochroic; **tubes** darker brown than context, up to 7 mm deep; **pore surface** pale yellow brown, becoming darker brown; **pores** angular, 2–5 per millimetre, edges thin, tomentose, becoming lacerate.

Hyphal system monomitic. **Generative hyphae** 3–7 µm diameter with simple septa, walls pale yellowish brown, thin to slightly thickened; **setae** in the hymenium, infrequent, ventricose, some subulate, typically curved at the apex, 14–50 × 7–12 µm; **basidia** broadly clavate, 10–11 × 5–6 µm, four sterigmate; **basidiospores** narrowly ellipsoid to ovoid, 5.0–6.5 × 3.0–4.5 µm, walls thin, hyaline to faintly yellow, faintly dextrinoid.

MERULIPORIA MURRILL

***Meruliporia incrassata* (Berk. & M.A. Curtis) Murrill**

Syn. *Serpula incrassata*
(Berk. & M.A. Curtis)
Donk



Habitat/range: On conifers, infrequently on hardwoods, causing a brown rot. Primarily on structural timbers in buildings; also on discarded boards on the ground. Extensive mats of white to grey mycelium with hyphal strands develop in walls and crawl spaces. In BC, known from southern Vancouver Island (Cowichan Lake area, Nanaimo, and Victoria) and Abbotsford. Elsewhere in western North America, known from WA, ID, OR, and CA.

Basidiomata effuse, some quite extensive, annual, separable, soft; spore print rusty brown; **context** buff, soft, fibrous, up to 7 mm thick; **tubes** up to 6 mm deep; **pore surface** whitish or buff, ochreous grey, when old deep purplish black to dark brownish red; **pores** round to angular, some sinuous, 2–3 per millimetre, edges entire, thick.

Hyphal system monomitic. **Generative hyphae** 2.5–9.0 μm diameter with clamp connections and scattered simple septa, walls hyaline, thin; **cystidia** lacking; **basidia** narrowly clavate, 30–60 \times 7–9 μm , four sterigmate; **basidiospores** broadly ellipsoid, 10–16 \times 5–8 μm , walls smooth, thickened, brown, dextrinoid.

Notes: The brown, dextrinoid basidiospores are distinctive and are (in part) responsible for the darkening of the pore surface as the basidiomata age. Basidiomata of *Serpula lacrymans* (Wulfen) J. Schröt., the renowned dry rot fungus, are when young a similar buff colour. As the brown basidiospores accumulate, the pore surface darkens to brown and becomes densely and intricately folded. *Serpula lacrymans* differs in having smaller basidiospores (9–11 [–12.5] \times 4.5–6.0 [–7.0] μm).



Meruliporia incrassata



Serpula lacrymans

NEOALBATRELLUS AUDET

***Neoalbatrellus
subcaeruleoporus***
Audet & B. S. Luther

Habitat/range: On the ground, associated with *Abies grandis*, *Alnus* spp., *Picea sitchensis*, *Pseudotsuga menziesii*, and *Tsuga heterophylla*. In BC, known from near Spahats (Wells Gray Park), Roberts Creek (Vancouver area), Cortes and Vancouver islands. Elsewhere in western North America, known from WA, OR, and CA.



Basidiomata stipitate, solitary to gregarious, developing necropigments after drying; **stipe** central (sometimes 2 or 3 stipes have a common base), 1.5–3.5 cm long, 0.2–0.5 cm diameter, cylindrical, exterior glabrous, shiny, hard, core white; **pileus** 1.5–3.3 cm diameter, plane; **pileus surface** grey with a blue tint to greyish blue, smooth, dull; **context** white or cream to pale orange, 0.5–1.0 mm thick; **tubes** 0.7–1.0 mm deep; **pore surface** bluish grey to white or pallid; **pores** 2–4 per millimetre, angular.

Hyphal system monomitic. **Hyphae** 3–9 µm diameter, a few up to 20 µm with simple septa; **basidiospores** broadly ellipsoid to subglobose, 3.6–4.7 × 2.9–3.7 µm, walls not amyloid.

Notes: Previously, reports of this species in western North America were included under *Albatrellus caeruleoporus* (Peck) Pouzar.

ONNIA P. KARST.

Habitat: On the ground beneath conifers or on the base of live conifers, causing a white pocket rot.

Basidiomata stipitate, substipitate, sessile, occasionally forming a rosette, annual, stipe central to lateral, up to 3.5 cm long, surface tomentose; **pileus** centrally depressed, circular to flabelliform, when on wood sessile and applanate or triquetrous, often imbricate, up to 18 cm diameter; **pileus surface** pale buff, yellowish brown to dark brown, soft-velvety to glabrous; **context** up to 1 cm thick, duplex, upper layer a soft tomentose texture or somewhat spongy, yellow brown, lower layer firm, rusty brown, xanthochroic; **tubes** 2–8 (–10) mm deep, decurrent; **pore surface** pallid to yellow, becoming brown; **pores** 2–4 per millimetre, round to angular.

Hyphal system monomitic. **Hyphae** 3–9 µm diameter with simple septa; **setae** in the hymenium with straight or hooked apices, 50–80 × 7–20 µm; **basidia** clavate, 13–27 × 5–7 µm, 2–4 sterigmate; **basidiospores** ellipsoid to ovoid, 5–7 × 3–5 µm, walls hyaline, smooth, thin, not dextrinoid.

Notes: *Coltricia* species are similar but differ in having a shiny and concentrically zonate pileus surface; microscopically, setae are lacking and the basidiospores are yellow to yellow brown.

- 1a On the base of live conifer trunks..... *O. leporina*
- 1b On the ground under conifers..... 2
- 2a Basidioma typically under *Pinus*; pileus up to 18 cm diameter; setae with hooked apices..... *O. leporina*
- 2b Basidioma typically under *Picea*; pileus up to 11 cm diameter; setae with straight apices..... *O. tomentosa*

***Onnia leporina*
(Fr.) H. Jahn**

Habitat/range: On live conifers, preferring *Pinus* species, causing a white pocket rot of roots and butts or on the ground near conifers. Widespread in BC from Haida Gwaii to Terrace south to the BC/WA border and in most States in western North America.



Basidiomata typically solitary, some on wood and sessile, typically on the ground with a lateral or central stipe; **stipe** up to 2 cm diameter, surface tomentose; **pileus** sessile and applanate or triangular in vertical section, often imbricate, up to 18 cm diameter; **pileus surface** pale buff, yellowish brown to dark brown, soft-velvety to glabrous; **margin** yellow when growing; **context** up to 1 cm thick, duplex, upper layer a soft tomentose texture or somewhat spongy, yellow brown, xanthochroic, lower layer firm, rusty brown; **tubes** 2–8 (–10) mm deep, decurrent; **pore surface** pallid to yellow, becoming brown; **pores** 3–4 per millimetre, round to angular.

Hyphae 3–7 µm diameter; **setae** common, 50–80 × 12–20 µm with hooked tips; **basidiospores** 5.0–6.5 × 3–4 µm, ellipsoid to ovoid, walls hyaline, smooth.

Notes: For decades, this fungus was mislabelled in North America as *Inonotus circinatus*, *Onnia circinata*, and *Polyporus circinatus*. These three names are now considered synonyms of *O. tomentosa* (Ryvarden and Gilbertson 1993). Basidiomata of *O. tomentosa* occur on the ground and are generally smaller and thinner than those of *O. leporina*. Microscopically, the straight setae of *O. tomentosa* distinguish it from *O. leporina*.

***Onnia tomentosa*
(Fr.) P. Karst.**

Syn. *Inonotus tomentosus*
(Fr.) Teng, *Polyporus*
tomentosus Fr.
Woolly velvet polypore

Habitat/range: On the ground, presumably arising from live conifer roots because it causes a white pocket rot in roots of *Picea*. The pockets are hollow and separated by firm wood. The fungus spreads locally by root-to-root contact, resulting in patches of dead trees. Widespread in BC from Haida Gwaii to BC's southern Coastal and Interior Wet Belt forests. Widespread elsewhere in western North America, from AK to NM.



Basidiomata stipitate, occasionally growing as a substipitate rosette, sometimes several caps from one base; **stipe** central to lateral, some very short, up to 3.5 cm long, 1.5 cm diameter; **pileus** up to 11 cm diameter, centrally depressed, circular to flabelliform, sometimes lobed; **pileus surface**, yellowish brown, very soft, tomentose, faintly concentrically zoned or lacking zones; **context** yellowish brown, up to 4 mm thick, duplex, upper layer soft, spongy, layer above tubes firm, fibrous; **tubes** decurrent, up to 3 mm deep; **pore sur-**

face pale buff, becoming brown; **pores** round to angular, 2–4 per millimetre, edges thick, entire, becoming thin, lacerate.

Hyphae 3–9 µm diameter; **setae** in the hymenium, abundant, apices straight, 50–70 (–140) × 7–11 µm; **basidiospores** ellipsoid, 5–6 × 3–4 µm, walls hyaline, smooth, thin.

OSTEINA DONK

***Osteina obducta* (Berk.) Donk**

Syn. *Oligoporus obductus*
(Berk.) Gilb. & Ryvarden
Bone polypore

Habitat/range: On conifers, especially *Picea sitchensis* and *Pseudotsuga menziesii*, rarely on dead *Betula occidentalis*, causing a brown rot. In BC, known from Haida Gwaii (Church Creek, Sandspit, Skidegate Lake), Hanson Island, Vancouver Island (Cowichan Lake), Manning Park, Kootenay National Park, and southwest of Canal Flats. Widespread in western North America.



Basidiomata sessile or excentrically to laterally stipitate; **stipe** white, 1–5 cm long, 3–6 cm diameter, narrowing toward the base, very hard, glabrous; **pileus** usually narrowed toward the point of attachment, spathulate, fan-shaped, conchate or subreniform, up to 12 cm wide × 13 cm long × ~1 cm thick; **pileus surface** smooth or finely wrinkled, glabrous, white, dingy ivory, greyish tan, cream, or dingy beige; **context** 0.3–1 cm thick, white, very dense, tough-fleshy; drying bone-hard; **tubes** 1–3 mm deep; **pore surface** white to cream; **pores** 3–5 per millimetre, round to angular.

Hyphal system monomitic. **Generative hyphae** 2–12 µm diameter with clamp connections, very tightly and intricately interwoven, very difficult to separate in squash mounts, walls very thick, more or less gelatinized; **basidiospores** 5.0–6.5 × 2.0–2.5 µm, cylindrical but narrowing slightly at the apex.

Notes: The dried basidiomata are of a very hard consistency (bone hard).

OXYPORUS DONK

Habitat: On live and dead hardwoods and conifers, causing white rot.

Basidiomata sessile, reflexed or effuse, annual or perennial, up to 15 cm diameter, soft to leathery, separable; **margin** white to cream, soft, finely tomentose to fimbriate, up to 7 mm wide; **pileus** dimidiate or elongated, up to 5 cm wide \times 12 cm long \times 5 cm thick, often imbricate; **pileus surface** white, cream to buff, becoming darker, finely tomentose to glabrous; **context** white, ivory, cream, pale buff to tawny, soft to corky, weakly zonate, up to 2 cm thick; **tubes** white, ivory, cream to pale buff, soft, up to 7 mm deep; **pore surface** white, ivory, cream to pale tan; **pores** round to angular, 1–7 per millimetre, edges thick, fimbriate, becoming thin, slightly lacerate.

Hyphal system monomitic. **Hyphae** 2–8 μm diameter with simple septa, walls thin to thick; **cystidia** present in all species, rare to abundant, cylindrical to narrowly clavate to swollen at the apex, 17–55 \times 4.5–8.0 μm , walls thin to thick, apices heavily encrusted; **gloeocystidia** in two species, arising in the subhymenium, embedded or projecting, cylindrical to clavate, 19–45 \times 5.5–10.0 μm , contents refractive, walls thin; **basidia** clavate or ovoid to broadly clavate, 8–20 \times 3–7 μm , four sterigmate; **basidiospores** ellipsoid to ovoid, 4–5 \times 2.5–3.0 μm or broadly ellipsoid to subglobose 3.5–9.0 \times 2.5–4.5 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Basidiomata pileate, perennial; on live hardwoods with basidiomata on stem cankers *O. populinus*
- 1b Basidiomata effuse to reflexed, annual; on dead hardwoods and conifers 2
- 2a On conifers *O. cuneatus*
- 2b On hardwoods 3
- 3a Basidiospores 4–5 μm long *O. similis*
- 3b Basidiospores 5–9 μm long 4
- 4a Gloeocystidia present; hyphal walls thin to thick *O. corticola*
- 4b Gloeocystidia lacking; hyphal walls thin *O. latemarginatus*

Oxyporus corticola **(Fr.) Ryvarden**

Habitat/range: On *Populus* species, infrequently on conifers, causing a white rot. Widespread in the southern half of BC. Elsewhere in western North America, known from AK and SK south to AZ and NM.

Basidiomata perennial, effuse, up to 12 cm diameter, soft, leathery; **margin** near white to cream, soft, fimbriate, up to 7 mm wide; **context** ivory, soft-fibrous, up to 1 mm thick; **tubes** ivory, up to 3 mm deep; **pore surface** cream to pale tan; **pores** round to angular, 2–4 per millimetre, edges thin, deeply lacerate.

Hyphae 2–5 μm diameter, walls thin to thick; **cystidia** may be rare, cylindrical, 17–30 \times 3–6 μm , not or scarcely projecting, walls thin, apically encrusted;



gloeocystidia cylindrical to narrowly fusoid, $33\text{--}45 \times 6\text{--}10 \mu\text{m}$, arising in the subhymenium, often projecting, contents refractive; **basidiospores** ovoid to broadly ellipsoid, $5\text{--}9 \times 3.5\text{--}4.5 \mu\text{m}$.

***Oxyporus cuneatus*
(Murrill) Aoshima**

Habitat/range: On bark of *Thuja plicata* logs, rarely on other conifers, causing a white rot of the sapwood. In BC, known from Terrace and the Prince George area south to Blue River and the Revelstoke area west to the Vancouver area and the southern half of Vancouver Island. Elsewhere in western North America, known from AK, WA, ID, MT, OR, CA, and CO.

Basidiomata effuse to widely effuse, some reflexed, annual; **pileus** dimidiate or elongated, up to 1 cm wide \times 6 cm long \times 0.9 cm thick, some imbricate; **pileus surface** white, becoming grey or yellowish, tomentose, matted tomentose or smooth; **margin** white, becoming grey or yellowish; **context** white, soft-fibrous, up to 5 mm thick; **tubes** white, up to 4 mm deep; **pore surface** white to ivory; **pores** round to angular, 3–4 per millimetre, edges thick, entire, becoming thin, lacerate.

Hyphae 2.5–6.0 μm , walls thin; **cystidia** abundant, narrowly clavate to cylindrical, $17\text{--}40 \times 4.5\text{--}6.0 \mu\text{m}$, walls thin, apically encrusted; **gloeocystidia** arising in the subhymenium, embedded, cylindrical to clavate, $19\text{--}30 \times 5.5\text{--}9.0 \mu\text{m}$, contents refractive, walls thin; **basidiospores** broadly ellipsoid to subglobose, $4.0\text{--}5.5 \times 3\text{--}4 \mu\text{m}$.

Notes: If the basidiospores are 5–9 μm long, see *O. corticola*. Although pileate basidiomata resemble those of *Trametes pubescens* and *T. hirsuta*, these two species differ in several microscopic features (i.e., presence of skeletal hyphae and clamp connections, and lack of both encrusted hymenial cystidia and embedded gloeocystidia). Effuse basidiomata could be confused with those of *O. similis* (see comparisons there).

***Oxyporus latemarginatus*
(Durieu & Mont.)
Donk**

Habitat/range: On hardwoods, causing a white rot. In BC, known from Oyster River on Vancouver Island and Vancouver. Elsewhere in western North America, known from AB, WA, MT, OR, CA, and AZ.

Basidiomata widely effuse, annual, soft, separable; **margin** white, fimbriate, up to 1 mm wide; **context** white to ivory, soft-fibrous, up to 1 mm thick; **tubes** white to ivory, up to 7 mm deep; **pore surface** white to ivory; **pores** angular, 1–3 per millimetre, edges becoming thin, lacerate.



Hyphae 3–8 µm diameter, walls thin; **cystidia** may be rare, narrowly clavate to cylindrical, 20–28 × 4.5–6.0 µm, walls thin, apically encrusted; **basidiospores** narrowly ellipsoid, 5.5–7.0 × 3–4 µm.

Notes: The macroscopic characters of *O. latemarginatus* and *O. corticola* are similar.

***Oxyporus populinus*
(Schumach.) Donk**
Syn. *Fomes connatus*
(Weinm.) Gillet
Mossy maple polypore

Habitat/range: On live hardwoods, causing a white rot of the heartwood. In BC, known from Agassiz (Farr et al. 2007), and on a dead, mature *Salix* spp. at Quesnel. Elsewhere in western North America, known only from AB (Banff National Park) and NM.



Basidiomata typically on stem cankers, perennial, sessile or reflexed; **pileus** up to 5 cm wide \times 12 cm long \times 5 cm thick; **pileus surface** cream to buff, becoming darker, finely tomentose to glabrous, often imbricate, often moss-covered at the base; **context** cream to tawny, corky, weakly zonate, up to 2 cm thick; **tubes** cream to buff, stratified; **pore surface** cream to buff; **pores** round to angular, 5–7 per millimetre.

Hyphae 2.5–4.5 μm diameter, walls thin to thick; **cystidia** abundant, cylindrical to swollen at the apex, 20–35 \times 3.0–4.5 μm , walls thin, apically encrusted but the encrustations dissolve rapidly in KOH; **basidiospores** subglobose 3.5–4.5 \times 2.5–4.0 μm .

Oxyporus similis
(Bres.) Ryvarden

Habitat/range: On hardwoods, preferring *Populus*, rarely on conifers, causing white rot. In BC, known from the Cinema/Quesnel area, Illecillewaet River (near Revelstoke), and Princeton. Elsewhere in western North America, known from WA, ID, MT, OR, CA, CO, and AZ.

Basidiomata effuse, annual, up to 15 cm diameter, soft, rather leathery, separable; **margin** white, soft, finely tomentose to fimbriate, up to 2 mm wide; **context** cream to pale buff, soft, less than 1 mm thick; **tubes** cream to pale buff, soft, up to 1.5 mm deep; **pore surface** ivory to pale buff; **pores** round to angular, 4–6 per millimetre, edges thick, fimbriate, becoming thin, slightly lacerate.

Hyphae 2–4 μm diameter, walls thin to thick; **cystidia** abundant, cylindrical to narrowly clavate, 25–55 \times 7–8 μm , walls thick, apex heavily encrusted; **basidiospores** ellipsoid to ovoid, 4–5 \times 2.5–3.0 μm .

Notes: Basidiomata resemble effuse basidiomata of *O. cuneatus*, which differs in occurring on conifers, having pores 3–4 per millimetre, cystidia with thin walls, and gloeocystidia.

Habitat: On live and dead conifers and hardwoods, causing a white rot.

Basidiomata some perennial, widely effuse, some narrowly reflexed only in *P. medulla-panis*, adnate, tough; **margin** ivory, cream to pale buff, tomentose, soft, fimbriate, up to 4 mm wide; **context** less than 1 mm thick, pale buff to cream, soft-fibrous; **tubes** pale buff to cream, up to 5 mm deep; **hyphal pegs** present only in *P. medulla-panis*; **pore surface** smoky grey, cream, yellowish white, bright yellow to tan, often glancing; **pores** round to angular, 4–7 per millimetre.

Hyphal systems trimitic except dimitic in *P. narymica*. **Generative hyphae** 2–4 µm diameter with clamp connections, walls thin; **skeletal hyphae** 2–7 µm diameter, walls dextrinoid in some species, faintly amyloid in *P. narymica*; **binding hyphae** 1–2 µm diameter, walls dextrinoid in some species; **cystidioles** fusoid, 13–35 × 4–8 µm, some projecting slightly; **basidia** clavate to broadly clavate, 15–40 × 5.5–11.0 µm, four sterigmate; **basidiospores** ellipsoid, ovoid to broadly ellipsoid, truncated in some species, 4.5–7.5 × 3–5 µm, walls thickened in some species, faintly to intensely dextrinoid in some species.

Notes: In the field, an effuse, poroid, yellow basidioma is likely a species of *Perenniporia*. The macroscopic features of the species overlap, making identification in the field difficult.

- | | | |
|----|---|--|
| 1a | Pore surface bright yellow | 2 |
| 1b | Pore surface cream, yellow, smoky grey, or tan | 4 |
| 2a | Pores 5–7 per millimetre; skeletal and binding hyphae dextrinoid; basidiospore walls dextrinoid, thick | <i>P. medulla-panis</i> |
| 2b | Pores 3–5 per millimetre; neither hyphal nor basidiospore wall dextrinoid; basidiospore walls, thin or thick..... | 3 |
| 3a | Hyphae not amyloid; basidiospore walls thin | <i>P. tenuis</i> var. <i>pulchella</i> |
| 3b | Skeletal hyphae faintly amyloid; basidiospore walls thick..... | <i>P. narymica</i> |
| 4a | On conifers..... | <i>P. subacida</i> |
| 4b | On hardwoods..... | 5 |
| 5a | Skeletal hyphae 2.5–5.0 µm diameter; basidiospores truncate, walls thickened, dextrinoid | <i>P. medulla-panis</i> |
| 5b | Skeletal hyphae 2.5–7.0 µm diameter; basidiospores not truncate, ovoid, walls thin and not dextrinoid | 6 |
| 6a | Basidiomata perennial; pores 5–6 per millimetre; skeletal hyphae dextrinoid, not amyloid | <i>P. subacida</i> |
| 6b | Basidiomata annual; pores 3–5 per millimetre; skeletal hyphae not dextrinoid, faintly amyloid..... | <i>P. narymica</i> |

Perenniporia
medulla-panis
(Jacq.) Donk

Habitat/range: On hardwoods, rarely on conifers, causing a white rot. In BC, known from three collections on *Populus balsamifera* ssp. *trichocarpa* at Quesnel, and on *Betula occidentalis* and *P. tremuloides* at Penticton. Elsewhere in western North America, known from WA to MT and south to CA and NM.



Basidiomata perennial, widely effuse, some narrowly reflexed, tough-corky; **context** thin, cream to pale yellow; **tubes** cream to pale yellow, stratified, each layer up to 1 mm deep; **hyphal pegs** present; **pore surface colour** variable from smoky grey, cream to bright yellow; **pores** round, 5–7 per millimetre, edges thick.

Generative hyphae 2–4 μm diameter, walls thin; **skeletal hyphae** 2.5–5.0 μm diameter, walls dextrinoid; **binding hyphae** 1.5–2.0 μm diameter, walls dextrinoid; **cystidioles** fusoid, 15–22 \times 7–8 μm , not projecting; **basidiospores** broadly ellipsoid to ovoid, typically truncate, 5.0–6.5 \times 3–4 μm , walls thick, faintly to intensely dextrinoid.

Perenniporia narymica
(Pilát) Pouzar

Habitat/range: On *Alnus* in the Victoria area. Elsewhere in western North America, known from AZ.



Basidiomata annual, widely effuse, tough-corky; **context** up to 1 mm thick, cream to pale yellow; **tubes** cream to pale yellow, up to 1 mm deep; **pore surface** cream, cream buff to bright yellow; **pores** round to angular, 3–5 per millimetre, edges thick.

Generative hyphae 2–4 μm diameter, walls thin; **skeletal hyphae** 3–6 μm diameter, walls thick, faintly amyloid; **binding hyphae** lacking; **cystidioles** fusoid, 14–20 \times 5–7 μm , not projecting; **basidiospores** ellipsoid to ovoid, 4.5–6.0 \times 3–4 μm , walls thick, neither dextrinoid nor amyloid.

Notes: Microscopically, the combination of amyloid skeletal hyphae and basidiospores that lack dextrinoid or amyloid walls distinguishes *P. narymica*.

***Perenniporia subacida*
(Peck) Donk**

Habitat/range: On live and dead conifers and less frequently on hardwoods, causing a white stringy rot with black flecks. Responsible for a root and butt rot in live conifers; basidiomata on live trees indicates 3–4 m of decay (Allen et al. 1996). Widespread and common in the southern half of BC and elsewhere in western North America.



Basidiomata perennial, widely effuse, tough, adnate; **taste** mild or slightly acid; **margin** near white to ivory, soft, fimbriate, up to 2 mm wide; **context** pale buff, soft, less than 1 mm thick; **tubes** pale buff, stratified, each layer up to 5 mm deep; **pore surface** cream to yellow, often glancing; **pores** round to angular, 5–6 per millimetre, edges thick, fimbriate, becoming thin, weakly lacerate.

Generative hyphae inconspicuous, 2–3 μm diameter, walls thin; **skeletal hyphae** 2.5–7.0 μm diameter, walls dextrinoid; **binding hyphae** 1–2 μm diameter, walls dextrinoid; **cystidioles** fusoid, 13–35 \times 4.5–6.0 μm , some projecting slightly; **basidiospores** ovoid to broadly ellipsoid, 4.5–7.5 \times 3–5 μm , typically containing a large oil drop, with a distinct apiculus, walls thin or in some collections thickened, neither amyloid nor dextrinoid.

Notes: The white rot with black flecks is a good field character; however, the black flecks also occur in *Heterobasidion annosum* and *Junghuhnia zonata*. The dextrinoid staining of the hyphal walls may take 20 minutes or more to become obvious.

***Perenniporia tenuis*
(Schwein.) Ryvarden
var. *pulchella*
(Schwein.) Gilb. &
Ryvarden**

Habitat/range: On dead hardwoods, predominately on *Populus*, causing a white rot. Widely scattered in BC, known from Quesnel, Kamloops, Princeton, and southern Vancouver Island (Cowichan Lake). Widespread elsewhere in western North America.



Basidiomata annual, widely effuse, adnate; **margin** cream to pale buff, tomentose, up to 4 mm wide; **context** thin, pale buff to cream, soft-fibrous; **tubes** pale buff to cream, up to 3 mm thick; **pore surface** bright lemon yellow; **pores** round to angular, 4–5 per millimetre.

Generative hyphae 2–3 μm diameter, walls thin; **skeletal hyphae** 2–4 μm diameter, walls not dextrinoid; **binding hyphae** apparently confined to the trama, 1–2 μm diameter, walls not dextrinoid; **cystidioles** fusoid, 15–17 \times 4–6 μm , not projecting; **basidiospores** ellipsoid, some truncated, 6.0–7.5 \times 4–5 μm , walls thin, neither dextrinoid nor amyloid.

PHAEOLUS (PAT.) PAT.

Phaeolus schweinitzii

(Fr.) Pilát

Syn. *Polyporus*

schweinitzii Fr.

Dyer's conk

Habitat/range: On live and dead conifers, relatively common; on the ground, connected to the roots, causing a destructive, brown cubical heart rot of the roots and butts of large, live trees. Widespread in BC from Haida Gwaii and Prince George south to the BC/WA border and elsewhere in western North America.



Basidiomata sessile or stipitate, solitary or multipileate, often forming rosettes, fan-shaped to circular, up to 24 cm diameter, rarely larger; **stipes** central, some lateral, some branched, short, stout, up to 5 cm diameter; **pilei** applanate, some imbricate; **pileus surface** densely felt-like, tomentose, hispid, rough, concentrically zonate, initially pale green, then orange, finally brown; **margin** broad, obtusely rounded, yellow, greenish yellow or orange; **context** rusty brown to dark brown, xanthochroic, soft, fleshy-fibrous, brittle; **tubes** 4–8 mm deep; **pore surface** green when growing, becoming greenish brown then brown, quickly becoming brown where bruised; **pores** round, 1–3 per millimetre or angular to daedaleoid.

Hyphal system monomitic. **Hyphae** 3–17 µm diameter with simple septa, walls thin to slightly thick, hyaline to dark brown; **gloeoplerous hyphae** in the hymenium, 3–6 µm diameter, contents brown, some with a resinous drop over the apex; **cystidia** cylindrical, 20–90 × 7–13 µm, projecting up to 75 µm, walls thin, hyaline; **cystidioles** fusoid, 44–50 × 5.5–7.0 µm, walls hyaline, thin to slightly thick; **basidia** clavate, 20–25 × 7–8 µm, four sterigmate; **basidiospores** 6–8 × 4–5 µm, ellipsoid or oval, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The soft, brittle context and the greenish tubes that quickly bruise brown are distinctive features. Small basidiomata might be confused with those of *Onnia tomentosa*, another terrestrial brown polypore, but its soft, velvety pileus surface is quite different from the rather harsh, hispid surface of *P. schweinitzii*. Microscopically, the setae of *O. tomentosa* are quite different from the cystidia of *P. schweinitzii*. The Dyer's conk is a favoured by dyers. It produces green, yellow, gold, or brown colours, depending on the material dyed and the mordant used.

Habitat: On live and dead conifers, causing a white laminated rot.

Basidiomata effuse, some perennial, up to 20 cm diameter, tough, woody, adnate; **margin** pale brown, yellowish brown to near white, soft, tomentose, fimbriate, up to 2 cm wide; **context** yellowish brown, soft to tough, fibrous to spongy, up to 1 cm thick, xanthochroic; **tubes** pale greyish brown to purplish brown, up to 5 mm deep; **pore surface** yellowish brown, purplish brown to dark brown; **pores** round, angular, or sinuous, 5–9 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2.0–5.5 µm diameter with simple septa, walls hyaline, pale yellowish brown to pale brown, thin to thickened; **skeletal hyphae** 3–8 µm diameter, rarely branched, walls brown to dark brown, thickened; **setae** and **cystidioles** lacking; **setal hyphae** in the margin, trama, and context, straight or abruptly bent and projecting into the hymenium, 3–10 µm diameter; **basidia** clavate, 10–14 × 3.5–5.5 µm, four sterigmate; **basidiospores** either cylindrical, slightly curved, 4.0–5.5 × 1.0–1.5 µm or ovoid, 4–6 × 3.0–4.5 µm, walls hyaline, thin, neither dextrinoid nor amyloid.

- 1a Margin nearly white to yellowish brown; setal hyphae 3–6 µm diameter; basidiospores cylindrical, 1.0–1.5 µm wide *P. ferrugineofuscum*
- 1b Margin pale brown; setal hyphae 5–10 µm diameter; basidiospores ovoid, 3.0–4.5 µm wide 2
- 2a Perennial, predominately on *Thuja*, causing a heart rot or saprobic; setal hyphae 4.9–7.5 µm diameter *P. weiri*
- 2b Annual, predominately on Pinaceae, especially *Pseudotsuga* and *Abies*, causing a root or butt rot; setal hyphae 6–10 µm diameter *P. sulphurascens*

Phellinidium
ferrugineofuscum
(P. Karst.) Fiasson &
Niemelä

Syn. *Phellinus*
ferrugineofuscus (P. Karst.)
Bourdot

Habitat/range: On conifers, causing a white laminated rot. In BC, known from Kalum Lake (Terrace area), Prince George, Revelstoke, Naramata, and southern Vancouver Island. Widespread elsewhere in western North America.



Basidiomata up to 20 cm diameter, rarely persisting to form a second tube layer, tough, woody, adnate; **margin** yellowish brown to near white, soft, tomentose, up to 7 mm wide; **context** bright yellowish brown, tough, sometimes cracking, up to 6 mm thick; **tubes** purplish brown, paler within, up to 4 mm deep; **pore surface** purplish brown; **pores** round, angular or sinuous, 7–9 per millimetre, edges thick, entire.

Generative hyphae 2–5 μm diameter, walls hyaline to pale brown, thin to thickened; **skeletal hyphae** rarely branched, rarely septate, 3.5–5.0 μm diameter, walls dark brown, thickened; **setal hyphae** in trama and context, straight or abruptly bent and projecting into the hymenium, 3–6 μm diameter; **basidiospores** cylindrical, slightly curved, 4.0–5.5 \times 1.0–1.5 μm .

Notes: *Fuscoporia ferruginosa*, *Phellinidium sulphurascens*, and *P. weiri* also occur on conifers and have setal hyphae and hyaline basidiospores. Their basidiospores are wider and their basidiomata are differently coloured than those of *P. ferrugineofuscum*.

Phellinidium sulphurascens
(Pilát) Y.C. Dai
Syn. *Phellinus sulphurascens* Pilát

Habitat/range: On live conifers, predominately on Pinaceae, especially *Pseudotsuga* and *Abies*, causing a root or butt rot. In BC, widespread south of 50°N. Elsewhere in western North America, known from WA, ID, OR, and CO (Larsen et al. 1994).

Basidiomata effuse, up to 10 cm diameter, annual, light weight, adnate; **margin** pale brown, soft, fimbriate, up to 2 cm wide; **context** yellowish brown, soft, fibrous, spongy, up to 1 cm thick; **tubes** pale greyish brown, brittle, up to 3 mm deep; **pore surface** slightly darker than the pale brown margin; **pores** round to angular, 5–7 per millimetre, edges thick, becoming thin, lacerate.



Generative hyphae 2.5–5.5 μm , walls hyaline, some pale yellowish brown; **skeletal hyphae** 3–7 μm diameter, walls brown, thickened; **setal hyphae** in the trama, straight, 6–10 μm diameter, projecting through the hymenium; **setae** lacking; **basidiospores** ovoid, 4–5 \times 3–4 μm , walls hyaline, thin.

Notes: The two images are of pore layers induced on alder blocks.

Phellinidium weiri
(Murrill) Y.C. Dai
Syn. *Phellinus weiri*
(Murrill) Gilb.

Habitat/range: On live and dead conifers, predominately on *Thuja plicata* and *Pseudotsuga menziesii*. The fungus causes a laminated white rot, especially in the roots and butts of live trees. It is a major threat to its most economically important host, second-growth Douglas-fir. This polypore species causes significant heart rot in live trees. Widespread and relatively common in the southern half of BC. Elsewhere in western North America, known from WA, ID, MT, and OR.



Basidiomata perennial, widely effuse, lightweight, adnate; **margin** pale brown, soft, fimbriate, up to 2 cm wide; **context** yellowish brown, soft, fibrous, spongy, up to 1 cm thick; **tubes** pale greyish brown, brittle, each layer up to 5 mm deep; **pore surface** brown; **pores** round to angular, 5–7 per millimetre, edges thick, becoming thin and lacerate.

Generative hyphae 2.5–5.5 μm diameter, frequently branched, walls thin, pale yellowish brown; **skeletal hyphae** 3.0–5.5 μm diameter, rarely branched, walls brown, thickened; **setal hyphae** in the context, trama, and rotted wood, 4.9–7.5 μm diameter, straight, some penetrating the hymenium to project up to 70 μm ; **basidiospores** ovoid, 4.5–6.0 \times 3.5–4.5 μm .

Notes: The setal hyphae seen with a hand lens in the margin, tube layer, and rotted wood are a good field characters. The close-up image (above right) is of a pore layer induced on an alder block.

Phellinopsis conchata

(Pers.) Y.C. Dai

Syn. *Phellinus conchatus*

(Pers.) Quél.

Habitat/range: Reported on live and dead hardwoods, principally on *Salix* species, causing a uniform white rot. In BC, known from one report on *Acer macrophyllum*, although the location was unspecified (Fernando et al. 1999); the host is restricted to the southwestern corner of BC. Elsewhere in western North America, known from WA, ID, MT, OR, WY, and CO.



Basidiomata sessile or reflexed, often imbricate, infrequently effuse; **pileus** dimidiate or irregular in shape, thin, conchate to convex, up to 11 cm wide \times 15 cm long \times 4 cm thick; **pileus surface** greyish brown or yellowish brown to black, sulcate, not rimose, becoming encrusted, often moss-covered; **context** reddish or yellowish brown, one or more black lines, woody, up to 3 mm thick, xanthochroic; **tubes** reddish or yellowish brown, indistinctly stratified, each layer up to 2 mm deep; **pore surface** yellowish brown to dark brown; **pores** round, 4–7 per millimetre, edges rather thick, entire.

Hyphal system dimitic. **Generative hyphae** 2–3 μm diameter, walls thin, hyaline; **skeletal hyphae** rarely simple septate, 2.5–4.0 μm diameter, walls thick, mostly brown; **setae** abundant, ventricose to subulate, 20–50 \times 7–9 μm ; **basidiospores** ovoid to subglobose, 5.0–6.5 \times 4.0–4.5 μm , walls hyaline, thin.

Notes: The distinguishing features of the genus *Phellinopsis* are setae that arise from the tramal hyphae, not from the hymenium, and the hyaline basidiospore walls that become pale yellow.

The similar *Phellinopsis overholtsii* (Ginns) L.W. Zhou & Ginns occurs in Washington, Oregon, Idaho, Montana, and Utah but has not been found in British Columbia. It is restricted to live *Crataegus*, causing a uniform white rot. Its setae are scarce, pores are 2–4 per millimetre, and basidiospore walls become brown with age.

PHELLINUS QUÉL.

Habitat: On live and dead hardwoods, causing a uniform white rot.

Basidiomata pileate, reflexed and effuse, perennial, woody; **pileus** dimidiate, hoof-like, infrequently applanate or irregular in shape, thin, convex, **pileus surface** pale brown, greyish or yellowish brown to black, sulcate, becoming glabrous and deeply rimose; **context** reddish or yellowish brown to dark reddish brown, woody, up to 2 cm thick, xanthochroic; **core** in some basidiomata next to the substrate, granular, dark reddish brown with white flecks; **tubes** reddish or yellowish brown, dark reddish brown, stratified, each layer up to 4 mm deep; **pore surface** yellowish brown, pale cinnamon brown, reddish brown to dark brown or purplish brown; **pores** round, 4–10 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2.0–3.5 µm diameter with simple septa, walls thin, hyaline, pale yellow, pale brown; **skeletal hyphae** 2–6 µm diameter, walls brown, dark reddish brown, thin to thickened; **sclerids** (contorted cells in the core) only in *P. tremulae*, up to 40 µm diameter, walls thickened, dark reddish brown; **tramal hyphae** parallel, ~3 µm diameter; **setae** in the hymenium, few to abundant, ventricose to subulate, 12–50 × 4–9 µm, walls thickened, brown to dark brown; **basidia** clavate to broadly clavate, 7–12 × 4–7 µm, four sterigmate, except one species with two as well as four sterigmata; **basidiospores** ovoid to subglobose, 3.0–6.5 × 2.5–6.0 µm, walls hyaline or in *P. laevigatus* some golden yellow, thin to thickened, not dextrinoid.

Notes: The macroscopic and microscopic features of the species are variable. One result is an overlapping of size, shape, colours, and some microscopic features.

- | | | |
|----|---|------------------------------|
| 1a | Basidiomata pileate..... | 2 |
| 1b | Basidiomata effuse..... | 4 |
| 2a | Setae 20–50 × 7–9 µm | <i>Phellinopsis conchata</i> |
| 2b | Setae 8–30 × 4–9 µm..... | 3 |
| 3a | On <i>Populus</i> ; pileate, sessile, up to 15 cm wide..... | <i>Phellinus tremulae</i> |
| 3b | On <i>Alnus</i> and <i>Betula</i> ; reflexed, up to 2 cm wide..... | <i>Phellinus lundellii</i> |
| 3c | On hardwoods; pileate or reflexed, up to 11 cm wide.... | <i>Phellinus igniarius</i> |
| 4a | Basidiospores 3.0–4.5 × 2.5–3.6 µm | 5 |
| 4b | Basidiospores 4.5–6.5 × 3.9–5.0 µm wide | 6 |
| 5a | Pores 8–10 per millimetre; setae 6–9 µm
diameter | <i>Phellinus laevigatus</i> |
| 5b | Pores 6–9 per millimetre; setae 5.0–6.8 µm
diameter | <i>Phellinus betulinus</i> |
| 6a | Context reddish or yellowish brown with one or more
black lines; setae 20–50 × 7–9 µm..... | <i>Phellinopsis conchata</i> |
| 6b | Context reddish brown; setae 8–22 × 4–7 µm | 7 |
| 7a | On <i>Alnus</i> and <i>Betula</i> ; setae 8–20 µm long..... | <i>Phellinus lundellii</i> |
| 7b | On <i>Prunus</i> ; setae 16–22 µm long | <i>Phellinus prunicola</i> |

Phellinus betulinus
(Murrill) Parmasto

Habitat/range: On *Betula occidentalis*. In BC, known from Cinema and Revelstoke. Elsewhere in western North America, known from WA, ID, and MT.



Basidiomata widely effuse, perennial, woody, adnate; **margin** yellowish brown, tomentose, up to 2 mm wide; **context** yellowish brown, up to 2 mm thick; **tubes** indistinctly stratified, each layer up to 1 mm deep, paler than context; **pore surface** dull reddish brown; **pores** round, 6–9 per millimetre, edges thick, entire.

Generative hyphae 2.0–3.5 µm diameter, walls thin, pale yellow to hyaline; **skeletal hyphae** 2.5–5.0 µm diameter; **setae** 13.2–18.6 × 5.3–6.8 µm; **basidiospores** ovoid, 3.9–4.5×2.8–3.6 µm, walls always thin.

Notes: *Phellinus prunicola* has larger basidiospores and inhabits species of *Prunus*. The habitat and geographic range of *Phellinus betulinus* is uncertain because specimens have been mislabelled as *P. laevigatus*. See comments under *P. laevigatus*.

Phellinus igniarius
(L.) QuéL.

Syn. *Fomes igniarius*

(L.) Fr.

Flecked-flesh polypore

Habitat/range: On live and dead hardwoods, causing a uniform white rot. Widespread in BC and elsewhere in western North America.

Basidiomata perennial, pileate or reflexed, up to 11 cm wide × 20 cm long × 8 cm thick; **pileus** hoof-like, infrequently applanate; **pileus surface**



grey to nearly black, glabrous, sulcate, becoming deeply rimose, encrusted; **margin** glabrous, grey to nearly black or yellowish brown; **context** dark reddish brown, zonate, woody, up to 2 cm thick; **core** in some basidiomata located next to the substrate, granular, dark reddish brown, flecked with white; **tubes** dark reddish brown, each layer distinct, up to 4 mm deep, often stuffed with white mycelium; **pore surface** pale cinnamon brown to dark purplish brown; **pores** round, 5–6 per millimetre, edges thick, entire.

Generative hyphae indistinct; **skeletal hyphae** 2–5 µm diameter, walls brown, thick; **trama hyphae** not parallel, 2–3 µm diameter; **setae** hymenial, ventricose to subulate, 12–25 × 4–9 µm, imbedded or projecting up to 8 µm; **basidiospores** broadly ovoid to subglobose, 5.0–6.5 × 4.5–6.0 µm, walls thick, hyaline.

Notes: Very young basidiomata and (rarely) older ones may have the pileus surface smooth and grey, resembling *Fomes fomentarius* basidiomata. Macroscopically, the paler brown context of *F. fomentarius* lacks the white streaks occurring in the dark brown context of *P. igniarius*. Microscopically, *F. fomentarius* lacks setae and has basidiospores 12–20 µm long.

***Phellinus laevigatus*
(P. Karst.) Bourdot &
Galzin**

Habitat/range: On hardwoods, preferring *Betula*, causing a white laminated rot. In BC, known from Prince George, Quesnel, Salmon Arm, Lumby, the Pemberton area, and Vancouver Island. Elsewhere in western North America, known from AB, WA, ID, MT, and OR.



Basidiomata widely effuse, perennial, woody, adnate; **margin** yellowish brown, tomentose, up to 2 mm wide; **context** yellowish brown, up to 2 mm thick; **tubes** indistinctly stratified, each layer up to 1 mm deep, paler than context; **pore surface** dull reddish brown, becoming cracked into angular blocks; **pores** round, 8–10 per millimetre, edges thick, entire.

Generative hyphae 2.0–3.5 µm diameter, walls thin, pale yellow to hyaline; **skeletal hyphae** 2.5–5.0 µm diameter; **trama hyphae** parallel; **setae** abundant, subulate to ventricose, 17–30 × 6–9 µm; **basidiospores** ovoid, 3–4 × 2.5–3.0 µm, walls hyaline to pale golden yellow, typically slightly thickened.

Notes: The most reliable characters of *P. laevigatus* are the small pores, small basidiospores, and the parallel arrangement of the tramal hyphae. The features of *P. betulinus* and *P. prunicola* are similar to, or overlap, those of *P. laevigatus*, making it difficult to name with confidence some collections.

Phellinus lundellii
Niemelä

Habitat/range: Reported on *Alnus* and *Betula* wood in a state of advanced decay. In BC, known from one collection on *A. rubra* at Cowichan Lake Research Station on Vancouver Island (Niemelä 1972). Not reported elsewhere in western North America.



Basidiomata effuse, infrequently reflexed and then typically developing on a vertical surface, adnate, perennial; **pileus** rarely extending out from the substrate as much as 2 cm, frequently elongated; **pileus surface** nearly black, smooth to rimose, weakly sulcate; **margin** pale yellowish brown, becoming blackened, narrow to wide, glabrous and rimose with age; **context** reddish brown, woody, tough fibrous, up to 1 mm thick; **tubes** indistinctly stratified, each layer up to 2.5 mm deep; **pore surface** reddish brown; **pores** round, 5–6 per millimetre, edges thick, entire.

Generative hyphae 2–3 µm diameter, infrequently branched, walls thin, hyaline to pale brown; **skeletal hyphae** 2.5–4.0 µm diameter, infrequent simple septa, walls thick, yellowish brown; **tramal hyphae** interwoven; **setae** abundant, narrowly subulate or ventricose, narrowing to a sharp apex, 8–20 × 4–7 µm, walls yellowish brown; **basidiospores** ovoid to broadly ellipsoid, 4.5–6.0 × 4–5 µm, walls hyaline, thin to slightly thickened.

Notes: *Phellinus lundellii* was segregated from the *P. igniarius* complex. Naming effuse basidiomata can be difficult. *Phellinus igniarius* has wider setae, up to 9 µm in diameter, and basidiospores up to 6.5 µm in diameter. *Phellinus laevigatus* has smaller pores (8–10 per millimetre) and the tramal hyphae have a parallel arrangement (not interwoven).

Phellinus prunicola
(Murrill) Gilb.

Habitat/range: On dead *Prunus*, causing a uniform white rot. In BC, known from one collection at an unspecified locality. Elsewhere in western North America, known only from MT.



Basidiomata effuse, up to 22 cm diameter, adnate; **margin** pale yellowish brown, becoming blackened, narrow to wide, glabrous and rimose with age; **context** reddish brown, woody, up to 1 mm thick; **tubes** distinctly stratified, each layer up to 2.5 mm deep; **pore surface** reddish brown; **pores** round, 6–9 per millimetre, edges thick, entire.

Generative hyphae 2–3 µm diameter, walls thin, hyaline to pale brown; **skeletal hyphae** 2.5–4.0 µm diameter, walls thin to thick, dark reddish brown; **setae** abundant, mostly ventricose, 16–22 × 4.5–6.8 µm; **basidiospores** ovoid to subglobose, 3.5–5.0 × 2.5–3.5 µm (Gilbertson and Ryvarden 1987) or 5.2–6.4 × 3.9–4.6 µm (Parmasto 2007), walls hyaline, thin.

Notes: The significantly different basidiospore sizes reported for *P. prunicola* suggest that two species are labelled *P. prunicola*. The paucity of records of *P. prunicola* may be partially related to the misidentification of specimens as *P. laevigatus*. *Phellinus laevigatus* has smaller basidiospores (3–4 × 2.5–3.0 µm). The effuse basidiomata of *Fomitiporia robusta* have larger, dextrinoid basidiospores and few or no setae. *Phellinus pomaceus* (Pers.) Maire, known from Washington, Idaho, and Montana but not yet found in British Columbia, is restricted to live and dead *Prunus* species. It has sessile or reflexed basidiomata with small (14–17 × 4.5–7.0 µm), rare setae.

Phellinus tremulae
(Bondartsev)
Bondartsev & P.N.
Borisov

False tinder conk

Habitat/range: On live and dead hardwoods; all BC records are on *Populus tremuloides*, causing a white rot of sapwood. Widespread in the southern half of BC and one collection from the Haines Triangle (extreme northwestern BC). Widespread elsewhere in western North America.

Basidiomata sessile, perennial, developing at branch scars; **pileus** up to 15 cm wide × 20 cm thick, triangular in vertical section, woody; **pileus surface** pale brown, tomentose, becoming black, crust-like, rimose; **context** dark reddish brown, woody, 1–4 mm thick; **core** granular, next to the substrate; **tubes**



indistinctly stratified, each layer up to 2 mm thick; **pore surface** purplish brown; **pores** round, 5–7 per millimetre, edges thick, entire.

Generative hyphae 2–3 μm diameter, walls hyaline to pale yellowish; **skeletal hyphae** 4–6 μm diameter, walls dark reddish brown, thick; **sclerids** contorted cells in the core, up to 40 μm diameter, walls thick, dark reddish brown; **tramat hyphae** parallel, $\sim 3 \mu\text{m}$ diameter; **setae** few to abundant, ventricose to subulate, 12–30 \times 6.0–7.5 μm , projecting up to 15 μm ; **basidiospores** subglobose, 4.5–5.0 \times 4.0–4.5 μm , walls hyaline, thin to thick.

Notes: The parallel arrangement of the tramal hyphae in *P. tremulae* distinguishes it from *P. igniarius* and similar species. Previously collections of *P. tremulae* were mislabelled as *P. igniarius*.

***Phellopilus
nigrolimitatus***
**(Romell) Niemelä, T.
Wagner & M. Fisch.**

Syn. *Phellinus
nigrolimitatus* (Romell)
Bourdot & Galzin

Habitat/range: On live and dead conifers, causing a white pocket rot, with pockets up to 2.5 cm long. Widespread in the southern half of BC and in western North America.

Basidiomata reflexed, occasionally effuse, perennial; **pileus** irregular in shape, shelf-like to elongated, up to 5 cm wide \times 10 cm long \times 4 cm thick; **pileus surface** blackish brown to yellowish or reddish brown, finely tomentose to glabrous, irregular, often soft and spongy; **margin** cinnamon or paler than pore surface, up to 3 mm wide; **context** dark yellowish brown, with one to several horizontal black lines, corky to soft-fibrous, up to 1 cm thick, xanthochroic; **tubes** indistinctly stratified, each layer up to 2 mm deep, paler brown than context; **pore surface** cinnamon; **pores** round, angular, or some daedaleoid, 5–7 per millimetre, edges thick, entire.



Generative hyphae 4.0–5.6 μm diameter, walls thin, brown to pale yellow; **skeletal hyphae** up to 4 μm diameter, walls brown; **black lines** with hyphae closely woven and agglutinated; **setae** in the hymenium, abundant, subulate to ventricose, 25–37 \times 6.5–8.5 μm ; **basidia** clavate, 10–12 \times 5.0–6.5 μm , four sterigmate; **basidiospores** narrowly ovoid, distinctly narrowing to the apex, 7–10 \times 2.0–2.5 μm , walls hyaline, thin, not dextrinoid.

Notes: In effuse basidiomata, the black line(s) in the context and the basidiospore shape distinguish *P. nigrolimitatus* from *Phellinidium weiri* and *P. ferrugineofuscum*.

PHYSISPORINUS P. KARST.

Habitat: On hardwoods and conifers, causing a white rot.

Basidiomata annual, effuse, up to 20 cm diameter, soft to tough, cartilaginous; **margin** narrow, up to 1 mm wide; **context** white to creamy white, dense, 2–5 mm thick; **tubes** ivory to pale tan, up to 5 mm deep; **pore surface** white or ivory to bluish white, translucent, bruising rusty red to brown but the discoloration faint, slow, and variable in *P. vitreus*; **pores** round to angular, 3–6 per millimetre or, in *P. sanguinolentus*, 8–10 per millimetre.

Hyphal system monomitic. **Hyphae** 3–8 µm diameter, septa simple or, in *P. rivulosus*, with a single clamp connection at each septum, agglutinated, walls thin to thick; **cystidioles** fusoid, 15–20 × 5–8 µm; **basidia** broadly clavate, 12–20 × 6–8 µm, four sterigmate; **basidiospores** ovoid to globose, 5–6 × 4–5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: These three species have in common cartilaginous basidiomata, broadly rounded basidiospores (ovoid to globose), and fusoid cystidioles.

- 1a Pores 3–4 per millimetre; hyphae with clamp connections *P. rivulosus*
- 1b Pores 4–10 per millimetre; hyphae lacking clamp connections 2
- 2a Pore surface white or ivory, when bruised rapidly staining rusty red to brown; pores 8–10 per millimetre *P. sanguinolentus*
- 2b Pore surface distinctly bluish white, when bruised slowly staining weakly reddish to pale brown or not at all; pores 4–6 per millimetre *P. vitreus*

***Physisporinus rivulosus*
(Berk. & M.A. Curtis)**

Ryvarden

Syn. *Ceriporiopsis rivulosa*
(Berk. & M.A. Curtis)
Gilb. & Ryvarden

Habitat/range: On live and dead *Abies* spp., *Thuja plicata*, and *Pseudotsuga menziesii*, causing a white ring rot. It is the most important butt rot of mature *T. plicata* in the coastal forests (Allen et al. 1996). In BC, known from Haida Gwaii, southern Vancouver Island, Vancouver, Revelstoke, and Blue River. Elsewhere in western North America, known from AK, WA, ID, MT, OR, CA, AZ, and NM.



Basidiomata widely effuse, annual, cartilaginous, separable, up to 4 mm thick; **taste** slightly bitter; **margin** white, wide, fibrous to membranous; **context** white, up to 1 mm thick; **tubes** dense, becoming resinous, rather translucent, up to 3 mm deep; **pore surface** white to ochreous; **pores** angular, 3–4 per millimetre.

Hyphae 3–6 μm diameter with clamp connections, often agglutinated, walls thin; **cystidioles** fusoid, 15–20 \times 5–8 μm ; **basidiospores** subglobose to ovoid, 5–6 \times 4–5 μm .

Physisporinus sanguinolentus
(Alb. & Schwein.)
Pilát

Habitat/range: On conifers, causing a white rot. In BC, known from Haida Gwaii, southern Vancouver Island, Vancouver, and Buntzen Lake (near Port Moody). Elsewhere in western North America, known from AK to AZ and NM.



Basidiomata effuse, up to 20 cm diameter, some perennial, separable, soft to tough, cartilaginous; **margin** narrow, up to 1 mm wide; **context** white, less than 1 mm thick; **tubes** ivory to pale tan, up to 5 mm deep; **pore surface** white or ivory, bruising rusty red to brown or black; **pores** round to angular, 8–10 per millimetre, edges thick, entire.

Hyphae 3.5–6.5 μm diameter with simple septa, agglutinated, walls thick to thin; **cystidioles** fusoid, 15–19 \times 5–6 μm ; **basidiospores** ovoid to subglobose, 5–6 \times 4.0–4.5 μm .

Notes: Basidiomata shrink significantly and discolour on drying. The grey to black colour of dried basidiomata distinguish this species from other effuse polypores in British Columbia.

Physisporinus vitreus
(Pers.) P. Karst.

Habitat/range: On hardwoods and conifers, causing a white pocket rot. In BC, known on *Tsuga heterophylla* at Skidegate Lake (Haida Gwaii), *Picea glauca* at Aleza Lake (Prince George area), and *Chamaecyparis nootkatensis* at China Beach (southwestern Vancouver Island). Elsewhere in western North America, known from AK, WA, and ID.



Basidiomata effuse, annual, large; **margin** white to bluish white, matted, wide; **context** creamy white, dense, cartilaginous, 2–5 mm thick; **tubes** white to bluish white, watery white, up to 5 mm deep; **pore surface** white to bluish white, watery white, translucent, when bruised the reddish to pale brown discolouration weak but variable in intensity, and slow to develop; **pores** round to angular, 4–6 per millimetre.

Hyphae 3–8 μm diameter with simple septa, agglutinated, walls thin to thick; **cystidioles** fusoid, 15–20 \times 5–6 μm ; **basidiospores** ovoid to globose, 5–6 \times 4–5 μm .

PIPTOPORUS P. KARST.

Piptoporus betulinus
(Bull.) P. Karst.
Birch conk

Habitat/range: Typically, several conks on a log or dead trunk of various species of *Betula*, causing a brown rot. Common within the range of the host in western North America.



Basidiomata pileate, typically reniform with a lateral stipe, relatively large, ~ 15 cm diameter but up to 25 cm, tough, rubbery, grey; **stipe** stubby, short, lateral or sometimes projecting from the upper surface of the pileus, thick, tough-rubbery, surface greyish white, core white; **pileus** 3–15 cm wide × 3–25 cm long × 1–5 (–10) cm thick, oval, hemispherical, conchate or reniform; **margin** broadly rounded, forming a curb around the pore layer; **pileus surface** greyish white, grey, or pale brown, typically a smooth, thin membrane that cracks giving a scaly appearance; **context** up to 5 cm thick, white, very tough, leathery; **tubes** 2–10 mm deep, easily separating from the context in fresh specimens; **pore surface** white to cream, tan in age; **pores** round to angular, 3–5 per millimetre, edges thick, entire becoming split in age.

Hyphal system dimitic. **Generative hyphae** 2.5–4.0 µm diameter with clamp connections, walls thin, hyaline; **skeletal hyphae** 2.5–5.0 µm diameter, with few to several branches, walls hyaline; **cystidia** lacking; **basidia** clavate, 10–12 × 5–6 µm, four sterigmate; **basidiospores** 5–6 × 1.5–2.0 µm, allantoid, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The distinctive features are the whitish grey to tan basidiomata on *Betula*; recessed pore surface surrounded by the curb-like projecting margin of the pileus; the thick, corky context; and convex surface of the pileus covered by a paper-thin membrane. The medicinal properties attributed to *P. betulinus* are numerous. It is an anti-inflammatory, boosts the immune system, and has both anti-viral and anti-bacterial properties.

POLYPOROLETUS SNELL

Polyporoletus sylvestris (Pouzar) Audet

Habitat/range: On the ground under *Abies lasiocarpa*, *Tsuga heterophylla*, and *T. mertensiana*, usually in the subalpine zone. Presumably attached to live tree roots and probably ectomycorrhizal. In BC, known from Vancouver Island (Courtenay, Cowichan Lake, and Mt. Washington), Callahan Lake (Whistler area), Garibaldi Provincial Park, Grouse Mountain, North Vancouver, West Vancouver, Vancouver, and Slesse Lake (Chilliwack area). Elsewhere in western North America, known from ID, WA, and OR.



Basidiomata solitary, stipitate, round to broadly clavate, up to 13 cm tall and 18 cm diameter; **stipe** lateral to central, 5–10 cm long, 3.5–6.0 cm diameter, surface grey with a weak lilac tint, olivaceous, glabrous, dull; some **pilei** imbricate from a common base; **margin** bright green; **pileus surface** pale olive grey with patches of orange yellow, fawn, pale yellow brown, olivaceous, quickly staining bright green where bruised or cut, soft, chamois-like or suede, ribose when old; **context** up to 2.5 cm thick, white, orange yellow, when cut initially lilac grey, in several hours primrose yellow to buff or pale greenish yellow to orange yellow, quickly staining bright green where bruised or cut, texture like the giant puffball; **tubes** to 1 cm deep; **trama** becoming weakly green where handled with a green line ~ 0.5 mm thick developing between tubes and context; **pores** round to angular, some radially elongated, 0.5–2.0 per millimetre, decurrent; **pore mouths** greyish white to greyish lilac.

Hyphal system monomitic. **Hyphae** mostly 5–13 µm diameter, some up to 28 µm diameter with frequent clamp connections and some simple septa; **gloeoplerous hyphae** in the trama; **cystidia** lacking; **basidia** clavate,

$30-45 \times 11-14 \mu\text{m}$, two and four sterigmate; **basidiospores** subglobose, some broadly ellipsoid, $8-13 \times 6.5-10.0 \mu\text{m}$, walls with the surface finely wrinkled, hyaline, neither amyloid nor dextrinoid, thickened with cavities developing within the wall.

Notes: The most distinctive and attractive features of fresh specimens are the colours. Microscopically, the thick-walled basidiospores with cavities in the wall are distinctive. In western North America, basidiomata were previously labelled *Polyporoletus sublividus*.

POLYPORUS FR.

Habitat: On hardwoods and conifers, causing a white rot; if on the ground, then usually attached to buried wood, except *P. tuberaster* is attached to buried sclerotia.

Basidiomata stipitate or in *P. alveolaris* some sessile, small to large, solitary, occasionally with 2–3 pilei from a common base, flexible, tough; **stipe** central, excentric or lateral, up to 11 cm long, 5 cm diameter, cylindrical, core white, solid, tough, hard, surface tomentose, velvety, glabrous, grey, pale yellow, tan, brown to black; **sclerotia** only in *P. tuberaster*, underground, large, round to lumpy, black, tough, heavy; **pileus** up to 18 cm wide, 5 cm thick, round to reniform or fan-shaped; **pileus surface** plane or centrally depressed, glabrous or often with scattered, tan to brown scales, some radially striate, striae of lighter colour, tan, dingy tan, buff, pale yellowish brown, reddish yellow, reddish brown, greyish brown, bronze, pale brick red, purplish brown, blackish brown; **margin** thin, smooth, finely ciliate or lacerate; **context** 0.1–4.0 cm thick, white, ivory, pale buff, tan, corky, fleshy-tough or leathery-tough; **tubes** up to 8 mm deep; **hyphal pegs** present in three species; **pore surface** white, ivory, cream, tan, or pale bay; **pores** round to angular, 2–9 per millimetre or hexagonal to diamond-shaped, 0.5–10.0 mm long × 0.5–2.0 mm wide, some radially elongated, 1–2 mm wide × 1–10 mm long, in some species decurrent.

Hyphal systems dimitic. **Generative hyphae** 2.5–10.0 µm diameter with clamp connections, except *P. badius* is simple septate, walls thin, hyaline; **binding hyphae** 1.5–12.0 µm diameter, dendritic (branches attenuated and tapering to 1–2 µm diameter); **cystidioles** in some species, fusoid, 16–23 × 4–7 µm; **basidia** clavate, either 15–42 × 5–10 µm or, in *P. squamosus*, 60–85 × 9–12 µm, four sterigmate; **basidiospores** cylindrical, some slightly curved, allantoid, narrowly ellipsoid, narrowly ovoid, 6–18 × 2–8 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: Microscopically, clamp connections and simple septa can be difficult to find because generative hyphae are sparse. The hyphal system characteristic of the genus is dimitic with binding hyphae that have dendritic branches. A few species have been labelled trimitic because sparsely branched, thick-walled hyphae were considered to be skeletal hyphae.

- | | | |
|----|---|---|
| 1a | Stipe white, grey, ochreous, yellow brown, or brown..... | 2 |
| 1b | Stipe black, some black only at the base..... | 6 |
| 2a | Pileus surface pale yellow, ochreous, pale reddish yellow, usually with flattened tan to brown scales; pores relatively large, 0.5–3.0 per millimetre; margin smooth, finely ciliate, or lacerate; basidiospores 10–16 × 4–8 µm | 3 |
| 2b | Pileus surface straw yellow to dark brown or bronze to purple brown, glabrous, scales if present small; pores 1–4 per millimetre; margin usually ciliate; basidiospores 6–9 × 2–3 µm..... | 5 |

- 3a Basidiomata on dead branches, lacking a sclerotium; context up to 0.1 cm thick; basidiospores $11\text{--}14 \times 4\text{--}5 \mu\text{m}$ *P. alveolaris*
- 3b Basidiomata on the ground, rooting, attached to a sclerotium or not; context up to 1 cm thick; basidiospores $10\text{--}16 \times 4\text{--}8 \mu\text{m}$ 4
- 4a Basidiomata attached to a buried, black sclerotium; stipe up to 6 cm long; pores 0.5–1.0 per millimetre and angular or somewhat radially elongated; basidiospores $4\text{--}7 \mu\text{m}$ diameter *P. tuberaster*
- 4b Basidiomata rooting, lacking a sclerotium; stipe 5–15 cm long; pores 2–3 per millimetre, angular; basidiospores $6\text{--}8 \mu\text{m}$ diameter *P. radicatus*
- 5a Pores 1–2 per millimetre, radially elongated; pileus up to 2.5 cm diameter; pileus surface straw yellow to dark brown; basidiospores $7\text{--}9 \times 2.5\text{--}3.0 \mu\text{m}$ *P. arcularius*
- 5b Pores 2–4 per millimetre, angular; pileus generally 1.5–5.0 (–8.0) cm diameter; pileus surface bronze to purple brown; basidiospores $6.0\text{--}7.5 \times 2.0\text{--}2.5 \mu\text{m}$ *P. brumalis*
- 6a On ground 7
- 6b On wood 8
- 7a Pores 3–4 per millimetre; pileus up to 10 cm diameter; context up to 5 mm thick; basidiospores $7\text{--}9 \times 3.0\text{--}3.5 \mu\text{m}$ *P. melanopus*
- 7b Pores 2–3 per millimetre; pileus 3–20 cm diameter; context up to 1 cm thick; basidiospores $12\text{--}15 \times 6\text{--}8 \mu\text{m}$ *P. radicatus*
- 8a Pileus typically 1–5 cm thick; pores large, 1–2 per millimetre; stipe thick, 1–5 cm diameter; basidiospores $10\text{--}18 \mu\text{m}$ long *P. squamosus*
- 8b Pileus up to 1 cm thick; pores small, 3–9 per millimetre; stipe slender, typically less than 1 cm diameter, some up to 2.5 cm diameter; basidiospores $7\text{--}12 \mu\text{m}$ long 9
- 9a Pileus surface tan, yellowish tan, or dingy tan with radial striations; pores 7–9 per millimetre; basidiospores $9\text{--}12 \mu\text{m}$ long *P. varius*
- 9b Pileus surface cream, tan, reddish brown to blackish brown, with or without radial striations; pores 3–8 per millimetre; basidiospores $7\text{--}10 \mu\text{m}$ long 10
- 10a Pileus cream or tan, up to 9 cm diameter *P. leptocephalus*
- 10b Pileus darker, chestnut to blackish brown, 5–15 cm diameter 11
- 11a Pores angular, radially elongated especially toward the stipe, 3–4 per millimetre; basidiospores $6.0\text{--}7.5 \mu\text{m}$ long *P. brumalis*
- 11b Pores round to angular, 5–8 per millimetre; basidiospores $7\text{--}9 \mu\text{m}$ long *P. badius*

Polyporus alveolaris
(DC.) Bondartsev &
Singer
Hexagonal-pored
polypore

Habitat/range: On dead hardwoods, particularly branches, causing a white rot. Widespread in BC and elsewhere in western North America.



Basidiomata stipitate to sessile, fleshy-tough; stipe central to lateral, often only a lateral stub, up to 1 cm long, 0.5 cm diameter, surface buff, glabrous; **pileus** circular to reniform, dimidiate, up to 8 cm wide \times 10 cm long \times 0.6 cm thick; **pileus surface** reddish yellow to pale brick red, fibrillose to weakly scaly, becoming pale yellow to white and squamulose to glabrous; **context** ivory to pale tan, up to 1 mm thick; **tubes** up to 5 mm deep; **hyphal pegs** frequent; **pore surface** white; **pores** decurrent, angular, hexagonal, typically radially elongated, 0.5–3 mm long, 0.5–2 mm wide, edges thin, even, becoming lacerate.

Generative hyphae 2.5–4 μm diameter with clamp connections, rarely branched; binding hyphae dendritic, 3–7 μm diameter; hyphal pegs 40–50 \times 17–40 μm ; basidia 28–42 \times 7–8 μm ; basidiospores cylindrical, narrowly ellipsoid, 11–14 \times 4–5 μm .

Polyporus arcularius
(Batsch) Fr.
Spring polypore

Habitat/range: On hardwoods, occasionally on conifers, causing a white rot. Widespread in the interior of BC from Muncho Lake to Osoyoos. Widespread elsewhere in western North America.



Basidiomata solitary or in small clusters, stipitate, tough; **stipe** central, 2–6 cm long, 2–4 mm diameter, straw yellow, yellow brown to dark brown or bronze to purplish brown, glabrous; **pileus** up to 2.5 cm wide, round, centrally depressed; **pileus surface** straw yellow to dark brown, zonate, smooth to rugose; **margin** ciliate; **context** up to 2 mm thick, tough, white to buff; **tubes** white to buff, 1–2 mm deep; **pore surface** white, buff, or yellowish brown, dull; **pores** hexagonal or diamond-shaped, radially elongated, 1–2 per millimetre, edges thin, becoming lacerate.

Generative hyphae frequently branched, 2.5–5.0 μm diameter with clamp connections; **binding hyphae** dendritic, 2–11 μm diameter; **basidia** 25–35 \times 5–6 μm ; **basidiospores** 7–9 \times 2.5–3.0 μm , cylindrical, some slightly concave, others narrowly ellipsoid.

Notes: The radially aligned, hexagonal, relatively large pores, centrally depressed pileus, central stipe, and thin, tough basidiomata distinguish *P. arcularius* and *P. brumalis* from other polypores. *Polyporus brumalis* differs from *P. arcularius* by its much darker pileus, smaller and less radially elongated pores, and especially by its smaller basidiospores. Pore shape is angular and less strikingly hexagonal in *Polyporus brumalis*. *Polyporus alveolaris* has radially elongated pores, but the basidiomata are typically laterally stipitate or substipitate, the pileus surface a reddish yellow to pale brick red, and the basidiospores are 11–14 μm long. Specimens of *P. arcularius* lacking hexagonal pores will have the typical glabrous, straw yellow to dark brown or bronze to purplish brown stipe to distinguish it from the black-stemmed species.

***Polyporus badius*
(Pers.) Schwein.**

Syn. *Polyporus picipes* Fr.
Black-footed polypore,
Black-leg

Habitat/range: On hardwoods and conifers, causing a white rot. Widespread in western North America.



Basidiomata stipitate, solitary or clustered; **stipe** central to lateral, 1–6 cm long, 1–2 cm diameter, hard, tough, chestnut brown to black and glabrous above, minutely velvety and black at base; **pileus** 4–15 cm wide, round to fan-shaped, convex; **pileus surface** radially striate, pale chestnut brown or dark red brown, almost black when old, azonate, glabrous, smooth or rugose; **context** 1–5 mm thick, white or pallid, tough-leathery; **tubes** 2–4 mm deep,

white; **hyphal pegs** present; **pore surface** white to tan; **pores** round to angular, 5–8 per millimetre, decurrent.

Generative hyphae inconspicuous, 3–5 µm diameter with simple septa; **binding hyphae** dendritic, 2–7 µm diameter; **basidia** 20–30 × 7–9 µm; **basidiospores** 7.5–9.0 × 3.0–3.5 µm, cylindrical, narrowly ellipsoid.

Notes: *Polyporus badius* is the only North American species of *Polyporus* that does not have clamp connections. Unfortunately, both generative hyphae and their septa can be difficult to find. *Polyporus leptocephalus* and *P. varius* also have black, minutely velvety stipes (the velvet may wear off with age, but the stipe is still black). *Polyporus leptocephalus* is characterized by its light-coloured pileus that lacks radial striations, basidiospores 7.5–10 × 2.5–3 µm, and pores that are 5–7 per millimetre. The pileus of *P. varius* is intermediate in colour between *P. leptocephalus* and *P. badius*, is often strikingly radially streaked with lighter colours, and the basidiospores are relatively large, 9–12 × 2.5–3 µm. *Polyporus brumalis* when old will often have black at the base of the stipe. The dark pileus colour (chestnut to almost black) of *P. badius* distinguishes it from *P. leptocephalus* and *P. varius*. The colours of the pileus of *P. melanopus* are similar, but it has larger pores (3–4 per millimetre), fruits on the ground, and the stipe is velvety.

Polyporus brumalis

Pers.

Winter polypore

Habitat/range: On hardwoods, causing a white rot. Rare in western North America (Gilbertson and Ryvarden 1986). In BC, at Liard Hot Springs, Vancouver, and Vancouver Island (Cathedral Grove). Elsewhere in western North America, known from YT, WA, ID, MT, and OR.



Basidiomata stipitate, typically solitary, sometimes several arising from a common base, tough and leathery; **stipe** 2–6 cm long, 0.2–0.6 cm diameter, central, minutely flocculose becoming glabrous, grey or brown, black at the base in some older specimens; **pileus** 1.5–5.0 (–8.0) cm diameter, round, centrally depressed; **margin** typically ciliate; **pileus surface** glabrous to minutely hispid, sometimes appressed-scaly, dark brown to dark red brown, bronze to purplish brown; **context** up to 3 mm thick, white, corky; **tubes** 1–3 mm deep, ivory, slightly decurrent; **pore surface** white to cream; **pores** angular or

radially elongated, especially toward the stipe, 3–4 per millimetre, edges thin, becoming lacerate.

Generative hyphae 4–10 μm diameter with clamp connections; **binding hyphae** dendritic, 4–10 (–13) μm diameter; **basidia** 16–22 \times 5–7 μm ; **basidiospores** cylindrical, narrowly ellipsoid, some with adaxial surface slightly concave, 6.0–7.5 \times 2.0–2.5 μm .

Notes: The similar *P. arcularius* differs in having a straw yellow to dark brown pileus surface, larger (1–2 per millimetre) pores, and longer basidiospores (7–9 μm).

***Polyporus leptocephalus* (Jacq.) Fr.**
Syn. *Polyporus elegans* Fr.
Elegant polypore

Habitat/range: On hardwoods, occasionally conifers, generally on fallen branches and logs lying atop the ground, causing a white rot. Widespread in BC, known from Haines Triangle (extreme northwestern BC), Bennett to Liard Hot Springs (along the Yukon border), on Haida Gwaii and the southern half of Vancouver Island, in the Prince George area, south in the Interior to Beaverdell (east of Penticton), and at Harrison Lake. Also widespread elsewhere in western North America.



Basidiomata stipitate, typically solitary; **stipe** 5–8 cm long, 2–6 mm diameter, central, excentric or lateral, glabrous or pruinose, entirely black or black only at the base; **pileus** 1–4 (–9) cm broad, plane or shallowly concave, glabrous; **pileus surface** pale tan to ochre, often fading to almost white; **context** 1–3 (–7) mm thick, white to pale buff, tough; **tubes** 1–3 mm deep, edges even; **pore surface** pale buff; **pores** 5–7 per millimetre, round to angular.

Generative hyphae 2.5–4.0 μm diameter with clamp connections; **binding hyphae** 2.5–5.0 μm diameter, dendritic; **basidia** 15–20 \times 6–7 μm ; **basidiospores** 7.5–10.0 \times 2.5–3.0 μm , cylindrical, some slightly concave, narrowly ellipsoid.

Notes: *Polyporus varius* differs in having a striate pileus surface.

Polyporus melanopus

Fr.

Habitat/range: Terrestrial, attached to buried branches and presumably dead roots of deciduous and coniferous trees, causing a white rot. Widely scattered in BC from Cinema, Mount Revelstoke National Park, Falkland, and southern Vancouver Island. Elsewhere in western North America, known from AK, WA, and ID.



Basidiomata stipitate, solitary, rubbery-tough; **stipe** central, rooting, black and velvety above, dark brownish black below, up to 11 cm long, 2 cm diameter; **pileus** circular, up to 10 cm diameter; **pileus surface** reddish brown, greyish brown to blackish brown, villose, scurfy to nearly scaly, becoming glabrous, azonate; **context** white, firm, up to 5 mm thick; **tubes** separated from the context by a faint, thin (up to 0.5 mm thick), brown layer; **pore surface** buff white, edges thick, entire; **pores** round to angular, 3–4 per millimetre.

Generative hyphae 3–5 µm diameter with clamp connections; **binding hyphae** 2–7 µm diameter; **cystidioles** fusoid, 16–21 × 4–5 µm; **basidia** 18–28 × 6–8 µm; **basidiospores** cylindrical, 7–9 × 3.0–3.5 µm.

Notes: Basidiomata of *P. leptocephalus* are typically smaller and occur on fallen branches and logs lying atop the ground. The colours of the pileus of *P. badius* are similar, but it has smaller pores (5–8 per millimetre), fruits on fallen branches and logs on the ground, and the stipe is typically glabrous.

Polyporus radicatus

Schwein.

Rooting polypore

Habitat/range: Presumably on the ground. Perhaps causing rot in live roots. Known in BC from a single collection on Vancouver Island (Metchosin). Elsewhere in western North America, known only from AB.

Basidiomata stipitate, typically solitary, fleshy; **stipe** 5–15 cm long, 0.5–2 cm diameter, central, rooting, surface finely roughened, pale yellow to blackish brown, below ground entirely black; **pileus** 3–20 cm diameter, circular, flat or shallowly concave; **pileus surface** pale yellow to blackish brown, finely scaly; **context** up to 1 cm thick, white, tough; **tubes** decurrent, 1–3 mm deep, edges even; **pore surface** white; **pores** 2–3 per millimetre, angular.



Generative hyphae 4.5–6.5 μm diameter with clamp connections; **binding hyphae** 2–12 μm diameter, dendritic, sparsely branched, walls thin to thick, hyaline; **cystidioles** fusoid, up to $60 \times 13 \mu\text{m}$; **basidia** $25–35 \times 8–12 \mu\text{m}$, clavate; **basidiospores** $12–15 \times 6–8 \mu\text{m}$, narrowly ellipsoid, some with the sides nearly parallel (i.e., nearly cylindrical).

Notes: The black, taproot-like stipe is distinctive.

Polyporus squamosus

Huds.

Dryad's saddle

Habitat/range: On living and dead hardwoods, especially *Populus*, causing a white rot. Uncommon but widespread in the southern half of BC. Elsewhere in western North America, known from AB, WA, ID, MT, CO, and AZ.



Basidiomata large, stipitate, tough; **stipe** excentric to lateral, simple or several arising from a common base, 3–10 cm long, 1–5 cm diameter, solid, hard, surface at apex reticulate from the decurrent pores, velvety, brown to black in lower portion; **pileus** circular to fan-shaped or reniform, up to 18 cm broad, up to 5 cm thick, sometimes imbricate; **pileus surface** pale buff with a thin blackish brown membrane that breaks up to form large, brown, appressed scales; **context** fleshy-tough, white to pale buff, up to 4 cm thick; **tubes** 2–8 mm deep; **pore surface** white to ivory or cream; **pores** decurrent, hexagonal, diamond-shaped, some radially elongated, 1–2 per millimetre.

Generative hyphae 3.0–4.5 μm diameter with clamp connections; **binding hyphae** dendritic, 4.0–7.5 μm diameter with some tapering to 1–2 μm diameter; **basidia** 60–85 \times 9–12 μm , clavate; **basidiospores** 10–18 \times 4–6 μm , cylindrical, narrowly ellipsoid, narrowly ovoid.

Notes: Easily recognized by its large, thick-fleshed, tough pileus with coarse, appressed, dark scales on a pale yellow background; thick, black stipe; and large (1–2 per millimetre), angular pores. The large basidiospores help to separate *P. squamosus* from other *Polyporus* species with radiating angular pores.

Polyporus tuberaster

Jacq.

Stone fungus, Canadian tuckahoe

Habitat/range: On the ground arising from a large, black, stone-like sclerotium, typically under *Populus tremuloides* and *P. balsamifera* ssp. *trichocarpa*. In BC, known from Fort St. John, Goodlow (30 km west of Fort St. John), Pouce Coupe (50 km south of Fort St. John), and Bridge Lake (117 km north of Kamloops) (Vanterpool and Macrae 1951), also Sheldon, Sechelt Peninsula, west side of Harrison Lake, and Victoria (Observatory Hill). Elsewhere in western North America, known from AB, SK, WA, OR, CA, and AZ.



Basidiomata stipitate, solitary, occasionally with 2–3 caps from a common base, attached to an underground sclerotium; **stipe** central to lateral, up to 6 cm long, up to 1.5 cm diameter, cylindric, tan to brown, glabrous above, tomentose below; **sclerotium** buried, round to irregular in shape, ~ 15 cm diameter, black, fleshy, tough, heavy (up to 13 kg), perennial; **pileus** fleshy, circular, up to 15 cm diameter; **pileus surface** plane or centrally depressed, buff, ochreous tan to ochreous tawny, pale yellowish brown, often with small, scattered, tan to brown scales, sometimes even and glabrous; **margin** thin, finely ciliate or lacerate; **context** white, fleshy-tough, up to 1 cm thick; **tubes** up to 5 mm deep, edges lacerate to dentate; **pore surface** white to pale tan; **pores** decurrent, angular, 1–2 mm long \times 0.5–1.0 mm wide, typically rather radially elongated.

Generative hyphae 3–9 μm diameter with clamp connections; **binding hyphae** up to 12 μm diameter, dendritic; **basidia** 25–40 \times 6–10 μm ; **basidiospores** cylindrical, narrowly ellipsoid, narrowly ovoid, 10–16 \times 4–7 μm .

Notes: Basidiomata of three other *Polyporus* species often arise from the ground. *Polyporus cryptopus* Ellis & Barthol. typically occurs in grasslands in Washington but has not yet been found in British Columbia. The pileus is up to 3 cm diameter with an ivory to grey surface. *Polyporus radicatus* has a distinctive scurfy, elongated, rooting black stipe and has been reported from Metchosin (southern Vancouver Island) and in Alberta. The branching stipe of *P. umbellatus* Pers. gives rise to numerous, 1–3 cm diameter pilei, and some basidiomata develop from branched, elongated, finger-shaped, black, 1–2 cm diameter sclerotia. It is known in Washington, Idaho, and Montana, but has not yet been found in British Columbia.

Polyporus varius

Fr.

Habitat/range: On hardwoods and conifers, causing a white rot. In BC, known from Haida Gwaii, Quesnel, Clearwater, the Vancouver area, southern Vancouver Island and adjacent Minstrel and Sonora Islands. Widespread elsewhere in western North America.



Basidiomata stipitate, small to medium size, tough; **stipe** central to excentric or lateral, 1–6 cm long, 1–2 cm diameter, tough, dense, hard, surface minutely velvety, entirely black or black only at the base; **pileus** surface radially striate, tan, yellowish tan, or dingy tan, usually with radial streaks (striae) of lighter colour, glabrous; **pileus** 5–12 cm broad, round to reniform or fan-shaped; **context** 2–5 (–10) mm thick, white, leathery-tough; **tubes** 1–2 mm, deep; **hyphal pegs** present; **pore surface** white, pale ochre, or pale bay; **pores** round to angular, 7–9 per millimetre.

Generative hyphae 2.5–4.0 μm diameter with clamp connections; **binding hyphae** dendritic, 1.5–6.0 μm diameter; **cystidioles** fusoid, 18–23 \times 5–7 μm ; **basidia** 18–30 \times 7–9 μm ; **basidiospores** 9–12 \times 2.5–3.0 μm , narrowly ellipsoid, narrowly ovoid, some slightly concave.

Notes: The definitive characters are the yellowish tan or dingy tan pileus, the typically striate margin, and the smooth, black stipe.

Habitat: On live and dead conifers, causing a white pocket rot.

Basidiomata sessile, reflexed and effuse, perennial; **pileus** up to 9 cm wide \times 13 cm long \times 8 cm thick, dimidiate to elongated, applanate to triquetrous or hoof-like; **pileus surface** pale reddish brown to black, zonate and sulcate, tomentose to hispid, rough-hispid, conspicuously concentrically grooved, texture of coarse sandpaper, becoming glabrous; **margin** thin, typically undulating, slightly lobed, acute, reddish brown and hirsute or yellowish brown and tomentose; **context** reddish or yellowish brown, lustrous, texture corky, tough-fibrous, typically with one or more black lines, up to 3 cm thick, xanthochroic; **tubes** reddish or yellowish brown, indistinctly stratified, each layer up to 6 mm deep; **pore surface** yellowish brown, becoming darker, glancing; **pores** round, angular to slightly daedaleoid, varying between specimens from 1–3 per millimetre to 4–6 per millimetre; edges thin to thick, entire to lacerate.

Hyphal system dimitic. **Generative hyphae** 2–3 μm diameter with simple septa, walls hyaline; **skeletal hyphae** 2.0–7.5 μm diameter with rare simple septa, rarely branched, walls thin to thick, brown; **setae** in the hymenium, abundant, subulate, 25–60 \times 7–14 μm , walls bright reddish brown; **setal hyphae** and **cystidia** lacking; **basidia** narrowly clavate to clavate, 10–14 \times 5–6 μm , four sterigmate; **basidiospores** ovoid to globose, 4–7 \times 3.5–5.0 μm , walls hyaline to pale yellowish brown, thin to slightly thickened, neither dextrinoid nor amyloid.

- 1a Context up to 4 mm thick; setae mostly 7–10 μm diameter; skeletal hyphae 2–4 μm diameter *P. chrysoloma*
- 1b Context up to 3 cm thick; setae mostly 10–14 μm diameter; skeletal hyphae 3.5–7.5 μm diameter *P. pini*

***Porodaedalea chrysoloma*
(Fr.) Fiasson &
Niemelä**

Syn. *Phellinus chrysoloma*
(Fr.) Donk
Golden spreading
polypore

Habitat/range: On live and dead conifers, causing a white pocket rot, which in *Abies* kills the sapwood and causes cankers. The distribution in BC is uncertain because collections have been misnamed *P. pini*. Widespread in western North America.





Basidiomata sessile to reflexed, rarely effuse, perennial; **pileus** thin, appenate, dimidiate to elongated, up to 5 cm wide, often imbricate, projecting straight out from the substrate; **pileus surface** tomentose to hispid, zonate, dull reddish brown; **margin** bright yellowish brown, typically undulate, slightly lobed, acute; **context** reddish brown, tough-fibrous, upper layer soft, tomentose and up to 1 mm thick, the lower border of the upper layer, a thin, black line, the lower layer denser and up to 3 mm thick; **tubes** indistinctly stratified, total thickness of all layers up to 1 cm, the lining ochreous, paler than the trama and context; **pore surface** bright yellowish brown, becoming darker, glancing; **pores** angular to slightly daedaleoid, some specimens with 1–3 per millimetre, others with 4–6 per millimetre; **pore mouths** thin, entire to lacerate.

Generative hyphae 2–3 μm diameter with simple septa, walls hyaline; **skeletal hyphae** 2–4 μm diameter with rare simple septa, branches rare, walls thick, brown; **setae** abundant, subulate, 25–60 \times 7–10 μm , walls bright reddish brown; **basidiospores** ovoid to globose, 4.0–5.5 \times 4–5 μm , walls hyaline to pale yellowish brown, thin to slightly thickened.

Notes: The effuse to reflexed basidiomata and the thin, dark line separating the upper tomentum of the pileus from the lower context help distinguish *P. chrysoluma* from *P. pini*. Typically, *P. pini* is pileate with a blunt margin and has larger pores (2–3 per millimetre).

***Porodaedalea pini*
(Brot.) Murrill**

Syn. *Phellinus pini* (Brot.)

A. Ames; *Fomes pini*
(Brot.) P. Karst.

Pine conk

Habitat/range: On live conifers, preferring *Pinus* species, rarely on hardwoods, causing a white pocket rot. Widespread in western North America. The geographic distribution and hosts in BC are uncertain because some prior reports were *P. chrysoluma* specimens misidentified as *P. pini*.

Basidiomata sessile, reflexed or effuse; **pileus** up to 9 cm wide \times 13 cm long \times 8 cm thick, appenate to triquetrous or hoof-like, some imbricate; **pileus surface** pale reddish brown to black, rough-hispid, conspicuously concentrically grooved, texture of coarse sandpaper, becoming glabrous; **margin** thin, reddish brown and hirsute or yellowish brown and tomentose;



context reddish or yellowish brown, lustrous, texture corky, typically with one or more black lines, up to 3 cm thick; **tubes** reddish or yellowish brown, indistinctly stratified, each layer up to 6 mm deep; **pore surface** yellowish brown; **pores** round to angular, 2–3 per millimetre or daedaleoid and larger; **pore mouths** thick, entire.

Generative hyphae 2–3 μm diameter; **skeletal hyphae** 3.5–7.5 μm diameter, walls thin to thick, brown; **setae** in the hymenium, abundant, 40–50 (–80) \times (6–)10–14 (–17) μm ; **basidiospores** 4.5–7.0 \times 3.5–5.0 μm , globose or subglobose, walls thin, hyaline to pale yellow.

Porpomyces mucidus
(Pers.) Jülich

Syn. *Ceriporiopsis mucida*
(Pers.) Gilb. & Ryvarden

Habitat/range: On conifers and hardwoods. Although the basidiomata are associated with a white rot, this species may be ectomycorrhizal. In BC on *Picea sitchensis* on Haida Gwaii, and on hardwoods at Cinema and Squamish. Elsewhere in western North America, known from AK, WA, ID, MT, OR, and CO.



Basidiomata effuse, annual, separable, soft, up to 3 mm thick; **margin** narrow to wide; **strands** in the margin of some basidiomata, white to buff; **context** white, about 1 mm thick; **tubes** white, up to 1.5 mm deep; **pore surface** cream to pale yellow; **pores** angular, 3–5 per millimetre or sometimes sinuous and elongated to irregular in shape, edges thin.

Hyphal system monomitic. **Hyphae** 2.5–4.0 µm diameter with clamp connections; **cystidia** lacking; **basidia** clavate, 10–12 × 4–6 µm, four sterigmate; **basidiospores** broadly ellipsoid to subglobose, 2.5–3.5 × 2.0–2.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The soft, pale yellow basidiomata with strands, the small, subglobose basidiospores, and the monomitic hyphal system are distinctive features of *P. mucidus*. The results of molecular phylogenetic studies (Larsson 2001) placed *P. mucidus* as a sister group to several species of *Trechispora* and distinctly separated from the type species of *Ceriporiopsis*, *C. gilvescens* (Bres.) Domański. *Anomoloma myceliosum*, although morphologically very similar to *P. mucidus*, differs in having basidiospores with amyloid walls.

Habitat: On live and dead conifers and dead hardwoods, causing a brown rot.

Basidiomata effuse, reflexed, a few species stipitate, small to medium, annual, separable or adnate, cottony, fleshy to tough, in a few species bruising reddish brown; **taste** in some species obviously bitter; **spore print** white or in *P. caesia* greyish blue; **stipe** excentric to lateral, short; **pileus** dimidiate, semicircular, reniform, spathulate, fan-shaped, typically narrow, some elongated, some imbricate, forming a rosette in one species; **margin** white, cream, pale pink, grey blue, tomentose, abrupt or fimbriate to cottony, narrow to broad; **pileus surface** white, ivory, cream to grey with a blue tint, mouse grey, or greyish tan, in one species rusty to brick red, tomentose, coarsely strigose, rough to glabrous or in one species a thin papery membrane, smooth to shallowly sulcate; **context** white, pale salmon pink, soft, cottony, wet cheesy, firm, fibrous, hard, fleshy tough, up to 1.5 cm thick; **tubes** white, cream, salmon pink, pale green tint, soft, up to 1.1 cm deep; **hyphal pegs** present in some species; **pore surface** white, ivory, pale buff, cream, pale greyish blue, salmon pink to tan; **pores** round, angular to irregular, 0.5–8 per millimetre, edges thin, entire to incised.

Hyphal system monomitic or dimitic in *P. angulipora*. **Generative hyphae** 2.0–12.0 µm diameter with clamp connections, walls thin to thick, in some species swelling in KOH or gelatinized, in one species weakly amyloid; **binding hyphae** in *P. angulipora*, 2–6 µm diameter, some segments swollen to 10 µm diameter; **gloeoplerous hyphae** in some species, up to 14 µm diameter; **cystidia** only in *P. sericeomollis*, ventricose, 14–26 × 6–10 µm, barely projecting, walls thick, apically encrusted; **gloeocystidia** only in *P. leucomallella*, 25–35 × 6–8 µm, cylindrical to clavate, projecting up to 15 µm, contents pale yellow; **cystidioles** only in *P. balsamea* and *P. guttulata*, 10–25 × 2–7 µm, furoid or cylindrical with an elongated, finger-like apex; **basidia** clavate or in *P. ceriflua* narrowly clavate, 11–25 (–40) × 4–7 (–10) µm, four sterigmate; **basidiospores** cylindrical, some slightly curved, to allantoid, 3.5–12.0 × 1.0–3.0 µm or narrowly ellipsoid to oblong, 3.5–7.0 × 1.5–5.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: Considerable variation exists in the macroscopic and microscopic features of the basidiomata of the British Columbia species of *Postia*. The above generic description attempts to encompass this variation.

- | | | |
|----|--|------------------------|
| 1a | Stipe present, typically lateral, short and stubby..... | 2 |
| 1b | Stipe lacking | 4 |
| 2a | Pores 2 (–3) per millimetre..... | <i>P. ptychogaster</i> |
| 2b | Pores 5–8 per millimetre | <i>P. floriformis</i> |
| 2c | Pores 3–6 per millimetre | 3 |
| 3a | Basidiomata ~ 1.5 cm diameter; pores 3–4 per millimetre;
taste bitter; pileus surface white, cream to pale ochreous,
typically glabrous or with radially arranged fibrils; cystidioles
lacking..... | <i>P. ceriflua</i> |

- 3b Basidiomata up to 12 cm diameter; pores 3–5 per millimetre; taste mild; pileus surface white to dark greyish brown, smooth or finely wrinkled; cystidioles lacking *Osteina obducta*
- 3c Basidiomata up to 9 cm diameter; pores 4–6 per millimetre; taste bitter; pileus surface white, typically marked with 1–3 mm diameter, saucer-shaped depressions; cystidioles fusoid *P. guttulata*
- 4a Basidiomata effuse 5
- 4b Basidiomata sessile or reflexed 9
- 5a Pores 4–6 per millimetre; taste bitter; cystidia, typically the apex crystalline encrusted *P. sericeomollis*
- 5b Pores 1–4 per millimetre; taste mild; cystidia lacking 6
- 6a Basidiomata salmon pink throughout *P. placenta*
- 6b Basidiomata white to cream 7
- 7a Pore surface when bruised staining reddish brown *P. lateritia*
- 7b Pore surface when bruised not changing colour 8
- 8a Context and tube layer generally 1.0–1.8 cm thick; basidiospores allantoid, 4.5–6.0 × 1.0–1.5 µm *P. tephroleuca*
- 8b Context and tube layer less than 2 mm thick; basidiospores allantoid, 8–12 × 2–3 µm *P. mappa*
- 8c Context and tube layer up to 7 mm thick; basidiospores broadly ellipsoid to ovoid, 5.5–7.0 × 4–5 µm *P. angulipora*
- 9a Basidiomata when bruised staining reddish brown 10
- 9b Basidiomata when bruised not changing colour 11
- 10a Pores 3–4 per millimetre; context soft, up to 2 mm thick; context hyphae loosely woven, randomly oriented; hyphae on pileus surface forming ferruginous to golden yellow strands *P. lateritia*
- 10b Pores 5–6 per millimetre; context fibrous, up to 15 mm thick; context hyphae in radiating strands; hyphae on pileus surface mostly thin-walled in agglutinated pale yellow to pale brown strands *P. fragilis*
- 11a Basidiomata under snow or next to receding snow banks; context soft, cottony, up to 2 cm thick; margin like a cottony roll partly covering the pore surface; pores 2–4 per millimetre *P. leucospongia*
- 11b Not with above combination of characters 12
- 12a Pileus and pore surface with a bluish grey tint; spore print pale blue *P. caesia*
- 12b Pileus and pore surface lacking any blue tint; spore print white 13
- 13a Taste bitter 14
- 13b Taste mild to slightly resinous 17
- 14a Pores 2–4 per millimetre; gloeocystidia with pale yellow contents *P. leucomallella*

- 14b Pores 4–8 per millimetre; gloeocystidia lacking 15
- 15a Basidiomata rarely over 4 mm thick; pileus surface smooth, lacking black granules; pores 6–8 per millimetre; cystidioles lacking *P. floriformis*
- 15b Basidiomata over 4 mm thick, some up to ~ 20 mm thick; pileus surface smooth or if roughened then ornamented with small, black granules; pores 4–6 per millimetre; cystidioles fusoid or lacking 16
- 16a Pileus surface typically with scattered, small, saucer-shaped depressions; pore surface often with a pale green tint; cystidioles fusoid; hyphae up to 12 µm diameter *P. guttulata*
- 16b Pileus surface typically roughened and ornamented with small, black granules; pore surface white to ivory; cystidioles lacking; hyphae up to 5 µm diameter *P. stipitica*
- 17a Pileus surface mouse grey or dark greyish brown 18
- 17b Pileus surface white to cream 19
- 18a Basidiospores allantoid, 4.5–6.0 × 1.0–1.5 µm *P. tephroleuca*
- 18b Basidiospores cylindrical, narrowing slightly at the apex, 5.0–6.5 × 2.0–2.5 µm *Osteina obducta*
- 18c Basidiospores cylindrical, some slightly curved or ellipsoid to oblong, 2.5–5.0 × 1.0–2.5 µm *Tyromyces*
- 19a Basidiospores up to 2 µm wide 20
- 19b Basidiospores 2 µm or greater wide 23
- 20a Pores 4–7 per millimetre 21
- 20b Pores 1–4 per millimetre 22
- 21a Basidiomata reflexed and sessile, associated with a brown rot; context up to 1 mm thick *P. perdelicata*
- 21b Basidiomata pileate, associated with a white rot; context typically 2–20 mm thick *Tyromyces*
- 22a Context up to 4 mm thick; margin undulating *P. undosa*
- 22b Context typically 5–10 mm thick; margin abruptly thin, even *P. tephroleuca*
- 23a Pileus surface glabrous, smooth to rugose; context very dense, tough-fleshy; chlamydospores lacking; basidiospores 5.0–6.5 µm long *Osteina obducta*
- 23b Pileus surface tomentose to hirsute or covered with chlamydospores; context soft, cottony to corky; basidiospores 3.5–4.5 µm long 24
- 24a Chlamydospores present *P. ptychogaster*
- 24b Chlamydospores lacking *P. balsamea*

Postia angulipora
(M.J. Larsen & Lombard) M.J. Larsen & Lombard

Syn. *Oligoporus anguliporus* (M.J. Larsen & Lombard) Gilb. & Ryvarden

Habitat/range: On *Pseudotsuga menziesii*, causing a brown cubical rot. In BC, known from one collection in Vancouver. Elsewhere in western North America, known only from two collections in OR.

Basidiomata effuse, annual, adnate, soft, rather fragile (cheesy), brittle when dry, up to 20 cm diameter, up to 12.5 mm thick; **margin** abrupt, narrow, matted; **context** white to cream, chalky, brittle, up to 2.5 mm thick; **tubes** white, cream, or pale buff, up to 10 mm deep; **pore surface** pale cream to buff; **pores** angular, 0.5–4 per millimetre, edges thin, becoming deeply lacerate.

Hyphal system dimitic. **Generative hyphae** 3–6 µm diameter; **binding hyphae** of two types: (a) in the trama, 3–6 µm diameter, some segments swollen to 10 µm, contorted, frequently branched, the tips broadly rounded (not attenuated), and (b) in the context next to the tube layer and in mycelial felts in the wood, 2–4 µm diameter, infrequently branched, walls parallel, thick; **basidiospores** broadly ellipsoid to ovoid, 5.5–7.0 × 4–5 µm.

Notes: Cream-coloured mycelial felts develop in cracks in the rotted wood. In many features, *P. angulipora* is similar to *Antrodia gossypium* and *A. vaillantii*; they differ in having strands and lacking the swollen, contorted, thick-walled binding hyphae.

Postia balsamea
(Peck) Jülich
Syn. *Oligoporus balsameus* (Peck) Gilb. & Ryvarden

Habitat/range: On live and dead conifers, causing a brown cubical butt and trunk rot. Widespread in BC from Haida Gwaii, the Prince George area, the Revelstoke area, Vancouver, and southern Vancouver Island. Elsewhere in western North America, known from AB, WA, ID, MT, OR, CA, AZ, and NM.



Basidiomata sessile or reflexed; taste slightly resinous; **odour** pleasant, nut-like; **pileus** dimidiate to elongated, up to 1 cm wide × 5 cm long × 0.8 cm thick, some imbricate; **pileus surface** near white to pale brown, finely radially fibrillose, smooth or weakly sulcate; **margin** whitish, wavy; **context** white to buff, corky, up to 3 mm thick; **tubes** white to buff, up to 5 mm deep; **pore surface** whitish; **pores** angular, 5–6 per millimetre, edges thin, lacerate.

Hyphae 2–7 µm diameter, walls thin to thick; **cystidioles** fusoid, 11–22 × 5–7 µm, sometimes rare, typically embedded, walls thin, some apically encrusted; **basidiospores** oblong to cylindrical, 3.5–4.5 × 2.5–3.0 µm.

Postia caesia
(Schrad.) P. Karst.
Syn. *Oligoporus caesius*
(Schrad) Gilb. &
Ryvarden
Blue cheese polypore

Habitat/range: On conifers, infrequently on hardwoods, causing a brown rot. In BC, known from Haines Highway km 98 (2 km north of BC/AK border), Haida Gwaii, the Prince George area, Revelstoke, Wells Gray Park, Enderby, Vancouver, and southern Vancouver Island. Widespread elsewhere in western North America.

Basidiomata typically small, sessile to reflexed, soft with blue mottling or streaks, bruising blue; **spore print** greyish blue; **pileus** up to 5 cm wide \times 6 cm long \times 1.8 cm thick (usually half that size), semicircular to conchate or reniform; **pileus surface** white to greyish white with blue tint, surface minutely velutinous, becoming glabrous; **margin** grey blue; **context** up to 1 cm thick, white, soft and watery; **tubes** white, soft, up to 8 mm deep; **pore surface** white, pale greyish, or pale greyish blue; **pores** 3–6 per millimetre, angular, edges thin, becoming lacerate.



Hyphae 2.5–7.0 μm diameter, walls thin to thick, weakly amyloid; **gloeoplerous hyphae** with contents staining intensely red in phloxine; **basidiospores** allantoid, 3–6 \times 1.0–1.5 μm .

Notes: *Postia perdelicata* is similar in most features but differs in lacking the bluish tints and having slightly shorter basidiospores.

Postia cerifluia
(Berk. & M.A. Curtis)

Jülich

Syn. *Tyromyces cerifluus*
(Berk. & M.A. Curtis)

Murrill; *Oligoporus*
minusculoides (Pilát) Gilb.
& Ryvarden

Habitat/range: On an advanced, brown-rotted conifer log in old-growth forest. Often the small basidiomata are in cracks in rotted wood and easily overlooked. In BC, known from a single collection on Vancouver Island (Cowichan Lake Research Station). Elsewhere in western North America known from WA.



Basidiomata small, soft and fragile, dimidiate and elongated, up to 4 cm along the substrate or ~ 1.5 cm diameter, pendulous (hanging downwards) and centrally attached by a dorsal stub that is buried in the substrate; **taste** bitter; **pileus surface** white, cream to pale ochre, matted tomentose, firm, or where exposed, pallid, typically glabrous or with radially oriented fibrils, horny; **margin** horny, translucent, sterile, 0.5 mm wide; **context** white, 2 mm thick, firm, lacking a black line adjacent to the tubes; **tubes** white, dry-ing pallid to pale brown, 2.5–3.5 mm deep with very thin walls; **pores** (1–) 3–4 per millimetre, angular or irregular, edges fimbriate.

Generative hyphae 2–6 µm diameter with clamp connections, walls thin to 1.4 µm thick, dextrinoid en masse; **trama hyphae** parallel, (2.0–) 3.0–4.4 µm diameter, walls thin to 0.8 (–1.4) µm thick; **context hyphae** somewhat woven, 3–5 (–6) µm diameter, walls typically 0.5 (–1.0) µm thick, some thin and some so thick that only a capillary lumen is seen, of two types: (a) predominating are straight, rarely branched, and often at least 200 µm between clamp connections hyphae, (b) less frequent are hyphae of narrower average diameter, branched, with walls mostly thin, some with irregularly thickened walls; **gloeoplerous hyphae**, **cystidia**, and **cystidioles** lacking; **basidia** cylindrical to narrowly clavate, 15–23 × 4.5–5.0 µm, four sterigmate; **basidiospores** cylindrical, narrowly ellipsoid and suballantoid, (4.4–) 4.6–5.6 × (1.6–) 2.0 µm ($n = 20$), walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The description is from the Cowichan Lake Research Station collection. The weakly dextrinoid hyphal walls are a feature not mentioned in previous descriptions of *P. cerifluia*.

Postia floriformis
(Quél.) Jülich

Syn. *Oligoporus floriformis*
(Quél.) Gilb. & Ryvarden

Habitat/range: On hardwoods and conifers, causing a brown cubical rot. In BC, known from Vancouver Island (Cowichan Lake), Vancouver, and Penticton. Elsewhere in western North America, known from ID, WA, OR, CO, CA, and AZ.



Basidiomata reflexed, sessile or forming a rosette; **taste** bitter; **pileus** up to 3 cm wide \times 6.5 cm long \times 0.6 cm thick, dimidiate or fan-shaped with a short, lateral stipe, typically imbricate, some confluent; **pileus surface** white, glabrous; **context** white, crisp (breaks with a snap), firm-corky, up to 3 mm thick; **tubes** white, becoming yellowish, up to 3 mm deep; **hyphal pegs** rare; **pore surface** white; **pores** angular, 6–8 per millimetre, edges thick, entire, becoming lacerate.

Hyphae distinct, parallel, infrequently branched, 2.5–6.0 μm diameter with clamp connections, walls thin to thick; **basidiospores** oblong to cylindrical, often allantoid, 3.5–4.5 \times 2.0–2.5 μm .

Postia fragilis
(Fr.) Jülich

Syn. *Oligoporus fragilis*
(Fr.) Gilb. & Ryvarden

Rusty-staining cheese polypore

Habitat/range: On conifers, rarely on hardwoods, causing a brown cubical rot. In BC, widely scattered from Haida Gwaii and Liard Hot Springs to Revelstoke and the southern half of Vancouver Island. Widespread elsewhere in western North America.



Basidiomata sessile or reflexed, annual, bruising reddish brown; **pileus** dimidiate to elongated, up to 4 cm wide \times 6 cm long \times 1.9 cm thick; **pileus surface** whitish to buff; **context** white, fibrous, up to 1.5 cm thick; **tubes** darker than context, up to 4 mm deep; **pore surface** near white to buff; tomentose to glabrous; **pores** round to angular, 5–6 per millimetre; edges thin, entire, becoming lacerate.

Hyphae 3–7 μm diameter, walls thin to thick, hyphae on pileus surface mostly thin-walled in agglutinated pale yellow to pale brown strands; **basidiospores** allantoid, 4–5 \times 1.0–1.5 μm .

Notes: Three similar polypores in BC are compared with *P. fragilis* under *Amylocystis lapponica*.

Postia guttulata
(Peck) Jülich
Syn. *Oligoporus guttulatus* (Peck) Gilb. &
Ryvarden

Habitat/range: On live and dead conifers, infrequently on hardwoods, causing a brown cubical rot in the butts of live *Picea*. In BC, known from Haida Gwaii, southern Vancouver Island, Wells Gray Park, and the Revelstoke area. Elsewhere in western North America, known from WA, ID, MT, CA, and AZ.

Basidiomata sessile, laterally substipitate or reflexed; **taste** bitter; **pileus** dimidiate to fan shaped, applanate, up to 9 cm wide \times 10 cm long \times 2 cm thick, some imbricate; **pileus surface** white, sometimes weakly zonate, glabrous, typically with saucer-shaped, 1–3 mm diameter depressions; some with a very thin, smooth membrane; **context** white to cream, firm, fibrous, up to 1.5 cm thick; **tubes** tinted pale green, up to 5 mm deep; **pore surface** white to cream, often with a pale green tint; **pores** round to angular, 4–6 per millimetre, edges thin, becoming lacerate.



Hyphae 3–12 μm diameter, walls thin to very thick; **gloeoplerous hyphae** 5–14 μm diameter, wavy, constricted, contents staining red in phloxine; **cystidioles** fusoid, 13–18 \times 4–5 μm , not projecting; **basidiospores** oblong to cylindrical, 4–5 \times 2.0–2.5 μm .

Notes: *Tyromyces chioneus*, *Postia guttulata*, and *P. stiptica* basidiomata are similar. Their distinctive features are discussed under *P. stiptica*. Each of the squares in the scale is 1 \times 1 cm.

Postia lateritia
Renvall

Syn. *Oligoporus lateritius*
(Renvall) Ryvarden &
Gilb.

Habitat/range: On conifers, preferring large-diameter logs, causing a brown rot. In BC, known from one collection in the McLeod Lake district. Unknown elsewhere in western North America.



Basidiomata annual, reflexed, rarely sessile or totally effuse, solitary or gregarious, when effuse up to 3.5×12 cm wide, 1–5 mm thick; **pileus** thin, up to 11 cm long \times 1–5 (–15) mm wide \times up to 9 mm thick from the substrate, up to 9 mm thick at the base; **pileus surface** soft, tomentose and azonate, cream with a few reddish-brown dots, becoming evenly rusty or brick red; **margin** distinct, up to 1.5 mm wide; **context** white to cream, soft, up to 2 mm thick; **tubes** white, up to 5 mm deep; **pore surface** white, bruising reddish brown; **pores** round to angular, 3–4 per millimetre, edges thin, dry, finely tomentose, becoming lacerate.

Hyphae 2.8–6.6 μm diameter, walls thin to thick, on pileus surface thick-walled forming ferruginous to golden-yellow strands; **gloeoplerous hyphae** scattered; **cystidioles** cylindrical with a finger-like apex, 10–25 \times 2–4 μm ; **basidiospores** allantoid, 4.5–6.3 \times 1.0–1.8 μm .

Notes: This polypore was recognized in 1992; before that, specimens of *P. lateritia* may have been mislabelled as either *P. fragilis* or *P. leucospongia*.

Postia leucomallella
(Murrill) Jülich
Syn. *Oligoporus leucomallellus* (Murrill)
Gilb. & Ryvarden

Habitat/range: On dead conifers, causing a brown rot. In BC, known only from Manning Park where it grew on the side of a decorticated, well-rotted, 40 cm diameter *Thuja plicata* log. Elsewhere in western North America, known only from ID.

Basidiomata sessile or reflexed, small, 0.6 cm wide \times ~ 2 cm long \times 0.5 cm thick, imbricate, soft; **pileus** white to cream; **context** white, up to 2 mm thick; **tubes** when dry pale ochreous, up to 10 mm deep; **pore surface** white to pale buff; **pores** round to angular, 2–4 per millimetre.

Hyphae 2.5–6.0 μm diameter, walls thin to thick; **gloeocystidia** common, projecting up to 15 μm beyond the hymenium, 25–35 \times 6–8 μm , cylindrical to clavate, most with a stem of 3 μm diameter, some up to 30 μm long and lying



parallel to the tromal hyphae, contents pale yellow; **basidiospores** cylindrical, some slightly curved, $4.5\text{--}5.5 \times 1.5 \mu\text{m}$.

Notes: Microscopically, the gloeocystidia are found in the hymenium and have pale yellow contents.

***Postia leucospongia*
(Cooke & Harkn.)
Jülich**

Syn. *Oligoporus leucospongia* (Cooke & Harkn.) Gilb. & Ryvarden
Marshmallow polypore

Habitat/range: On conifers, especially logs of *Abies lasiocarpa*, *Pinus albicaulis*, and *Pseudotsuga menziesii*, appearing in spring in association with receding snow banks, causing a brown cubical rot. In BC, known from Revelstoke, Creston, Manning Park, and southern Vancouver Island (Bowser). Elsewhere in western North America, widespread at elevations above the snow line from AK and YT south to NM and AZ.



Basidiomata annual, sessile or reflexed, soft, cottony; **pileus** 1–5 cm wide \times 2–10 cm long \times 1.0–2.5 cm thick, semicircular to elongate; **pileus surface** white to cream, a thin, tomentose to papery, fragile membrane; **margin** broad, thick, a cottony roll that partially covers the pore surface; **context** duplex, the upper layer cottony, 1–2 cm thick, the lower layer 1–1.5 mm thick, tough, dense; **tubes** 2–6 mm deep; **hyphal pegs** present; **pore surface** white to pale buff, often with a pinkish cast; **pores** round to angular, 2–4 per millimetre, edges thick becoming thin, lacerate or dentate.

Hyphae 3–7 µm diameter, walls thin to thick; **basidiospores** allantoid, 4.5–6.0 × 1.0–1.5 µm.

Notes: The basidiomata are delicate and shrivel as the logs dry. The thick, soft, cottony (marshmallow-like) pileus is characteristic but compare *P. ptychogaster*.

Postia mappa
(Overh. & J. Lowe)

**M.J. Larsen &
Lombard**

Syn. *Oligoporus mappus*
(Overh. & J. Lowe) Gilb.
& Ryvarden

Habitat/range: On conifers, infrequently on hardwoods, especially fence rails and bridge timbers, causing a brown cubical rot. In BC, known from one report on *Thuja plicata* at Enderby (Overholts and Lowe 1946). Elsewhere in western North America, known from ID.



Basidiomata effuse, up to 10 cm diameter, typically very thin, separable; **margin** white to cream, soft, fimbriate, up to 1 mm wide; **context** white, soft, very thin; **tubes** whitish to ivory or pale buff, up to 1 mm deep; **pore surface** white to pale buff; **pores** round to angular, 3–4 per millimetre, edges thick, finely tomentose, becoming thin.

Hyphae 2.5–4.0 µm diameter, walls thin to thick; **basidiospores** allantoid, 8–12 × 2–3 µm.

Postia perdelicata
**(Murrill) M.J. Larsen
& Lombard**

Syn. *Oligoporus perdelicatus* (Murrill)
Gilb. & Ryvarden

Habitat/range: On conifers, rarely on hardwoods, causing a brown cubical rot. In BC, known from one collection on *Pseudotsuga menziesii* on Vancouver Island (Cowichan Lake). Elsewhere in western North America, known from NT, WA, ID, MT, OR, CA, and AZ.

Basidiomata reflexed to sessile, annual; taste mild (Gilbertson and Ryvarden 1987) or bitter (Lowe 1975); **pileus** solitary, dimidiate to elongated, up to 1 cm wide × 3 cm long × 0.2 cm thick; **pileus surface** white, finely tomentose to glabrous; **context** white, soft to firm, up to 1 mm thick; **tubes** white, up to 1 mm deep; **pore surface** white; **pores** round to angular, 5–7 per millimetre, edges thin, becoming lacerate.



Hyphae 2.5–5.0 μm diameter, walls thin to thick; **basidiospores** mostly al-lantoid, some cylindrical and straight, $3.5\text{--}5.0 \times 1.0\text{--}1.5 \mu\text{m}$.

Notes: Similar to *P. caesia* but lacks the blue tint.

***Postia placenta*
(Fr.) M.J. Larsen &
Lombard**

Syn. *Oligoporus placenta*
(Fr.) Gilb. & Ryvarden

Habitat/range: On conifers, rarely on *Populus*, causing a brown cubical rot. In BC, scattered from Haida Gwaii and Prince George south to Revelstoke, the Vancouver area, and southern Vancouver Island. Elsewhere in western North America, known from AB and WA south to AZ and NM.

Basidiomata effuse, annual, up to 30 cm diameter, tough, adnate; **margin** pale pink or some white, fimbriate, up to 1 mm wide; **context** white or very pale salmon pink, less than 1 mm thick; **tubes** salmon pink, up to 3 mm deep; **pore surface** salmon pink or some white; **pores** round to angular, 3–4 per millimetre, sometimes splitting to form large, round depressions, edges thick, entire, becoming thin, lacerate.

Hyphae frequently branched, 2.0–4.5 μm diameter, walls thin to thick; **gloeo-plerous hyphae** in the trama, up to 8 μm diameter; **basidiospores** cylindrical, some allantoid, $5.5\text{--}7.0 \times 2.0\text{--}2.5 \mu\text{m}$.



***Postia ptychogaster*
(F. Ludw.) Vesterh.**

Habitat/range: On a mossy log. In BC, known from southern Vancouver Island (near Mesachie Lake). Elsewhere in western North America, known from WA, OR, and CA.



Basidiomata effuse to pileate, annual, dimidiate, sessile, spatulate or laterally stipitate, only several centimetres in diameter, when dry fragile, frequently developing on the lower surface of the imperfect stage; **pileus surface** white, azonate, finely pubescent; **context** duplex, about 14 mm thick with a dense, waxy, 4 mm thick mycelial layer adjacent to the tube layer, from this dense layer hyphal strands permeate (like veins or roots) a soft, cottony mycelial layer, 10 mm thick; **tubes** pallid, up to 3 mm deep; **pore surface** pallid; **pores** angular, 2 (-3) per millimetre, edges thin, lacerate.

Imperfect stage (above left) typically preceding the development of the tube layer, sessile, cushion-shaped, up to 4 × 5 cm, soft, cream, surface covered with minute spines; core becoming powdery, grey brown.



Hyphae with clamp connections, walls hyaline, thin, of two types: (a) in the cottony context typically curved, 2–3 µm diameter, prominent clamp connections, (b) in the dense context adjacent to the tubes and in the strands, essentially parallel, straight, (2.4–) 3.0–5.0 (–8.0) µm diameter; **tramal hyphae** straight, vertically woven, 3–4 µm diameter, walls typically 0.5 µm thick, en masse weakly to moderately intensely dextrinoid; **basidiospores** ellipsoid to nearly oblong (with sides parallel), some narrowed slightly over the apical one-third, 3.8–4.4 × 2.4–2.8 µm, walls hyaline, ~0.3 µm thick, smooth, neither amyloid nor dextrinoid, cyanophilous (walls a distinct dark blue line), with a minute apiculus; **chlamydospores** arising from curved, narrow hyphae in the cottony context, catenulate, ellipsoid to nearly oblong, some with ends truncated, 5.6–8.0 (–10.0) × 3.5–6.0 µm, walls smooth, about 0.4 µm thick, pale yellow brown, dextrinoid, cyanophilous.

Notes: *Postia leucospongia* also has a soft, spongy context but is often near receding snow banks, has allantoid basidiospores only 1.0–1.5 µm wide, and lacks chlamydospores.

Postia sericeomollis
(Romell) Jülich
Syn. *Oligoporus sericeomollis* (Romell)
Bondartzeva

Habitat/range: On live and dead conifers, especially living *Thuja plicata*, causing a brown cubical heart rot. This fungus and *Phellinidium weiri* are the two most common causes of butt and trunk decay in *T. plicata* (Allen et al. 1996). The decay columns, when aged and hollow, provide optimal roosts used by pileated woodpeckers. In BC, known from Haida Gwaii, Prince George, Blue River, the Revelstoke area, the Vancouver area, and the southern tip of Vancouver Island. Elsewhere in western North America, known from NT, WA, ID, MT, OR, WY, CO, and AZ.



Basidiomata effuse, annual, up to 15 cm diameter, separable; **taste** bitter; **margin** white, tomentose, fimbriate, relatively wide; **context** white, less than 1 mm thick; **tubes** soft, white, up to 4 mm deep; **pore surface** white to pale cream, tan; **pores** round to angular, 4–6 per millimetre, edges thin, entire.

Hyphae 2–4 µm diameter, walls thin to thick; **cystidia** abundant in some specimens to uncommon in others, ventricose, 14–26 × 6–10 µm, arising as right-angle branches from the trama hyphae, barely projecting, walls thick, apically encrusted; **basidiospores** oblong to narrowly ellipsoid, 4–5 × 2.0–2.5 µm.

Notes: A similar species also with cystidia, *P. hibernica* (Berk. & Broome) Jülich, occurs in Alberta and Idaho but has not yet been found in British Columbia. Its allantoid, 5–6 × 1.0–1.5 µm basidiospores distinguish it from *P. sericeomollis*.

Postia stipitica
(Pers.) Jülich
Syn. *Oligoporus stipiticus*
(Pers.) Gilb. & Ryvarden

Habitat/range: On hardwoods and conifers, causing a brown cubical rot. In BC, known from Haida Gwaii, southern Vancouver Island, and the Vancouver area. Elsewhere in western North America, known from SK, WA, ID, MT, OR, CA, and AZ.

Basidiomata sessile or reflexed, annual, sometimes in small clusters; **taste** immediately very bitter; **pileus** 1.5–8.0 cm wide × 2–15 cm long × 0.5–1.8 cm thick, semicircular, reniform or elongated; **pileus surface** white to ivory, often rough and ornamented with small black dots, sometimes glabrous; **context** up to 1 cm thick, white, wet cheesy; **tubes** up to 0.8 cm deep; **pore surface** white to ivory; **pores** round to angular, 5–6 per millimetre, edges thin, becoming lacerate.



Hyphae 2–5 µm diameter, swelling to 8 µm in KOH, walls thin to thick; basidiospores 4.0–5.5 × 1.5–2.0 µm, oblong to short-cylindrical.

Notes: *Tyromyces chioneus*, *P. guttulata*, and *P. stiptica* basidiomata are similar in appearance and their microscopic features are confusingly similar. *Postia guttulata* is characterized by the weakly zonate pileus with saucer-shaped, 1–3 mm diameter depressions, the exudation of drops of liquid on most fresh basidiomata, and a faint greenish cast to the pore surface. It grows on both conifers and hardwoods. *Postia stiptica* has a rough pileus that usually has small, black dots on the surface and also grows on both conifers and hardwoods. The separation of *T. chioneus* from *P. guttulata* and *P. stiptica* is made easy by the bitter taste, fresh or dried, of the *Postia* species. If the basidiomata are on a conifer, then it will not be *T. chioneus* as that species is restricted to hardwoods. *Tyromyces chioneus* also has a weakly aromatic odour that, to the author, is sweet-spicy with a citrus tinge. Some basidiomata of *P. tephroleuca* lack the mouse-grey pileus surface, but they differ from *P. stiptica* in having narrower (1.0–1.5 µm), allantoid basidiospores.

Postia tephroleuca
(Fr.) Jülich
Syn. *Oligoporus tephroleucus* (Fr.) Gilb. & Ryvarden

Habitat/range: On conifers and hardwoods, causing a brown cubical rot. In BC, widely scattered from Haida Gwaii, Liard Hot Springs, Quesnel, Squamish, and southern Vancouver Island (Englishman River Park and Cowichan Lake). Elsewhere in western North America, known from ID, MT, and AZ.



Basidiomata sessile or reflexed, annual; **pileus** up to 7 cm wide × 8 cm long × 3.8 cm thick; **pileus surface** cream to mouse grey, coarsely strigose; **context** white, typically concentrically zonate, up to 3 cm thick; **tubes** white to cream, up to 8 mm thick; **hyphal pegs** present; **pore surface** white; **pores** 3–4 per millimetre, edges thin, finely lacerate.

Hyphae 3–8 µm diameter, walls thin to thick, when thick with a wandering lumen; **basidiospores** allantoid, 3.0–6.0 × 1.0–1.5 µm.

Notes: Basidiomata with a mouse-grey pileus predominate but see the comment under *P. stipitica*.

***Postia undosa*
(Peck) Jülich**

Syn. *Oligoporus undosus*
(Peck) Gilb. & Ryvarden

Habitat/range: On conifers, occasionally on hardwoods, causing a brown cubical rot. In BC, known from Haida Gwaii, Quesnel, Revelstoke, the Nelson area, Kelowna, and southern Vancouver Island. Elsewhere in western North America, known from AB to WA and south to CA and NM.



Basidiomata effuse or reflexed, annual; **pileus** typically narrow, elongate, up to 3 cm wide × 3 cm long × 1.5 cm thick; **margin** typically undulating; **pileus surface** white to cream, tomentose to glabrous, smooth to shallowly sulcate; **context** white, soft, up to 4 mm thick, white hyphal mats developing in cracks in the wood; **tubes** up to 11 mm deep; **hyphal pegs** present; **pore surface** cream; **pores** angular to irregular, 1–3 per millimetre, edges thin, entire to incised.

Hyphae 2.5–8.0 µm diameter, walls thick with a narrow lumen, swelling and gelatinizing in KOH; **basidiospores** allantoid, 4.5–6.0 × 1.0–1.5 µm.

Notes: The undulating margin and relatively large pores characterize *P. undosa*. Each of the squares in the scale is 1 × 1 cm.

PSEUDOINONOTUS T. WAGNER & M. FISCH.

Pseudoinonotus
dryadeus
(Pers.) T. Wagner &
M. Fisch.
Syn. *Inonotus dryadeus*
(Pers.) Murrill
Warted oak polypore



Habitat/range: On live and dead *Abies*, *Tsuga*, and *Quercus*, causing a white rot. Typically fruiting at the base of live trees or attached to roots. In BC, known only from Haida Gwaii and the southern Vancouver Island. Elsewhere in western North America, known from OR, CA, AZ, and NM.

Basidiomata sessile, annual, up to 23 cm wide × 35 cm long × 12 cm thick, applanate, dimidiate, sometimes imbricate; **pileus surface** buff to dark brown, finely tomentose, becoming glabrous, becoming rimose; **context** bright yellowish brown, becoming reddish brown, soft, fibrous, with streaks of dark mycelium, up to 10 cm thick, xanthochroic; **tubes** bright yellowish brown, becoming reddish brown, up to 2 cm deep; **pore surface** buff, becoming dark brown and cracked, often exuding amber droplets, **pores** round to angular, 4–6 per millimetre, edges thin, entire.

Hyphal system monomitic. **Hyphae** 5–14 µm diameter with simple septa, walls thin and pale brown to thick and dark brown; **setae** in the hymenium, few to many, ventricose, apex often curved, 25–40 × 9–16 µm; **basidia** broadly clavate to ovoid, 14–16 × 9–11 µm, four sterigmate; **basidiospores** subglobose, 6–8 × 5–7 µm, walls hyaline, dextrinoid, thin to thick.

Notes: The distinctive features of this species are the large basidiomata, subglobose, hyaline basidiospores, and hooked, ventricose setae.



Habitat: On conifers and hardwoods, causing a brown cubical rot.

Basidiomata sessile, reflexed or effuse, annual, orange to rust, in *P. alboluteus* up to 1 m diameter, developing in spring and associated with receding snow banks; **pileus** dimidiate or elongated, up to 6 cm wide × 9 cm long × 2.6 cm thick, some imbricate; **pileus surface** pale orange to rust, typically zonate, tomentose or glabrous, becoming hispid or radially fibrillose, soft, spongy; **context** pale orange, staining red in KOH, up to 5 mm thick, sometimes duplex, upper layer soft and fibrous, lower layer firm and corky; **tubes** pale orange, up to 2 cm deep, red in KOH; **pore surface** pale or bright orange; **pores** round to angular, 2–3 per millimetre or in *P. alboluteus* typically over 1 mm diameter, edges thin, becoming lacerate.

Hyphal system monomitic. **Hyphae** 2–10 µm diameter with simple septa, walls thin to thick, hyaline, pale reddish to brownish, pale red in KOH then fading to hyaline; **cystidia** numerous, cylindrical, 60–120 × 4–10 µm, projecting up to 60 µm, walls thin or moderately thick; **basidia** clavate, 25–45 × 5–6 µm, four sterigmate; **basidiospores** cylindrical to oblong, 6–14 × 2.5–4.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Basidioma effuse, some slightly reflexed; pores typically greater than 1 mm diameter; cystidia 60–120 × 5–10 µm; basidiospores cylindrical, 9–14 µm long *P. alboluteus*
- 1b Basidioma typically dimidiate or distinctly reflexed with smaller pores, cystidia and basidiospores 6–9 µm long *P. fulgens*

***Pycnoporellus*
alboluteus
(Ellis & Everh.)
Kotl. & Pouzar**

Orange sponge polypore

Habitat/range: On conifers, especially *Picea*, infrequently on *Populus*, causing a brown cubical rot. Basidiomata develop in spring in association with receding snow banks. From Haida Gwaii and the Prince George area, then widespread in the southern half of BC. Widespread elsewhere in western North America.



Basidiomata bright orange, effuse to indistinctly reflexed, often 1 m diameter; **pileus** surface soft, spongy, loosely strigose; **context** pale orange, staining cherry red in KOH, soft, up to 3 mm thick; **tubes** pale orange, up to 2 cm deep, edges splitting to form large teeth; **pore surface** bright orange; **pores** angular, typically over 1 mm diameter.

Hyphae 2–10 μm diameter with simple septa, walls thin to thick, pale red in KOH then fading to hyaline; **cystidia** frequent, cylindrical, 60–120 \times 5–10 μm , projecting up to 60 μm , walls typically moderately thick; **basidiospores** cylindrical, 9–14 \times 3.0–3.5 μm .

***Pycnoporellus fulgens*
(Fr.) Donk**

Habitat/range: On conifers and hardwoods, causing a brown cubical rot. In BC, known from Haida Gwaii, Hazelton, the Prince George area, Robson Valley, Wells Gray Park, and south to Manning Park, Vancouver, and southern Vancouver Island (Cowichan Lake). Widespread elsewhere in western North America.



Basidiomata sessile or reflexed, annual; **pileus** dimidiate or elongated, up to 6 cm wide \times 9 cm long \times 2.6 cm thick, some imbricate; **pileus** surface pale orange to rust, tomentose or glabrous, becoming hispid or radially fibrillose, typically zonate; **context** pale orange, red in KOH, up to 2 cm thick, sometimes duplex, upper layer soft and fibrous, lower layer firm and corky; **tubes** pale orange, up to 6 mm thick, red in KOH; **pore surface** pale orange to yellow; **pores** round to angular, 2–3 per millimetre, edges thin, becoming lacerate.

Hyphae 4–9 μm diameter with simple septa, walls typically very thick, leaving only a capillary lumen, pale red to brownish red; **cystidia** numerous, cylindrical, 45–60 \times 4–6 μm , projecting up to 35 μm , walls thin; **basidiospores** cylindrical to oblong, 6–9 \times 2.5–4.0 μm .

PYCNOPORUS P. KARST.

Pycnoporus cinnabarinus
(Jacq.) P. Karst.

Cinnabar shelf

Habitat/range: On hardwoods, rarely on conifers, causing a white rot. Widespread in the southern half of BC and elsewhere in western North America.

Basidiomata sessile to reflexed, leathery, up to 7 cm wide \times 13 cm long \times 2 cm thick; **pileus** dimidiate to elongated; **pileus surface** ochreous salmon to apricot orange, fading or becoming black, glabrous; **context** red to pale orange, soft, fibrous to corky, up to 1.5 cm thick; **tubes** up to 4 mm deep; **hyphal pegs** numerous; **pore surface** bright red; **pores** round to angular, 3–4 per millimetre, edges thick, tomentose, becoming thin, lacerate.



Hyphal system trimitic. Hyphal walls neither amyloid nor dextrinoid. **Generative hyphae** 3–5 μm diameter with clamp connections, walls thin; **skeletal hyphae** 2.5–10.0 μm diameter, rarely branched; **binding hyphae** 1.5–5.0 μm diameter; **cystidia** lacking; **basidia** clavate, 18–25 \times 5.0–7.5 μm , four sterigmate; **basidiospores** allantoid, 6–8 \times 2.5–3.0 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The distinctive red basidiomata often grow in direct sunlight.

RICIDOPORUS MURRILL

Rigidoporus crocatus
(Pat.) Ryvarden

Syn. *Poria nigrescens*
Bres.

Habitat/range: On conifers and hardwoods, causing a white rot. In BC, known from Haida Gwaii, Vancouver Island, and the Princeton area. Elsewhere in western North America, known from AK, WA, ID, MT, CA, AZ, and NM.



Basidiomata perennial, effuse, up to 10 cm diameter, tough, crisp, separable; **margin** buff, finely tomentose, up to 2 mm wide; **context** pinkish buff, corky to rigid, up to 1 mm thick; **tubes** darker than context, distinct, pinkish tan, multi-layered, each layer up to 3 mm deep; **pore surface** flesh pink to pinkish brown; **pores** round to angular 5–7 per millimetre, edges thin, entire.

Hyphal system monomitic. **Hyphae** 3.0–8.5 μm diameter with simple septa, walls thin to thick; **cystidia** lacking; **basidia** broadly clavate, 17–20 \times 10–12 μm , four sterigmate; **basidiospores** ovoid to subglobose, 3.5–5.5 \times 3.5–5.0 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

SARCOPORIA P. KARST.

Sarcoporia polyspora

P. Karst.

Syn. *Parmastomycetes transmutans* (Overh.)

Ryvarden & Gilb.

Habitat/range: On conifers and hardwoods, causing a brown cubical rot. In BC, isolated from trunk rot in live *Abies lasiocarpa* in the Prince George area (Smith and Craig 1968). Elsewhere in western North America, widespread and common from NT to AZ.

Basidiomata annual, effuse, reflexed or sessile, soft and fleshy; **taste** weakly acid; **pileus** laterally elongated, up to 1 cm wide \times 8 cm long \times 0.8 cm thick; **pileus surface** white to pale brown, bruising or drying reddish brown, strigose, matted; **margin** ivory, cream to pale buff, tomentose, soft, fimbriate, up to 4 mm wide; **context** white, soft to cartilaginous, except gelatinous next to the tubes, up to 5 mm thick; **tubes** fragile, 1–3 mm deep; **hyphal pegs** lacking; **pore surface** white, when dry reddish brown; **pores** round, 2–4 per millimetre, edges thin.



Hyphal system monomitic. **Hyphae** 3–6 μm diameter with clamp connections, frequently branched, walls hyaline, thin to thick; **cystidia** lacking; **basidia** clavate, 20–27 \times 5–7 μm , four sterigmate; **basidiospores** ellipsoid to cylindrical, (4–) 5–7 \times 2.5–4.0 μm , walls slightly thickened, hyaline, dextrinoid, smooth.

Notes: The reddish-brown staining when bruised (or in age) is a good field character. Microscopically, the dextrinoid basidiospores reduce the possible names to only a few species. Three similar polypores in British Columbia are compared with *S. polyspora* under *Amylocystis lapponica*.

SCHIZOPORA VELEN.

Habitat: On hardwoods, infrequently on conifers, causing a white rot. Often on the lower surface of dead branches on live trees.

Basidiomata effuse or forming nodule-like pilei, initially white or cream, tough, often large, up to 7 mm thick; **margin** narrow, white, byssoid or indistinct; **context** white to pallid, fibrous, up to 2 mm thick; **tubes** initially ploid, becoming toothed with lacerate edges, white, cream to ochreous, up to 5 mm deep; **surface of pores and teeth** cream, ochreous, pale reddish brown, or with an orange tint; **pores** angular, variable in size, 1–5 per millimetre.

Hyphal systems monomitic and dimitic. **Generative hyphae** 2–4 µm diameter with clamp connections, some hyphal tips subglobose, walls thin to moderately thick, some in the trama very thick leaving only a capillary lumen, some at the edges of pores, teeth or ridges are encrusted over the apical portion; **skeletal hyphae** only in *S. paradoxa*, common to infrequent, especially in the margin and trama, walls thick, often leaving only a capillary lumen; **cystidia** of two shapes: (a) fusoid with an attenuated, slender apex or (b) with a subglobose, ~ 5 µm diameter apex, both shapes with some apices encrusted with crystals or a resinous droplet; **basidia** cylindrical to clavate with a median constriction (subburniform), 15–20 × 4–5 µm, four sterigmate; **basidiospores** ellipsoid to ovoid, 4.0–6.5 × 3.0–4.5 µm, containing one large oil drop, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Pores 3–5 per millimetre, basidiospores 3.5–5.0 × 3.0–3.5 µm *S. flavipora*
- 1b Pores 1–3 per millimetre, basidiospores 4.0–6.5 × 3.0–4.5 µm 2
- 2a Basidiospores 4.0–5.5 × 3.0–4.0 µm, skeletal hyphae lacking *S. radula*
- 2b Basidiospores 5.5–6.5 × 3.5–4.5 µm, skeletal hyphae present *S. paradoxa*

***Schizopora flavipora* (Cooke) Ryvarden**

Habitat/range: In BC, on a presumably dead trunk of *Alnus* at Fairy Lake, near Port Renfrew, southern Vancouver Island and not reported elsewhere in North America (Langer 1994).

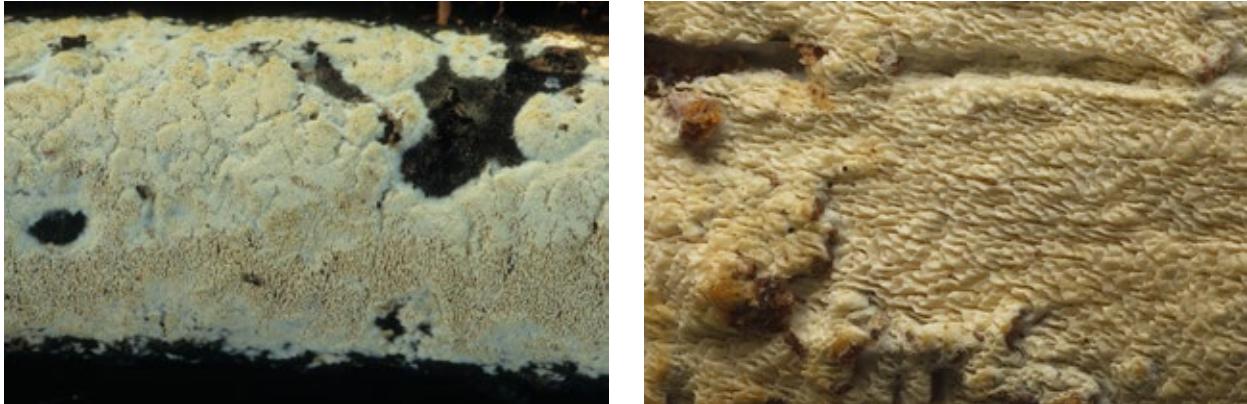


Basidiomata effuse, tough, leathery, some large as a result of several small ones growing together; **margin** near white, fimbriate, up to 2 mm wide; **context** cream to pallid, corky when dry, less than 1 mm thick; **tubes** cream to pallid, up to 3 mm deep; **pore surface** near white to cream; **pores** angular to sinuous, 3–5 per millimetre, sometimes splitting to form spines or teeth.

Hyphal system monomitic. **Generative hyphae** 2–6 μm diameter with clamp connections, often branched, walls thin to moderately thick; **cystidia** of two types: (a) in the hymenium fusoid with a sparsely encrusted apex and (b) primarily in the trama and context with a subglobose, $\sim 5 \mu\text{m}$ diameter apex; **basidiospores** ellipsoid to ovoid, $3.5\text{--}5.0 \times (2.5\text{--}) 3.0\text{--}3.5 \mu\text{m}$, containing a large oil drop.

Schizopora paradoxa
(Schrad.) Donk
Split-pore polypore

Habitat/range: On hardwoods, causing a white rot. Often on the lower surface of dead, still-attached branches. In BC, known from Haida Gwaii, Cottonwood (near Quesnel), Wells Gray Provincial Park (Hallenberg 1983), the Vancouver area, and the southern half of Vancouver Island. Elsewhere in western North America, known from AK, WA, and CA.



Basidiomata effuse, sometimes forming nodulose pilei, especially on oblique surfaces, tough, often large; **margin** byssoid or indistinct; **context** soft-fibrous, up to 2 mm thick; **tubes** initially poroid, some splitting to form teeth with lacerate edges, up to 5 mm deep; **surface of pores, tubes, and teeth** white, becoming whitish cream or yellow with grey tints; **pores** 1–3 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2–4 μm diameter with clamp connections, walls thin or slightly to moderately thick, some in the trama with subglobose tips, up to 7 μm diameter, some coated with a crystalline or resinous layer; **skeletal hyphae** common, especially in the margin and trama, walls thick, often leaving only a capillary lumen; **cystidia** fusoid or with a subglobose, up to 5 μm diameter apex; **basidiospores** ellipsoid, $5.5\text{--}6.5 \times 3.5\text{--}4.5 \mu\text{m}$, containing a large oil drop.

Notes: *Schizopora radula* has shorter basidiospores and the pore surface has an orange tint.

Schizopora radula
(Pers.) Hallenberg

Habitat/range: On hardwoods, infrequently on conifers, causing a white rot. In BC, known from four collections on *Alnus rubra* and *Pseudotsuga menziesii* from Cowichan Lake (Ginns and Macrae 1971; Langer 1994) and on an unidentified hardwood from Vancouver (Hallenberg 1983). Distribution elsewhere in western North America uncertain because samples were mislabelled as *S. paradoxa*.



Basidiomata effuse, up to 5 mm thick; **margin** narrow, white; **context** less than 0.5 mm thick, white to pallid, fibrous; **tubes** cream to ochreous, up to 4 mm deep; **pore surface** with an orange tint, cream to ochreous or pale reddish brown; **pores** varying in shape: typically angular and 1–3 per millimetre to strongly lacerate (appearing tooth-like), edges thin, becoming thick.

Hyphal system monomitic. **Generative hyphae** 2–4 μm diameter with clamp connections, some hyphal tips subglobose up to 7 μm diameter, walls thin to moderately thick, some in the trama very thick leaving only a capillary lumen, the apical portion encrusted at the edges of pores, teeth or ridges; **cystidia** fusoid with a narrow ($\pm 3 \mu\text{m}$ diameter) stem-like base and a subglobose, up to 6 μm diameter apex; **basidiospores** ellipsoid, 4.0–5.5 \times 3–4 μm , containing one large oil drop.

Habitat: On hardwoods and conifers, causing a white rot.

Basidiomata effuse to reflexed, perennial; **odour** in *S. odora* garlic-like; **margin** distinct, white, cream, narrow to wide, floccose to fimbriate, tomentose to membranous; **strands** white, only in *S. subincarnata* and *S. alutacea*, in the margins, beneath some basidiomata and in the adjacent wood; **pileus** dimidiate to elongate, up to 3 cm wide, thin, leathery, some imbricate; **pileus surface** white to cream, glabrous to finely tomentose to matted hirsute; **context** white to cream, soft or firm, fibrous, thin, in pileate conks up to 5 mm thick; **tubes** white to pale buff, soft-waxy, leathery or rigid, each layer up to 8 mm deep; **hyphal pegs** conspicuous; **pore surface** white, cream to tan, sometimes tinted pink, sometimes glancing; **pores** round, angular or somewhat sinuous in *S. lenis*, 5–10 per millimetre.

Hyphal systems dimitic and trimitic. **Generative hyphae** 2–6 µm diameter with clamp connections, apices at pore mouths encrusted, except lacking encrustations in *S. lenis*; **skeletal hyphae** 2–6 µm diameter, non-septate, walls in *S. albocrenea* and *S. lenis* swelling and (or) dissolving in KOH; **binding hyphae** 1.5–4.5 µm diameter; **strands** only in *S. alutacea* and *S. subincarnata*; **cystidioles** fusoid or basally swollen with an elongated acute apex, 9.5–20.0 × 3.0–5.5 µm; **basidia** clavate, 8–17 × 3–6 µm, four sterigmate; **basidiospores** allantoid, 3.0–6.5 × 0.5–2.1 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- | | | |
|----|---|------------------------|
| 1a | Basidiomata reflexed..... | 2 |
| 1b | Basidiomata effuse | 3 |
| 2a | On conifers; pore surface pinkish orange; some generative hyphae greater than 4 µm diameter | <i>S. amorpha</i> |
| 2b | On dead hardwoods, rarely on conifers; pore surface white to cream; generative hyphae up to 3.5 µm diameter..... | <i>S. nivea</i> |
| 3a | Basidiomata with a distinct garlic-like odour | <i>S. odora</i> |
| 3b | Basidiomata lacking a distinct odour | 4 |
| 4a | Pore surface pinkish orange; some generative hyphae up to 6 µm diameter | <i>S. amorpha</i> |
| 4b | Pore surface white, cream, or pale brown, some in <i>S. subincarnata</i> tinted pink; generative hyphae up to 4.5 µm diameter | 5 |
| 5a | Margin with conspicuous white strands | 6 |
| 5b | Margin lacking strands | 7 |
| 6a | Basidiomata creamy white often with a pink tint, soft-waxy to rather leathery; strands rare in the margin | <i>S. subincarnata</i> |
| 6b | Basidiomata white to pale greyish buff, soft, separable; strands common in the margin | <i>S. alutacea</i> |
| 7a | Basidiomata perennial | <i>S. stellae</i> |
| 7b | Basidiomata annual | 8 |

- 8a On hardwoods, rarely on conifers; pores 8–10 per millimetre; binding hyphae present *S. nivea*
- 8b On conifers, rarely on hardwoods; pores 4–8 per millimetre; binding hyphae absent 9
- 9a Basidiospores up to 1.0 µm wide *S. stellae*
- 9b Basidiospores 1.0–2.1 µm wide 10
- 10a Basidiospores 3.5–5.0 µm long; pore mouths lacking encrusted hyphal tips *S. lenis*
- 10b Basidiospores 4.0–6.5 µm long; pore mouths with encrusted hyphal tips 11
- 11a Basidiospores 4.0–5.5 × 1.3–1.8 µm *S. albocrenea*
- 11b Basidiospores 4.5–6.5 × 1.0–1.5 µm 12
- 12a Pore surface buff white or tinted pink; pores round, edges even *S. subincarnata*
- 12b Pore surface white; pores angular, edges lacerate *S. odora*

***Skeletocutis
albocrenea***

A. David

Habitat/range: On *Picea engelmannii* and *Pseudotsuga menziesii*, causing a white rot. In North America, known from only three BC collections (Manning Provincial Park and on Vancouver Island [Cowichan Lake]).

Basidiomata effuse, very thin, cream; **margin** narrow, byssoid or membranous; **context** less than 0.05 mm thick; **tube walls** thin; **hyphal pegs** frequent; **pores** angular, (5–) 6–8 per millimetre; **pore surface** white, becoming cream or pale brown; **pore mouths** entire.

Generative hyphae predominate in context and trama, 2–4 µm diameter with clamp connections, walls thin, hyaline; those at pore mouths sparsely crystalline-encrusted and not inflated; **skeletal hyphae** few, wavy, 2.8–3.6 µm diameter, walls thick, becoming gelatinized and dissolving in KOH; **cystidioles** common, fusoid, (5.5–) 9.0–12.0 × 3.8–5.5 µm, apices conical; **basidiospores** allantoid, 4.0–5.5 × 1.3–1.8 µm.

Notes: *Skeletocutis subincarnata* is similar in some respects but differs in having thicker basidiomata that are relatively loosely attached to the substrate; sometimes has a pink tint; slightly longer, slightly narrower basidiospores; and relatively less encrustation of the hyphae in the context and trama.

***Skeletocutis alutacea*
(J. Lowe) Jean Keller**

Habitat/range: On conifers and hardwoods, causing a white rot. In BC, known from Victoria and on *Betula* in West Vancouver. Elsewhere in western North America, known from WA, ID, MT, OR, and CA.

Basidiomata annual, effuse, up to 20 cm diameter, relatively soft, separable; **margin** white to cream, cottony to fimbriate; **strands** in some margins, conspicuous, up to 1 mm diameter; **context** white to cream, soft-fibrous, less than 1 mm thick; **tubes** cream, up to 1 mm deep; **pore surface** white to pale ochreous buff, glancing; **pores** round to angular, 4–8 per millimetre, edges thin, entire, finely granulose.



Generative hyphae 2.5–4.5 µm diameter with clamp connections; **skeletal hyphae** 2–3 µm diameter, rarely branched; **cystidioles** fusoid, 11–15 × 4.0–4.5 µm; **basidiospores** allantoid, 3.5–5.0 × 1.0–1.5 µm.

Notes: The soft texture and hyphal strands distinguish *S. alutacea* from the other *Skeletocutis* species in British Columbia.

***Skeletocutis amorpha*
(Fr.) Kotl. & Pouzar**

Habitat/range: On conifers, causing a white rot. In BC, known from Prince George, Quesnel, Revelstoke, New Denver, and Courtenay (southern Vancouver Island). Elsewhere in western North America, known from AB and MT south to CA and AZ.



Basidiomata effuse, some reflexed, annual; **taste** slightly bitter; **pileus** solitary to imbricate, dimidiate to elongated, up to 2 cm wide × 4 cm long × 0.2 cm thick, thin, leathery; **pileus surface** white to grey or pale buff, tomentose to matted hirsute, smooth to deeply sulcate; **context** up to 1 mm thick, composed of a soft, fibrous upper layer and a firm cartilaginous lower (inner) layer; **tubes** up to 1 mm deep; **pore surface** white to cream, becoming pinkish buff to reddish orange, cartilaginous; **pores** round to angular, 6–8 per millimetre, edges thin, entire.

Generative hyphae 2–6 μm diameter with clamp connections, walls irregularly thickened and the result is a wandering lumen, with encrusted apices at the pore mouths; **skeletal hyphae** 3–6 μm diameter; **binding hyphae** up to 4.5 μm diameter; **cystidioles** fusoid, 12–18 \times 3.5–4.5 μm ; **basidiospores** allantoid, 3.0–4.5 \times 1.3–1.8 μm .

Notes: When fresh, the cartilaginous texture and orange to pink mottling on the pore surface are distinctive.

Skeletocutis lenis

(P. Karst.) Niemelä

Syn. *Diplomitoporus*

lenis (P. Karst.) Gilb. &

Ryvarden

Habitat/range: On conifers, causing a white rot. In BC, known from Haida Gwaii, southern Vancouver Island, Haney, and Cranbrook. Widespread elsewhere in western North America.



Basidiomata effuse, annual, up to 7 mm thick, soft, light weight, separable; **margin** narrow, white; **context** white, soft-cottony, thin; **tubes** papery-tough, up to 6 mm deep; **pore surface** white or silvery white; **pores** round, angular, or somewhat sinuous, 5–7 per millimetre.

Generative hyphae 2–4 μm diameter, those at the pore mouths lacking spiny crystalline encrustations; **skeletal hyphae** 2–5 μm diameter, mostly greater than 3 μm , walls thick, swelling in KOH; **cystidioles** fusoid, some with a slightly elongated acute apex, 15–20 \times 3–4 μm ; **basidiospores** allantoid to lunate, 3.5–5.0 \times 1.2–2.1 μm .

Notes: Included in *Skeletocutis* despite the lack of encrusted hyphal tips.

Skeletocutis nivea

(Jungh.) Jean Keller

Habitat/range: On hardwoods, rarely on conifers, causing a white rot. In southern BC, from the North Thompson River at Blue River to southern Vancouver Island. Elsewhere in western North America, known from WA,

ID, MT, OR, CA, and AZ.

Basidiomata effuse, some reflexed, annual; **pileus** dimidiate to elongate, up to 3 cm wide, some imbricate; **pileus surface** white to cream, finely tomentose to glabrous; **context** white, up to 5 mm thick; **tubes** white to pale buff,



distinct from the context, up to 2 mm deep; **pore surface** white to cream, glancing; **pores** round to angular, 8–10 per millimetre, edges thin, entire.

Generative hyphae 2.0–3.5 μm diameter with clamp connections, walls thin; **skeletal hyphae** 3–5 μm diameter; **binding hyphae** 1.5–2.0 μm diameter; **cystidioles** rare, inconspicuous, fusoid, $\sim 10\text{--}12 \times 3\text{--}4 \mu\text{m}$; **basidiospores** alantoid, 3–5 \times 0.5–1.0 μm .

Notes: The distinguishing features are the small pores, glancing pore surface, and narrow basidiospores.

Skeletocutis odora
(Sacc.) Ginns
Syn. *Antrodia odora*
(Sacc.) Gilb. & Ryvarden

Habitat/range: On conifers, causing a white rot. In BC, known from a collection on *Abies* at Aleza Lake and another collection from Observatory Hill, Victoria. Elsewhere in western North America, known from AK, OR, AZ, and NM.



Basidiomata effuse, annual, up to 9 mm thick, hard, relatively brittle, separable; **odour** strong, garlic-like; **margin** white to cream, finely fimbriate; **context** white to cream, relatively cottony, up to 1 mm thick; **tubes** becoming yellowish brown and contrasting with the paler context; up to 8 mm deep;

pore surface white, becoming pale brown; **pores** angular, 4–6 per millimetre, edges lacerate.

Generative hyphae predominate, 2.0–4.5 μm diameter, often heavily encrusted at the pore edges and in the trama; **skeletal hyphae** few, 2.0–4.5 μm diameter; **cystidioles** often numerous, fusoid, 10–12 \times 4–5 μm , not projecting; **basidiospores** allantoid, 4.5–6.0 \times 1.0–1.5 μm .

***Skeletocutis stellae*
(Pilát) Jean Keller**

Habitat/range: On conifers causing a mottled white rot. In BC, on *Abies* and *Picea*, widespread but uncommon from Haida Gwaii, Prince George, Kootenay National Park, and southern Vancouver Island. Elsewhere in western North America, known from AB and MT south to CA and AZ.



Basidiomata effuse, perennial, adnate; **margin** cream, floccose to fimbriate, typically wide; **context** firm, fibrous, white, up to 2 mm thick; **tubes** rigid, indistinctly layered, each layer up to 3 mm thick; **hyphal pegs** present; **pore surface** cream to pale brown, glancing; **pores** round, 5–7 per millimetre.

Generative hyphae 2–4 μm diameter with clamp connections, those at the pore edges densely encrusted with spiny crystals; **skeletal hyphae** 2–6 μm diameter; **cystidioles** inconspicuous, fusoid, 10–14 \times 3.0–4.5 μm ; **basidiospores** allantoid, 4.5–6.0 \times 0.7–1.0 μm .

***Skeletocutis subincarnata*
(Peck) Jean Keller**

Habitat/range: On conifers, causing a white rot. From Haida Gwaii and Terrace, widespread in the southern half of BC. Elsewhere in western North America, known from AK, AB, ID, MT, CA, and AZ.

Basidiomata effuse, annual; **margin** distinct, white, narrow, tomentose to fimbriate; **strands** rare, white, in the margin, beneath the basidioma, and in the adjacent wood and bark; **context** white, soft, fibrous, thin; **tubes** soft-waxy to leathery, up to 4 mm deep; **hyphal pegs** conspicuous; **pore surface** buff white, some tinted pink; **pores** round, 5–7 per millimetre, edges thin, even, then fimbriate.

Generative hyphae 2–3 μm diameter with clamp connections, those at the pore edges densely encrusted with spiny crystals; **skeletal hyphae** 2–4 μm diameter; **cystidioles** fusoid, 9.5–16.0 \times 3.0–5.5 μm ; **basidiospores** allantoid, 4.0–6.5 \times 1.0–1.5 μm .

Notes: *Skeletocutis stellae* is similar, but the basidiomata are typically perennial and the basidiospores slightly narrower.

SPONGIPELLIS PAT.

Habitat: On live and dead hardwoods, preferring *Populus* species, causing a white rot.

Basidiomata annual, pileate, up to 10 cm wide × 20 cm long × 6.5 cm thick; **pileus** applanate to hoof-like, broadly attached or dimidiate with a narrowed base, some imbricate, fleshy, soft; **pileus surface** white to cream, finely hirsute to tomentose, short hispid to glabrous; **margin** round, velvety to nearly glabrous; **context** white to pale cream, duplex, up to 5 cm thick; **tubes** white to pale cream, up to 1.5 cm deep; **pore surface** white; **pores** round to angular, some daedaleoid, 1–3 per millimetre.

Hyphal system monomitic. **Generative hyphae** 4–9 µm diameter with clamp connections, walls up to 0.5 µm thick; **cystidia** lacking; **basidia** clavate, 20–30 × 7–9 µm, four sterigmate; **basidiospores** broadly ellipsoid to globose, 6–9 × 4.5–7.0 µm, walls slightly thickened, hyaline, smooth, neither amyloid nor dextrinoid.

- 1a Pores often irregular (sinuous to daedaleoid) with edges lacerate and dentate *S. delectans*
- 1b Pores round with edges even (smooth) *S. spumeus*

***Spongipellis delectans*
(Peck) Murrill**

Habitat/range: On live and dead hardwoods, preferring *Populus* species (all BC reports are on *P. balsamifera* ssp. *trichocarpa*), causing a white mottled rot of the heartwood. Scattered in BC from Kitseguecla Creek (near Smithers) south to the Cinema/Quesnel area and in Vancouver. Elsewhere in western North America, known from AK, MT, and OR.



Basidiomata sessile to slightly effuse (extending down the substrate below the pileus); **pileus** solitary or imbricate, dimidiate, applanate to hoof-like, up to 7 cm wide × 15 cm long × 4 cm thick; **pileus surface** white, azonate, tomentose, short hispid to glabrous; **context** white to ochreous, up to 2 cm thick, duplex, corky below, soft and spongy above; **tubes** white to ochreous,

up to 2 cm deep; pore surface white; pores round to angular, 1–2 per millimetre, often irregular (sinuous to daedaleoid) edges thin, entire, becoming lacerate and dentate.

Hyphae 4–7 μm diameter with clamp connections; basidiospores broadly ellipsoid to subglobose, 7–9 \times 5–7 μm , walls slightly thickened, hyaline.

Notes: *Trametopsis cervina* is similar but differs in having allantoid basidiospores and skeletal hyphae.

***Spongipellis spumeus*
(Sowerby) Pat.**

Habitat/range: On live and dead hardwoods, causing a white rot. In BC, known from one report on *Populus balsamifera* ssp. *trichocarpa*, but the specific locality not given (Shaw 1973). Elsewhere in western North America, known from WA, ID, MT, and CO.



Basidiomata annual, pileate, up to 10 cm wide \times 20 cm long \times 6.5 cm thick; pileus applanate, broadly attached or dimidiate with a narrowed base, fleshy, soft; pileus surface creamy white, cream to pale reddish brown, finely hirsute to tomentose, the tomentum becoming matted and agglutinated; margin round, velvety to nearly glabrous; context white to pale cream, up to 5 cm thick, duplex, upper layer of vertically oriented fibres, 0.3–1.0 cm thick, lower layer more dense; tubes white to pale cream, up to 1.5 cm deep; pore surface white; pores round, 1–3 per millimetre, edges entire.

Hyphae 4–9 μm diameter with numerous, conspicuous clamp connections, walls up to 0.5 μm thick; pileus surface hyphae 3–7 μm diameter, contents dense, grainy; basidiospores subglobose to broadly ellipsoid, 6.0–8.5 \times 4.5–6.0 μm , walls slightly thickened.

TRAMETES FR.

Habitat: On live and dead hardwoods and occasionally on conifers, causing a white rot.

Basidiomata annual or, in *T. ochracea*, perennial, sessile, reflexed, in *T. hirsuta* rarely effuse; **odour** of anise only in *T. suaveolens*; **pileus** dimidiate or elongated, applanate, up to 10 cm wide × 14 cm long × 4 cm thick, leathery, some imbricate; **pileus surface** of distinct concentric bands (zonate), variable in colour from white or greyish white, cream, cinnamon buff, brown, reddish brown, bluish grey to blackish, hirsute to tomentose to glabrous; **context** white, cream, in several species with a black line beneath the surface tomentum, tough-fibrous, soft-corky, zonate, up to 3 cm thick; **tubes** white to cream, up to 1 cm deep; **hyphal pegs** present in several species; **pore surface** white, pale buff, cream, smoky grey, cinnamon buff, tan; **pores** angular to round, 1–5 per millimetre, in some species radially elongated to sinuous.

Hyphal system trimitic. **Generative hyphae** generally sparse and indistinct, 2–6 µm diameter with clamp connections; **skeletal hyphae** 3–10 µm diameter; **binding hyphae** 1.5–5 µm diameter; **cystidia** lacking; **basidia** clavate, 8–40 × 4–7 µm, four sterigmate; **basidiospores** cylindrical, straight or slightly curved, allantoid, ellipsoid, 4–12 × 1.5–4.5 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: Clamp connections can be difficult to find; to save time, after a search assume that clamp connections are present and move on.

- 1a Anise odour; basidiospores 9–12 µm long..... *Trametes suaveolens*
- 1b Odour mild; basidiospores 4–9 µm long 2
- 2a Basidiomata effuse 3
- 2b Basidiomata pileate or reflexed 4
- 3a Context duplex with a black line separating the upper soft-fibrous layer from the corky lower layer; pore surface white, tan, or smoky grey; pores 1–4 per millimetre, round to angular; pore mouths even; binding hyphae 2–4 µm diameter *Trametes hirsuta*
- 3b Context lacking a black line; pore surface cinnamon buff, becoming darker; pores up to 1 mm diameter; pore mouths irregular, daedaleoid or splitting to form teeth; binding hyphae lacking *Trametopsis cervina*
- 4a Pore surface variable: poroid, sinuous, daedaleoid to toothlike 5
- 4b Pore surface with pores round or angular, infrequently becoming elongated and sinuous 6
- 5a Pileus surface hirsute to strigose; basidiospores ellipsoid, 4–5 × 2.0–2.5 µm *Trametes gibbosa*
- 5b Pileus surface finely tomentose to glabrous; basidiospores allantoid, 7–9 × 2.5–3.0 µm *Trametopsis cervina*
- 6a On conifers 7

- 6b On hardwoods 9
- 7a Context usually 3–10 mm thick, lacking a black line beneath the pileus surface tomentum *Trametopsis cervina*
- 7b Context up to 3 mm thick with a black line 8
- 8a Basidiospores 6–9 × 2.0–2.5 µm *Trametes hirsuta*
- 8b Basidiospores 5–6 × 1.5–2 µm *Trametes versicolor*
- 9a Pore shape irregular, sinuous to daedaleoid 10
- 9b Pore shape round to angular 11
- 10a Pileus surface hirsute to strigose; basidiospores 7–9 µm long *Trametopsis cervina*
- 10b Pileus surface finely tomentose to glabrous; basidiospores 4–5 µm long *Trametes gibbosa*
- 11a Pore surface grey 12
- 11b Pore surface white to cream 13
- 12a Pileus surface hirsute, grey, zonate or concentrically sulcate; context duplex with a black line separating the upper soft-fibrous layer from the corky lower layer *Trametes hirsuta*
- 12b Pileus surface tomentose to finely pubescent or almost glabrous, cream, not or faintly zonate; context lacking a black line *Trametes pubescens*
- 13a Pileus surface smooth, lacking concentric zones *Trametes pubescens*
- 13b Pileus surface with concentric bands or furrows (sulcate) 14
- 14a Context with a black line beneath the hairs on the pileus surface 15
- 14b Context lacking a black line 16
- 15a Context greater than 1 cm thick; basidiospores 6–9 µm long *Trametes hirsuta*
- 15b Context less than 1 cm thick; basidiospores 5–6 µm long *Trametes versicolor*
- 16a Pileus surface zonate, vinaceous buff to avellaneous with reddish brown zones or pale buff with faint darker reddish brown zones; basidiospores 6–8 × 2.0–2.5 µm *Trametes ochracea*
- 16b Pileus surface not or very faintly zonate and uniformly cream-coloured; basidiospores 5–7 × 1.5–2.0 µm *Trametes pubescens*

***Trametes gibbosa*
(Pers.) Fr.**

Habitat/range: On decorticated *Populus balsamifera* ssp. *trichocarpa*, causing a white rot. In BC, known from Vancouver. Elsewhere in western North America, known from a few recent collections from west of the Cascade Range in WA and OR.



Basidiomata pileate, up to 15 cm wide × 15 cm long × 5.5 cm thick, tough; **pileus** applanate to resembling a horse's hoof, typically semicircular; **pileus surface** white or greyish white, finely tomentose or glabrous, slightly uneven; **margin** thin, acute, often curved downward; **context** white, tough, fibrous, 3 cm thick; **tubes** up to 2.5 cm deep; **pore surface** white to cream; **pores** typically radially elongated, wavy, sinuous to daedaleoid, some branched, up to 5 mm long and 0.3 mm wide, a few round and 3 per millimetre.

Generative hyphae sparse, 2–5 µm diameter; **skeletal hyphae** predominate, 3–9 µm diameter, rarely branched, walls hyaline, thin to 5 µm thick, some with only a capillary lumen; **binding hyphae** sparse, 2–4 µm diameter, branches sometimes long (100 [–200] µm) and not branched, not tapering to an attenuated apex; **basidiospores** ellipsoid, 4–5 × 2.0–2.5 µm.

Notes: The relatively large basidiomata, tough texture, white colour, and radially elongated pores are good field characters.

***Trametes hirsuta*
(Wulfen) Pilát**
Hairy turkey tail

Habitat/range: On hardwoods, especially *Alnus* and *Betula*, and in orchards on *Prunus*, rarely on conifers, causing a white rot. In BC, on Haida Gwaii and widespread in the southern half of the province. Widespread elsewhere in western North America.

Basidiomata annual, sessile, reflexed, rarely effuse, leathery, up to 6 cm wide × 10 cm long × 2.4 cm thick; **pileus** dimidiate, applanate; **pileus surface** hirsute, grey, concentrically sulcate; **margin** typically yellowish brown, tomentose; **context** duplex, pileus surface layer grey, soft-fibrous, up to 3 mm thick, separated by a black line from the ivory, corky, up to 15 mm thick lower layer; **tubes** ivory, up to 6 mm deep; **hyphal pegs** infrequent; **pore surface**



typically grey, also white or tan; **pores** round to angular, 1–4 per millimetre, edges thick, entire, becoming thin.

Generative hyphae 2.5–6.0 μm diameter; **skeletal hyphae** 3–7 μm diameter; **binding hyphae** 2–4 μm diameter; **basidiospores** cylindrical, most slightly curved, 6–9 \times 2.0–2.5 μm .

Notes: The grey, hirsute pileus and brown margin are distinctive. *Trametes versicolor* has a distinctly zonate pileus; *T. ochracea* and *T. pubescens* are tomentose with pale margins. The basidiomata of these three are only 1 cm thick. See species account for *Trametes versicolor* in which Table 4 contrasts several similar polypores.

***Trametes ochracea*
(Pers.) Gilb. &
Ryvarden**

Habitat/range: On hardwoods, rarely on conifers, causing a white rot. In BC, known from scattered collections in the southern half of the province. Widespread in western North America.



Basidiomata perennial, sessile or reflexed, up to 5 cm wide \times 8 cm long \times 1 cm thick; **pileus** dimidiate, elongated, tough-fibrous; **pileus surface** zonate, finely tomentose or almost glabrous, vinaceous buff to avellaneous with reddish brown zones or pale buff with faint darker reddish brown zones;

context cream, tough-fibrous, up to 5 mm thick; **tubes** cream, up to 4 mm deep; **pore surface** cream to smoky grey; **pores** round, 3–4 per millimetre, edges thick.

Generative hyphae 2.0–3.5 μm diameter; **skeletal hyphae** 4–8 μm diameter; **binding hyphae** 2.5–5.0 μm diameter; **basidiospores** cylindrical, typically slightly curved, 6–8 \times 2.0–2.5 μm .

Notes: The pileus surface in *T. versicolor* is more strongly zonate. *Trametes hirsuta* and *T. versicolor* have a black line beneath the surface tomentum of the pileus. *Trametes pubescens* has a pileus surface with a uniformly cream colour and not or very faintly zonate.

***Trametes pubescens*
(Schumach.) Pilát**

Habitat/range: On hardwoods, rarely on conifers, causing a white rot. Widespread but scattered in the southern half of BC with two collections from the north at Dawson Creek and Germansen Landing (185 km northwest of Mackenzie). Widespread in western North America.



Basidiomata sessile or reflexed, annual; **pileus** dimidiate, thin, leathery, up to 6 cm wide and 1 cm thick, typically imbricate; **pileus surface** cream to warm buff, some faintly zonate, tomentose to finely pubescent or nearly glabrous; **context** white to cream, tough-fibrous, up to 5 mm thick; **tubes** cream to pale buff, up to 4 mm deep; **hyphal pegs** typically present; **pore surface** cream to pale ochreous buff, often smoky grey; **pores** angular, 3–5 per millimetre, edges becoming thin.

Generative hyphae 2–3 μm diameter; **skeletal hyphae** 5–10 μm diameter; **binding hyphae** 1.5–3.0 μm diameter; **basidiospores** cylindrical, typically slightly curved, 5–7 \times 1.5–2.0 μm .

Notes: The uniformly cream to buff, zonate, and tomentose pileus distinguishes this species from the other *Trametes* species.

Trametes suaveolens

L.

Habitat/range: On live hardwoods, preferring *Salix* and *Populus*, causing a white rot. In BC, on *P. balsamifera* ssp. *trichocarpa* at Quesnel and on *Salix* sp. in the Kelowna area. Elsewhere in western North America, known from AK, YT, AB, ID, MT, WY, UT, and AZ.



Basidiomata solitary, sessile, relatively large, annual; **odour** of anise; **pileus** dimidiate, elongated, up to 10 cm wide \times up to 16 cm long \times up to 4 cm thick; **pileus surface** cream to buff, finely tomentose to glabrous, smooth; **margin** rounded; **context** white to cream, soft-corky, zonate, up to 3 cm thick; **tubes** white to cream, up to 1 cm deep; **pore surface** cream to pale buff; **pores** round to angular, 2–3 per millimetre, edges thick, entire.

Generative hyphae 3–5 μm diameter; **skeletal hyphae** 4.0–7.5 μm diameter; **binding hyphae** 2.5–5.0 μm diameter; **basidiospores** cylindrical, 9–12 \times 4.0–4.5 μm , walls smooth.

Notes: An anise odour is present in three other polypores of western North America. *Gloeophyllum odoratum* differs in inhabiting conifer logs and fallen branches, and having a brown context. *Haploporus odorus* has a restricted distribution (i.e., the northeastern quadrant of British Columbia) and small (5–6 \times 3.0–4.5 μm), finely ornamented, dextrinoid basidiospores. *Ischnoderma resinosum* has a dark brown pileus surface and basidiospores only 4–7 μm long.

Trametes versicolor

(L.) Pilát

Turkey tail

Habitat/range: On hardwoods, occasionally on conifers, causing a white rot. In BC, known from Haida Gwaii (Kroeger et al. 2012), Terrace, and Prince George, then widespread and common to the BC/WA border. Widespread elsewhere in western North America.

Basidiomata annual, sessile or reflexed; **pileus** dimidiate, leathery, up to 7 cm wide \times 10 cm long \times 0.8 cm thick, some imbricate; **pileus surface** with distinct concentric bands, variable in colour from buff, brown, reddish brown, bluish grey to nearly black, hirsute to tomentose; **context** cream with a black line beneath the surface tomentum, tough-fibrous, up to 5 mm thick; **tubes** cream, up to 3 mm deep; **pore surface** white, cream to grey; **pores** angular to round, 4–5 per millimetre, edges thick.



Generative hyphae 2.5–3.0 µm diameter; **skeletal hyphae** 4–6 µm diameter; **binding hyphae** 2–4 µm diameter; **basidiospores** cylindrical, slightly curved, 5–6 × 1.5–2.0 µm.

Notes: This species is used by many people as a remedy for various ailments. Four British Columbia polypores similar to *T. versicolor* are distinguished from it in Table 4.

TABLE 4 *Distinguishing Trametes versicolor from four similar polypores*

Name	Pileus surface	Hymenium	Basidiospores	Cystidia
<i>Cerrena unicolor</i>	hirsute, sulcate, grey to pale brown, often green related to algal growth	daedaleoid pores, grey	5–7 × 2.5–4 µm, ellipsoid to narrowly ellipsoid	none
<i>Lenzites betulinina</i>	hispid, zonate, grey to cream	lamellae up to 12 mm deep, cream to ochreous	5–6 × 2–3 µm, cylindrical to suballantoid	lance-shaped apices of binding hyphae resemble cystidia
<i>Trametes hirsuta</i>	hirsute, zonate, grey	poroid, grey, some white or tan	6–9 × 2–2.5 µm, suballantoid	none
<i>Trametes versicolor</i>	alternating silky-glabrous and hirsute zones, colour variable	poroid, white, cream to grey	5–6 × 1.5–2 µm, cylindrical or allantoid	none
<i>Trichaptum abietinum</i>	hirsute, azonate, grey	poroid to tooth-like, lavender to purple	6–7.5 × 2.5–3 µm, cylindrical or suballantoid	15–30 × 4–7 µm, walls thickened, apex crystalline encrusted

TRAMETOPSIS TOMŠOVSKÝ

Trametopsis cervina (Schwein.) Tomšovský

Syn. *Trametes cervina*
(Schwein.) Bres.

Habitat/range: On dead conifers and hardwoods, causing a white rot. In BC, known from one collection on *Pseudotsuga menziesii* in Victoria. Elsewhere in western North America, known from ID, MT, OR, CA, AZ, and NM.

Basidiomata sessile, reflexed, rarely effuse, annual, up to 5 cm wide × 21 cm long × 2 cm thick; **pileus** dimidiate, elongated, often imbricate; **pileus surface** hirsute to strigose, pinkish buff, cinnamon buff, or clay, weakly zonate to azonate; **context** pale buff, up to 1 cm thick; **tubes** pale buff, up to 1 cm deep; **pore surface** cinnamon buff, darker when aged; **pores** relatively large, 1–2 per millimetre, variable in shape from round, angular, daedaleoid to nearly hydnaceous, edges thin, lacerate.



Hyphal system dimitic. **Generative hyphae** 2–4 µm diameter with clamp connections; **skeletal hyphae** 3.0–5.5 µm diameter; **basidiospores** cylindrical and slightly curved to allantoid, 7–9 × 2.5–3.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The distinguishing features are the pale yellowish tan colour and the large irregular pores with edges that split to give a tooth-like appearance. This polypore was segregated from *Trametes* when a molecular phylogeny tree placed it outside the *Trametes* clade (Tomšovský 2008).

TRECHISPORA P. KARST. EMENDED LIBERTA

Trechispora mollusca (Pers.) Liberta

Habitat/range: On conifers and hardwoods, typically on well-rotted wood, associated with a white rot but may be colonizing soil. In central and southwestern BC. Elsewhere in western North America, known from WA, ID, MT, OR, CA, CO, AZ, and NM.



Basidiomata effuse, annual, up to 6 cm diameter, soft, fragile, separable; **margin** white, typically thin, cobwebby; **strands** in the margin and context; **context** white, soft, less than 0.5 mm thick; **tubes** white, soft, fragile, up to 2 mm deep; **pore surface** white to cream; **pores** round, angular or sinuous, 2–5 per millimetre, edges thin, pubescent, entire, becoming lacerate.

Hyphal system monomitic. **Hyphae** 2.5–5.0 μm diameter with clamp connections, some swellings up to 6 μm diameter at septa, frequently branched, walls hyaline, thin, some segments sparsely to densely encrusted; **vesicles** in the context, terminal hyphal cells, subglobose, 20–40 μm diameter, walls hyaline, thin; **cystidia** lacking; **basidia** cylindrical and often slightly constricted at the midpoint or clavate, 12–14 \times 4.5–5.5 μm , four sterigmate; **basidiospores** ovoid to subglobose, 3.5–4.5 \times 2.5–3.5 μm , walls ornamented with minute spines (Figure 61, page 11), hyaline, thin, neither amyloid nor dextrinoid.

Notes: Worldwide there are over 40 species in the genus *Trechispora*. Most have a smooth hymenial surface. The only one in western North America to develop a poroid-like surface is *T. mollusca*. The genus is characterized by effuse, relatively thin, fragile basidiomata that are delicately attached to the substrate; small basidiospores ornamented with relatively short, blunt spines; and hyphae with swellings at the septa.

Habitat: On conifers and hardwoods, causing a white pocket rot.

Basidiomata effuse, reflexed or sessile, annual, flexible and leathery to firm and corky; **pileus** dimidiate, elongate, flabelliform, up to 6 cm wide and 3 mm thick, except up to 1 cm thick in *T. subchartaceum*, some imbricate; **pileus surface** white, grey, buff to tan, hirsute to matted strigose becoming glabrous, often zonate; **context** white, pale buff, pale purplish brown, up to 7 mm thick, sometimes duplex; **tubes** violaceous, becoming buff, up to 3 mm deep; **hyphal pegs** only in *T. abietinum*; **pores, lamellae, and tooth-like surfaces** pale buff, lavender to purple; **pores** round, angular, and, in *T. fuscoviolaceum*, radially elongated, 2–5 per millimetre.

Hyphal system dimitic. **Generative hyphae** 2–6 µm diameter with clamp connections, walls thin to thick; **skeletal hyphae** 2.5–6.0 µm diameter, rarely branched; **cystidia** numerous, embedded in the hymenium or projecting, cylindrical, fusoid, arising either from the same hyphae that give rise to the basidia or as the apical portions of skeletal hyphae that curve into the hymenium, walls thickened, apically encrusted; **basidia** clavate, 12–25 × 4–7 µm, four sterigmate; **basidiospores** cylindrical, some slightly curved, 4–11 × 1.5–3.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- | | | |
|----|---|--------------------------|
| 1a | Basidiomata with lamellae | 2 |
| 1b | Basidiomata with pores, conical spines, and (or) tooth-like projections | 3 |
| 2a | Lamellae distinct, radially elongated, lacking a thin, gelatinous layer between the context and the lamellae | <i>T. laricinum</i> |
| 2b | Lamellae radially elongated, sometimes splitting into tooth-like projections with a thin, gelatinous layer between the context and the lamellae | <i>T. fuscoviolaceum</i> |
| 3a | On conifers..... | <i>T. abietinum</i> |
| 3b | On hardwoods..... | 4 |
| 4a | On <i>Populus</i> ; pileus surface relatively coarse, hirsute-strigose; pileus up to 1 cm thick; pores 3–4 per millimetre, pore edges thick, entire, becoming thin, lacerate; basidiospores 7.5–11.0 × 2–3 µm | <i>T. subchartaceum</i> |
| 4b | On a variety of hardwoods; pileus surface more delicate, hirsute becoming glabrous; pileus up to 3 mm thick; pores 3–5 per millimetre, pore edges becoming irregular and tooth-shaped; basidiospores 6–8 × 2.0–2.5 µm | <i>T. biforme</i> |

Trichaptum abietinum

(Dicks.) Ryvarden

Violet-pored bracket

Habitat/range: On dead and infrequently on live conifers, causing a white pocket rot of the sapwood. Widespread and common in southern half of BC, with scattered records from the northern part of the province. Widespread elsewhere in western North America.



Basidiomata typically reflexed, some sessile, some effuse; **pileus** up to 4 cm wide \times 4 cm long \times 0.4 cm thick, solitary or imbricate, semicircular or conchate, pliable, soft-leathery; **pileus surface** white to grey, some green related to algal growth, tomentose to hirsute, azonate; **context** up to 1 mm thick, white to grey, occasionally grey brown, duplex, upper layer whitish, floccose and soft, lower layer white, firm and tough-fibrous; **tubes** 1–3 mm deep; **hyphal pegs** present; **pores** 2–4 per millimetre, angular to daedaleoid, mouths initially thick and entire, becoming very uneven, thin, jagged and lacerate; **pore and tooth-like surfaces** tinted purple, often bright purple, becoming ochreous.

Generative hyphae 2–4 μm diameter; **skeletal hyphae** 2.5–5.0 μm diameter, branched only at the tips; **cystidia** numerous, narrowly clavate, 4–7 μm diameter, as the apical 15–30 μm of tramal skeletal hyphae that curve into and project through the hymenium, walls thickened, crystalline-encrusted apex; **basidia** 12.5–14 \times 5–6 μm ; **basidiospores** cylindrical, slightly curved, 6.0–7.5 \times 2.5–3.0 μm .

Notes: The purple, toothed lower surface make this common polypore immediately recognizable. The purple colours fade with age, but the small, thin, soft, white pilei and occurrence on conifers strongly suggest *T. abietinum*. *Trichaptum biforme* is similar but usually grows on hardwoods. See species account for *Trametes versicolor* in which Table 4 contrasts several polypores similar to *Trichaptum abietinum*.

Trichaptum biforme

(Fr.) Ryvarden

Violet-toothed polypore

Habitat/range: On hardwoods, rarely on conifers, causing a white pocket rot of sapwood. Widespread and common in North America.

Basidiomata sessile, annual, small to medium; **pileus** dimidiate, flabelliform, up to 6 cm wide, 3.5 mm thick, some imbricate; **pileus surface** grey to buff, hirsute, becoming glabrous, zonate; **context** pale buff, tough-fibrous, up to 1.5 mm thick; **tubes and cores of teeth** violaceous or pale buff, up to 2 mm deep; **pore surface** purple to violaceous, fading to pale buff; **pores** angular, 3–5 per millimetre, mouths becoming thin, lacerate, splitting to form spines and tooth-like projections.



Generative hyphae 2.5–6.0 μm diameter; **skeletal hyphae** 3–6 μm diameter; **cystidia** numerous, fusoid, 20–35 \times 3–5 μm , some arise in the hymenium, others appear to be the apical portion of skeletal hyphae, walls thickened, apically encrusted with small crystals; **basidia** 12–22 \times 4.0–5.5 μm ; **basidiospores** cylindrical, slightly curved, 6–8 \times 2.0–2.5 μm .

Trichaptum fuscoviolaceum
(Ehrenb.) Ryvarden



Habitat/range: On conifers. In BC, known from Terrace and Vancouver Island (Cowichan Lake and Sidney). Not known elsewhere in northwestern North America.

Basidiomata reflexed, rarely sessile or effuse, thin, rigid, up to 1.5 cm wide \times 8 cm long \times 0.3 cm thick; **pileus surface** white, grey to tan, hirsute; **context** pale purplish brown, less than 1 mm thick, flexible, leathery, often duplex with a white, cottony upper layer and a pale brown layer, having the same colour as the tube trama; **lamellae** lavender to purple, up to 3 mm deep, radiating, breaking into short segments that are tooth-like in shape.

Generative hyphae 2–4 μm diameter, walls hyaline, thin; **skeletal hyphae** 2.5–5.0 μm diameter, hyaline, rarely branched; **hyphal pegs** scattered, projecting through the hymenium; **cystidia** numerous, arising in the hymenium or as the apical portion of skeletal hypha in the trama, cylindrical to fusoid, walls thick, hyaline, typically with the acute apex crystalline encrusted; **basidia** clavate, 12–14 \times 5–6 μm ; **basidiospores** cylindrical, slightly curved, 6.0–8 \times 2–3 μm .



Notes: The similar *T. abietinum* differs in being typically poroid. *Trichaptum fuscoviolaceum* always has some areas where the teeth are well developed.

***Trichaptum laricinum*
(P. Karst.) Ryvarden**

Habitat/range: On conifers, causing a white pocket rot of sapwood. In BC, known from the Prince George area, north of Valemount, the Clearwater area, Kamloops, the Vernon area, and Naramata. Widespread in North America.



Basidiomata sessile, reflexed or effuse, thin, rigid; **pileus surface** grey to tan, hirsute; **context** pale purplish brown, less than 1 mm thick, flexible, leathery; **lamellae** lavender, purple to blackish purple, up to 3 mm deep, radiating.

Generative hyphae inconspicuous, 2–4 μm diameter, walls thin to thick; **skeletal hyphae** 3–5 μm diameter, rarely branched; **cystidia** numerous, fu-soid, 15–30 \times 4–6 μm , embedded or projecting up to 10 μm , some arise in the hymenium, others appear to be the apical portion of skeletal hyphae, walls thick, apically encrusted; **basidia** 18–20 \times 4–5 μm ; **basidiospores** allantoid, 6–7 \times 2.0–2.5 μm .

***Trichaptum
subchartaceum*
(Murrill) Ryvarden**

Habitat/range: Restricted to dead *Populus*, causing a white pocket rot. In BC, reported only from southwest of Fort Nelson and north of Valemount. Elsewhere in western North America, known from AK and YT south to AZ and NM.



Basidiomata reflexed, sessile, annual; **pileus** dimidiate, elongate, up to 6 cm wide, 1 cm thick; **pileus surface** grey to pale buff, hirsute to matted strigose; **context** pale buff, duplex, upper layer soft, fibrous, up to 2 mm thick, lower layer firm, corky, up to 5 mm thick; **tubes** violaceous, becoming buff, up to 3 mm deep; **pore surface** purple to violaceous, becoming pale buff; **pores** round to angular, 3–4 per millimetre, edges thick, entire, becoming thin, lacerate.

Generative hyphae 2.5–3.5 μm diameter; **skeletal hyphae** 2.5–6.0 μm diameter; **cystidia** numerous, cylindrical, typically slightly narrower at the base, 22–42 \times 5–7 μm , projecting up to 20 μm , arising in the hymenium/subhymenium, walls slightly thickened, apically encrusted; **basidia** 18–25 \times 5–7 μm ; **basidiospores** cylindrical, slightly curved, 7.5–11.0 \times 2–3 μm .

Notes: Collections on *Populus* with violaceous pore mouths and thick pilei are probably *T. subchartaceum*. *Trichaptum biforme* has thin, often spathulate or flabelliform, pilei.

TYROMYCES P. KARST.

Habitat: On hardwoods, causing a white rot.

Basidiomata annual, pileate, sessile, white, soft, watery; **pileus** semicircular, applanate, dimidiate, up to 8 cm wide \times 12 cm long \times 3 cm thick, some imbricate; **odour** weakly to distinctly aromatic; taste mild; **pileus surface** white to dark grey, glabrous or strigose to hispid; **context** white, soft and watery, up to 2 cm thick; **tubes** up to 1 cm deep; **hyphal pegs** uncommon, scattered; **pore surface** white to cream; **pores** round to angular, 4–6 per millimetre.

Hyphal system monomitic in *T. galactinus* and dimitic in *T. chioneus*. **Context** monomitic; **generative hyphae** in context 2–8 μm diameter with clamp connections, walls thin to thick; **skeletal hyphae** confined to the tube trama of *T. chioneus*, essentially straight, 2.0–4.5 μm diameter; **cystidioles** fusoid, 9–13 \times 4–5 μm ; **basidia** clavate, 10–16 \times 4–6 μm , four sterigmate; **basidiospores** cylindrical, some slightly curved or broadly ellipsoid to ovoid, 2.5–5.0 \times 1.5–2.5 μm , walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

- 1a Pileus surface white to dark grey, finely tomentose to glabrous; skeletal hyphae in the trama; basidiospores cylindrical, some slightly curved, 4–5 \times 1.5–2.0 μm *T. chioneus*
- 1b Pileus surface white to pale grey, strigose to hispid; skeletal hyphae lacking; basidiospores broadly ellipsoid to ovoid, 2.5–3.0 \times 2.0–2.5 μm *T. galactinus*

Tyromyces chioneus
(Fr.) P. Karst.
White cheese polypore

Habitat/range: On hardwoods, especially *Betula*, causing a white rot. In BC, known from Haida Gwaii (Kroeger et al. 2012), Terrace, Prince George, and south to the BC/WA border. Widespread elsewhere in western North America.

Basidiomata annual, applanate, some convex, some with a distinct hump next to the substrate, broadly attached; **odour** weakly to moderately aromatic [to the author it is sweetly spicy with a citrus tinge]; **pileus** up to 7 cm wide \times 12 cm long \times ~ 2 cm thick, convex, semicircular; **pileus surface** white



to dark grey, azonate, initially finely tomentose, soon becoming glabrous; context up to 15 mm thick, white, soft and watery when fresh, drying friable; tubes up to 5 (-8) mm deep; hyphal pegs uncommon, scattered; pore surface white to cream; pores 4–5(-6) per millimetre, round to angular.

Generative hyphae 2–8 µm diameter with clamp connections, much branched with distinctive short, finger-like branches, walls thick, refractive; skeletal hyphae confined to the trama, essentially straight, 2.0–4.5 µm diameter; cystidioles fusoid, 9–13 × 4–5 µm; basidiospores cylindrical, some slightly curved, 4–5 × 1.5–2.0 µm.

Notes: When fresh, having a distinct sweet to spicy odour. *Tyromyces chioneus*, *Postia guttulata*, and *P. stipitica* basidiomata are similar. Their distinguishing features are discussed under *P. stipitica*.

***Tyromyces galactinus*
(Berk.) J. Lowe**

Habitat/range: On hardwoods, causing a white rot. In BC, known from one collection on *Populus balsamifera* ssp. *trichocarpa* at Cinema. Elsewhere in western North America, known from WA, OR, and MT.



Basidiomata annual, sessile, semicircular, dimidiate, white, soft, watery, up to 8 cm wide × 12 cm long × 3 cm thick; **odour** weakly aromatic; **pileus** single or several and imbricate; **pileus surface** white to pale grey, strigose to hispid; **context** white, soft and watery, up to 2 cm thick, duplex, lower part dense, zonate, often with resinous bands, upper zone less dense, rather fibrous; **tubes** up to 1 cm deep; **pore surface** white to cream; **pores** angular, 4–6 per millimetre, edges thin, entire to lacerate.

Hyphae 4–7 µm diameter, walls thin; **basidiospores** broadly ellipsoid to ovoid, 2.5–3.0 × 2.0–2.5 µm.

WOLFIPORIA RYVARDEN & GILB.

Wolfiporia cocos
(F.A. Wolf) Ryvarden
& Gilb.
Tuckahoe

Habitat/range: On conifers, causing a brown cubical rot. In BC, known from a collection on *Pinus contorta* at Beaverdell (Penticton area) and cultured from root rot in *Pseudotsuga menziesii* at Skutz Falls (Vancouver Island). Widespread in western North America, known from AB, SK, WA, ID, MT, OR, and CA.

Basidiomata widely effuse to subreflexed, up to 7 mm thick, firm, fibrous to corky; **margin** narrow or several millimetres wide, cream, cottony, becoming matted or membranous; **pileus** thick, obtuse, projecting from the substrate only 1 cm; **pileus surface** dark blackish brown, granulose to crustose; **context** pale buff to cream next to tubes, tan to grey brown next to the substrate, 1–2 mm thick; **tubes** up to 5 mm deep, firm, rigid, initially outlining pores, splitting to become spiny or flattened teeth; **pore surface** yellowish white, tan, or pinkish buff, bruising pale brown; **pores** 1–2 per millimetre, angular to daedaleoid.

Hyphal system dimitic. **Generative hyphae** 3–23 µm diameter with simple septa, walls thin to thick, hyaline to pale olive brown; **skeletal hyphae** 3–8 µm diameter, walls thickened, subhyaline; **gloeoplerous hyphae** scattered, 7–20 µm diameter, contents oily, reddish brown; **cystidioles** fusoid, 22–38 × 5–7 µm, slightly projecting; **basidia** clavate, 17–45 × 8–10 µm, four sterigmate; **basidiospores** cylindrical to narrowly ellipsoid, 8–11 × 2.5–4.0 µm, walls hyaline, thin, smooth, neither amyloid nor dextrinoid.

Notes: The distinctive wide hyphae are a primary character of the genus. The Eastern Algonkian referred to several edible plants and the subterranean sclerotia of *W. cocos* as “tuckahoe.” Edible sclerotia formed by this species are composed of mycelium mixed with living roots of trees. Sclerotia have not been reported from western North America. The sclerotia of *Polyporus tuberaster*, although underground, are not associated with live roots, are rock-hard and gritty, and are called the “Canadian tuckahoe.”

WRIGHTOPORIA POUZAR

***Wrightoporia lenta* (Overh. & J. Lowe) Pouzar**

Habitat/range: On conifers, causing a brown rot. In BC, on *Pseudotsuga menziesii* at Goldstream Park, Victoria, and on an unidentified conifer at Silverton. Elsewhere in western North America, known only from WA.

Basidiomata effuse, felt-like, pliable, up to 12 cm diameter, 3 mm thick; **context** white, cottony, less than 1 mm thick; **tubes** white to cream, up to 2 mm deep; **pore surface** white to cream; **pores** angular to irregularly elongated, 2–3 per millimetre, edges thin, pliable.

Hyphal system dimitic. **Generative hyphae** 2.4–4.0 µm diameter with clamp connections; **skeletal hyphae** 1.2–2.4 µm diameter, walls thick, dextrinoid; **cystidia** lacking; **basidia** clavate, 15–27 × 4–8 µm, four sterigmate; **basidiospores** broadly ellipsoid, rarely subglobose, 5.4–6.0 × 4.2–4.8 µm, walls hyaline, thin, ornamented with minute warts, amyloid.

Notes: The combination of skeletal hyphae with dextrinoid walls and basidiospores ornamented with minute, amyloid spines is present in most species of *Wrightoporia*.

XANTHOPORUS AUDET

***Xanthoporus syringae* (Parmasto) Audet**

Syn. *Albatrellus syringae*
(Parmasto) Pouzar

Habitat/range: On the ground, associated with dead or wounded roots (one collection was attached to dead *Salix* roots), under *Alnus*, *Salix*, and conifers, causing a white rot, not mycorrhizal. In BC, known from two collections at Beaver River in Glacier National Park and Keefer Lake lodge (east of Vernon). Elsewhere in North America, known from AK, YT, AB, and CO.



Basidiomata stipitate, gregarious to cespitose, confluent; **taste** pleasant; **stipe** excentric or central, up to 4 cm long, 5–12 mm diameter, cylindrical, buff cream to grey ochreous, smooth; **pileus** 8–15 cm broad, fan-shaped, plane to depressed; **pileus surface** ochreous to pale yellow brown, glabrous; **context** white, brittle, up to 3 mm thick; **tubes** pale yellow, up to 2 mm deep, decurrent; **pore surface** yellow, bruising pale brown; **pores** 2–5 per millimetre, angular.

Hyphal system monomitic. **Hyphae** 4–15 µm diameter with clamp connections and a few simple septa, walls at stipe base thin to 0.5 µm thick; **basidiospores** ellipsoid to broadly ellipsoid, 4.0–5.6 × 3.0–4.0 µm.

Notes: The pale yellow tints and presence of a stipe are the distinctive macroscopic features of *X. syringae*. The similar *X. peckianus* (Cooke) Audet differs in having smaller pores (4–6 per millimetre), smaller basidiospores (3.5–4.5 × 2.5–3.0 µm), and thick-walled hyphae at the stipe base. It is not known in western North America. Previously *X. syringae* was included in the genus *Albatrellus*, but recent studies have shown it to be only distantly related to *Albatrellus*.

GLOSSARY AND ABBREVIATIONS

AB	Alberta
adnate	referring to the effuse part of a basidiomata, tightly attached to its substrate.
AK	Alaska
allantoid	referring to basidiospore shape, with curved parallel sides with rounded ends; sausage-like (Figure 6B).
amyloid	describes cell contents or walls, especially of basidiospores, cystidia, and hyphae, that stain blue to blue grey with an iodine stain such as Melzer's reagent.
apiculus	on basidiospores, a protuberance on the basal end that attaches it to the sterigma.
applanate	referring to the shape of a basidioma; in vertical section from base to margin, a triangle with a relatively narrow base abutting the tree trunk or other substrate, and the sides of the triangle extending almost horizontally (Figures 2A and D).
AZ	Arizona
basidioma (pl.: basidiomata)	fruiting body also called a conk, bracket, and shelf; the structure supporting multiple basidia; the mushroom.
basidiospore	in the Basidiomycota the sexual spore (Figure 6). See basidium.
basidium (pl.: basidia)	a spore-bearing cell in which the conjunction of two nuclei occurs followed by meiotic division. The basidia support and give rise to the basidiospores, most commonly four per basidium.
BC	British Columbia
binding hyphae	one of the three principal types of hyphae much branched, thick walled, and lacking septa (Figures 5A and B). One variation has branches obviously attenuated to a relatively fine tip (called "dendritic"), with good examples in many species of <i>Polyporus</i> . See also generative and skeletal hyphae.
bracket fungus	a general term for basidiomata of pileate polypores, particularly those that are large and perennial. See also conk fungus and shelf fungus.
butt rot	a term that foresters use to describe rot in the base of a live tree trunk.
byssoid	referring to the texture of a basidioma's margin; cottony and soft.
CA	California

catenulate	in chains or an end-to-end series.
chlamydospore	an asexual spore that develops when vegetative hyphae disarticulate, typically rectangular to subglobose, thick walled and 5–10 µm long. See <i>Abortiporus biennis</i> and <i>Postia ptychogaster</i> .
ciliate	referring particularly to the margin of the pileus; fringed with fine, straight hairs (see <i>Polyporus arcularius</i> , <i>P. brumalis</i> , and <i>P. tuberaster</i>).
clade	a group of biological taxa (as species) that includes all descendants of one common ancestor, a monophyletic group of any magnitude.
clamp connection	a small, arced cell that bridges a septum (Figures 4A–c).
clavate	referring to the shape of terminal cells, especially basidia and cystidia: having a broadly rounded apex and sides that taper to a relatively small base; club-shaped.
CO	Colorado
conchate	referring to the shape of a basidioma, like the half-shell of a mollusc.
conifer	a gymnosperm tree (as opposed to hardwood) that usually has needle-like or scale-like foliage. In North America, conifers are evergreen, except the larches (<i>Larix</i> spp.).
conk fungus	general term for basidiomata of pileate polypores, particularly those that are large and perennial. See also bracket fungus and shelf fungus .
context	the internal tissue of polypores, equivalent to the flesh in agarics; in pileate polypores, the mass of mycelium between the tube layer and the pileus surface; in effuse polypores, the layer of mycelium (also called the subiculum) between the substrate and the tube layer.
core	referring to the context of basidiomata in a few species of the Hymenochaeteaceae; distinctive granular tissue, brown with white flecks developing next to the substrate.
cystidiole (pl.: cystidioles)	a single hymenial cell, differing from basidia in having a relatively wide midpoint and narrowing to the apex, scarcely projecting above the basidia, with hyaline, thin walls; in some cases, distinguished from cystidia only by the degree to which they project (Figure 7H).
cystidium (pl.: cystidia)	typically a single cell arising in the hymenium, but sometimes in the subhymenium or the trama, that distinctly projects beyond the basidia; a general term that is applied to various shapes, as well as places of origin; also applied to the apical portions of skeletal hyphae that project from the trama through the hymenium (Figures 5C, 7A–G). The term “cystidia” is usually prefixed with a modi-

	fier that gives type or position; for example, pileocystidia (on the pileus). True cystidia arise from generative hyphae.
daedaleoid	referring to pores of basidiomata that are sinuous and lobed, labyrinthine, or maze-like.
dendritic	referring to hyphae that are irregularly branched, forming a tree-like pattern; typically the branches taper to a fine tip (Figure 5B).
dendrohyphidia	single cells arising in the subhymenium or hymenium, the apical portion with numerous relatively narrow and short branches (Figure 7F).
dextrinoid	describes cell contents or walls that stain reddish brown in an iodine reagent such as Melzer's reagent.
dimidiate	referring to the shape of a basidioma; semicircular (Figure 3C).
dimitic	one of the three principal types of hyphal systems; basidiomata of dimitic polypores are composed of generative and skeletal hyphae. Less common is a system of generative and binding hyphae. See also monomitic and trimitic .
dissepiment	the end wall of the pores of a polypore, also called the "pore mouth."
duplex	referring to the context, two-layered; typically, the texture is soft above and firm next to the tubes. In some species, the layers are separated by a thin black line.
ectomycorrhiza	a symbiotic association of a fungus with the root tips of a plant that occurs in many plant species. The fungus supplements the plant's requirements for water and minerals, and the plant supplies carbohydrates to the fungus. The mycelia form a covering around individual root tips, growing between the outer root tip cells.
effuse	referring to basidiomata that are entirely attached to the substrate; resupinate, lacking a pileus and stipe (Figure 2H).
fimbriate	referring to basidiomata with margins that are bordered by long thread-like processes thicker than hairs.
flabelliform	referring to the shape of a basidioma; fan-shaped, narrowing to a slender base (Figure 3D).
fusoid	referring to the shape of cystidioles and cystidia; widest at the midpoint and slightly narrower at the ends (Figure 7H).
generative hyphae	one of the three principal types of hyphae; branched, septate, with walls thin to thick and mostly hyaline (Figures 4A–D). These basic hyphae are present in all species, although they may be scarce or indistinct, and give rise to skeletal, binding, and a few other types of hyphae.

glabrous	referring to the pileus surface; smooth, lacking hair.
glancing	referring to pore surfaces; changing from dull to lustrous when the angle of incident light is changed.
gloeocystidium (pl.: gloeocystidia)	a cell that arises either in the subhymenium or trama and extends either into the hymenium or remains embedded in the trama. These cells are distinguished by their oily or refractive contents.
gloeoplerous hyphae	having oily, refractive contents that typically stain intensely red in phloxine (Figure 4E).
hardwoods	angiosperm trees (as opposed to conifers) that are usually broad-leaved and the leaves are nearly always deciduous, except for arbutus (<i>Arbutus menziesii</i>).
hirsute	referring to the pileus surface; covered with coarse, relatively long hairs.
hispid	referring to the pileus surface; covered with stiff, erect hairs or bristles harsh to the touch.
hoof-like	referring to the shape of a basidioma; resembling the foot of a horse (Figure 2B).
hyaline	lacking pigmentation (colourless), especially pertaining to basidiospore and hyphal walls.
hymenium	the spore-bearing layer of a basidioma, composed of basidia, cystidia, and other sterile cells.
hypha (pl.: hyphae)	one thread-like strand, mostly 4–10 µm diameter and several hundred microns long, most being septate; the main component of most fungi (Figures 4–5). See also mycelium.
hyphal pegs	clusters of nearly parallel hyphae, extending from the trama through the hymenium and into the interior of the pores.
hyphal system	a scheme that describes the structure of the basidiomata based on the associations of different types of hyphae. The hyphal system of a species is of taxonomic significance. See also monomitic, dimitic, and trimitic.
ID	Idaho
imbricate	referring to basidiomata with pilei that overlap, like shingles (Figure 2F).
KOH	abbreviation for potassium hydroxide.
lamellae	gills, as on a true mushroom but in polypores of a woody texture.
long	referring to the size of basidiomata, the horizontal dimension parallel to the substrate (Figure 1).

Lugol's iodine	an alternative to Melzer's reagent. Ingredients: iodine 1 g, potassium iodide 2 g, distilled water 100 ml. In well-ventilated area, dissolve potassium iodide in water. Add iodine and let dissolve for 24 h. Mix well.
lumen	hollow centre of cells, such as hyphae (Figure 4B), cystidia, and setae.
MB	Manitoba
Melzer's reagent	an iodine-based stain used mainly to mount fungal tissues for microscopic examination. Ingredients: chloral hydrate 22 g, iodine 0.5 g, potassium iodide 1.5 g, distilled water 20 ml. In well-ventilated area, dissolve potassium iodide in water. Add iodine and let dissolve for 24 h. Add chloral hydrate and stir until dissolved. Because Melzer's contains chloral hydrate, it is now difficult to obtain. One replacement for use in microscopy is Lugol's iodine. See also amyloid and dextrinoid reactions.
monomitic	one of the three principal hyphal systems; basidiomata of monomitic polypores are composed of generative hyphae. See also dimitic and trimitic .
MT	Montana
multipileate	referring to basidiomata with several pilei or stipes arising from a common base.
mycelium (pl.: mycelia)	an undifferentiated mass, often hardly visible, of hyphae that permeate the substrate.
near white	variations of white that differ slightly from pure white.
necropigments	the red or orange-red pigments that develop several months after some basidiomata have been dried.
NM	New Mexico
nodulose	referring to basidiomata; small knots (nodes) of mycelium up to a few centimetres in diameter; produced by several species of <i>Antrodia</i> , <i>Gloeophyllum odoratum</i> , and <i>Schizopora paradoxa</i> .
NT	Northwest Territories
OR	Oregon
pileus (pl.: pilei)	that portion of a basidioma with a distinct upper surface and with the pore-bearing surface on the lower side; for gilled mushrooms, the term "cap" is often used (Figure 2).
pore	in basidiomata referring to the surface configuration of the basidiospore-bearing layer.
potassium hydroxide solution (abbrev.: KOH)	the standard reagent used in the preparation of slides for microscopic examination of many fungi, typically as a 5% aqueous solution or weaker. Percentages higher than 5% may cause the walls of hyphae and cystidia in a few polypores to swell and dissolve. Ingredients for a 5%

	solution: potassium hydroxide 5 g, distilled water 100 ml. Mix the ingredients, stirring until potassium hydroxide pellets are dissolved.
reflexed	referring to a basidioma that is effuse, with part of the margin curving away from the substrate to form a pileus; especially of effuse forms that grow from the lower surface of a log up the side and form a pileus (Figure 2E).
reniform	referring to the shape of a pileus; like that of a bean, kidney-shaped.
rimose	referring to a pileus surface; cracked in all directions. See <i>Phellinus igniarius</i> .
saprobes	fungi that use dead organic matter as food. For polypores, the food is primarily wood.
sclerids	in the granular core of the context, apparently disarticulated, irregularly shaped hyphal cells with thick, brown walls (Figure 8F). In this report, species having sclerids include <i>Fomes fomentarius</i> , <i>Fomitopsis officinalis</i> , <i>Inocutis rheades</i> , and <i>Phellinus tremulae</i> .
sclerotium (pl.: sclerota)	buried in soil or embedded in the substrate, an egg-shaped to globose compact mass of hyphae often with a thin, black rind. Sclerota are found in <i>Polyporus tuberaster</i> and <i>Wolfiporia cocos</i> as ellipsoid inflations of living tree roots, and in <i>Bondarzewia</i> as an underground extension of the stipe.
scrupose	referring to the texture of the pileus surface; rough with minute, hard fascicles of hyphae.
sensu	Latin for “in the opinion of” or “as interpreted by.”
separable	referring to the degree of attachment of a basidioma to its substrate; easily removed, not strongly adhering.
sessile	referring to a basidioma that is broadly attached to the substrate and lacks a stipe (Figure 3A).
setae	cystidia characterized by thick, brown walls and a pointed apex; occurring, with few exceptions, in the Hymenochaetaceae, in the hymenium of polypores with a brown context (Figures 8C–E).
setal hyphae	hyphae that have thick, brown walls and a lanceolate, pointed tip. In the polypores, these hyphae occur in a few species of the Hymenochaetaceae (Figures 8A and B).
shelf fungus	general term for basidiomata of pileate polypores, particularly those that are large and perennial. See also bracket fungus and conk fungus .
size	of basidiomata, usually stated as the maximums; for example, up to 40 cm wide × 30 cm long × 10 cm thick (Figure 1).
SK	Saskatchewan

skeletal hyphae	one of the three principal types of hyphae used to define a hyphal system. These hyphae are characterized by having thick, hyaline or pigmented walls and lacking both branches and septa. See also generative and binding hyphae .
slash	branches and logs on the ground, especially the woody debris left after logging.
spathulate	referring to basidiomata shape; spoon-shaped (Figure 3E).
spore print	a deposit of basidiospores that can be obtained by placing a piece of paper beneath the pore layer.
sterigma (pl.: sterigmata)	projections, typically narrowly acute and four in number, from the apex of a basidium that support the developing basidiospores.
sterigmate	having sterigmata.
sterile conk	macroscopic growths on living tree trunks that resemble polypore basidiomata but lack a pore layer; typically black, rimose and hard.
stipe	stem.
stipitate	having a stipe (Figures 3F–H).
strand	linear aggregation of essentially parallel hyphae.
strigose	referring to the texture of a pileus surface; coarse, stiff repent mycelium or strands.
subhymenium	a thin layer of hyphae adjacent to the base of the basidia.
substrate	the material, typically bark and wood of trunks, branches, stumps, and logs, within which the fungus grows and that the basidiomata are attached to.
subulate	shape of setae and cystidia; slender, tapering to a point, awl-shaped, thickest at the base and tapering evenly to the apex (Figure 8C).
sulcate	referring to a pileus surface of a polypore, a series of low, concentric grooves and broadly rounded ridges.
synonym (abbr.: syn.)	alternate name for the same fungus.
taxonomy	the classification of organisms; an arrangement based on shared characteristics and assigning of names to those groups. Organisms are grouped together into taxa (sing. taxon) and given a taxonomic rank; groups of a given rank can be aggregated to form a super group of higher rank and thus create a taxonomic hierarchy.
thick	basidiomata size; the vertical dimension from the pileus surface down to the mouths of the pores (Figure 1). See also long and wide .

thin	referring to the (1) context of effuse basidiomata, 1 mm or less thick; (2) walls of basidiospores, hyphae, and cystidia when the inner and outer surfaces of the wall do not appear distinct; and (3) in a broad sense, for making relative comparisons.
tilde (~)	symbol for “approximately”; for example, “~ 12” means approximately 12.
tomentose	referring to the texture of the surface of the pileus, stipe, margin, or pore edges; covered with densely matted hyphae; woolly.
trama	referring to the mycelial layer beneath the hymenium and subhymenium; the tissue between the pores or in the core of the teeth.
trimitic	one of the three principal types of hyphal systems; basidiomata of trimitic polypores are composed of generative, binding, and skeletal hyphae. See also dimitic and monomitic .
triquetrous	referring to the shape of a basidioma; in vertical section from base to margin, a triangle with a relatively wide base abutting the tree trunk or other substrate, and the sides of the triangle of about equal length (Figure 2F).
tubes	referring to basidiomata in vertical section, the layer or layers of tissue from the mouth of the pores to the context (Figure 2A–H); the interior of the pores, the walls of which are lined by the hymenium.
UT	Utah
ventricose	referring to the shape of setae, cystidia, and cystidioles; swollen or enlarged in the middle, usually abruptly tapered toward the apex (Figure 7E)
vesicle	an inflated or swollen hyphal cell.
WA	Washington
wide	basidiomata size; the horizontal dimension at right angles to the substrate (Figure 1). See also long and thick .
WY	Wyoming
xanthochroic	referring to basidiomata with a yellowish- or reddish-brown context that stains black when touched with a 2–3% solution of KOH. A trait present in many species of the Hymenochaetaceae but not exclusive to the family.
YK	Yukon Territory

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