

A low-angle photograph of a birch tree trunk, showing its characteristic white bark with dark lenticels and peeling areas. The trunk is covered in patches of snow and several large, flat, light-colored mushrooms. The background consists of a clear blue sky and the bare branches of other trees, some of which are also covered in snow.

Notable Nature Along The Pasadena Ski and Nature Park Trails

XII: Winter Mushrooms

Prepared by Henry Mann, Naturalist/Nature Enthusiast,
for the Pasadena Ski and Nature Park

Fungal spore producing structures (“mushrooms”) can commonly be seen on stems and branches of trees and shrubs in winter. Like many plants, most mushrooms die in winter, although some are perennial and can revive in spring. Solid hard ones, mostly polypore conks and brackets, last into winter even if dead, although they may not look as vibrant and colorful as when actively growing in summer. Some cold-loving fungi (jelly fungi, crusts, a few gilled fungi) appear even during short thaws.

Specimens can be collected and examined more closely indoors to allow for a precise identification. A hand lens may be of use in examining the detailed surface features. Removal of winter mushrooms will rarely damage either the fungus or the tree on which it grows.

I thank Andrus Voitk for the use of some photos as indicated, and for much valued advice and information.

Any errors or inconsistencies are entirely my own responsibility. HEM

The Larger Conks

The larger bracket fungi are often referred to as “conks”. They tend to be hard, often woody types, whose mature brackets are usually over 10 cm across. Some, like the Artist’s Fungus, can become very large, sometimes in excess of 40 cm. The common ones featured here are all polypores (having pores on their lower sides) except Chaga. Some grow only on hardwoods, some only on conifers, and others on both. For identification it is often helpful to identify the host tree or shrub or at least determine if it is a conifer or a hardwood.



The most common larger bracket fungus along the trails is the **Tinder Polypore** or **Hoof Fungus** (*Fomes fomentarius*). The spore producing underside is composed of tiny pores. It occurs on dead birch. See also title slide. It has a long history of usage by humans.



Birch Polypore (*Piptoporus betulinus* = *Fomitopsis betulina*). A very common conk growing on dead birch, from above looking like a pancake emerging from the tree trunk. The margins are rolled under onto the lower pore surface which is white when young, becoming brown with age when pores open. It has an interesting history of human usages as well as medicinal properties.



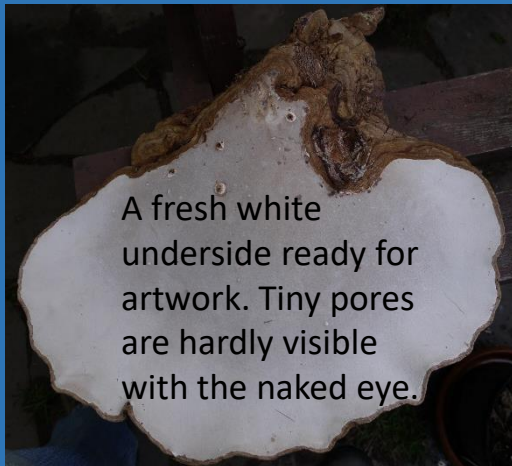
Red-banded Polypore (*Fomitopsis pinicola*) is a very common wood decay conk of conifers, sometimes also hardwoods. It is characterized by a whitish margin and/or a coloured band layer which may range from yellow to orange to red. The lower spore producing layer contains tiny round pores just visible with the unaided human eye.



The **Pale Polypore** (*Fomitopsis ochracea*) is very similar to the Red-banded Polypore, but lacks the orange/red colour band and has a dull rather than shiny upper surface. It grows on both conifers and hardwoods.



Artist's Conk (*Ganoderma applanatum*) is a large flattened shelf fungus often 15 to 40 or more cm across, usually growing on birch. The white underside can be engraved to produce intricate designs. For examples go to Google and enter "Conk Art" or "Ganoderma Art".



Phellinus (*Phellinus* spp.) A number of *Phellinus* species occur in the PSNP woods growing mainly on birch and other hardwoods. Those with brackets tend to have black crusty upper surfaces and brown pore surfaces, the pores being very tiny. Sometimes brackets are just barely formed. Sometimes just a crusty brown pore surface on wood is formed. Although common, it is a difficult group to identify to species without detailed microscopy.



Chaga (*Inonotus obliquus*) is a parasite of birch which forms black crusty lumps on trunks and branches. It has a long history of use for medicinal purposes.



Smaller Bracket Fungi

The smaller bracket fungi usually have brackets less than 10 cm across. Many are polypores with various types and sizes of pores. Others are not polypores, but have gills, ridges, veins, or smooth spore producing surfaces. Features of upper surfaces are also important for identification.



Toothed Maze Polypore (*Cerrena unicolor*) has overlapping shelves 3-10 cm across, tops are densely hairy and zoned, pale gray, sometimes with green algal growth among the hairs. Pores are maze-like with toothed margins. Common on birch and other hardwoods.



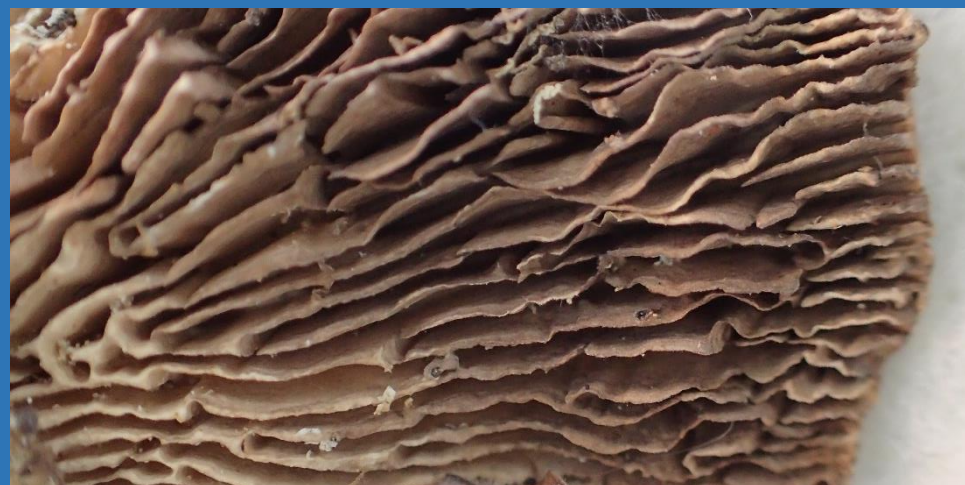
The **Maze Polypore** (*Daedaleopsis confragosa*) has a bracket usually less than 10 cm across and grows on hardwoods such as birch, alder and mountain maple. Pores on the underside are elongated and maze-like and brown in winter as in these photos.



The **Northern Maze Polypore** (*Daedaliopsis septentrionalis*) is very similar in size and appearance to the previous *D. confragosa* and grows on similar hardwoods. Instead of elongated closed pores, this species has a more gill-like lower spore surface, most gills radiating outward from the attachment on the tree. Sometimes pore features of the two species overlap and it is difficult to distinguish them.



The Gilled Bracket (*Trametes betulina* = *Lenzites betulina*) might be confused with the Northern Maze Polypore (previous slide), as both have gill-like lower surfaces rather than distinct pores. However, the Gilled Bracket has a hairy upper surface, whereas the Northern Maze Polypore's upper surface is smooth and hairless. Otherwise they are of similar size and color and both can occur on birch trees.



Yellow-red Gill Polypore

(*Gloeophyllum sepiarium*) forms hairy zoned colourful brackets when fresh, but in winter losing their colour becoming dark brown to charcoal grey or black (upper right photo).

Pores are elongate to almost gill-like. Grows on dead conifer wood.



True Turkey Tail (*Trametes versicolor*) forms clusters of thin brackets 2-8 cm wide (av. 4-5 cm) on hardwoods. The shelves are tough and pliable, but not overly soft. The tops are strongly banded, often blue/gray, but also other colors as shown below. The entire surface is finely velvety including all bands (best seen with a hand lens). The pore surface is whitish, darkening with age, with 3-5 tiny round pores per mm. Two other members of the Turkey Tail group (*Tametes*) also might be located in the area. These have the same general features as described above for *T. versicolor*.

The following slides will indicate their distinguishing differences.



Pale Turkey Tail (*Trametes ochracea*). This species could easily be mistaken for *T. versicolor*, but it has bands (zones) of longer hairs alternating with hairless bands. In True Turkey Tail the hairs are short and velvety and all bands are hairy. Other colors may be present besides those shown in the below photos, but not like the “blue” version of *T. versicolor*.



Pubescent Turkey Tail

(*Trametes pubescens*).

Although this species shows banding (zonation) the bands are not as colourful or distinct as the other two previous species. The surface has soft short hairs.



Three **Trichaptums** are known from the trails. They have small thin brackets up to 6 cm broad at their base, but often half that, or less. The tops are hairy, zoned and grayish to brownish, sometimes appearing greenish because of green algae growing on their hairy upper surfaces. When young and actively growing their pore surfaces and margins are purplish, turning brown when older and in winter. The species featured in this slide and the next one is the **Violet-toothed Polypore** (*Trichaptum abietinum*). It grows on dead conifers and is especially seen on fallen Balsam Fir along the trails.



The Violet-toothed Polypore (*Trichaptum abietinum*) has irregular angular pores, purplish when young, turning brown with age. Often pore margins may extend to produce a toothed surface. Some green algal growth can be seen on the tops of the brackets in the lower photos.



The **Purple-Toothed Polypore** (*Trichaptum biforme*) is similar to *T. abietinum*), perhaps slightly larger brackets, but grows on hardwoods, not conifers.



The **Larch Polypore** (*Trichaptum laricinum*), in size and upper features, is similar to the other two with a zoned hairy cap and purple colouration, however the pore surface differs. It has more elongated gill-like pores (A and B) as compared to the irregular angular pores of the other two (C). It grows on conifers.

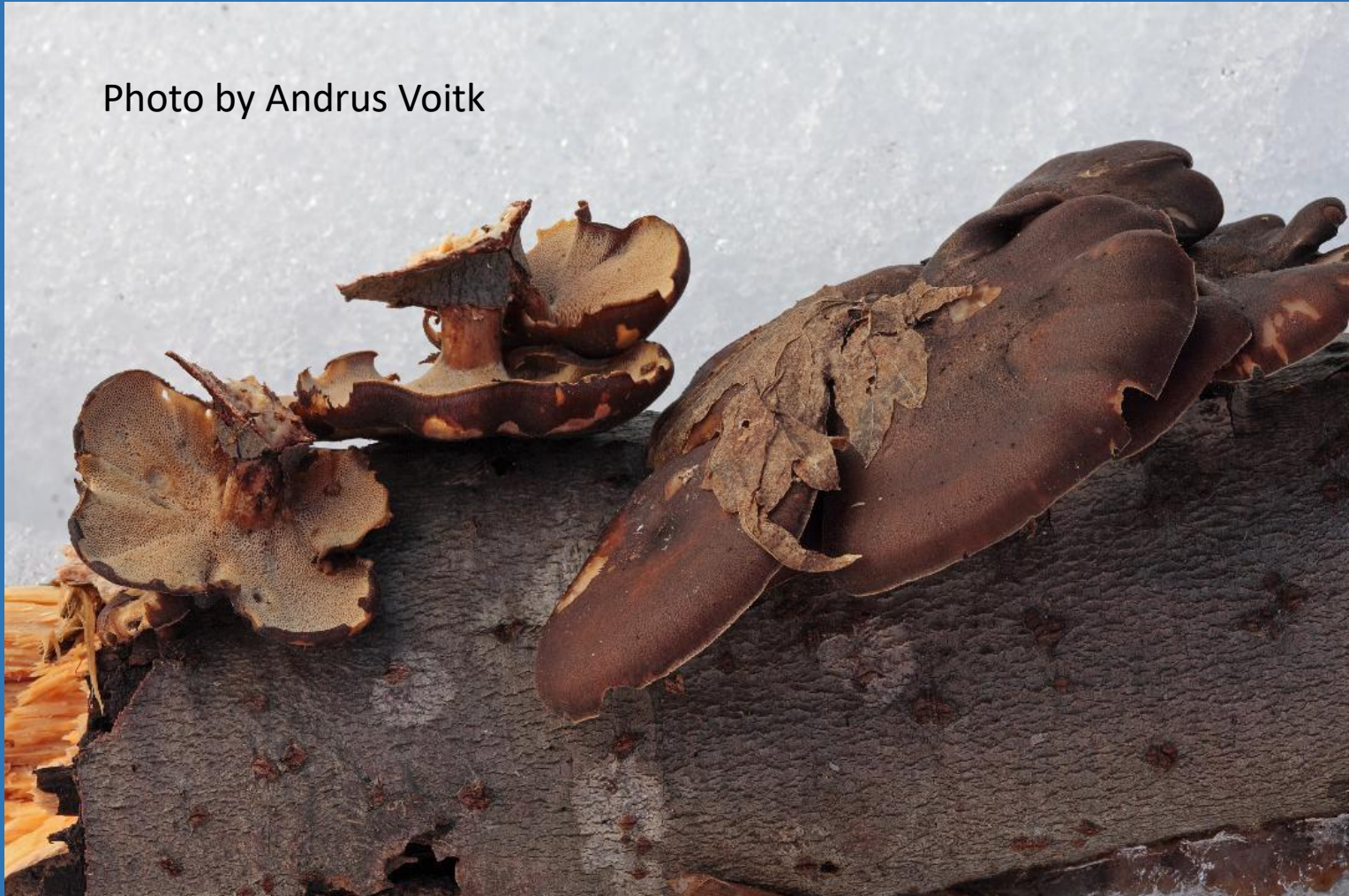


Cheese Polypore (*Tyromyces chioneus*) is a soft thick-bodied fleshy whitish polypore often seen growing on dead alder stems and other hardwoods. Pores are small and angular. Older dried and winter specimens tend to become corky and yellowish.



Winter Polypore (*Polyporus brumalis*) has a brown to dark brown cap 3-8 cm across with a pale brownish stem, never black, and a whitish pore surface. Pores are small, about 3 per mm, and rounded to slightly angular. It grows on dead hardwoods, especially birch, and can be found year round. Several other “stem and cap” polypores might also be encountered as old previous summer specimens.

Photo by Andrus Voitk



Gilled Mushrooms

Following are some winter mushrooms whose spore producing layers consist of gills or gill-like structures such as in the following examples: **A**, true, thin gills; **B**, flattened folds; **C & D**, wavy vein-like gills.



Luminescent *Panellus* (*Panellus stipticus*) produces overlapping caps about 1-4 cm across with a short stem attachment. It has true cinnamon coloured gills. Freshly growing caps will glow in the dark. *Panellus* grows on dead hardwoods. Very common on alders.



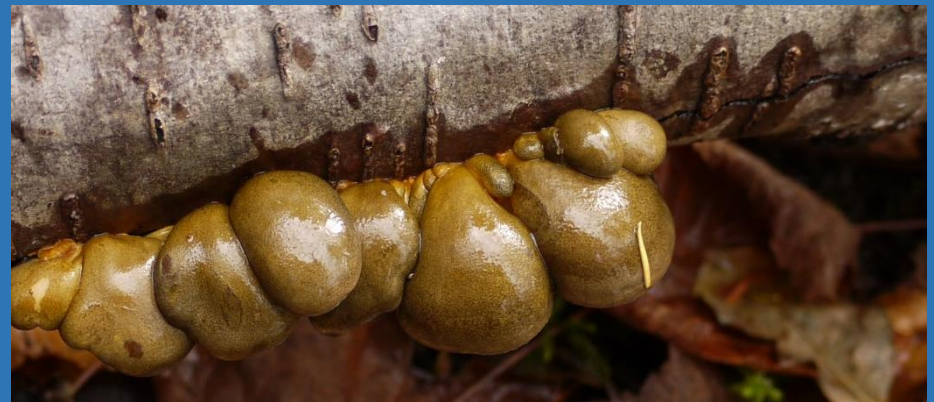
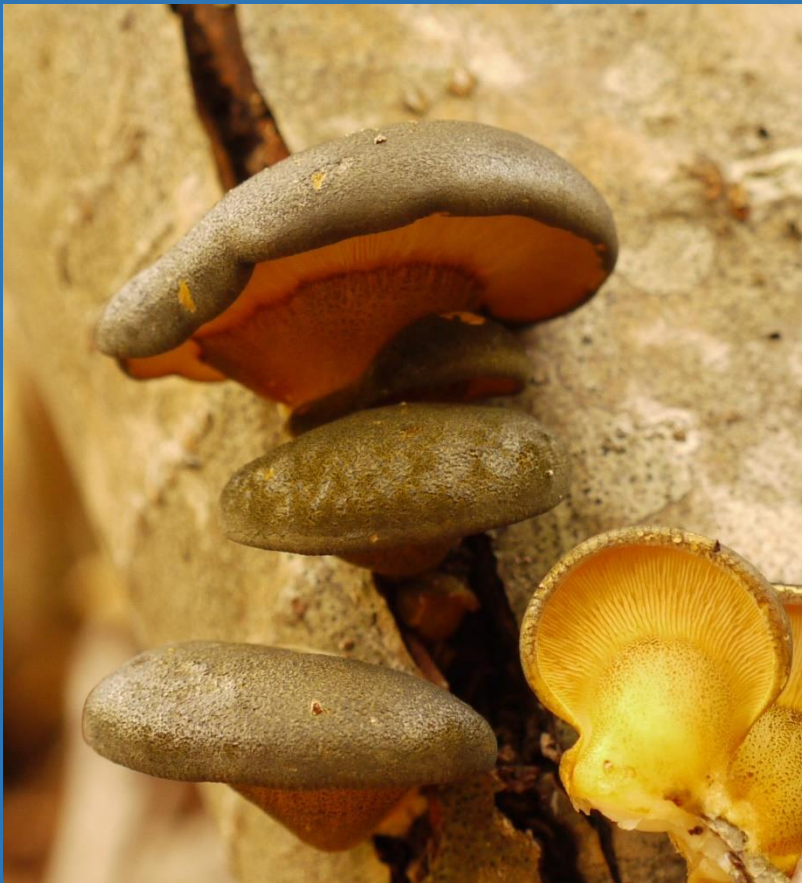
The top of a birch sump in winter with a lush growth of Luminescent Panellus and some Turkey Tails.



Winter Oysterling (*Panellus ringens*) is related to Luminescent Panellus. It is uncommon, but may be seen in late winter/early spring on dead hardwoods such as alder. Caps are only 1-3 cm across.



Late Fall Oyster (*Panellus serotina* = *Sarcomyxa serotina*) is closely related to the previous two featured *Panellus* species, but is a larger mushroom. Caps are 3-11 cm across, of a rubbery consistency, the upper surface slippery/sticky when fresh, and a green/olive/brownish colour. Gills are yellowish to orange. It usually does not appear on dead hardwoods until after the first hard frosts of fall. Said to be a good edible if properly prepared.

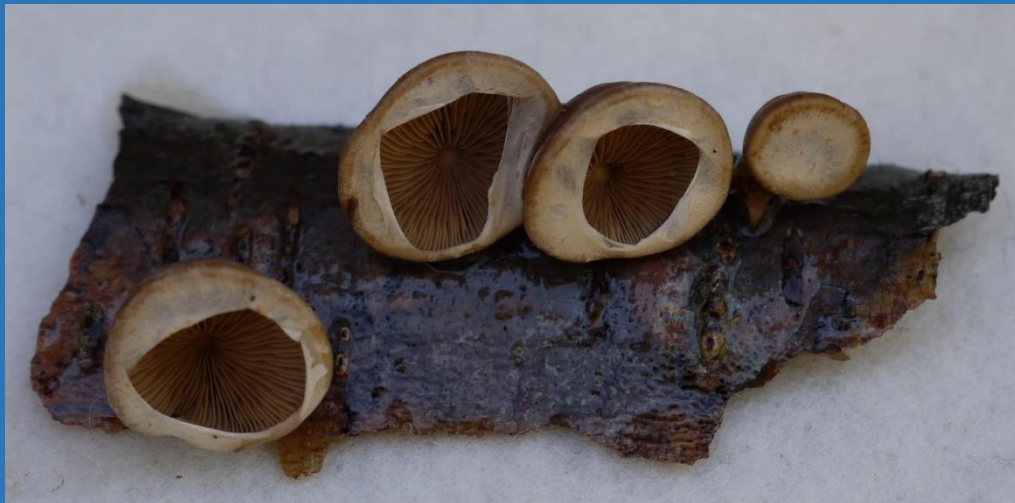


Orange Mock Oyster (*Phyllotopsis nidulans*) produces bracket-like caps 2-7 cm across in clusters on dead hardwoods and conifers. Caps are densely hairy and orange to yellow and may still be noted in early winter. Orange to yellow gills radiate outward from the attachment point. Fresh material produces an offensive foul odor.

Photos by
Andrus Voitk



Veiled Panus (*Tectella patellaris*) is a cone shaped fungus 1 to 3 cm across drooping from a narrow stalk-like attachment to dead hardwood stems. When young, the inverted cup has a whitish membrane (veil) covering the inner gills which is torn as the fruiting body grows and matures



Common Split Gill (*Schizophyllum commune*) has a cap 1-4 cm across which is densely white to gray hairy above. The spore producing surface is of thick white to gray gills-like folds which “split “ in the middle and turn brownish in older specimens. It occurs on hardwoods.



Photo by Andrus Voitk



Curly Crimped Gill (*Plicatura crispa* = *Plicaturopsis crispa*). Caps are 2 cm or less across, in clusters, with pale brown velvety upper surfaces turning darker with age. In winter they may be dried and shriveled, but reviving in humid conditions. Gills are white to grey and radiating outward as vein-like wavy folds. This is one of our most common winter mushrooms growing on hardwoods, especially dead alders.

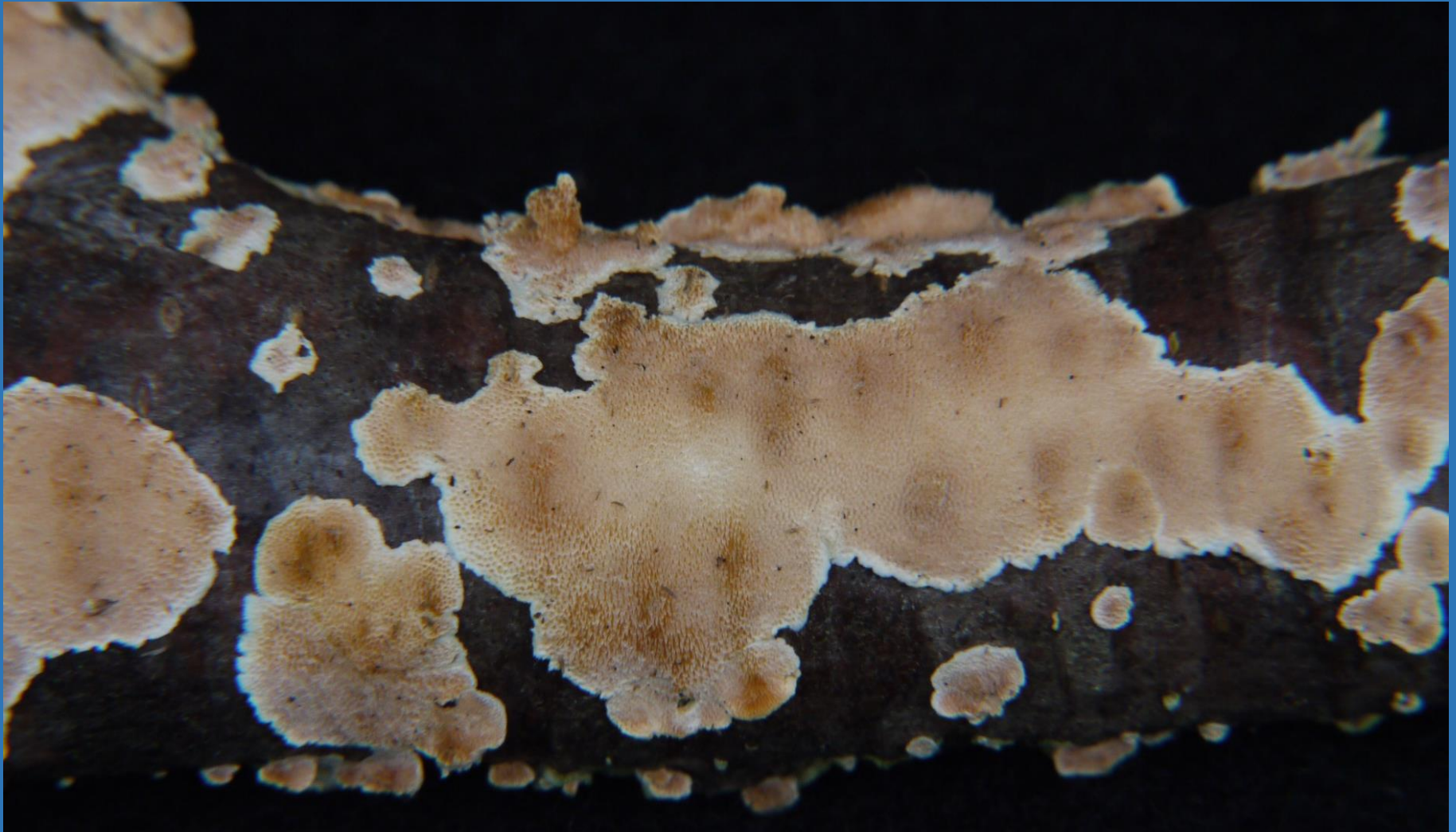


Snowy Crimped Gill (*Plicatura nivea*) is similar to Curly Crimped Gill but the cap is a velvety paler light brown and tends to be less bracket-like and to expose its gill surface more. Also gills are white, more densely curled and directionless compared to *P. crispa*. It grows on hardwoods especially alder. In the right bottom photo both species are growing on the same dead alder stem.



Crusty Fungi

A number of wood decay fungi form flattened or wrinkly bumpy surfaces with only their spore producing layer exposed. Others form crusty masses of various shapes and colours.



Reddish-brown Crust (*Hyemenochaete tabacina*) grows as a crust with the upper edge projecting outward and downward to form a bracket. It has a rusty “tobacco” colour. The pore surface is smooth, without pores, the reddish spines only visible with a microscope. It grows on hardwoods such as maple and birch.



Plum Phellinus (*Phellinus prunicola*) is a polypore related to the Phellinus conks featured earlier, however this species does not produce a bracket, but only a thin tough crust on the surface of plum and cherry trees, in these photos on our pincherry trees. Pores are too small to be seen with the naked eye.



Rusty Porecrust (*Phellinus ferruginosus*) is another crust forming Phellinus of hardwoods. This rusty brown species sometimes looks like it almost wants to form a bracket, but just can't seem to manage, or barely so. We often can see the sides of some pores.



Wrinkled Crust (*Phlebia radiata*) is a wood decaying crust fungus that produces wrinkles and folds often radiating outward from a central location. It does not have pores. *P. radiata* may lose some of its bright colour in winter. It grows on both dead conifers and hardwoods.



Orange Disco (*Aleurodiscus amorphous*) is a crust fungus growing on conifer wood. It produces disc-like patches which may coalesce into larger masses. Margins are distinct and white hairy.



The surface is smooth pinkish salmon-orange, becoming duller and faded in dry weather and with age.

Ochre Spreading Tooth (*Steccherinum ochraceum*)

Of the crust forming wood decay fungi in our area, this is the only one that produces teeth on its spore producing layer. The edges of this crust sometimes roll into small brackets which have a hairy other surface. The species name “ochraceum” is derived from the ochre colour of the toothed layer.



Hazel Woodwart (*Hypoxylon fuscum*) Forms small rounded warty mounds 1 to 4 mm across on dead hardwoods, often seen on alder and hazelnut of the birch family.



Birch Woodwart (*Annulonpoxylon multiforme* = *Hypoxylon multiforme*) is a wood decay fungus that forms black warty cushions over one cm across on dead wood of hardwoods, birch, alder, cherry, mountain ash, etc. When young, it may be reddish-brown, but in mature state in fall and winter the mounds are dull black.



Coral Spot (*Nectria cinnabarina*) is a weak parasite that attacks hardwoods. The orange spherical fruiting structures are about 1 mm in diameter and may turn brown or black with age. As seen in these photos it can commonly be seen infecting twigs of our wild Pin Cherry, but other deciduous species may be susceptible as well.



Black Knot (*Apiosporina morbosa* = *Dibotryon morbosum*) can commonly be observed on the branches of our wild cherries, but can also infect horticultural plums and cherries. This crusty parasite does not outright kill the trees or shrubs, but causes loss of vigor, reduced fruit production, deformation, and unsightly appearance.



Jelly Fungi and Cup Fungi

During prolonged periods of wet rainy/misty weather, even in winter, jelly fungi may appear on stems and branches. As their name suggests, they are soft gelatinous bodies, sometimes rubbery, of various shapes, colours, and sizes. Some when dry can be noted as crusty material on stems and will quickly swell up again in wet weather. Jelly fungi can readily be noted in damp early spring weather as well as wet spells throughout the year. A few of the more common ones that may be encountered along the trails are featured in the following slides.

Two tiny colourfull cup fungi (not jelly fungi) are also included at the end of this section.



Orange Jelly/Orange Witch's Butter (*Dacrymyces chrysospermus*) is a very common jelly fungus appearing in wet spells throughout the year. It grows on conifer and has a small white area where attached to the wood.



Yellow Witch's Butter (*Tremella mesenterica*) grows on hardwood species. It may appear in wet weather any time of year.



Black Witches Butter/Black Jelly Roll (*Exidia glandulosa*). When dry in summer or winter this jelly fungus appears as a black crust on hardwood bark (right). In warm damp weather it quickly absorbs water and swells to a black jelly-like mass (left).



Jelly Ear/Tree Ear/ Wood Ear (*Auricularia americana*). These firm rubbery ear-shaped fungi can commonly be noted in warm wet weather growing on conifers.



Exidia spp. Various shaped brownish jelly fungi growing on hardwoods, often on dead alder and maple, appear to be in the *Exidia* group. Some are ear-shaped and others of various convoluted forms. See also slide 47.

Photo by Andrus Voitk



Leafy Jelly Fungus (*Tremella foliacea*).

Composed of thin convoluted leafy lobes, purple-brown to brown to pale brown, crisp when dry, but softening fleshy in warm wet spells. Grows on hardwoods such as alder.



Another here unnamed Jelly Fungus may be seen in warm wet spells growing on hardwoods such as alder. The irregular lumps may be colourless to yellowish or brownish.



Agassiz's Cup (*Lachnellula agassizi*) is a tiny cup fungus only about 5 mm across. The inside of the cup is bright yellow or orange and hairless while margins and underside of cup are densely white hairy. It grows on dead conifer bark. Cups open conspicuously during periods of warm wet weather. Compare to Lemon Drops, next slide.



Lemon Drops (*Bisporella citrina*) is a tiny stemmed cup growing on dead hardwoods and conifers, usually in dense clusters. The cups are up to 3 or 4 mm across, bright lemon yellow, and hairless above and below. Commonly appearing in warm wet spells.



Postscript Comments

- Of the thousands of mushrooms that occur in NL, this presentation features just a few that might be encountered in the winter off-season.
- All mushrooms featured here are decomposers that recycle wood to renew forest soil fertility.
- Mushrooms in general are at the base of the food chain and directly or indirectly provide food for birds and other forest animals.
- Some of the featured mushrooms are reported to be edible, e.g. Late Fall Oyster, Jelly Ears. A number of other edibles are known to occur during the summer months in our woods (See Notable Nature I).
- Some of the featured mushrooms are reported to possess medicinal properties, e.g. Turkey Tails, Chaga, Split Gill, Birch Polypore. Many other mushrooms are known to contain compounds of scientific and medical importance.
- Hundreds of different mushroom species inhabit the ski trail woods, most appearing during the spring, summer and autumn months, each in their own season. Wet autumn weather is prime hunting time.
- To date, six rare mushroom species have been discovered along the PSNP trails (See Notable Nature I).