

Hygrophorus marginatus

Photos by M. Trappe



Amanita muscaria var. muscaria, "Fly Agaric" *(poisonous)*



Amanita muscaria var. muscaria, "Fly Agaric" *(poisonous)*



Amanita muscaria var. formosa (poisonous)



Cantharellus roseocanus, "Spruce Chanterelle"



Cantharellus formosus, "Golden Chanterelle"



Cantharellus formosus, a mutated specimen



Hygrophoropsis aurantiaca, "False Chanterelle" *(poisonous)*



Cantharellus subalbidus, "White Chanterelle"



Gomphus kauffmanii, "Woolly False Chanterelle" *(poisonous)*



Boletus zelleri



Laccaria amythestio-occidentalis, "Amethyst Laccaria"

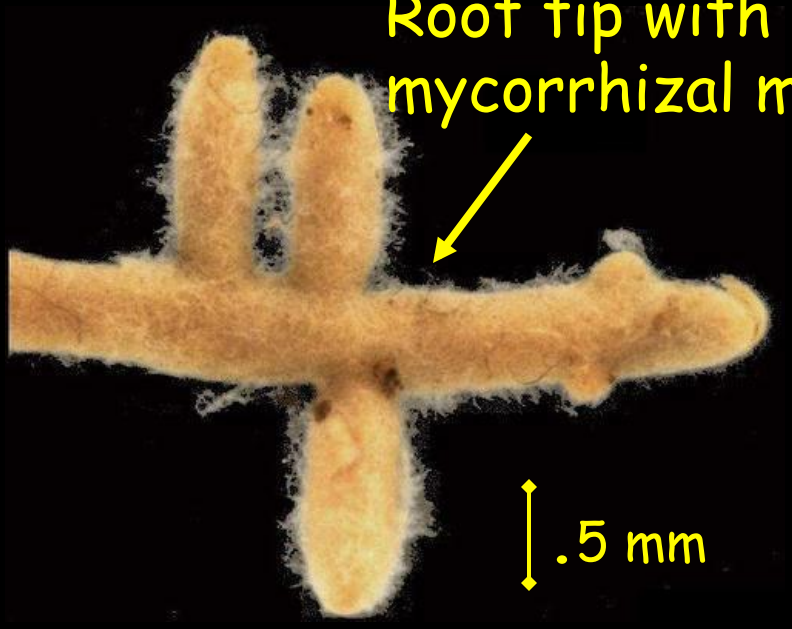


Scleroderma cepa, "Hard-skinned Puffball" *(poisonous)*


Floccularia albolanaripes



Ganoderma applanatum, "Artist's Conk"





Mycorrhizal Fungi

Form an intimate relationship with plant roots that facilitates nutrient acquisition. Most trees need mycorrhizal fungi to grow.

Many mushrooms and most truffles are mycorrhizal.

Saprobic (wood decay) Fungi

Get their energy from breaking down cellulose and lignin in dead wood. Vital to nutrient cycling in nature.

Many mushrooms and all conks are saprobic.


Ganoderma tsugae



Ganoderma tsugae, view from underneath


Ganoderma lucidum, "Reishi"



Ganoderma conks at Chinatown market, San Francisco


Galerina heterocystis


Gyromitra gigas (poisonous)


Agaricus arvensis



Mycena elegantula



Hypholoma fasciculare, "Sulphur Tuft" *(poisonous)*



Amanita muscaria var. muscaria, "Fly Agaric" *(poisonous)*



Coprinus lagopus



Coprinus lagopus



Lepiota barssii, "Gray Parasol"



Phaeolus schweinitzii (poisonous)



Suillus brevipes, "Slippery Jack"

Photos by M. Trappe

Three of Oregon's Gourmet Truffles



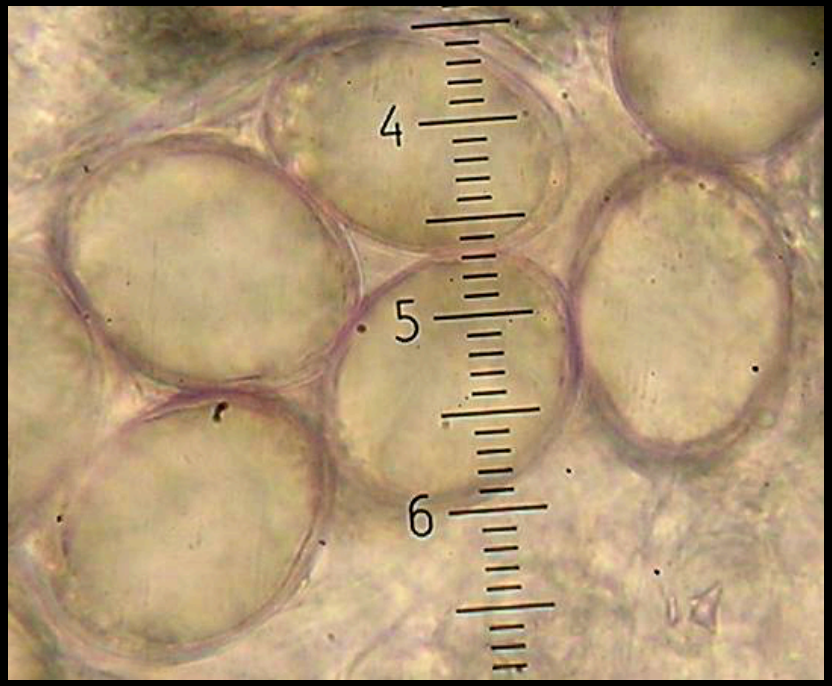
Tuber sphaerosporum, Tuber oregonense, Kalapuya brunnea



Oregon Black Truffle spore



Oregon White Truffle spores



Oregon Brown Truffle spores



Tuber gibbosum, "Oregon White Truffles" (spring variety)



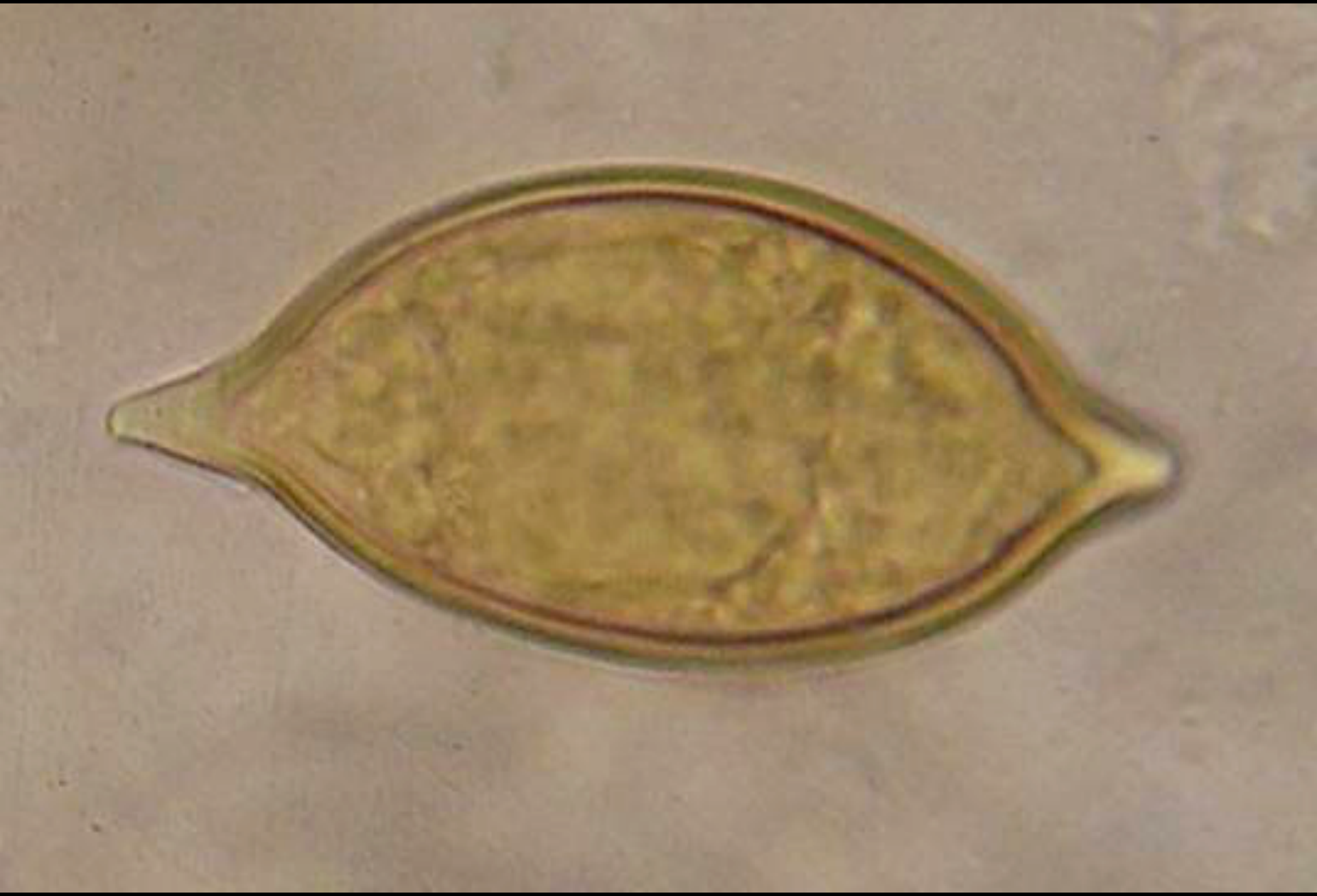
Tuber gibbosum, "Oregon White Truffle" (spring variety)



Tuber oregonense, "Oregon White Truffles" (fall variety)



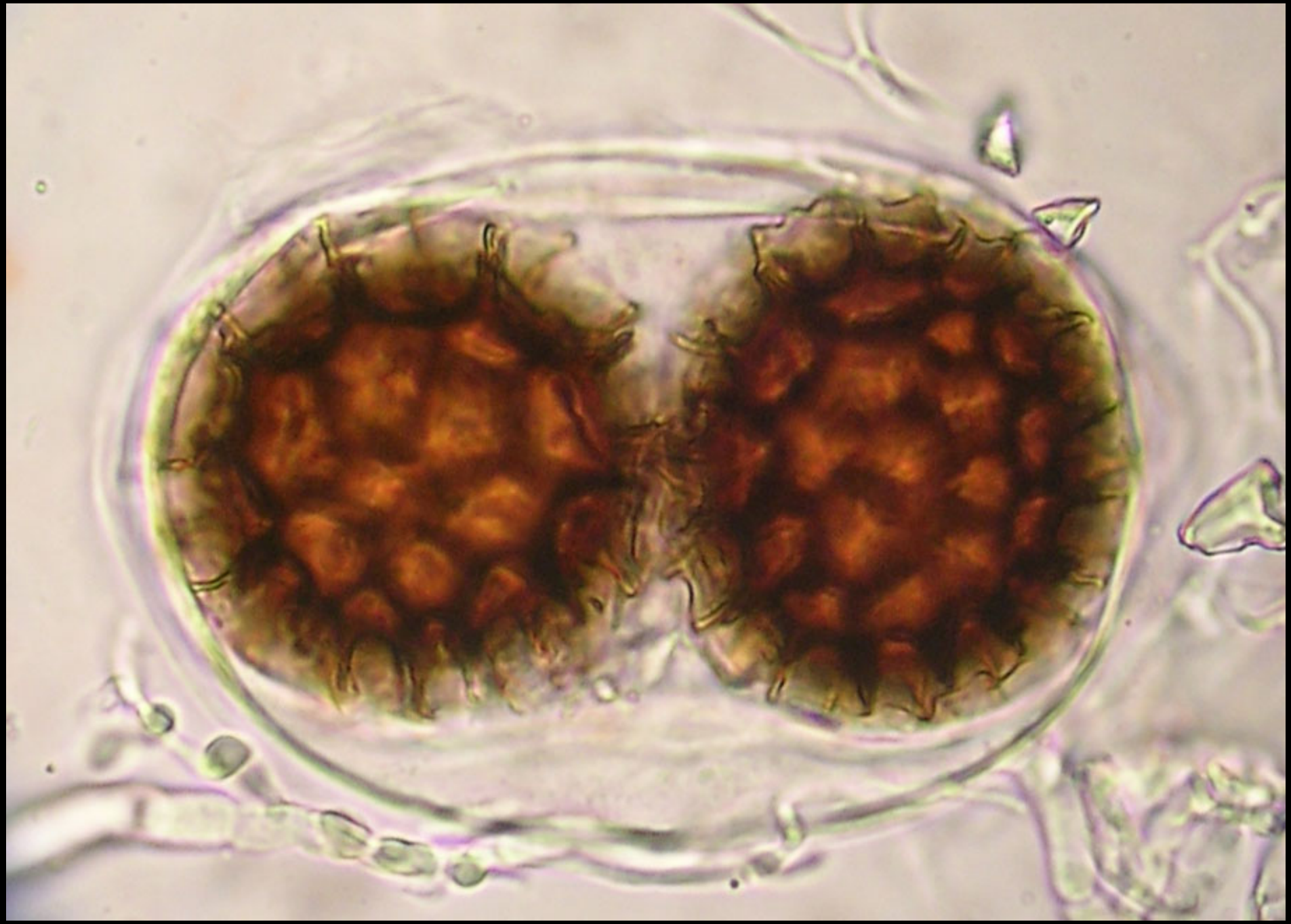
Leucangium carthusianum, "Oregon Black Truffles"



Leucangium carthusianum spore, 14 end-to-end span 1 millimeter



Tuber melanosporum, "Italian Black Perigord Truffle"



Tuber melanosporum spores



Tuber sphaerosporum truffles



Balsamia nigra truffle



Gilkeya compacta truffles



Barssia oregonensis truffles

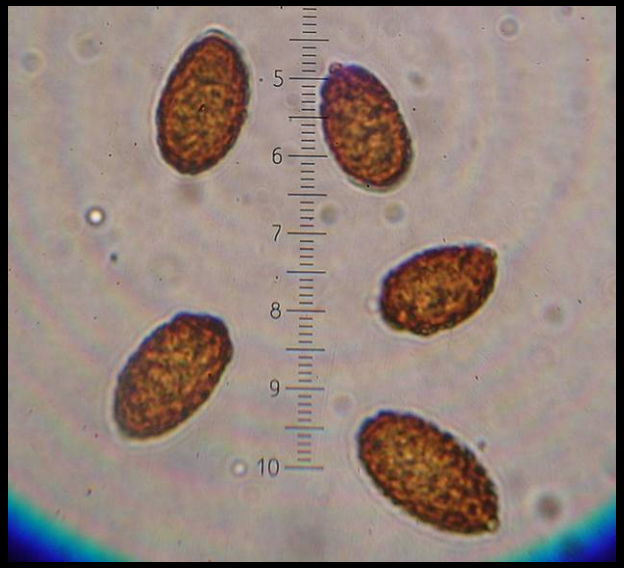


Leucogaster citrinum truffles



Hydnotrya cerebriformis truffle

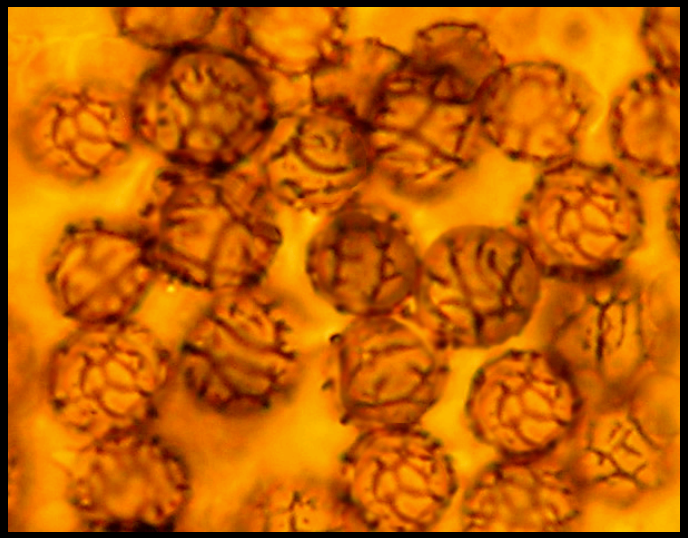
Truffle Spores



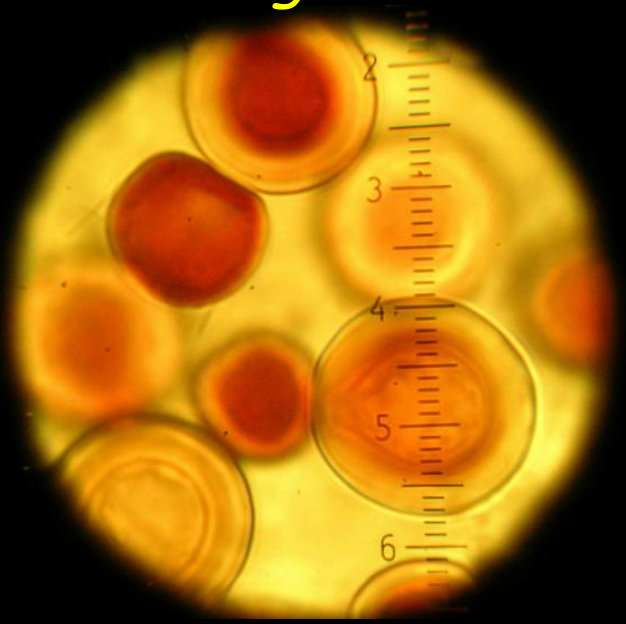
Hysterangium



Leucogaster



Arcangeliella



Gigasperma



Gautieria angustispora truffles


Gautieria angustispora truffle



Elaphomyces muricatus, "Deer Truffle"



Elaphomyces truffle parasitized by *Cordyceps capitata* fungus



Melanogaster tuberiformis truffles



Rhizopogon ater truffles, discovered near Falls City in 1994



Macowanites luteolus, residual stem suggests mushroom ancestry



Thaxterogaster pinguis, very mushroom-like but underground



Mycophagy (fungus-eating)
Truffles depend on small animals to eat them and distribute their spores. When a truffle is mature it produces a scent that attracts animals who dig it up and devour it. Thus truffles are an important link in forest food chains.

Truffle Diversity
There are over 100 species of "truffles" in the Pacific Northwest. Less than a dozen are delicacies for humans. Most of the truffles pictured here today would only be considered gourmet by small animals.



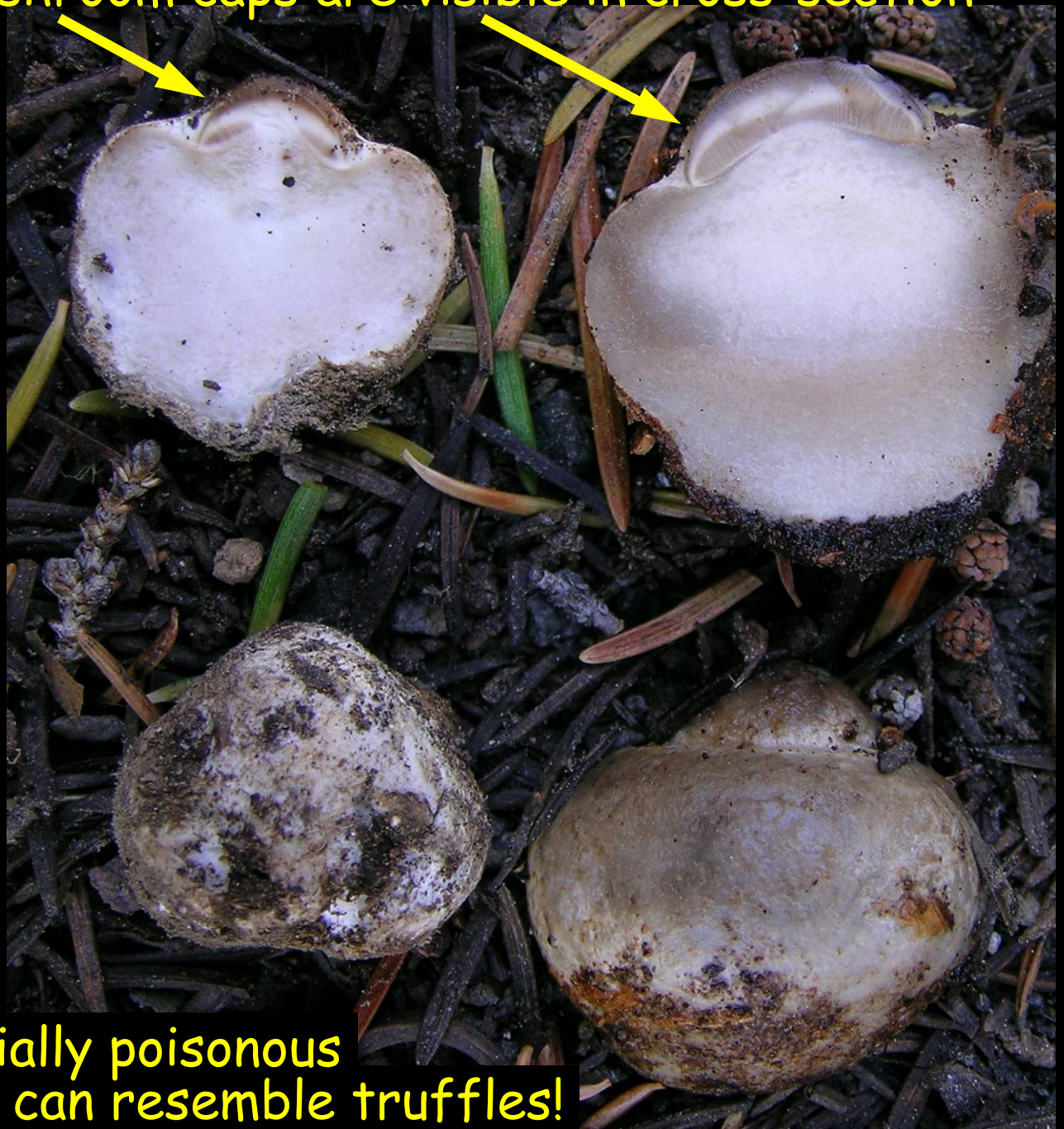




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Primordial mushroom caps are visible in cross-section



Be careful! Potentially poisonous mushroom buttons can resemble truffles!



Amanita pantherina (poisonous), with young button at left



Coprinus umbrinus



Galerina autumnalis, "Deadly Galerina" *(poisonous)*



Cystoderma fallax



Gomphidius oregonensis; forked gills & glutinous cap pellicle



Tiny *Galerinas* (?), growing on the vein of a rotting leaf



Stropharia hornemannii



Hericium abietus, "Conifer Coral"



Helvella acetabulum, "Ribbed Elfin Cup"



Gyromitra infula



Lepiota magnispora, "Shaggy Stalked Lepiota"



Hygrocybe coccinea, "Red Waxy Cap"



Hypholoma fasciculare, "Sulphur Tuft" *(poisonous)*



Peziza repanda, "Brown Cup Fungus"



Morchella deliciosa
"Blonde Morel"



Morchella angusticeps
"Black Morel"



Morchella atrotomentosa, "Alaskan Morel"



A good afternoon



Morchella angusticeps, "Morel"


Armillaria bulbosa



Lycogala epidendrum, "Wolf's Milk" slime mold



Physarum polycephalum, "Many Headed Slime Mold"



Physarum polycephalum, another form, top speed 1 mm/hr



Hemitrichia calyculata, another lovely slime mold



Marasmiellus candidus



Mycena elegantula



Amanita francheti, (poisonous)



Mycena strobilinoides, "Flame Mycena"



Helvella maculata, "Elfin Saddle"



Polyporus squamosa

Photos by M. Trappe



Aleuria aurantiaca, "Orange Peel Fungus"



Geopyxis carbonaria, smells like rotten eggs when crushed


Inocybe maculata



Boletus edulis, "King Bolete"



Sarcosphaera coronaria, "Crown Fungus"



Sarcosphaera coronaria, typical appearance in the wild



Boletus mirabilis, "Admirable Bolete"



Schizophyllum commune



Schizophyllum commune, underside (note split gills)


Agaricus californicus


Paneolus acuminatus



Lichenomphalia ericetorum, actually part of a lichen



Stropharia ambigua



Russula aeruginea



Mycena pura (young)


Mycena pura



Trametes versicolor, "Turkey Tails"


Tricholoma sejunctum



Ramaria sandaracina, "Flaming Gelatinous Coral"



Russula olivacea



Clavulina cristata, "Crested Coral"


Cortinarius cylindripes


Tremellodendron pallida



Lycoperdon perlatum, "Common Puffball"



Pseudohydnum gelatinosum, "Cat's Tongue"



Calvatia sculpta, "Sculpted Puffball"

Photos by M. Trappe



Stropharia riparia



Laetiporus coniferarum, "Sulphur Shelf"



Ganoderma oregonense, "Varnished Conk"



Fistulina hepatica, "Beefsteak Fungus"



Fistulina hepatica, underside made of many fine tubes



Gyrodon merulioides, "Ash Bolete"



Boletus truncatus, underside of cap



Boletus edulis, "King Bolete"



Boletus edulis, has netlike ("reticulate") pattern at apex of stem



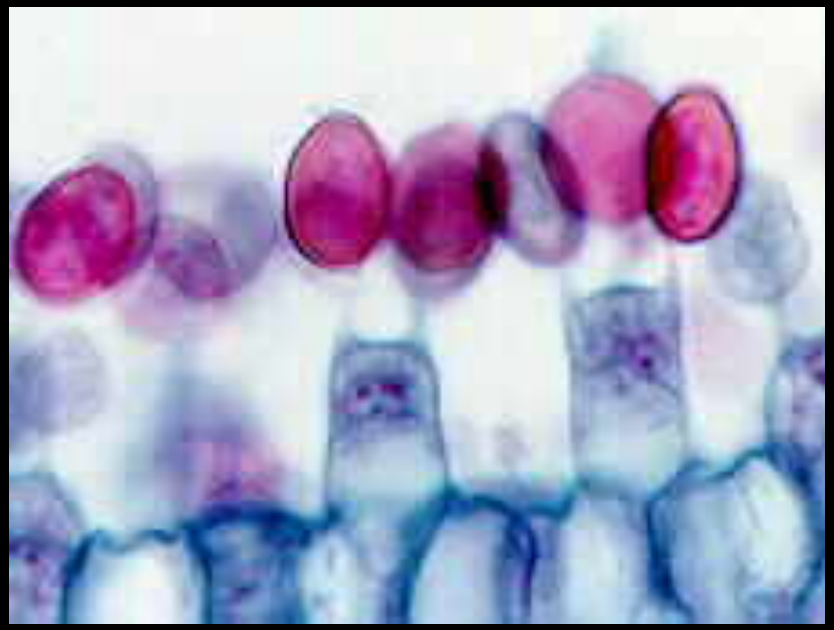
Leccinum ponderosum, related to *Boletus* but with a scaly stem



Lepiota naucina, "Smooth Parasol"



Morchella angusticeps
"Black Morel"



Basidiomycetes

All *gilled* mushrooms are Basidiomycetes.

Their spores (dyed pink in picture) are borne on outside of microscopic structures called *basidia* (dyed blue) and are connected by tiny prongs called *sterigmata*.



Ascomycetes

Ascomycetes are usually brittle and include morels, cup fungi, and the gourmet ("true") truffles.

Their spores form on the inside of microscopic socks or sacs called *asci*.



Coprinus atramentarius, "Tippler's Bane"



Agrocybe praecox



Hygrocybe marginata



Discina perlata, "Pig's Ear"



Melanoleuca evanosa



Daldinia occidentale



Daldinia occidentale



Trametes hirsuta, "Hairy Turkey Tails"



Coprinus micaceus, "Mica Cap"



Grifola frondosa, "Maitake"



Hericeum erinaceus (wild), "Lion's Mane"



Hericeum erinaceus (cultivated), "Pom Poms"


Lentinula edodes, "Shiitake"



Leccinum manzanitae, "Manzanita Bolete"





Clavulinopsis fusiformis

Photos by M. Trappe



Ganoderma applanatum, "Artist's Conk"



Lepiota magnispora, "Shaggy Stalked Lepiota"



Lentinus ponderosus



Amanita muscaria var. muscaria, "Fly Agaric" *(poisonous)*



Amanita flavorubescens (poisonous)



Agaricus subrutilescens
"Wine-Colored Agaric"



Morel Landscape



Calvatia subcretacea



Scleroderma citrinum



Hygrophorus goetzii



Clavariadelphus pistillaris, "Club Coral"



Amanita calyptrata, "Coccoli"



Ramariopsis kunzei, "White Coral"



Mycena murina



Agrocybe praecox



Coprinus comatus, "Shaggy Mane"



Coprinus comatus, "Shaggy Mane"



Amanita aestivalis



Clitocybe odora, "Blue-Green Anise Mushroom"



Phaeolus schweinitzii (poisonous)



Nivatogastreum nubigenum



Clitocybe deceptiva



Piptoporus betulinus, "Birch Polypore"



Ramaria rasilispora, "Yellow Coral"



Mycena epipterygia



Mycena epipterygia with *Spinellus fusiger* mold



Amanita pachycolea, "Grisette Amanita", emerging from 'egg'



Amanita pachycolea, "Grisette Amanita", fully opened



Amanita pachycolea
(a grayer variety)



Cortinarius distans



Dacrymyces palmatus, "Witches Butter"



Pholiota flammans, "Yellow Pholiota"



Amanita caesarea, "Caeser's Amanita"



Amanita flavorubescens (poisonous) *Photos by M. Trappe*



Gyromitra gigas, "Walnut False Morel" *(poisonous)*


Lepiota cristata


Pycnoporellus cinnabarinus


Lactarius camphoratus



Guepiniopsis alpina, "Jelly Drops"



Helvella compressa


Helvella cupuliformis



Stropharia rugoso-annulata, "Wine Red Stropharia"



Armillaria mellea, "Honey Mushroom"



Russula brevipes parasitized by *Hypomyces*, "Lobster Mushroom"



Hypholoma fasciculare, "Sulphur Tuft" *(poisonous)*



Fomitopsis cajanderi, "Rosy Conk"


Inocybe fastigiata


Lepiota magnispora


Lepiota asperula



Lepiota rubrotincta, "Red-eyed Parasol"



Lepiota atrodisca, "Black-eyed Parasol"



Morchella deliciosa, "Blonde Morel"



Pleurotus ostreatus, "Oyster Mushroom"


Cortinarius mucosus



Sparassis crispa, "Cauliflower Mushroom"



Tricholoma magnivelare, "Matsutake"

Photos by M. Trappe


Amanita silvicola (poisonous)


Coltricia perennis



Inocybe olympiana



Trametes versicolor, "Turkey Tails"



Nidula candida, "Bird's Nest"



Pholiota aurivella, "Golden Pholiota"



Schizophyllum commune



Coprinus comatus, "Shaggy Mane"



Pholiota nameko, "Namekotake"



Gyromitra esculenta (poisonous)



Geastrum saccatum, "Earth Star"



Pluteus cervinus, "Deer Mushroom"


Flammulina veluptipes
"Velvet Foot"



Scutellinia scutellata, "Eyelash Fungus"



Bolbitius vitellinus, "Sunny Side Up"



Ustilago maydis, "Huitlacoche" Corn Smut


Lentinula edodes, "Shiitake"


Agaricus hondensis


Suillus punctatipes



Cortinarius caperata, "Gypsy Mushroom"



Lyophyllum decastes, "Fried Chicken Mushroom"


Hygrophorus miniata


Sarcodon imbricatus


Lactarius deliciosus



Hypholoma fasciculare, "Sulphur Tuft" *(poisonous)*



Xylaria hypoxlyon, "Candle Snuff Fungus"



Ramaria araiospora, "Red Coral"



Laccaria laccata, "Lackluster Laccaria"



Ascocoryne sarcoides, "Purple Jelly Fungus"



Cortinarius violaceus, "Violet Cortinarius"



Radulum orbiculare, "Dog Barf Fungus"


Cortinarius cylindripes


Suillus fuscotomentosus



Boletus edulis, "King Bolete"


Cortinarius uraceus


Inocybe lilacina



Laccaria laccata



Stemonitus splendens, a slime mold



Trichaptum abietus



Laccaria bicolor



Hypholoma capnoides (poisonous)



Clavaria purpurea



Agaricus campestris


Cystoderma amianthinum



Lepista nuda, "Blewit"


Marasmius plicatulus



Polyporus hirtus, "Iodine Polypore"



Spathularia flavida



Xylaria polymorpha, "Dead Man's Fingers"



Amanita phalloides, "Death Cap" (poisonous)



Amanita phalloides, "Death Cap" (poisonous)



Clitocybe inversa



Deconica coprophila


Boletus rubripes


Porphyrellus pseudoscaber


Coprinus finetarius



Hysterangium truffle


Psathyrella velutina



Amanita flavorubescens (poisonous)



Hygrocybe conica, "Witch's Hat"



Pluteus cervinus, "Deer Mushroom"



Coprinus lagopus, Nov. 25



Coprinus lagopus, Nov. 27



Hericium erinaceus, "Lion's Mane"



Hericium abietis, "Conifer Coral"



Boletus edulis, "King Bolete"



Gymnosporangium libocedri, "Incense Cedar Rust"



Agaricus augustus, "The Prince"



Turbinellus floccosus, "Scaly False Chanterelle"



Amanita calyptrata, "Coccora"



Lactarius scrobiculatus, "Furry Milk Cap"



Fomitopsis pinicola, "Red Belted Conk"



Lepiota magnispora, "Shaggy-stalked Parasol"


Marasmiellus candidus



Phlogiotis helvelloides, "Apricot Jelly Mushroom"



Sarcocypha coccinea, "Scarlet Cup"



Phaeolus schweinitzii, "Dyer's Polypore"


Stropharia hornemannii



Suillus punctatipes, close-up of cap surface



Tricholoma magnivelare, "Matsutake"


Trametes versicolor, "Turkey Tails"



Hebeloma crustuliniforme, "Poison Pie"



Calocera cornea, "Miniature Staghorn Jelly Fungus"



Polyozellus multiplex, "Blue Chanterelle"



Pholiota aurivella, "Golden Pholiota"



Lycoperdon perlatum, "Common Puffball"



Paxillus atrotomentosus, "Velvet Pax"



Hygrophorus eburneus, "Ivory Waxy Cap"



Craterellus tubaeformis, "Winter Chanterelle"


Gyromitra infula


Boletus coniferarum


Tyromyces borealis



Clavulina cinerea, "Ashy Coral"


Xeromphalina campanella


Cystoderma fallax


Thelephora palmata



Stropharia ambigua


Russula rosacea



Daedalea quercina "Maze Polypore" (underside)


Inocybe calamistrata


Clavariadelphus occidentalis


Leptonia parva



Panellus serotinus , note forked gills


Clavaria vermicularis



Amanita silvicola (poisonous)


Dacrymyces chrysospermus


Cortinarius cylindripes


Fomitopsis officianalis



Armillaria mellea, "Honey Mushroom"


Ramaria araiospora, "Red Coral"



Ramaria carnisalmonea, "Salmon Coral"



Boletus chrysenteron, parasized by *Hypomces* fungus



Pleurotus ostreatus, "Oyster Mushroom"


Laccaria laccata


Mycena amabilissima



Boletus edulis , "King Bolete"



Lactarius rufus, and a mycophagist