

Illinois Mushrooms



Photo Credit: <http://illinoismushrooms.com/What%27s%20Up%204.html>

Lake Shelbyville Eco-Meet

2024 Varsity



**US Army Corps
of Engineers®**

U.S. ARMY CORPS OF ENGINEERS – ST. LOUIS
DISTRICT LAKE SHELBYVILLE

1989 State Highway 16
SHELBYVILLE, IL 62565

(217) 774-3951

TABLE OF CONTENTS

Introduction.....	2
Anatomy.....	3
Life History	5
Species Description	6
Ascomycetes.....	6
Stalked Scarlet Cup	
Yellow Morel	
Basidiomycetes	8
Lion's Head	
Bird's Nest or Splash Cup Chanterelle	
Crown-Tipped Coral	
Dryad's Saddle	
Elegant Stinkhorn	
Emetic <i>Russula</i>	
Fawn or Deer Mushroom	
Giant Puffball	
Green-Gilled <i>Lepiota</i>	
Indigo Milk Cap	
Jack-O-Lantern	
Malodorous <i>Lepiota</i>	
Orange <i>Mycena</i>	
Oyster Mushroom	
Rounded Earthstar	
Shaggy Mane	
Split-Gill	
Spotted Bolete	
Sulphur-Colored Chicken of the Woods	
Turkey Tail Fungus	
Wood Ear	
Yellow-Orange Fly Agaric	
Conservation	24
Mushroom Facts	25
Glossary.....	26
Bibliography	28

This study guide is an adaptation of the Illinois Department of Natural Resources’ “Illinois Mushrooms” poster along with Edible Wild Mushrooms of Illinois & Surrounding States by Joe McFarland and Gregory M. Mueller.

Disclaimer: Edible and non-edible mushrooms will be discussed in the study guide. Dangerous and harmless mushrooms can look very similar to one another. DO NOT eat any wild mushrooms without 100% confirmation that it is edible.

INTRODUCTION

Mushrooms are members of the Kingdom Fungi, one of the largest and most diverse groups of organisms. Fungi are second only to insects in the number of species that occur on earth. It has been estimated that more than 10,000 species of mushrooms are found in the United States and at least 2,000 species occur in Illinois. The 25 species illustrated here are commonly found throughout Illinois and were selected to represent the diversity of mushrooms in our state. Unlike organisms such as butterflies, trees, or turtles, little is known about the number and distribution of mushrooms because so few people study them. The study of fungi is called **mycology**, and the people who study them are known as **mycologists**. Fungi are important components of all ecosystems because they play critical roles in nutrient recycling by breaking down organic matter. While some fungi are destructive plant **pathogens**, causing plant disease, others enhance plant growth through the formation of **mycorrhizae**. Mycorrhizae, or “fungus-root” is a symbiotic relationship between a fungus and a plant’s roots. This relationship is beneficial for both the fungus and the plant. Plants can thrive in harsh soil and drought conditions with the help of mycorrhizae. The fungus will wrap threads called mycelium around the roots of a plant which allows the sharing of water, nitrogen, carbon, and other minerals. In return, the plant will provide the fungus with sugars and carbon.

Despite their ecological and economic importance, no mushrooms are listed on the U.S. Fish and Wildlife Service federally endangered and threatened species list, probably because so little is known about them due to their cryptic habitat and short-lived nature.

ANATOMY

The term “mushroom” is used here in a very broad sense to refer to **fungi** that have large, fleshy, **fruiting bodies** that can easily be seen without magnification. This definition includes fungi commonly referred to as a garics, bird’s nest fungi, boletes, chanterelles, coral fungi, cup fungi, earthstars, morels, polypores or shelf fungi, puffballs, stinkhorns, tooth fungi, and toadstools.

Most mushrooms belong to the fungus group known as **Basidiomycetes** (club fungi), while many others are included in the **Ascomycetes** (sac fungi). Basidiomycetes are spore droppers because they produce their spores on the outside of club-shaped structures known as **basidia**. **Basidiospores** are generally shot off a short distance and then dispersed by wind, water, or insects. Ascomycetes are spore shooters since they produce their spores inside sac-like structures called **asci**. **Ascospores** must be shot out of the asci for the mushroom to disperse its spores.

The fruiting body of a mushroom is composed of several parts. The cap, or **pileus**, is the structure that supports the spore-producing surface (**hymenophore**), which can be composed of gills (**lamellae**), downwardly directed tubes with pores, spines, or veins. The term agaric typically refers to mushrooms that have gills on the underside of their caps, while boletes and polypores possess tubes with pores, tooth fungi have spines or teeth, and chanterelles have veins. The hymenophore can be covered by a protective layer (**partial veil**) that initially connects the cap edge to the stalk, but which breaks apart at maturity leaving a ring, or **annulus**, around the stalk. The stalk, or **stipe**, extends the cap and hymenophore into the air, allowing the mushroom to better disperse its spores. When young, the entire mushroom can be covered by a **universal veil**. As the cap and stalk expand, the universal veil tears open near the base of the stipe leaving a **volva**.

Fungi are composed of microscopic strands called **hyphae**, which are collectively known as a **mycelium**. Fungi can be thought of as having their stomachs on the outside of their bodies since they must digest their food before it can pass through their cell walls. The mycelium secretes

enzymes that break down surrounding organic material into simple soluble molecules, which are then absorbed through the cell walls.

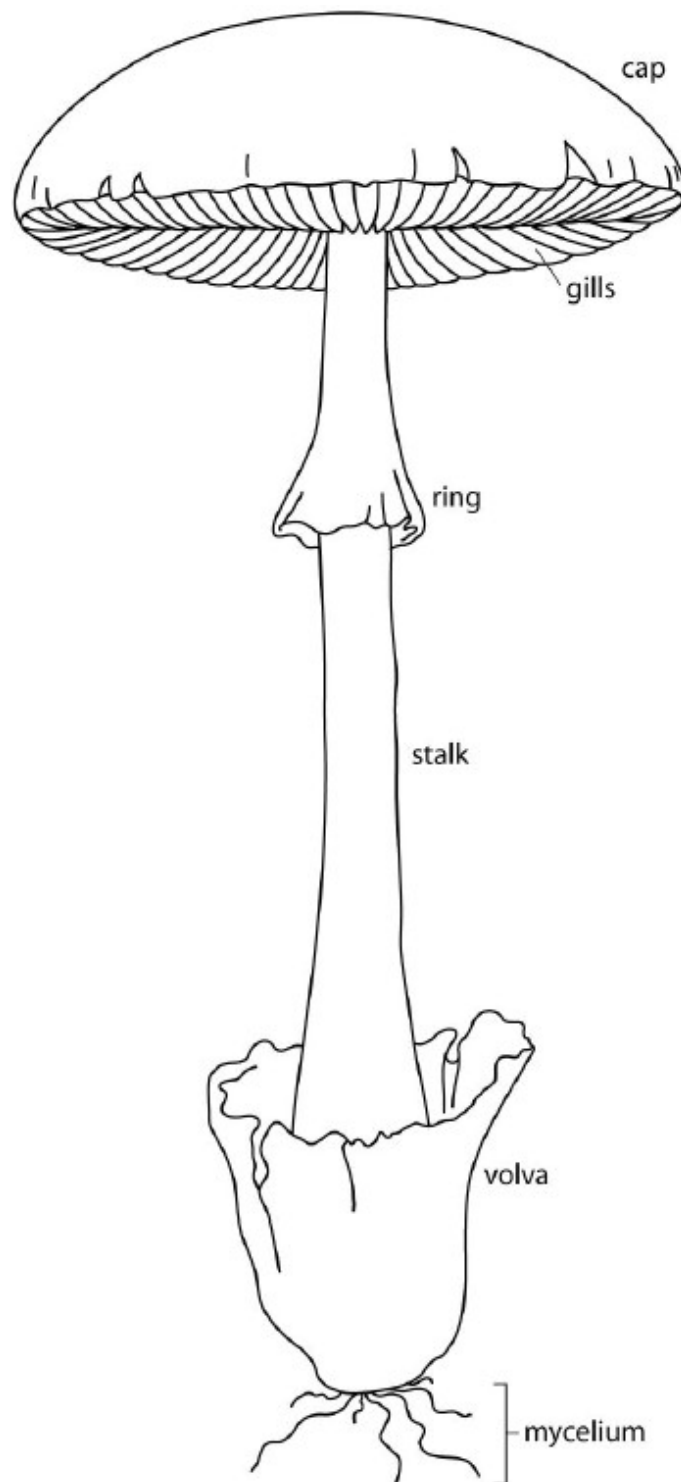


Figure 1.

LIFE HISTORY

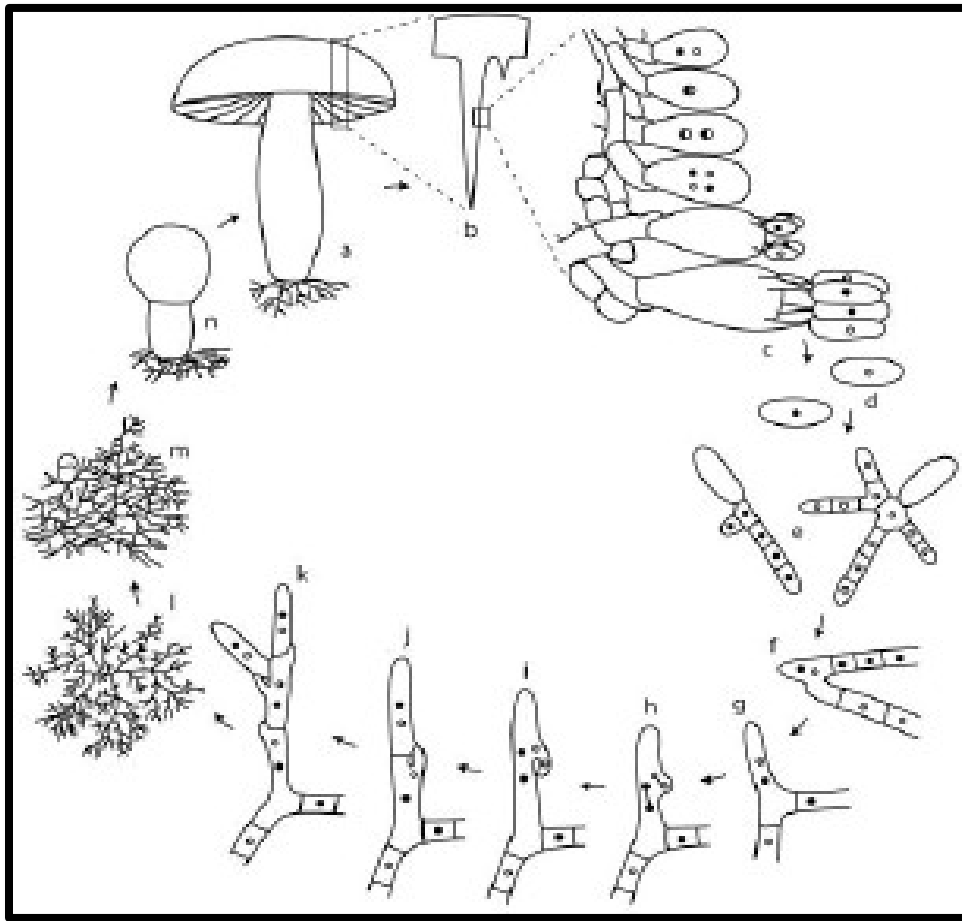


Figure 2.

Much in the same way that apples are the seed-bearing parts of an apple tree, mushrooms are the spore-bearing, or reproductive parts, of a **fungus**. The **fruiting body** of a mushroom (a) is generally the only phase seen since the **mycelium** occurs hidden in the substrate. If a piece of gill section (b) is removed and observed under a microscope, a layer of **basidia** in various stages of development can be seen (c). As shown in the developmental sequence, the uppermost (youngest) basidium contains two nuclei, which are shown here as white and black dots to indicate two different types of nuclei. These nuclei fuse and then undergo a two-step division resulting in four nuclei. Each nucleus migrates into one of the four **basidiospores**, which are produced at the tips of the basidia. After the basidiospores are released (d), they germinate to form **hyphae** (e). If hyphae with two different types of nuclei meet, they fuse and form a mycelium with both types of nuclei (f-g). As the mycelium grows, the nuclei divide so that each new cell has the same type of nuclei as the original cell (h-k). A small **clamp**

connection is often formed between adjacent cells. In time, a large growth of mycelium will form (l) and when suitable environmental conditions (humidity, temperature, water, and light) are met, a small mushroom termed a **button** will develop (m). This button will grow to form a young fruiting body (n), which will develop into a mature mushroom, and the life cycle is repeated.

SPECIES DESCRIPTION

ASCOMYCETES | SAC FUNGI

Stalked Scarlet Cup

Sarcoscypha occidentalis



Cap: ¼ - 5/8” wide, tiny red cup on small white stalk (3/8 – 1 ¼”).

Gills: No gills.

Habitat: Grows on fallen wet sticks and branches in damp, deciduous woods in spring/early summer.

Additional: Not edible, spores produced in lining of the cup.

Yellow Morel
Morchella esculenta



Cap: Size varies, typically 7-15 cm tall. Color ranges from yellow-brown and grey. Honeycomb or sponge-like pits. Completely hollow inside. Since it has a completely hollow interior once cut open, the stem and cap are actually one – looking different because the top has pits and chambers. Has no gills.

Habitat: Beginning in early April through early May. Prefers to grow around dead American Elm trees, dead cottonwoods, old apple trees and other fruit trees, live ash and Tulip Poplar trees. Sometimes will grow in fresh mulch and around white pines.

Additional: Sometimes called Gray Morel or Blonde Morel depending on coloration. Morels are edible. There are “false morels” that look similar to the common yellow or black morel. These, however, are not completely hollow like traditional morels and are considerably heavier. These mushrooms are toxic and it is dangerous to mix these with the traditional, edible morels.

BASIDIOMYCETES | CLUB FUNGI

Lion's Mane

Hericium erinaceus



Cap: No “cap” but a fruiting body. Baseball to basketball size white mass of spongy tissue. Covered with dense, soft spines that hang down (up to 6 cm long). With age or frost, the white may turn yellow.

Gills: No gills, spored produced on the white spines.

Habitat: One to several fruiting bodies on hardwood logs, stumps, etc. Also on tree wounds, usually in autumn. Not rare, but not common.

Additional: Is edible, similar to another species, Bear’s Head.

Bird’s Nest or Splash Cup

Cyathus striatus



Cap: The bird's nest mushroom gets its common name from its vase-shaped fruiting body that has the appearance of a miniature bird's nest (1/4 – 3/8"). The inner surface of the "nest" has distinct, dark brown lines. The "eggs" in the nest are gray to black and contain the spores.

Gills: No gills, spores are in cases call peridioles, the "eggs"..

Habitat: Found in moist, shaded areas. Woodlands, parks, gardens, dead logs, twigs, wood chips and bark mulches. Will grow year-round but most abundant in late summer/early fall.

Additional: Not edible. Not known to be toxic or harmful to humans, just undesirable for consumption. The spore cases, peridioles, are dispersed when rain hits the cap just right and shoots the peridioles out of the nest, dispersing spores.

Yellow Chanterelle

Cantharellus cibarius



Cap: Yellowish orange to gold, fading to pale yellow. 1-3" across. As it matures, the edges will flare up exposing the gills.

Gills: Attaches down to stem, hard to differentiate where one stops and the other one starts. The gills always run down the stem for a distance before fading away. Unique texture, ribs of tissue rising and falling in narrow ridges and valleys. Gills are sometimes forked.

Habitat: Starts in late May to late June. Around oaks, especially after summer rains. Sometimes, these can be found into September.

Additional: Trumpet shaped. In northern regions, can have a strong, apricot smell. The smell is not common of those found in Illinois. These are edible.

Crown-Tipped Coral

Artomyces pyxidatus (formerly known as *Clavicornia pyxidate*)



Cap: No “cap”. Many branches, coral-like mushrooms. Yellow-tan with crownlike tips. $\frac{3}{4}$ - 2 $\frac{1}{2}$ ” wide and 2-5” tall. Short, thin stalk.

Habitat: Grows individually or in groups on the dead wood of deciduous trees in summer.

Additional: Is edible, said to be peppery in taste.

Dryad’s Saddle

Polyporus squamosus



Cap: Circular to fan-shaped, yellow-tan, covered with dark, distinct brown scales. A polypore. The fruiting body has tubes with pores on the underside of the cap. The stalk is lateral to eccentric (off-center) and black at the base.

Habitat: Grows singly or in layers on living or dead deciduous wood. Can reappear for years in the same locations often fruiting more than once a year. Common in spring and summer.

Additional: Considered edible, known to have a watermelon taste when raw.

Elegant Stinkhorn

Mutinus elegans



Body: Long, tapered, pinkish orange column. Top part has greenish brown, smelly slime coating with spore mass. White cup around base. Height 4-7” total.

Habitat: Grows on leafy debris, mulch piles (**humus**) and rotting wood starting in July and through September. The “stinkhorn” name is applied to this species due to its pungent odor .

Additional: Considered edible in the immature stage, but caution is encouraged due to toxic look-a-likes.

Emetic Russula

Russula emetica



Cap: Bright red cap, 1 -4” wide. Cushioned shape, becoming convex in the middle. Flesh and stalk are brittle, stalk is 2-4” in length.

Gills: Off-white/pale cream gills that are closely spaced and brittle.

Habitat: Grows singly or in groups on moss and in mixed woods from July – October. Grows in sphagnum bogs or under **conifers**.

Additional: Poisonous. Can cause severe gastrointestinal upset and vomiting, nausea, diarrhea, and stomach cramps. Also known as the vomiting russula or “sickeners”.

Fawn or Deer Mushroom

Pluteus cervinus



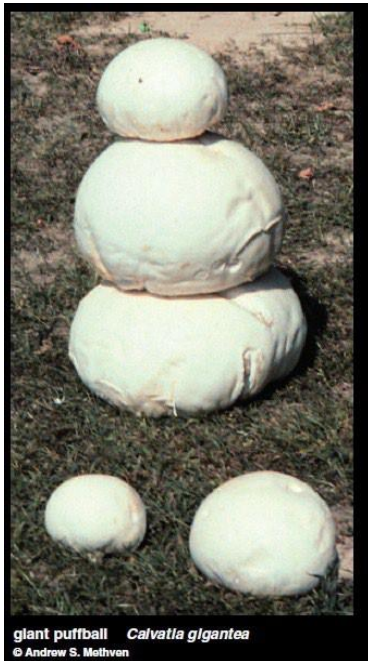
Cap: Typical mushroom shape, brownish gray to dark brown with darker fibers radiating from the center. Smooth texture and tacky when wet. White stalk, sometimes tinged brown or black.

Gills: Pinkish white gills closely spaced. Younger mushrooms start with white gills and fades to a pink shade.

Habitat: Grows singly or scattered on dead wood or on the ground over buried wood from May through October.

Additional: Edible with caution. Many of its look-a-likes are poisonous.

Giant Puffball
Calvatia gigantea



Flesh/exterior: Giant mass, sometimes of a softball but often times larger – up to 2 feet across. White to greyish. Minor dimples on surface, mottled. Soft, turning greenish-yellow with age and then darker tan as the spores mature.

Habitat: Common on lawns but also in forests beginning in August and continuing into October. Found at the edge of wooded areas.

Additional: Only edible if cut open and completely white in the middle. If green/yellow it can cause gastrointestinal problems.

Green-Gilled *Lepiota*
Chlorophyllum molybdites



Cap: Large, white with broad, cream-colored scales on the cap. 2 – 12” wide. Round, becoming flat. The cream colored scales on the cap break into many small scales when cap is open. Stalk enlarges towards base, white, 3 - 10” with large **annulus** (ring) around stalk.

Gills: Initially white but change to dull green over time. Closely spaced.

Habitat: Forms fairy rings in lawns, meadows, and pastures in summer and early fall.

Additional: Poisonous. Can make a person very sick. Will cause violent gastrointestinal upset and may require hospitalization.

Indigo Milk Cap

Lactarius indigo



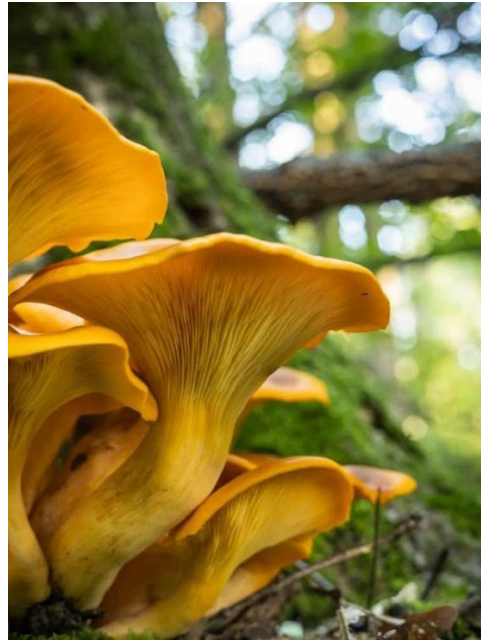
Cap: Medium sized, 2-4" cap. Light blue with darker blue rings extending outward from a center depression. When young, the cap will curl downward, when maturing, the cap will flare upwards. When fresh, will "bleed" an opaque blue liquid when cut.

Gills: Light blue, thin, and connected to the stem. With age the blue fades slightly and may show green hues. Will leak blue liquid when cut.

Habitat: Grows on soil in mixed woodlands, found occasionally, beginning in early summer through early fall.

Additionally: Is edible.

Jack-O-Lantern
Omphalotus illudens



Cap: Pumpkin orange, sometimes with brown streaks or patches. Smooth without scales or warts, growing as large as 9 inches across, usually 2-3 inches. The cap edge is typically wavy and the center depressed.

Gills: Bioluminescent, or glows. Orange, thin, and well-defined. Gills can run down the stem, often the reason it can be confused with the Yellow Chanterelle, but the Jack-O-Lantern's gills are razor thin.

Habitat: A root parasite that grows from soil around trees and stumps, usually oaks, mainly in autumn but also in spring or summer. Rarely found alone, almost always in clusters.

Additional: Toxic, will cause severe gastrointestinal pain, vomiting, chills, and sweating.

Malodorous *Lepiota*

Lepiota cristata



Cap: Typical mushroom shape, white cap (2/5 – 2”) with brown scales. The center of the cap is a darker red-brown color compared to the rest of the cap. The cap is initial bell-shaped to convex, then later flattens out. The stalk is only 2 -8 cm long and is white to pale pink with an annulus.

Gills: Crowded, white gills become dark brown as the mushroom ages and spores mature.

Habitat: Grows in humus in mixed deciduous-coniferous forests in summer and fall.

Additional: Also known as the Stinking Dapperling for its rubber/tar smell. Should be considered poisonous as most species of *Lepiota* are.

Orange *Mycena*

Mycena leai



Cap: Mushroom-shaped cap/fruiting body has a sticky, bright orange cap ½ -2” wide. Cap is egg shaped, becoming bell-shaped to conical with sunken center. Stalk is long and curving, 1 ¼ - 2

¾” long, orange-yellow. Tough texture, fibrous, sticky, coarse hairs at base.

Gills: Pinkish yellow, closely spaced, staining orange-yellow when cut with bright red-orange edges and a light cream inner area.

Habitat: Grows in dense clusters on deciduous wood from June – September.

Additional: Not recommended/not edible. Does have antibiotic and antitumor properties.

Oyster Mushroom

Pleurotus ostreatus



Cap: Size ranges from 3-12 inches across. Oyster-shell shaped with smooth surface. White to silver/grey in warm weather and darker tan to brown in cool weather. Skin on cap can be peeled if rain-soaked.

Gills: Thin, white to cream colored, forked near edge of cap. Gills run downward onto minimal stem. Almost nonexistent stem.

Habitat: On wood, both living and dead tree stumps and logs. Occasionally on ground over buried roots/stumps. Nearly any deciduous tree.

Additional: Grows nearly year-round and is an edible mushroom of Illinois’.

Rounded Earthstar
Geastrum saccatum



Cap: The fruiting body (1/4 – 1” wide) is shaped like a star, and its outer layer splits into rays that curve backward in a star-like pattern. The rays are pale tan while the spore case is brown with a central pore. The rounded earthstar grows on humus in late summer.

Habitat: Grows on humus either scattered or clustered in late summer and fall.

Additional: Not edible.

Shaggy Mane
Coprinus comatus



Cap: Typically 2-3” tall when young, becoming columnar up to 6” tall when mature. Silver white with soft, scaly fibers and plates curling upwards. Brownish at top.

Gills: Thin and very closely crowded, silver white when young, becoming salmon pink before liquefying into black, spore-filled, ink.

Habitat: Favors grassy habitats, especially disturbed areas such as roadsides, but often seen in random locations like in gravel.

Additionally: When mature, the gills turn black and liquefy. This liquid is full of spores. This mushroom can be eaten if pick fresh before it liquifies.

Split-Gill

Schizophyllum commune



Cap/Fruiting Body: Small, white, hairy, fan-shaped caps (1/4 – 1 1/2” wide). No stalk present.

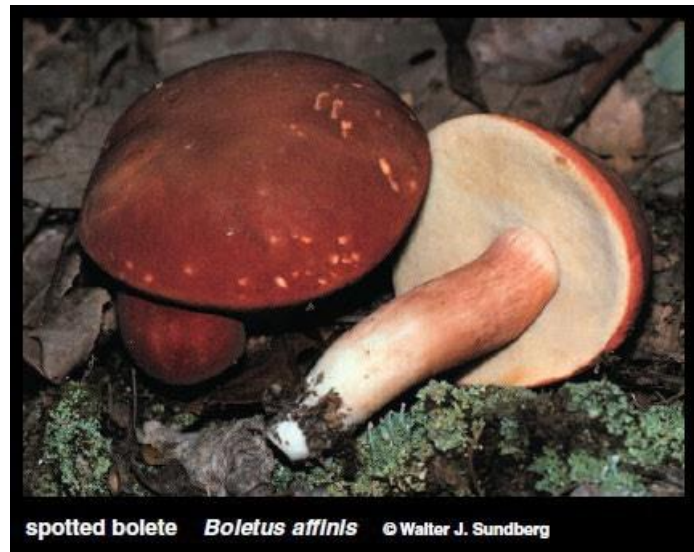
Gills: White-pink gill-like folds that split towards the edge.

Habitat: This fungus grows on dead branches and logs year-round but mostly in summer and fall.

Additional: Not recommended/edible.

Spotted Bolete

Boletus affinis



Cap: The spotted bolete's fruiting body has a typical mushroom shape. There are tubes with pores (yellow) on the underside of the red-brown cap (5-10 cm wide). The pink-brown stalk is 5-10 cm long and 1-2 cm wide.

Habitat: This mushroom may be found in deciduous forests in summer and early fall.

Additional: Considered edible.

Sulfur-Colored Chicken of the Woods

Laetiporus sulphureus



Fruiting Body: Layered, fan-shaped, fleshy orange/red to orange/yellow on top and sulfur yellow below (2-12" wide). Cap is flat and fleshy with angular pores that are bright sulfur yellow. No stalk present.

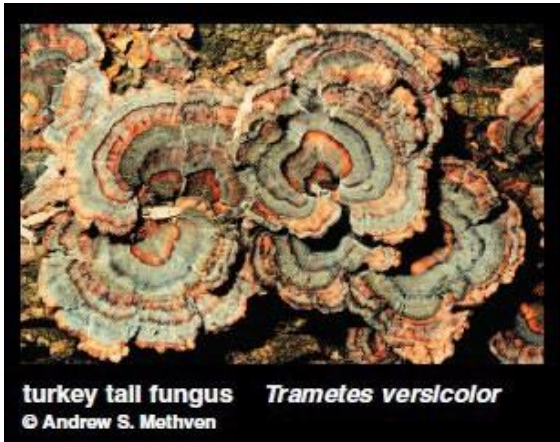
Habitat: Grows in overlapping clusters on dead or dying deciduous trees, stumps, buried roots, or living trees from May – November.

Additional: Is edible and also called Sulfur Shelf or Chicken Mushroom. Can be used as a

chicken substitute in casserole, enchiladas, and more.

Turkey Tail Fungus

Trametes versicolor



Fruiting body: Clusters of leathery, think brackets with multicolored zones above and whitish yellow pores below. Cap semicircular to spoon-shaped, irregular and thin. Zones of black-green, gray-blue, gray-brown, rust color. The bands of color is what gives it its “Turkey Tail” name. Cap is 1-4” wide.

Habitat: Grows on stumps and logs of deciduous trees, grows in groups, rows, or clusters, layered.

Additional: Is edible/medicinal. The Chinese use the turkey tail as a remedy against liver cancer and jaundice.

Wood Ear
Auricularia auricula



Flesh: Rusty tan to honey colored, somewhat translucent but not clear. Wrinkled and wavy. Individual “ears” can be up to 6 inches wide. When soft and fresh, the inside is gelatin-like. Shrinks in dry weather and gelatinous middle turns tough.

Gills: No gills or stem. Gelatinous flesh attaches directly to surface.

Habitat: Grows on variety of deciduous trees, logs, branches, either alone or in clusters. Found almost all year long. Most common in cool weather.

Additional: Is edible. Can be dehydrated and rehydrated. Versions of this is used in Asian cuisine.

Yellow-Orange Fly Agaric

Amanita muscaria variety *formosa*



Cap: The fruiting body of this species has a typical mushroom shape. The cap is 2 ¾ - 6” wide, pale yellow-orange in color and covered with white “warts” when fresh. The stalk grows to 6” tall, white to pale yellow. Annulus is present on stalk.

Gills: The gills are white. An annulus, or ring, is present on the stalk.

Habitat: This mushroom grows under conifers in summer and fall.

Additional: Not edible. Poisonous and a hallucinogenic.

CONSERVATION

During the past few years, there has been increasing concern about the decline of mushroom species. Surveys indicate that populations of some mushroom species have decreased in Illinois, especially those associated with forests. It is generally accepted that the primary cause for this reduction is habitat degradation and destruction from urbanization and agriculture. To conserve our remaining mushrooms, we must continue to manage our public and private natural areas and forests in ways that protect and maintain mushroom populations. Research should continue to be conducted: a) to determine what species remain; b) to better define habitat requirements; and c) to make recommendations, based on our best information, for management policies that can be adopted by land managers.

There are many ways we can expand our knowledge of mushrooms and support their conservation. Amateur mycologists make significant contributions to **mycology** by studying and properly documenting the locations, distributions, and habitats of mushrooms. While collections of mushrooms are necessary for scientists to study and the focus of many passionate **mycophagists**, there are other ways to enjoy these amazing organisms.

- Learn to identify common mushrooms in the field using one of the many field guides available to help you with identification.
- Keep a journal of your mushroom observations including items such as location, habitat type, and plant associates.
- Photograph mushrooms.
- Join or form a mushroom club. For more information contact the Illinois Mycological Association (<http://www.ilmyco.gen.chicago.il.us/>) or the North American Mycological Association (<http://www.namyco.org/>).

MUSHROOM FACTS

- The early Greeks believed mushrooms were the result of Zeus's lightning because they would suddenly appear after a thunderstorm.
- Although an estimated 1.5 million species of **fungi** are believed to exist on earth, only about 80,000 have been discovered and described.
- The largest living organism in the world is a honey mushroom (*Armillaria ostoyae*). It occurs in the Malheur National Forest in eastern Oregon where it grows hidden underground. It stretches 3.5 miles across, covers an area larger than 1,665 football fields and is believed to be more than 2,400 years old!
- A giant puffball (*Calvatia gigantea*) can contain more than 7,000,000,000,000 (7 trillion) spores. If every spore actually germinated and grew into a puffball, the puffballs produced would weigh more than the earth.
- Although spores are extremely small (about 1/100th of a millimeter long), they can be observed in mass by making a spore print. After removing the stalk from a fresh mushroom, place the cap on a sheet of white paper (gill side touching the paper) and cover it with a bowl. The spores should drop onto the paper after six to 12 hours and form a colored "print" on the paper.
- Mushrooms contain **chitin** in their cell walls. This hard material is also found in the brittle outer covering of insects and crustaceans (crabs, lobsters, shrimp).
- Some mushrooms are **bioluminescent** and emit light in a manner similar to fireflies and jellyfish. Wood that when broken apart "glows in the dark," the phenomenon known as foxfire, does so because it is colonized by bioluminescent fungi.
- Six million tons of cultivated mushrooms are consumed each year. Cultivated mushrooms are the fifth largest crop produced in the United States.
- Scientists have recently discovered that fungi are more closely related to animals than to plants. Unlike plants, fungi do not have chlorophyll and cannot make their own food. They depend on other organisms to provide them with food.

- Of the thousands of mushrooms in Illinois, a dozen or two are good to eat and several are poisonous and deadly if eaten!
- Although Illinois has a state tree, a state flower, a state prairie grass, and a state insect, it does not have a state mushroom.

GLOSSARY

Annulus - remnant of the partial veil that surrounds the stipe after expansion of the pileus

Ascus (singular) / Asci (plural) - saclike cells characteristic of the Ascomycetes inside which ascospores are produced

Ascomycetes - group of fungi which reproduce by forming asci and ascospores

Ascospores - spores produced in ascus

Basidium (singular) / Basidia (plural) - clublike cells characteristic of the Basidiomycetes on which basidiospores are produced

Basidiomycetes - group of fungi which reproduce by forming basidia and basidiospores

Basidiospores - spores produced on a basidium

Bioluminescent - organism capable of producing light

Button - young mushroom before the pileus has expanded and stipe has elongated

Chitin - structural carbohydrate found in the cell walls of fungi

Conifer/coniferous - cone-bearing, evergreen trees, such as pines

Clamp Connection - outgrowth from the tip cell of a hypha, which, at cell division, makes a connection by fusion between the tip cell and subterminal cell (See “Life History,” h, i, and j).

Deciduous - trees that lose their leaves annually

Fruiting Body - general term for spore-bearing structures in fungi

Fungus (singular) / Fungi (plural) - filamentous, eukaryotic (cells contain nuclei) organisms which lack chloroplasts, absorb their food, and have chitin in their cell walls

Humus - dark, nutrient-laden material in soil resulting from decay of formerly living things

Hymenophore - spore-bearing structure or surface

Hypha (singular) / Hyphae (plural) - one or more of the filaments of a mycelium

Lamellae - vertical plates on the underside of the pileus; gills

Mycelium - mass of hyphae

Mycologist - one engaged in the study of mycology

Mycology - scientific study of fungi

Mycorrhizae - symbiotic association of a fungus and the roots of a plant

Mycophagist - an eater of fungi

Partial Veil - layer of tissue which, when young, joins the stipe to the pileus edge; later becomes an annulus

Pathogen - disease-causing organism

Pileus - hymenophore-supporting part of a fruiting body; the cap

Stipe - stalk

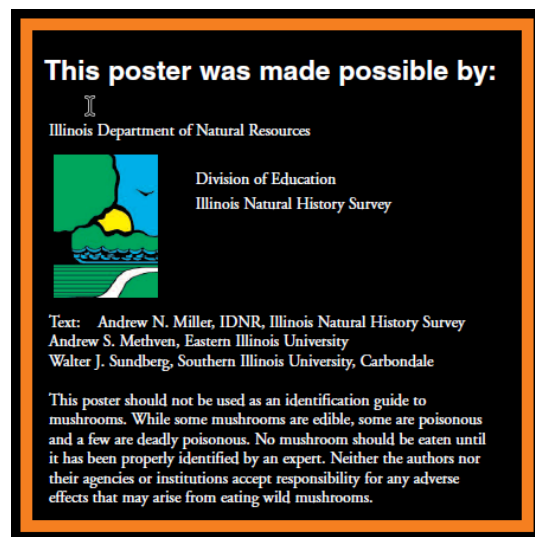
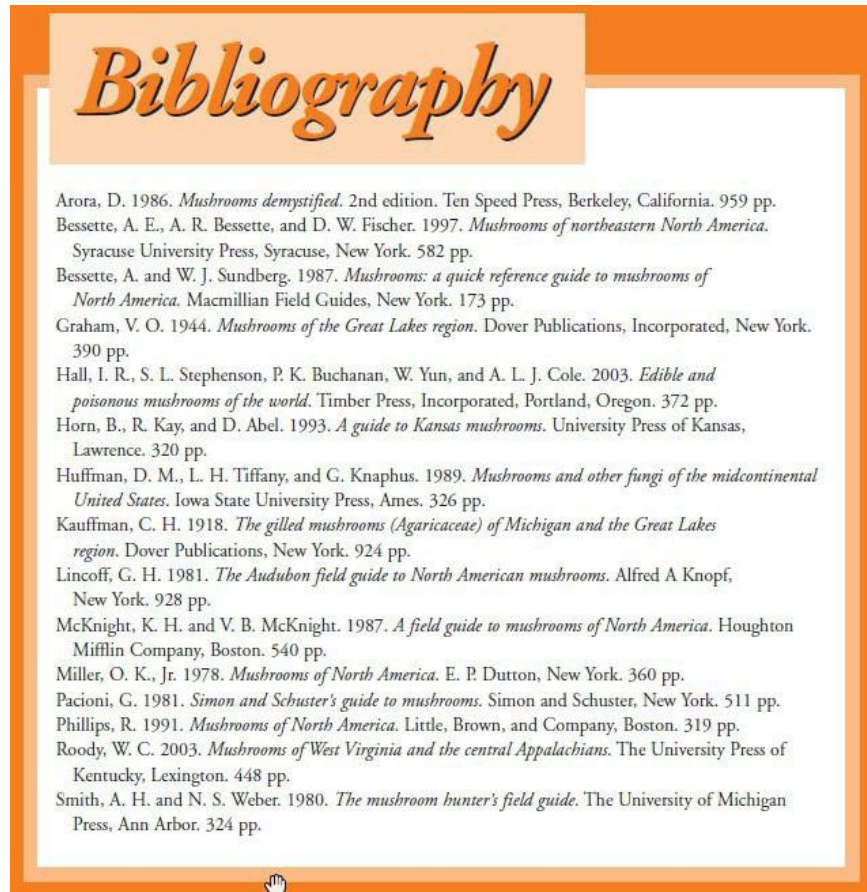
Universal Veil - layer of tissue covering the entire fruiting body while early development takes place

Volva - cuplike lower part of the universal veil found at the base of the elongated stipe

REFERENCES

The Illinois Department of Natural Resources' "Illinois Mushroom" poster. The credits and bibliography from the poster are listed below.

<https://www.dnr.illinois.gov/publications/Documents/00000680.pdf>



Information also taken from both the Illinois Department of Natural Resources and the Missouri Department of Natural Resources websites.

McFarland, Joe and Mueller, Gregory M. *Edible Wild Mushrooms of Illinois & Surrounding States a Field-to-Kitchen Guide*. University of Illinois Press, 2009.