FALL MUSHROOMS FALL MUSHROOMS



TEXT AND PHOTOGRAPHS BY DAVE BRUMFIELD DESIGNED AND ILLUSTRATED BY DANETTE RUSHBOLDT



INTRODUCTION

For much of the year, any walk through the woods reveals an assortment of fascinating mushrooms, each playing an important role in the forest ecosystem.

This guide serves as a reference for some of the mushrooms you may encounter while hiking in the Metro Parks. It is arranged in three sections: mushrooms with gills, mushrooms with pores, and others. Each mushroom is identified by its common and scientific name, a brief description, where and when it grows, and some fun facts.

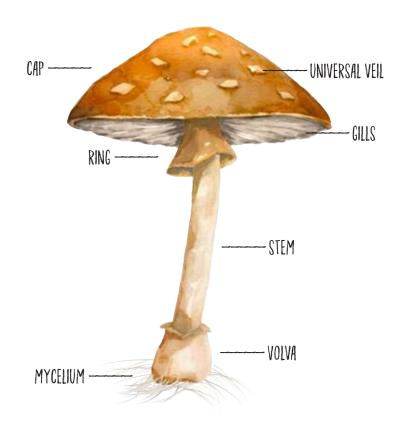
As you venture into the woods this fall, take a closer look at the mushrooms around you. Our hope is that this guide will help you to identify them, develop a better understanding of the role they play in nature, and inspire you to further explore the world of mushrooms. Happy Mushrooming!

NATURALIST DAVE BRUMFIELD

GLOSSARY OF TERMS

FRUITING BODY The reproductive structure of a fungus; typically known as a mushroom.
FRUTING The reproductive stage of a fungus when a mushroom is formed.
FUNCUS A group of organisms that includes mushrooms and molds.
HYPHAEThread-like filaments that grow out from a germinated spore.
MYCORRHIZAL Having a symbiotic relationship between a plant root and fungal hyphae.
PARASITE Fungus that grows by taking nourishment from other living organisms.
POLYPORE A group of fungi that form fruiting bodies with pores or tubes on the underside through which spores are released.
SAPROPHYTE A fungus that grows by taking nourishment from dead organisms.
SPINES Small "teeth" hanging down from the underside of the cap of a mushroom.
SPORE A microscopic, reproductive unit of a fungus, similar to a seed in an apple.

STRUCTURE OF A MUSHROOM



CAP	Supports and protects the gills; color and shape depend on stage of growth and species.
	The lower surface of the cap, composed of blade-like layers stacked side by side. Spores are produced and released by the gills; other mushrooms have pores, teeth-like structures or some other means of spore dispersal.
	The mass of thread-like hyphae found in soil and other substrates; it absorbs nutrients from the substrate. When conditions are right, mushrooms develop as the fruiting body of the mycelium.
RING	As a mushroom matures, a partial skin covers the edge of the cap to the stem. The ring is what is left when the mushroom cap grows and stretches the skin to breaking.
STEM	The structure that holds the cap above ground; not all mushrooms have a stem.
UNIVERSAL VEIL	A tissue surrounding the developing mushroom button (it is like the shell covering an egg).
VOLVA	. If the mushroom has a universal veil, what is left at the bottom of the stem when

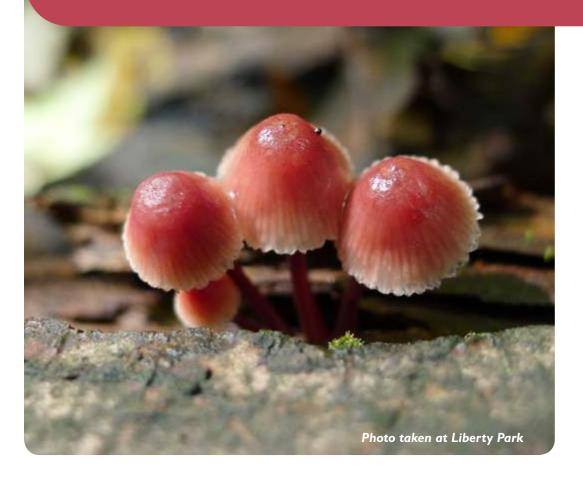
the veil is broken is the volva; common in Amanita species.

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BLEEDING MYCENA (Mycena haematopus)



SMALL BUT MIGHTY

Although mycenas are somewhat SMALL. what they LACK in SIZE they make up in BEAUTIFUL colors.



ORANGE MYCENA

WHERE DOES IT GROW?

• Fruits on well-decayed wood, usually in clusters; saprophytic

HOW TO IDENTIFY IT

- Cap is reddish-brown, lighter towards the margin; a half inch to 2 inches wide
- Stem is brownish-red, 1 to 4 inches tall; exudes a red liquid when squeezed

· Gills are whitish, attached

FUN FACTS

• This mycena is relatively easy to identify. As you can see in the photo, when you sqeeze the stem of Mycena haematopus, it "bleeds" a reddish latex. In its scientific name haemat means "blood."





BLEWIT (Lepista nuda)



YOU "BLEWIT"



Blewits QUICKLY become BROWN with age.

WHERE DOES IT GROW?

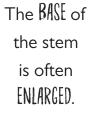
• Found in grass (often under oaks) and woodland leaf litter; saprophytic

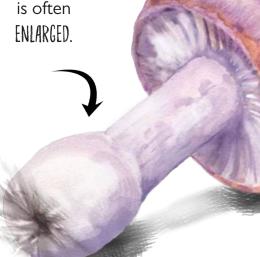
HOW TO IDENTIFY IT

- Cap, gills and stem of young specimens are a bluish-lilac color;
 fades to a light brown with age, sometimes brown from the beginning;
 2 to 6 inches wide; velvety, dry and sometimes wrinkled at the margins
- Stem is solid, 1 to 3 inches tall
- Gills are close together and attached

FUN FACTS

• Deep in the Amazon, scientists have discovered a fungus that consumes polyurethane plastic.





BRICK CAP (Hypholoma sublateritium)



Not SURE if your mushroom is a brick cap? A SPORE print will HELP.

Spore prints are PURPLISH-BROWN.



WHERE DOES IT GROW?

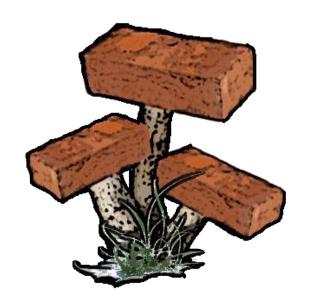
• Fruits on dead logs and stumps, often in clusters; saprophytic

HOW TO IDENTIFY IT

- Caps are 1 to 4 inches wide; brick-red color, paler near the margins
- Stem is 2 to 4 inches tall, whitish in color, darkening near the base and it hollows with age
- Gills are whitish at the beginning, turning purplish-brown as the spores mature

FUN FACTS

• Mushrooms are made up of around 90 percent water.



HOW DO YOU STACK UP?

Fruiting Time

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DE

DEADLY GALERINA (Galerina marginata)



IT'S ALL IN THE NAME

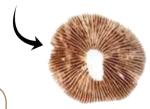


Galerina marginata
PRODUCES the same
lethal TOXINS as the
DEADLY destroying
ANGEL.



DESTROYING ANGEL

SPORE prints of Galerina marginata are rusty BROWN.



WHERE DOES IT GROW?

• Fruiting body grows on well-decayed logs, scattered or clustered; saprophytic

HOW TO IDENTIFY IT

- \bullet Cap is brown to tawny brown; 1 to $2\frac{1}{2}$ inches across; convex to flat and smooth
- Gills are attached; yellowish, then turning a rusty-brown, close together
- Stem is 1 to 4 inches tall; whitish, darkening with age; a ring on the stalk often disappears with age

FUN FACTS

• Hieroglyphics found in the tombs of the pharaohs suggest that the ancient Egyptians believed mushrooms to be "plants of immortality."

HONEY MUSHROOM (Armillaria mellea)



In the year 2000, in the state of



a species of honey
mushroom
COVERING 3.4 square
MILES was discovered.
Of course, MOST
of it grows
UNDERGROUND
as MYCELIUM.

WHERE DOES IT GROW?

• Fruits in clusters on stumps, logs, buried wood and trunks of living hardwoods; parasitic and saprophytic

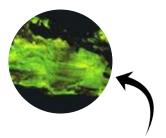
HOW TO IDENTIFY IT

- Cap is 1 to 4 inches across; usually yellow or rusty-brown with fine yellowish-brown scales
- Stem is 2 to 6 inches tall, white to yellowish-brown; distinct ring on the upper stalk
- Gills are attached, whitish turning yellow with age

FUN FACTS

• The honey mushroom is believed to be the largest organism in the world.

The MYCELIA of this mushroom is known to produce a cool, GREEN light (BIOLUMINESCENCE) while growing in moist, decaying wood. This phenomenon, known as FOXFIRE, is often OBSERVED by campers on moonless or cloudy nights in AUTUMN.



FOXFIRE ON A LOG

JACK-O-LANTERN (Omphalotus illudens)





JACK-O-LANTERN MUSHROOM AT NIGHT

SAME, BUT DIFFERENT

WHERE DOES IT GROW?

• Fruits on buried wood at the base of rotting stumps and roots; saprophytic

HOW TO IDENTIFY IT

- Cap is smooth and the margin is incurved; 2 to 8 inches in width; produces large clumps of orange mushrooms; cap, gills and stem are all orange to yellowish-orange
- Stems are 2 to 8 inches in length
- Gills are tightly packed and run down the stem for a distance (decurrent)

FUN FACTS

• The jack-o-lantern mushroom gets its name from its orange color, like a pumpkin, and its ability to glow in the dark, called bioluminescence.



LUMINESCENT PANELLUS (Panellus stipticus)





FIOLUMINESCENCE
from mushrooms
was used TO
ILLUMINATE equipment
in early SUBMARINES
during the
REVOLUTIONARY war.

WHERE DOES IT GROW?

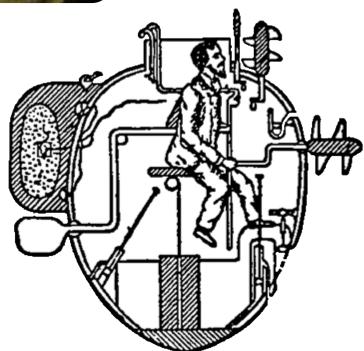
• Fruits on dead deciduous wood (logs, stumps, branches) in overlapping clusters; saprophytic

HOW TO IDENTIFY IT

- Cap is kidney-shaped; tan to brown; one half to 1½ inches across; surface has fine hairs that look wooly
- Stem is short and lateral, whitish-tan and fuzzy
- Gills are attached to slightly decurrent, pinkish-brown

FUN FACTS

• The gills of this *Panellus stipticus* are bioluminescent. This mushroom is reported to have astringent properties (ability to stop bleeding).



SUBMARINE circa 1770

SHAGGY MANE (Coprinus comatus)





GOING,



GOING,



GONE!



• Grows in grass, wood chips and hard-packed soil; saprophytic

HOW TO IDENTIFY IT

- Caps are cylindrical, white and covered with shaggy scales (thus the name shaggy mane); 1 to 2 inches wide, 2 to 6 inches high; becomes bell shaped as it matures
- Gills are white becoming black with age; free from stalk; cap and gills dissolve within 24 to 48 hours
- Stems are 2 to 8 inches tall; white and hollow

FUN FACTS

• Liquefied *Coprinus comatus* was used as writing ink in George Washington's day.



VELVET FOOT (Flammulina velutipes)





IMMATURE STAGE

Although they LOOK
NOTHING like their WILD
counterpart,
ENOKI mushrooms,
popular in ASIAN
CUISINE, are a
CULTIVATED form of
Flammulina velutipes.

WHERE DOES IT GROW?

• Fruiting mostly on dead deciduous wood, sometimes diseased trees; saprophytic

HOW TO IDENTIFY IT

- Cap is orange-brown, somewhat darker toward the center; a half inch to 2 inches wide; slimy in wet weather
- Gills are attached; white to pale yellow
- Stem is orange-brown when young, becoming dark brown and velvety as it matures, often upcurved; 1 to 3 inches tall

FUN FACTS

• Sometimes the velvet foot is referred to as the winter mushroom because it can be found growing during a mild winter.



ENOKI MUSHROOMS

YELLOW-ORANGE FLY AGARIC (Amanita muscaria var. guessowii)





Long ago POISONOUS fly agaric mushrooms were SPRINKIED in milk to LURE flies. UPON drinking the milk the flies would DE.

WHERE DOES IT GROW?

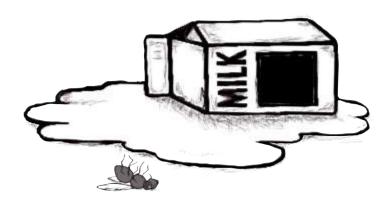
• Fruits on the ground; mycorrhizal with conifers

HOW TO IDENTIFY IT

- Cap is 3 to 10 inches across; yellow-orange with white, cottony patches left from the universal veil
- Stem is 2 to 6 inches tall, has a ring and enlarged base
- Gills are free, close and white



• The fly agaric (Amanita muscaria) ranges in color from red (Amanita muscaria var. muscaria) to orange-yellow (Amanita muscaria var. guessowii) to white (Amanita muscaria var. alba). All are known to be poisonous.





ARTIST'S CONK (Ganoderma applanatum)



DON'T BE FOOLED

At a DISTANCE, young
ARTIST'S conk can
easily be MISTAKEN for
a young RESINOUS
polypore.
REMEMBER: artist's conk
is HARD and solid, and
the resinous POLYPORE
is SOFT
and spongy.

WHERE DOES IT GROW?

• Fruits on decaying hardwood; saprophytic

HOW TO IDENTIFY IT

- Cap is fan-shaped and woody; brown to grayish-brown, zoned with ridges and furrows; 2 to 20 inches across
- Pore surface is white, bruising brown



RESINOUS POLYPORE

FUN FACTS

• This popular bracket fungus is named the artist's conk for a very good reason. Its smooth white undersurface permanently stains brown when scratched, thus acting like a canvas for making intricate drawings.



BLACK-FOOTED POLYPORE (Polyporus badius)



The STEM is often FUZZY as well as BLACK.

WHITE BOTTOM

WHERE DOES IT GROW?

• Fruiting body grows in groups on decaying deciduous wood; saprophytic

HOW TO IDENTIFY IT

- Cap has a reddish-brown surface, darker in the center; tough and leathery; convex to vase-shaped, often with wavy margins; 2 to 8 inches across; sometimes water collects in the depressed center
- Pore surface is smooth and white; pores are tiny and round to angular
- Stem is short, blackish at the base

FUN FACTS

• The spores of mushrooms are made of chitin, one of the hardest naturally-made substances on Earth.

BLACK FOOT

Fruiting Time

an feb. mar apr may jun jul aug sep oct nov de

HEN OF THE WOODS (Grifola frondosa)



AKA: SHEEPSHEAD



WHERE DOES IT GROW?

• Fruits at the base of hardwood trees, especially oaks; parasitic and saprophytic

HOW TO IDENTIFY IT

- Fruiting body is composed of a cluster of spoon-shaped caps; grayish-brown on top, white underneath; fleshy, up to 2 feet across
- Stem is short and branching
- Pore surface runs down part of the stem

FUN FACTS

• Hen of the woods is known to have many health benefits and can be found in health food stores. It is sold under its Japanese name, Maitake.

In parts of
PENNSYLVANIA and
Ohio,
Grifola frondosa
is also KNOWN as
SHEEPSHEAD
mushroom.
Can you
GUESS why?



MULTICOLOR GILL POLYPORE (Lenzites betulina)



WHO'S WHO?



Turkey Tail (Trametes veriscolor)



False Turkey Tail (Stereum ostrea)

WHERE DOES IT GROW?

• Fruits on dead deciduous wood; saprophytic

HOW TO IDENTIFY IT

- Fruiting body (cap) is semicircular to kidney-shaped; multicolored; 1 to 4 inches wide; older specimens are sometimes tinted green, on the upper surface due to algae growing on it.
- Gill-like structures on the underside are white
- Gills are close, free from the stem or slightly attached

FUN FACTS

 The genus Lenzites is named for the mycologist H.O. Lenz.

THE UNDERNEATH REVEALS ALL!



Multicolor Gill Polypore

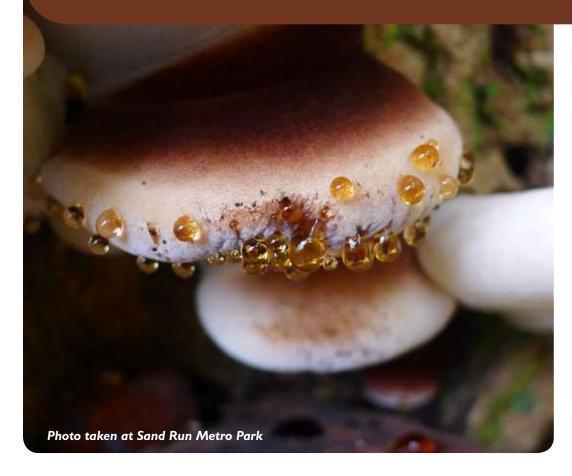


Turkey Tail



False Turkey Tail

RESINOUS POLYPORE (Ischnoderma resinosum)



IT'S ALL A CRYING GAME



The flESH of young specimens is SOFT and fleshy.



A MATURE

Ischnoderma resinosum

is very TOUGH

and LEATHERY.

RESINOUS polypores can be found growing ALONE or in a MASS.

WHERE DOES IT GROW?

• Grows on the side of dead trees and logs; saprophytic

HOW TO IDENTIFY IT

- Fruiting body is bracket-shaped; grows up to 10 inches across and 1 inch thick
- Upper surface is brownish-orange to dark brown with a white margin, sometimes with zones of color
- Pore surface is white, bruising brown

FUN FACTS

• When actively growing it often weeps resin-colored water droplets, thus the name "resinous" polypore.

TURKEY TAIL (Trametes versicolor)



I GOT YOUR TURKEY TAIL!

WHERE DOES IT GROW?

• Fruits on the side of dead logs and trees, especially oaks; saprophytic, a very common decomposer in our woods

HOW TO IDENTIFY IT

- Cap is fan-shaped; covered with white hairs; no stem; a half-inch to 1½ inches across
- Pores are small and found on the underside; whitish in color; easily seen with a hand lens. False turkey tail has a similar banding pattern, but when you turn it over you only see a flat surface.

FUN FACTS

• One of several mushrooms that has medicinal properties for treating cancer and boosting the immune system.

Fruiting Time

AN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEG

VIOLET TOOTH POLYPORE (Trichaptum biforme)



YUMMY



WHERE DOES IT GROW?

• Grows on stumps and logs, helps add nutrients back into the soil; saprophytic

HOW TO IDENTIFY IT

- Caps are tough and leathery; semicircular; ½ to 3 inches wide; the upper surface has zones of various colors with a violet tinge on the edge.
- As it matures, its large, angular pores become tooth-like and jagged.

FUN FACTS

• Even though the green color looks like chlorophyll, this mushroom cannot make its own food. The green is actually an algae.

Even though this mushroom CANNOT MAKE its own food, it IS food to the PLEASING fungus BEETLE.



JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

BEAR'S HEAD TOOTH FUNGUS (Hericium americanum)



LOOK FAMILIAR?



The TEETH of
Hericium americanum
are WHITE when
young and turn
YELLOW with age.

WHERE DOES IT GROW?

 Grows on dead deciduous trees or logs, found on beech, oak and maple; saprophytic

HOW TO IDENTIFY IT

 Fruiting body forms a cluster of white, forking branches that bear spines (teeth)

 Spines are a half inch to 2 inches long; spores produced on the spines

FUN FACTS

 Young bear's head tooth fungus can be cooked and eaten, having a taste comparable to that of lobster.

GET THE POINT?



Fruiting Time

an feb mar apr may jun jul aug sep oct nov de

GIANT PUFFBALL (Calvatia gigantea)



The LARGEST giant puffball on RECORD was 8 feet 8 inches in DIAMETER and weighed 48 lbs.

NOW THAT'S A RECORD!

WHERE DOES IT GROW?

• Fruits on decayed organic material on the ground; found late summer to early fall in meadows, fields, lawns and woods; saprophytic

HOW TO IDENTIFY IT

- Fruiting body is ball-shaped; white when young, changing to yellowish-green
- The giant puffball is 8 to 20 inches tall, 8 to 20 inches wide (softball to beach ball in size)
- Gills are attached to stem; pale to dark purple, remaining purple in contrast to a fading cap

FUN FACTS

• It is estimated that a 12-inch giant puffball can produce as many as 7 trillion spores — now that is a lot of spores!



YOU KNOW YOU WANT TO!

Fruiting Time

an feb. mar apr may jun jul aug sep oct nov deg

NORTHERN TOOTH (Climacodon septentrionale)





CLOSE-UP VIEW OF TEETH

AHHHH, NOW I SEE IT!

WHERE DOES IT GROW?

• Parasitic on hardwood trees, especially sugar maples and beech

HOW TO IDENTIFY IT

- Yellowish-white fruiting bodies grow with overlapping, fan-shaped caps on the trunks of trees
- Clusters form a group that can be 18 inches tall and 12 inches wide
- Crowded, whitish spines on the underside of the caps

FUN FACTS

• The majority of plant diseases are caused by fungi. Northern tooth fungus causes heartwood rot, which can weaken trees causing them to snap in half.

At first GLANCE, the northern TOOTH fungus is easily MISTAKEN for a polypore.
However, upon closer EXAMINATION, you immediately see short spines or TEETH rather than pores on the underside.

OLD MAN OF THE WOODS (Strobilomyces floccopus)



WHERE DOES IT GROW?

• Fruits on the ground in mixed forests; mycorrhizal, especially with oaks

HOW TO IDENTIFY IT

- Cap is covered by large, black scales; 2 to 6 inches across
- Stem is dark grayish; 1½ to 5 inches tall; with a wooly surface
- Pore surface is white, turning gray and eventually black, staining red then black when bruised

FUN FACTS

• The old man of the woods is a member of the bolete family. Believe it or not, it has pores underneath that shaggy cap.

WHO ARE YOU CALLING AN OLD MAN?



This MUSHROOM is also known as the PINE CONE bolete. Strobilomyces comes from an ancient GREEK word strobilos, meaning "pine cone."

SHEESH!

Now I know why scientists use SCIENTIFIC NAMES to identify a species; COMMON names can sometimes be so CONFUSING.

PEAR-SHAPED PUFFBALL (Lycoperdon pyriforme)



TOUCH-ME-NOT



Similar to the TOUCH-ME-NOT seed pod in the FALL, people can't seem to resist the URGE to SQUEEZE the puffball and see the "PUFF" of spores being RELEASED.

WHERE DOES IT GROW?

 Whitish-brown pear shaped puffball that grows in clusters on decaying logs and stumps, very common; saprophytic

HOW TO IDENTIFY IT

- Fruiting bodies are a half inch to $1\frac{3}{4}$ inches tall; a half inch to $1\frac{1}{2}$ inches wide
- Enclosed spore mass is firm and white when young; softens and turns brownish as it matures

FUN FACTS

• Lycoperdon pyriforme and other such saprobic fungi play an important role in breaking down the tough materials in wood and returning those nutrients to the soil.



GUILTY!

PIGSKIN POISON PUFFBALL (Scleroderma citrinum)



SEE THE RESEMBLANCE?





WHERE DOES IT GROW?

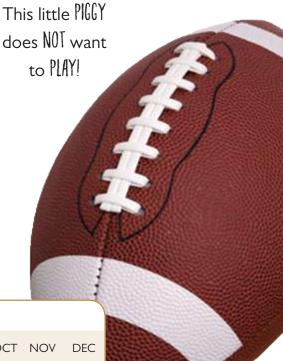
• Grows on the ground or decaying wood; mycorrhizal with deciduous trees, especially oak, beech and birch

HOW TO IDENTIFY IT

- Round and somewhat flattened; light brown with a surface texture like a football
- \bullet Fruiting body is $\frac{3}{4}$ to 2 inches wide
- Enclosed spore mass is firm and white when young, softens and turns purplish-black as it matures before it tears open to disperse spores

FUN FACTS

• The pigskin poison puffball, also known as the common earthball, is so named because of its tough, warty, outer skin and poisonous spores.



Fruiting Time

TREE EAR (Auricularia auricula)



CAN YOU "EAR" ME?



Easy to SEE how this MUSHROOM got its common NAME.

WHERE DOES IT GROW?

• Fruiting body grows on rotting wood; saprophytic

HOW TO IDENTIFY IT

Brown, rubbery ear-shaped mushroom;
 1 to 6 inches wide

FUN FACTS

 This mushroom shrivels up during dry weather, then rehydrates and revives during times of wet weather.



This brown FUNGUS is also known as JELLY ear.

YUMMY?