



Mushroom Identification & Foraging Knowledge Sharing

Lorenzo Lo Piccolo - 2022



Quick Introduction

- Always had an inclination for sciences
- Began foraging in 2005 after reading about morels
- Got interested in learning more about mushrooms:
 - The more I learned the quicker I found mushrooms
 - Experiencing connections in nature was a humbling experience
- Wild-foraged Mushroom Certification from MAMI (Midwest American Mycological Information) - Michigan Department of Agriculture and Rural Development (MDARD)
- Not an expert, still much to learn but like to share my limited knowledge
- I post my findings in Instagram @lorenzo.funginus (not selling anything)
- *Disclaimers – do not rely solely on information presented here. Please do your own research before consuming any mushrooms.*



Mushrooms and Fungi Facts

- All mushrooms are fungi, but not all fungi are mushrooms (ex. yeasts, molds, lichens)
- Fungi are one of the life's five kingdoms
- All living species have a binomial name – ex. first/last names, *Agaricus bisporus*
- Fungi are genetically closer to humans than plants
- Mycology: science that studies fungi, originally part of botany.
- Estimated 5+ million species, 148K prescribed, 8K harmful to plants, 300 to humans.
- Toadstool is a term used for inedible colorful or poisonous mushrooms
- Without fungi we would not have forests: principal decomposers and nutrient cycling
- Friend-foe: symbiotic and/or parasitic with other plants, animals, and other fungi
- Mushrooms we see are only the fruit of a fungi
- Most fungi live most of their lives undergrown or hidden
- Mushrooms can stay dormant for years. Only fruit when conditions are right.
- Largest life form on earth (Oregon: *Armillaria* sp. is 2,385 acres, 2,400 years old)



Fungi Uses

- **Ancient food:** People used them 5,300 years ago (Otzi iceman)
- **Foods:**
 - edible mushrooms
 - yeasts to make bread, wine, beer, mead, yogurt, kombucha, etc.
 - molds to make cheese (blue cheese)
 - high source of natural vitamin D
- **Medicine:** antibiotics (1940), cancer treatments, many other conditions
- **Industrial:** production of chemicals, enzymes, detergents, etc.
- **Farming:** biological pesticides, control weeds, plant diseases, improves crops
- **Environment:** bioremediation to degrade pollutants in soils (plastics)
- **Planet forming:** fungi may be used to make dirt in other planets habitable



Foraging Tips - Safety

- What I carry in the woods: water, whistle, knife, cell phone, basket/netting bag
- Tick (Lyme's disease) and mosquito (West Niles) avoidance:
 - Wear long pants. Use tick protection. Permethrin/Deet are good for cloths. Essential oils are a natural solution but they do not last long.
 - Wear light colored clothes and high socks – there is no fashion in the woods
 - Back home: take cloth off and run on drier on high for at least 15 mins.
 - Shower and check for ticks all over your body. Ticks like dark humid areas.
 - If you get a bite and have symptoms within a few days seek medical assistance.
- Some parks/game areas have open turkey and deer hunting seasons. Check schedules.
- Watch out for kids and pets. They cannot describe what they ate.
- First time eating an edible species do in moderation (1 tblsp) and wait 24hrs. Store one complete raw sample in fridge for IDs.
- **Always, always, always** cook mushrooms thoroughly before eating. No warranties in wild foods.
- Ensure correct identifications:
 - Never guess mushrooms. When in doubt throw it out!
 - Many field guides available for identification.
 - Consult experts – MAMI offers list of certified individuals (midwestmycology.org)
 - FB groups available (ex. Michigan Mushroom Identification) but do not rely solely on them.
 - Joining a club (michiganmushroomhunters.org)



Foraging Tips - Safety


Mushroom Poisoning:

- Most common are gastrointestinal problems which not reported.
- Some types of mushrooms contain enough toxins to kill a person within 72hrs if not seeking medical aid (Michigan has 2 notable species – will cover)
- If you suspect mushroom poisoning, contact your local poison control center (1-800-222-1222) and seek immediate medical attention.



Foraging Tips - Etiquette

- In Michigan you can collect for personal use only in:
 - In State land, parks, forests game areas managed by DNR
 - In private property with permission of owner
 - National forests – check first, some require permits
- NOT in:
 - Local and county parks – Most don't, but check first
 - National parks
- Please learn rules and regulations of lands before you go.
- Only harvest for personal use; leave plenty for the wildlife and other foragers.
- When in parks, stay within the perimeters. Bring maps or use mobile apps.
- Do not trespass!
- You need a state certification to sell mushrooms to others. Check with midwestmycology.org for more certification information.



Foraging Tips – Search and IDs

- Know your trees
- Pay attention to where mushrooms grow: ground, wood, bark, moss
- Avoid environments with chemical treatments: grasses, orchards, roads, golf courses, etc.
- Watch the weather: 2-3 days after a good rain are best for “shrooming” by it varies
- Watch seasons (chart on next slide)
- Pay attention to mushroom features:
 - ❑ **Cap color, texture, features. Under cap: gills, teeth/spikes, fake gills, pores**
 - ❑ **Stem - color, texture, features (ex. rings), size/shape**
 - ❑ **Spore print colors – how to get one?**
 - ❑ **Smell – somewhat subjective**
 - ❑ **Taste (yes, this is not dangerous if you don’t ingest)**
- Foraging reality check:
 - ❖ **Most days you will be disappointed, but you will learn something new every time.**
 - ❖ **Your findings will improve with time.**
 - ❖ **Often you can find enough mushrooms for one or multiple meals.**
 - ❖ **“Finding the mother load” is rare. Some people never do in their life time. I have not.**
 - ❖ **Wild food is not pristine, it has blemishes, bugs, and bacteria. It needs to be cooked.**



Michigan Mushrooms - Seasons

SCIENTIFIC NAME	COMMON NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Armillaria spp.	Honey mushrooms								Edible	Edible	Edible	Edible	
Calvatia gigantea	Giant puffball								Edible	Edible	Edible		
Cantharellus spp.	Chanterelles						Edible	Edible					
Coprinus cornatus	Shaggy mane				Edible	Edible	Edible	Edible	Edible	Edible	Edible		
Craterellus cornucopiodes	Black trumpets						Edible			Edible	Edible		
Inonotus obliquus	Chaga	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible
Entoloma arbotivum	Aborted entoloma								Edible	Edible	Edible	Edible	
Ganoderma spp.	Shelf mushrooms	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible
Grifola frondosa	Hen of the woods								Edible	Edible	Edible		
Herecium spp.	Lion's mane								Edible	Edible	Edible	Edible	
Hydnum spp.	Hedgehog mushroom							Edible	Edible	Edible	Edible		
Hypomyces lactiflorum	Lobster mushroom								Edible	Edible	Edible		
Laetiporus spp	Chicken of the woods					Edible	Edible	Edible	Edible	Edible	Edible	Edible	
Morchella spp.	Morels			Edible	Edible	Edible							
Pleurotus populinus	Aspen oyster mushroom					Edible	Edible	Edible	Edible				
Pleurotus ostreatus	Pearl oyster mushroom	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible	Edible
Pleurotus plumonairus	Indian oyster mushroom							Edible	Edible				
Polyporus squamosus	Dryad's saddle				Edible	Edible				Edible	Edible		
Polyporus umbellatus	Lumby bracket					Edible	Edible			Edible	Edible		
Stropharia rugoso-annulata	King strophania, Wine Cap					Edible	Edible	Edible	Edible	Edible	Edible		
Trametes versicolor	Turkey tails					Edible	Edible	Edible	Edible				
Tuber canaliculatum	Michigan truffles								Edible	Edible	Edible	Edible	
Chlorophyllum molybdites	False parasol							Toxic	Toxic	Toxic	Toxic		
Amanita bisporigera	Destroying angel						Toxic	Toxic	Toxic	Toxic	Toxic	Toxic	
Gyromitra esculenta	False morel				Toxic	Toxic	Toxic						
Omphalotus illudens	Jack O'Lantern							Toxic	Toxic	Toxic	Toxic	Toxic	
Verpa bohemica	Early false morel			Toxic	Toxic								
Galerina marginata	Funeral bell				Toxic	Toxic				Toxic	Toxic	Toxic	

Source: MAMI

Edible

Toxic



Michigan Mushrooms - Spring

- ❖ Morels
- ❖ Oysters
- ❖ Pheasant backs

Michigan Mushrooms - Spring

Black Morel (*Morchella angusticeps*)

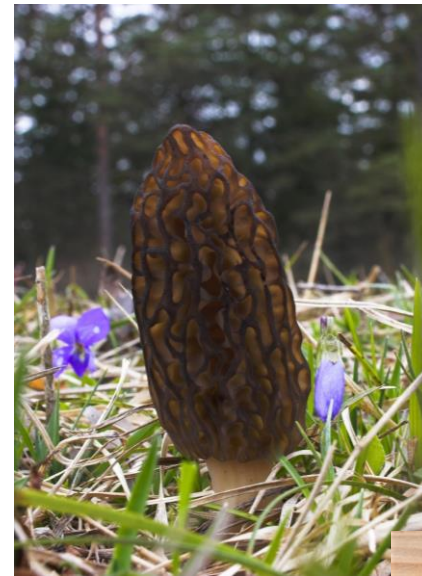
When: mid April to early May depending on the weather.

Identification: black or dark ridges around pits. Hollow inside. Cap attached to stem near base. Beige spore print.

Associations: hardwoods, black cherries, tulip poplar, aspen, ash, pines, or wood chips.

Toxic Look-alikes: *Verpa* & *Gyromitra* spp.

Choice edible. Dehydrates well.



Michigan Mushrooms - Spring

White/Yellow/Blonde Morel (*Morchella Americana*)

When: late April to late May depending on the weather.

Identification: white or lighter color ridges around pits. Hollow inside. Cap attached to stem fully at the base.

Associations: hardwoods, elms, apples, ash trees.

Toxic Look-alikes: *Verpa* & *Gyromitra* spp.

Choice edible. Dehydrates well.



Michigan Mushrooms - Spring



Morels can vary in shape, size, height, and colors. But main identifying features will be consistent.



Michigan Mushrooms - Spring



When: April, May.

Identification: cap hangs freely halfway on the stem. Stem is hollow inside. Shallow pits. Pointed cone cap.

Associations: hardwoods and apple orchards.

Toxic Look-alikes: *Verpa* & *Gyromitra* spp.

Decent flavor but small specimens. Dehydrates well.

Half-free Morel (*Morchella semilibera*)



Connection Point
Half-free Morel



Michigan Mushrooms - Spring



False Morel/Wrinkled Cap

(*Verpa spp.*)

When: April, May.

Identification: cap hangs freely on top of the stem like a skirt. Stem has white sheds inside. Cap has nodules or folds. No pits. Smaller than morels. Two species in MI.

Associations: mixed forests

Toxic if not cooked properly. Better avoid until doing more research.





Michigan Mushrooms - Spring

False or beefsteak morel

(Gyromitra spp.)

When: April, May

Identification: Usually reddish colored. Cap has nodules or wrinkle lobes. Stem is not hollow. They can get very big and meaty. At least three species in MI.

Associations: hardwoods and conifer trees.

Toxic. Contains known carcinogenic (jet fuel)



Michigan Mushrooms - Spring



Pheasant Backs/Dryad's Saddle (*Cerioporus squamosus*)

When: mostly May, Sep, and Oct

Identification: Grows on tree trunks. Has radial scales on top of brackets, large pores under the brackets. Smells like watermelon.

Associations: A wood decomposer which prefers many hardwoods (maples, elms, and elders)

Toxic Look-alikes: None

Edible when young (brackets under 3"). It can come back on same tree same season and for a few years. Underrated flavor.



Michigan Mushrooms - Spring

Oysters

(Pleurotus ostreatus)

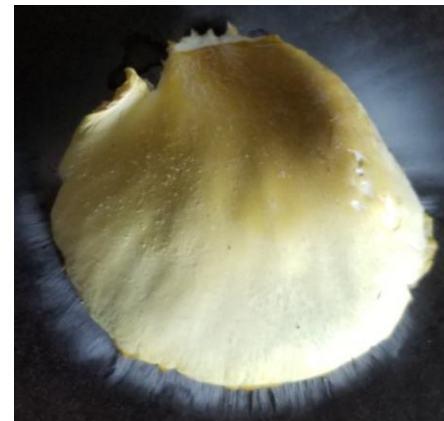
When: usually in spring and fall.

Identification: Light colored brackets. Gills under cap which run into the stems. Smells like anise (fishy when older). Light grey or lilac spore print.

Associations: hardwoods and conifers, decomposer and parasitic (trees & bugs).

Toxic Look-alikes: None

Choice edible. It can get very buggy. Collect early. Same tree can produce twice in same season and for several years. Dehydrates well.





Michigan Mushrooms - Summer

- ❖ **Chanterelles**
- ❖ **Chicken of the Woods**
- ❖ **Destroying Angels**



Michigan Mushrooms - Summer

When: high summer (July/August)

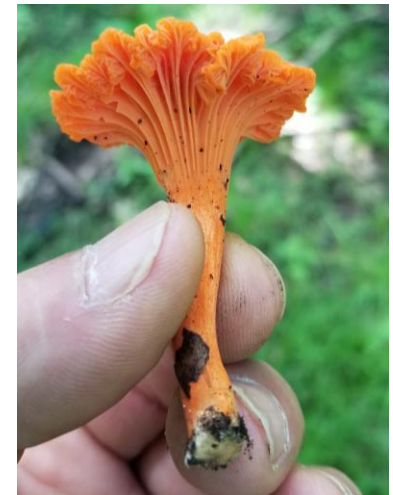
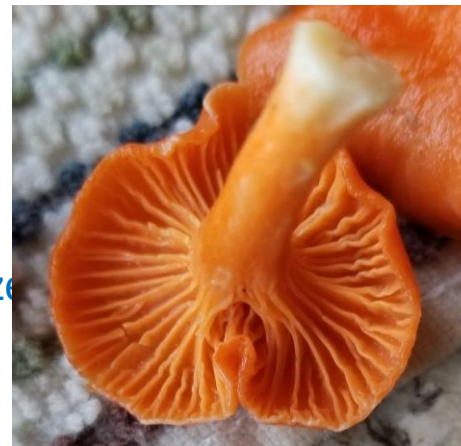
Identification: Grows on ground. Caps can be yellow, orange, or a shade of pink on some species. Has fake gills under cap that run down partially on stem. Blunt edges. White interior. Smell like dry apricots or frozen orange juice.

Associations: mostly oaks and beeches.

Toxic Look-alikes: Jack O'Lantern (grow later in the season, grow on groups on wood)

Choice edible. Larger specimens tend to be buggy. Best consumed quickly or cook and freeze cooked. If frozen raw it will get bitter. Do not dehydrate well.

Chanterelles (*Chantharellus* spp.)



Michigan Mushrooms - Summer

Chicken of the Woods (*Laetiporus* spp.)

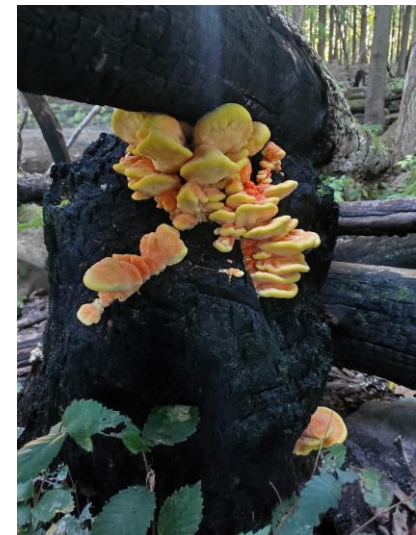
When: summer to early fall

Identification: Grows on wood. Top of brackets vary from yellow to bright orange. Bottom of brackets have pores and can be white or yellow depending on species.

Associations: any hardwood tree

Toxic Look-alikes: none

Choice edible. Consistency of chicken when cooked. Best collected young or collect tender edges only. Easy to spot at a distance.



Michigan Mushrooms - Summer



When: June to November

Identification: White throughout. Veil under gills that becomes a ring on the stem with maturity. Bulb or sac at the base. No odor.

Associations: Oaks and other hardwoods. Grows individually or small groups in the forest floors.

Deadly/poisonous. Contains Amatoxins. Causes most fatalities or emergency visits if ingested. Cause liver/kidney failure/damage if not treated early. Delayed symptoms (6hrs) with brief remission (1-2 days) followed by coma. Not poisonous to the touch.

Destroying Angel (*Amanita bisporigera*)





Michigan Mushrooms - Fall

Season with most mushrooms:

- ❖ Honeys (*)
- ❖ Shaggy Mane
- ❖ Black Trumpets
- ❖ Hen of the Woods
- ❖ Lion's mane
- ❖ Shrimp of the Woods (*)
- ❖ Puffballs (*)
- ❖ Hedgehog
- ❖ Lobster
- ❖ Wine caps
- ❖ Many others: Milky caps, Boletes, Russulas

Michigan Mushrooms - Fall

When: late summer or early fall, after rains.

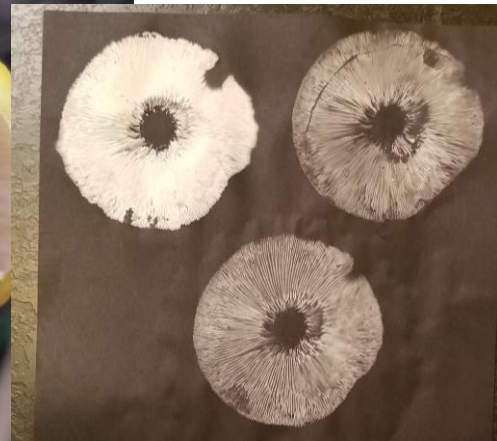
Identification: Grows on trunks, roots, or underground logs. Yellow/honey color with small scales on cap. Sticky when wet. Ring on stem when cap is open. Gills under cap. White spores.

Associations: parasitic to hardwoods and conifers. Can destroy sections of forests if not managed.

Toxic Look-Alikes: Galerina (has rusty spores), Jack-O-Lantern (orange, has yellow spores and same color throughout)

Edible but needs longer cooking time. Taste similar to shiitake or enoki.

Honey/Stumpers (*Armillaria mellea*)



Michigan Mushrooms - Fall



Shrimp of the Woods (*Entoloma abortivum*)

When: Late summer and fall

Identification: whitish lobes with depression in the center. Pinkish areas inside. Taste like shrimps. Not fishy.

Associations: hardwood forests, near decaying wood, near Honey mushrooms.

Toxic Look-alikes: None

Formed when *Entolomas* parasitize Honeys. Ensure inside is white or slightly pink and firm. Do not consume otherwise. **Choice edible.**



Michigan Mushrooms - Fall

When: Sep/Oct

Identification: White large ball with rubbery skin. Multiple species exist.

Associations: it grows with many trees and plants.

Toxic Look-Alikes: False puffballs (thick skin and dark colored inside)

Some are edible only when young and white. Do not consume if there is a slight color variation inside. Other similar species found. Each ball has billions/trillions of spores inside.

Puffballs
(*Calvatia* spp.)



Michigan Mushrooms - Fall

Names: funeral bell, deadly skullcap, autumn skullcap.

When: late summer and early fall

Identification: Small brown. Brittle and thick stem. Gills closely spaced. Stem ring disappears with age. Edges (margins) curve in against the gills but flatten at maturity. Spore print is brown.

Associations: Grows in groups on decaying trunks.

Toxic/Deadly. Contains Amatoxins. Has caused some fatalities when ingested.

Deadly Galerina (*Galerina marginata*)



Michigan Mushrooms - Fall

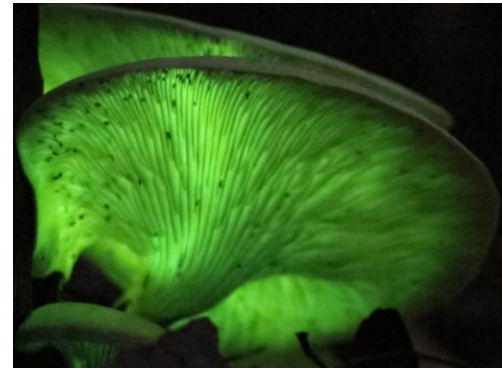
When: throughout fall

Identification: Large clusters. Brightly orange shade, even inside body. Large gills that run down stem. Spore print is white to pale yellow. It is glows in the dark when exposed to light.

Associations: Grows on dead, dying, or buried wood.

Toxic – unknown toxin. Causes gastrointestinal distress if ingested.
Not poisonous to the touch.

Jack O'Lantern
(*Omphalotus illudens*)



Michigan Mushrooms - Fall

When: Late spring through fall

Identification: Very thin fan shaped cap. Alternating band colors on cap. Velvety touch. Visible small white pores under caps. Caps have white edge.

Associations: Grows on dead wood

Toxic Look-Alikes: None

Very plentiful. Collect when fresh and without green algae on it. Can use in teas, soups or dehydrate+pulverize to add to healthy drinks and shakes.

Turkey Tails
(*Trametes versicolor*)



Last photo source: flickr.com

Michigan Mushrooms - Fall

Lion's Mane
(choice edible)



Bitter Bolete



Michigan Mushrooms - Fall

Ink Cap

(edible young)



Candy Bolete

(edible, tastes acidic)



Michigan Mushrooms - Fall



Bicolor Bolete

**Macrolepiota
spp.**



Laccaria spp.



Michigan Mushrooms - Fall



Black Trumpets
(choice edible)



Fly Agaric Amanita
(toxic)



Polypore

Michigan Mushrooms - Fall

Grifola/Hens/Maitake

(choice edible)



Blewits

(choice edible)



Michigan Mushrooms - Winter

Season with least mushrooms in nature:

- ❖ **Oysters** – if we have a warm period (40s-50s F)
- ❖ **Chaga** - only on Birch trees
- ❖ **Reishi** - only on Hemlock trees

Note: Chaga and Reishi can be found year around.



Michigan Mushrooms - Winter

Season with least mushrooms in nature:

- ❖ **Oysters** – if we have a warm period (40s-50s F)
- ❖ **Chaga** - only on Birch trees
- ❖ **Reishi** - only on Hemlock trees

Note: Chaga and Reishi can be found year around.

