SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
Number 561 April 2020

PSMS EVENT CANCELLATIONS AS OF END OF MARCH 2020

(Changes to this information will probably occur, perhaps often; they can be found at www.psms.org.)

Canceled	On Hold
All Spring 2020 field trips	Mushroom Maynia
All Spring public ID clinics	Membership meetings after April
April membership meeting	Board meetings after April
April Board meeting	
Survivor's Banquet	
Spring Bridle Trails outings	

No classes will be scheduled for Spring 2020. It is anticipated that things will get worse before they get better, and many more events will have to be canceled. Check the website often.

THOUGHTS ON HUNTING FUNGI SAFELY IN A PANDEMIC

Brian S. Luther[1]
Wren Hudgins[2]

As you have probably already heard, PSMS had to cancel all the spring field trips when Governor Jay Inslee banned all events with over 50 people because of the COVID-19 pandemic. It's not uncommon for well over that many people, sometimes twice as many, to attend the field trips.

As Field Trip Chair, I (Brian) worked very hard to schedule and reserve what would have been six fun field trips this spring. I cancelled them with great remorse, but the safety of our members is above all.

That started Brian and I (Wren) wondering about how to ensure the safety of individual mushroom hunters. We got together and brainstormed about how PSMS members might now go hunting safely. We came up with the following suggestions:

Suggestions

1. Accept that there are no guarantees. Any outing carries risk.
2. Select a hunting location that is not closed. Give preference to remote or less popular areas. Very popular trailheads will have more infected surfaces. An ideal location would be one with no cars in the parking lot.
3. Give preference to sites that aren't too far away. A distant location will require stops for fuel, toilets, and food, all of which have many potentially infected surfaces.
4. Select your hunting partners carefully. Those with a cold, asthma, allergies, etc., would cause much anxiety in the rest of the group. Discuss until everyone is satisfied that no one in the group has worrisome symptoms or had recent risky exposures.
5. Limit the group size; 2 to 4 seems prudent.
6. Drive to the trailhead separately.
7. Make a plan and have a way to communicate with each other. If you use walkie talkies, it's best if everyone brings their own. Agree on a channel and test radios. The club channel is 2-1.
8. Maintain a 10-ft separation from each other. If you are about to sneeze or cough, turn away from the group, "aim" your sneeze into a handkerchief, a tissue, which you can then hygienically dispose, or, failing those, into your elbow.
9. Do not touch mushrooms belonging to or touched by other people.
10. In general, increase your awareness of hand-to-face movements, which are normally habitual and automatic. Even if you washed your hands before you left home, followed all these guidelines, and think you have arrived at the trailhead with clean hands, still don't touch your face. The point here is to increase awareness so that touching your face becomes a conscious choice, not an automatic movement. Gloves tend to increase hand awareness.
11. Assume all surfaces are infected. Use hand sanitizer after touching unknown surfaces such as doorknobs, gas pumps, or money. A good idea is to keep some disinfectant surface wipes such as Lysol in the car to wipe down the steering wheel and other high touch surfaces.

Comments

In this new world, it's easy to feel as if spontaneity has died. Outings now require more thought and more work. People who are young and feel bulletproof may not follow all recommended guidelines, but being sloppy about this comes from either lack of education or selfishness, neither of which is excusable. You are not just following these guidelines because you are protecting yourself. You are protecting those of us in high risk groups (Wren and Brian, for example), your grandmother, and many people you don't know. You also have a responsibility to the larger community, defined any way you want (family, friends, PSMS, state, country, world).

If, when you read this, safe hunting still appears possible, we think the benefits still outweigh the hassles. Good luck.

Note: This article was written just before Gov. Inslee issued his "stay at home" order on 3/23/20. Although mushroom hunting is not considered an "essential activity" and is therefore not allowed now, we don't know what the situation will be by mid to late April, or later. In the event that the "stay at home" order has been lifted by then, these guidelines still make sense and will still promote safe hunting then.

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BOARD NEWS

Luise Asif

Because of the COVID-19 situation, the Board has reluctantly cancelled the membership meetings in March and April. With the permission of presenter Cornelia Cho, MD, the Board is working on the possibility of having a virtual meeting in April. The membership will be apprised by email if we are successful and as restrictions change.

Thank you all who took time to vote! We welcome new trustee Hallie Magrini. Coming back in new roles are Brenda Fong as Treasurer and Marian Maxwell as trustee. Congratulations to Marion Richards, who steps up from trustee to Vice President. Completing the Board are Milton Tam, Anne Tarver, and Hans Drabicki, with Parker Olson and Marcus Sarracino as alternates. We thank outgoing trustee Paul Hill for his thoughtful contributions. He continues as PSMS Photography Chair and will be presenting a workshop at this fall's Ben Woo Foray.

As of this writing, planning continues for Mushroom Maynia, should restrictions be lifted. James Nowak has the Ben Woo Foray well in hand, and Derek Hevel, Kim Traverse, and Milt Tam are busy working on the Fall Show.

Danny Miller

Congratulations to *Danny Miller*, winner of the PSMS Golden Mushroom Award.

NEW TEST IDENTIFIES MUSHROOMS CONTAINING AMANITIN

Kim Kaplan

ars.usda.gov., Feb. 2020
via *The Spore Print*, L.A. Myco. Soc., Mar. 2020

Albany, Calif - A simple, portable test that can detect the deadliest of the mushroom poisons in minutes has been developed by Agricultural Research Service (ARS) scientists and their colleagues.

Eating toxic mushrooms causes more than 100 deaths a year, globally, and leaves thousands of people in need of urgent medical assistance. Amanitin is the class of mushroom toxins that cause the most serious issues.

The new test can identify the presence of as little as 10 parts per billion (equivalent to 10 cents out of $10 million) of amanitin in about 10 minutes from a rice-grain-size sample of a mushroom or in the urine of someone who has eaten a poisonous amanitin-containing mushroom. The test also works with dog urine, as dogs are known to indiscriminately eat mushrooms.

"We developed the test primarily for mushrooms as food products. Serendipitously, it was sensitive enough to also detect the toxin in urine," said ARS microbiologist Candace Bever, who worked on the development. Bever is with the Foodborne Toxin Detection and Prevention Research Unit in Albany, California.

No definitive point-of-care clinical diagnostic test currently exists for amatoxin poisoning. Early detection of amanitin in a patient's urine would help doctors trying to make a diagnosis.

"Our hope is that doctors and veterinarians will be able to quickly and confidently identify amatoxin poisoning rather than having to clinically eliminate other suspected gastrointestinal diseases first," she added. "We also hope that will give patients a better chance at recovery, even though there are no clearly effective, specific treatments right now."

The test also could be a practical and definitive way for mushroom foragers to identify and avoid eating mushrooms with amanitin toxin if a commercial partner can be found to produce and market a test kit. This test is the most sensitive and reliable field method available to chemically identify amanitin-containing mushrooms. Although mushroom experts can identify deadly mushrooms just by looking at their appearance, experts cannot see the toxin chemicals that lurk inside.

Still this test only identifies the presence or absence of this specific class of toxin; it does not detect other compounds such as hallucinogens or toxins that cause other gastrointestinal or neurological symptoms. So, it cannot determine if a mushroom is edible.

Mushroom hunting has gained in popularity in the last several decades. A single mushroom identification group on Facebook, among many, has more than 166,000 members. Foraging for mushrooms is popular throughout most of Europe, Australia, Japan, Korea, parts of the Middle East, and the Indian subcontinent, as well as in Canada and the United States. Distinguishing toxic from nontoxic mushroom species is based on first correctly identifying the mushroom and then referencing a mushroom field guide to determine if it is known to contain toxins or not. But mushrooms of the same species can vary in appearance, especially at different life stages and habitats, making them very difficult to identify.

cont. on page 4

FUNGUS-ILLUSTRATED POSTAGE FROM THE FAROE ISLANDS

Brian S. Luther

The Faroe Islands in the North Atlantic are part of the Kingdom of Denmark, but they are self-governing, issuing their own postage, just as Greenland does (Luther, 2013). I documented the myco-stamps from Denmark itself earlier (Luther, 2020). The Faroe Islands have some of the most stunning scenery known anywhere, so if you're unfamiliar with these islands then I suggest you look them up for some truly breathtaking views. They've issued just a few myco-stamps, which I discuss here.

The islands have over 400 different plant species but no native trees, and the vegetation is primarily grassland or heather moors. There are a number of native woody plants which provide mycorrhizal hosts for fungi, but because of the harsh environment they remain low and shrubby at best in protected sites.

The myco-stamps from the Faroe Islands are listed in the following table. M=mushrooms or fungi as the main illustration; F=stamps commemorating Dr. Alexander Fleming; FDC=first day cover, an envelope (cover) issued on the first day of the stamp(s) issue, affixed with the stamps, and normally having a cover illustration (cachet) of the same theme. All catalog numbers are from the Scott Postage Stamp Catalogues.

Faroe Islands Myco-Stamps.

Date of Issue	Scott Cat. No.	Value	Type	Subject
6/6/1983	96	400 o	F	Dr. Fleming & Penicillium mold on petri plates
2/17/1997	315	4.5 k	M	*Hygrocybe helobia*
"	316	6.0 k	M	*H. chlorophana*
"	317	6.5 k	M	*H. virginea*
"	318	7.5 k	M	*H. psittacina*

In 1983 the Faroe Islands issued a set of two stamps (Scott 95–96), with Scott 96 commemorating Dr. Alexander Fleming who won the Nobel Prize for Physiology or Medicine in 1945 (along with Howard Florey and Ernst Chain) for co-discovering the mold that produces penicillin. The stamp shows the mold growing on some of the petri plates he's inoculated. The single FDC shows both stamps, but lacks an interesting or similarly themed cachet, so I'm not showing it.

Brian S. Luther

Scott 96. Alexander Fleming with Penicillium mold on petri plates.

In 1997 the Faroe Islands issued a set of four mushroom stamps (Scott 315–318) all of which are delightfully vibrant. They were issued on separate full sheets of 20 each with a white selvage having no other marginal illustrations. All show both the Danish common name and the scientific name and are perforate with gum. Scott 317 is now in the genus *Cuphophyllus* as *C. virgineus*, and Scott 318 is now *Gliophorus psittacinus*. Unfortunately the Domfil Catalogue (Gimeno, 1999–2000, p. 87) misspelled Scott 315 as "*H. heliobia*."

Brian S. Luther

Faroe Islands, Scott 315–318.

The FDC shows all four stamps, but the stamps are affixed in an unconventional way. Normally stamps put on an FDC are arranged in order of lower to higher denomination (value) from left to right and top to bottom. This FDC has the higher values on top. The colorful cachet shows ten *Hygrocybe* mushrooms (all the same species), but it's not one of the four species shown on the stamps. Instead they all appear to be the European *H. conica* from the prominently conical shape, colors, and dark staining shown in places, as seen in the European monograph by Boertmann (1996). Thus, all related philatelic items for this set display five different species. The cancel is circular showing four stylized mushrooms (two each with a view of the gills and the caps), and there are two cancels on each FDC.

Brian S. Luther

Faroe Islands, Scott 315–318 FDC.

References

Boertmann, David. 1996. *The Genus Hygrocybe. Fungi of Northern Europe*, Vol. 1. David Boertmann & The Danish Mycological Society, 184 pp.

Gimeno, Jordi Domingo. 1999–2000. Setas, Mushrooms, Champignons, Pilze, Funghi. *Domfil Thematic Stamp Catalogue*, 258 pp.

Luther, Brian S. 2013. Fungus-illustrated stamps from Greenland. *Spore Prints* 494 (Sept.), pp. 4–5. Online and in color at www.psms.org.

Luther, Brian S. 2020. Danish mushroom stamps. *Spore Prints* 559 (Feb.), pp. 4–5. Online and in color at www.psms.org.

CONSIDER DONATING TO PSMS IF YOU'RE AN AMAZON PRIME MEMBER

Brian S. Luther

For those of you who're Amazon Prime members, it's easy to make a contribution to PSMS with every purchase, through Amazon Smile. PSMS is a registered non-profit organization and this would be a really easy way of contributing to our club. With every purchase through Amazon Smile, something will be donated to PSMS, if you set it up. It's a simple way to help and we think it's a good idea and hope you will too!

MUSHROOMING FROM HOME **Luke Smithson**

New Jersey Myco. Assoc., Mar. 23, 2020

Tom Bigelow, president of the New York Mycological Society and member of NJMA, put together this wonderful resource for all of us mushroomers who are stuck at home right now. I've added a few things to it.

Since we are missing out on our upcoming lectures and workshops, and many of us cannot even leave our homes, please use these wonderful resources to keep your mushroom minds sharp! And even though we cannot gather together for our fungi festivities, please don't forget to stay in touch with each other. Especially remember to call our elders and those home alone. This is a scary time, but we will get through it and be out in the field soon!

Videos

Hans Otto Baral - On Orbiliomycetes

Bart Buyck - Russula in North America

David Hibbett - How Mushrooms Changed the World

Gary Lincoff - On Gilled Mushrooms

Donald Pfister - On Orbiliomycetes and Estimating Fungal Diversity
Alan Rockafeller - Identifying Psychoactive Mushrooms Growing in California

Christian Schwarz - Mycology into the 21st Century and DNA Sequencing & Citizen Science

Tom Volk - Cryptic Species

Bill Yule - How We Identify Mushrooms and On Gyroporus castaneus and On Boletus sensibilis and Boletus bicolor

Adam Haritan - Many of his Learn Your Land videos are myco related, and not entirely about edibles (although most are).

Soup Up your Audubon Guide!

If you're looking for some mycological activities at home, why not soup up your *Audubon Guide* by adding current binomials to the plates! To do this, go to indexfungorum and type in the binomial used in the text of the *Audubon Guide*, click on the "search" button, and the current name comes up in green. You can then double-check the name on iNaturalist - if they disagree, go with the iNaturalist name. If you have a label printer, print out the new name and affix it to the plate—or make your own labels, or simply write it in. Just remember, names are changing frequently and you'll need to update every once in a while!

Deepen Your Involvement in iNaturalist

You can also deepen your involvement in iNaturalist by checking out this video tutorial: Explore iNaturalist When You're Stuck at Home.

Online Reading & Resources

If you're looking for some online reading, or want to brush up on your favorite mushrooms, there are some great websites you can peruse:

Foray Newfoundland and Labrador. All issues of their excellent newsletter *Omphalina* are available here as PDFs

Forest Floor Narrative

Fungi Growing on Wood Gary Emberger's excellent website on wood-decay fungi (click on "Species List")

Mushroom Expert Michael Kuo's website - the go-to reference.

Les champignons du Quebec An invaluable resource. In French - if you don't read French, use Google Translate!

Mykoweb Michael Wood's excellent website. Check out the "Systematics" page for a huge selection of downloadable mycological literature.

Tom Volk's Fungus of the Month

Weird and Wonderful Wild Mushrooms Jan Thornhill's fascinating mushroom blog.

Cry of the Bolete A shameless plug for my own occasional blog about foraging and rewilding your garden. Not all mushrooms, but definitely fungi heavy.

Collection of Polypores Dr. Josef Vlasak's collection of polypores, many collected in the mid Atlantic region. A good resource to study of on those brackets.

Polypores of British Columbia A free PDF of North American Polypores, in full color!

NJMA News And last but certainly not least, all of NJMA's wonderful newsletter can be found online. Lots of great reading material there.

More Videos. . .

Check out the series of interviews with prominent mycologists available on YouTube - search "An Oral History of Mycology." There are over 50 (!) interviews in this ongoing series.

Violetta White Delafield

If you happened to miss this fantastic article on jstor.org about Violetta White Delafield, please read it! Her drawings are stunningly beautiful. All of the links throughout the article lead to papers about the fungi discussed. It's a lovely and fascinating rabbit-hole to get lost in.

Lewis David von Schweinitz

Jstor.org also has an article on the paintings of early American mycologist Lewis David von Schweinitz. The Academy of Natural Sciences of Drexel, located in Philadelphia, has digitized his beautiful paintings and can be found here. (If you are interested in other natural history artwork that the Academy has digitized, go here.

Amanitin Test, *cont. from page 2*

Many poisonous mushrooms closely resemble edible wild mushrooms. For instance, the Springtime Amanita (*Amanita velosa*) is a highly desirable edible wild mushroom in the Pacific coastal United States. But to the untrained eye, it can appear similar to the Death cap mushroom *A. phalloides*. The Death Cap accounts for more than 90 percent of fungus-related poisoning deaths in Europe.

"This test can provide more information about a wild mushroom beyond physical appearance and characteristics, and detect something we cannot even see—the presence of amanitins," said Bever. If an affordable product like this was available, foraging could become even more popular and possibly safer.

The new test is an immuno-assay and depends on a very specifically reactive monoclonal antibody—a lab-produced protein that detects and binds only with a specific target. This research was published in the journal *Toxins*.

BEN WOO MEMORIAL FORAY

Luise Asif

Save the date!
Friday, October 9, thru Sunday, October 11

$195/person for PSMS members
$200/person for PSMS guest members
Registration opens middle of June
Space is limited to only 100 foragers

You must be a PSMS member or PSMS guest member
Prior registration is required.

The Puget Sound Mycological Society is very excited to host the fifth annual Ben Woo Memorial Foray as we celebrate continuing the work of PSMS mycologist Ben Woo. The theme of this year's foray is "Citizen Science" on how we can all expand our understanding of and contribute to the study of mycology. This is a great opportunity to get together with friends, meet new people, and explore the incredible world of fungi.

The foray will be held at Camp Berachah Ministries, also called Black Diamond, at Mt. Rainier. The campus is surrounded by magnificent old growth forest with mushrooms growing literally just outside your door! Within a short driving distance is access to acres of prime mushroom habitat.

The package includes accommodations, meals, informative evening presentations, guided mushroom forays, and engaging hands-on workshops. Saturday, we invite everyone to a "Mushroom Happy Hour" featuring mushroom appetizers and beverages. Accommodations are dormitory style with separate rooms for women and men. There are typically three adults per room. If you have a special request to share a room with another person(s) please include their name(s) in the notes section. Though we can't guarantee that your specific requests can be accommodated, we should be able to group same gender couples or friends wanting to share a room. Bathroom facilities are segregated into separate women's and men's facilities.

RV and camping spaces are available, but no RV hook-up services. You are welcome to camp or bring your RV. There is no reduction in registration fee. Please make a note in the comment's section if you plan on camping or if you are bringing your RV.

A few rustic A-frame cabins are available, and I do mean rustic! They're great for rugged outdoor types that want to room together These cabins have 6 bunk beds, a light bulb, an electric outlet, and a heater that might work. The bathrooms are a short walk away. There is no extra charge for cabin rental.

If you are bringing children, please make a note in the comments section. Children must be PSMS members and must be registered. Children and adults pay the same price.

The event will wrap up Sunday morning with a walk around the collection table. Our team of expert identifiers—Marian Maxwell, Danny Miller, Steve Trudell, Noah Seigel, and Daniel Winkler—will discuss details and answer questions about specimens gathered during the foray.

Bring your own bedding, sheets, blankets, pillows, sleeping bag, towels, and other personal items to make yourself comfortable. There are no nearby services, so bring what you need with you. Don't forget a flashlight (it gets very dark out there at night), rain gear, and mushroom-gathering paraphernalia.

Meals are served in the main lodge. There will be dinner Friday night and breakfast, lunch, and dinner on Saturday. A sack lunch will be provided for those going off site all Saturday on their own forays. If you want a sack lunch to take with you Saturday, make a note in the comments section. Sunday breakfast will be served before checkout at 11:00 am. Refrigeration and kitchens are available for those with special dietary needs or for those who want to cook their own meals.

Check-in begins at 3:00 pm on Friday, October 9, and checkout is at 11:00 am Sunday morning, October 11. You must be out of your room by 11:00 am, but you may linger on the property to forage for the remainder of Sunday.

Coming in the May Spore Prints
A lineup of presentations!

WILD, MUSHROOM-FUELED CANADIAN SCHOOL BUS RIDE ENDS IN NOT-GUILTY RULING

Doug Crosse

https://www.northbaynipissing.com/, Mar. 13, 2020

SUNDRIDGE, Ont. - An Almaguin-area school bus driver who used her bus to chase imaginary creatures in 2018 has been given a conditional discharge by reason of a mental disorder.

It was the morning of Sept. 21, 2018, and the then 52-year-old driver for Campbell Bus Lines was meant to be picking up students in Kearney to take them to various schools in Huntsville. What unfolded was a bizarre series of events that led to a bus being wedged in trees after causing extensive damage to a barn and hitting another bus in the area.

Ontario Provincial Police in Almaguin Highlands were notified at 7:20 am that a bus had backed into a barn after reversing up a private road off Taverner's Road in Kearney. The bus plowed all the way to the other side of the barn before lurching forward, ripping off the doors of the structure, and damaging an ATV. The bus then collided with a bus from Whitmell Bus Lines, striking it several times before continuing on its way.

Eventually the bus became stuck in a wooded area on a nearby property. Police received a call from a homeowner on Chetwynd Road who reported that a woman was sitting in his sun room. She walked out of the house when confronted.

The driver claimed at first that she was looking for her baby on the road near the home. Officers did not detect alcohol and quickly determined she was having a mental-health episode that required medical treatment.

Further questioning revealed she believed she had seen a bear cub and a grasshopper and was trying to run them over with her bus when she drove through the barn. Assistant Crown attorney Wesley Beatty read into evidence that the defendant thought the bus she was driving was a "magical school bus with magical properties."

The facts were not in dispute, said defense lawyer Peter Ward, who added that his client "has absolutely no recollection of the events of that day." Ward said his client had suffered from an "acute psychosis" as a result of harvesting wild mushrooms and making a tea, which inadvertently caused a hallucinogenic event.

Justice Erin Lainevool found the defendant to be not guilty by way of mental disorder.

FROM THE DEATH CAP TO THE ALCOHOL INKY: SEVEN MUSHROOMS YOU DEFINITELY DON'T WANT TO EAT

Bill Heavey

Field & Stream, Mar. 9, 2020
via *Popular Science*, Mar. 11, 2020

There is a commonsense rule about wild mushrooms that all outdoorsmen should heed: Avoid them. There are about 10,000 species of fungi out there, of which only a small number will kill you. From that vantage, the odds sound OK. Thing is, with the exception of a few easily identifiable species, it's hard to tell the lethal from the good. And mushrooms have never been known for being forgiving. Often, they look like a hundred other mushrooms, some of which are delicious. But do you really want to roll those dice?

Here are some mushrooms you definitely want to avoid.

Death Cap (A*manita phalloides*)

The Death Cap is included in every "most dangerous" list of mushrooms because it accounts for the majority of deaths from mushroom poisoning. Half a small one can kill an adult man. This genus of fungi is native to Europe but is increasingly showing up in North America.

Death Caps look like any common small, white mushroom. The poison is amanitin, which is a particularly nasty cocktail of eight other toxins found in amino acids. Famous people who may have died from eating Death Caps include the Roman emperor Claudis (54 A.D.) and Holy Roman Emperor Charles VI in 1740. Unlike some other mushrooms, Death Caps are equally deadly cooked, raw, frozen, or dried.

What happens if you eat one?

Symptoms occur 6 to 24 hours after eating and include nausea, vomiting, diarrhea, and abdominal pain. Typically—and this is the really dangerous part—you might feel all right for awhile after this, which leads to many patients being discharged from hospitals, sometimes with fatal results. The pain comes back, along with jaundice, convulsions, coma, and death. The liver and kidneys—necessary organs to your continued existence—fail. Recovery can take place in one to two weeks, but you never really get over it.

Fly Agaric (*Amanita muscaria)*

This is the one you see in fairytale books with a bright red cap and white spots. The "fly" part derives from the fact that people used to put these in milk as a way to trap and kill flies. This one has ibotenic acid and muscimol, which act on the central nervous system.

Pawe/Kubicki-Unsplash

What happens if you eat one?

Eat one of these and you may be in for a wild ride that includes delirium, manic behavior, delusions, and convulsions. You may feel drunk and perceive small objects as very large. The symptoms appear in as little as 30 minutes and last up to 4 hours. The only treatment is moral support, since anything else may worsen the reaction. Reassure the victim that the poisoning is merely temporary.

False Morel (*Gyromitra esculenta*)

This mushroom looks like the human brain, not a morel. And yet it's commonly mistaken for a morel. It can be fatal if eaten raw but is a particular delicacy in parts of Scandinavia and Eastern

Europe when properly cooked. The culprit here is gyromitrin and MMH, which is produced when the mushroom is partially heated. MMH is also used as a propellant for rockets and is not a good thing to ingest.

What happens if you eat one?

Symptoms appear 7 to 10 hours after eating, at which point nausea and vomiting set in, followed by abdominal pain and diarrhea. In severe cases, you die from liver damage.

Autumn Skullcap (*Galerina autumnalis*)

As a rule of thumb, avoid anything with "skullcap" in the name. These grow worldwide, from the Arctic to Australia, on dead wood. They may be confused with some edible mushrooms, such as the Honey Fungus.

Peter Pearsall

What happens if you eat one?

The toxic agent here is the same amanitin found in the Death Cap. Hold onto your liver.

Alcohol Inky (*Coprinopsis atramentaria*)

The alcohol inky—a wonderful name for a mushroom—is a member of the inky cap family, several of which have a great distinction. They're fine by themselves and absolute living hell if you have booze with them. This is because they contain coprine, an amino acid that interacts with alcohol.

Naomi Smith

What happens if you eat one?

Strictly speaking, coprine is not poisonous. What it does, however, when taken with alcohol, is exacerbate the worst symptoms of alcohol intoxication. These include flushing of the face and neck, headache, and sometimes nausea. Further, it leaves your body susceptible to alcohol poisoning. In other words, you could eat an alcohol inky cap without booze, be fine, have a drink a few days afterward, and get seriously sick. The reaction starts between 30 minutes to two hours after eating. Your pulse speeds up, you get flushed, have a headache, feel weak and dizzy, then barf. Fortunately, recovery takes place spontaneously a few hours later.

Deadly Webcap (*Cortinarius rubellus*)

Universal Images

Deadly Webcap is a good name for this one, which is native to North America and Europe and is especially fond of subalpine forests in, for example, Mount Rainier National Park.

What happens if you eat one?

If you're a fan of kidney or liver failure, this is the way to go. It wasn't known to be dangerous until 1972, when four people in Finland ate it, two of whom experienced "permanent" kidney failure. Seven years later, three people in Scotland mistook it for a chanterelle. Two of them required liver transplants. Nicholas Evans, who wrote *The Horse Whisperer*, his wife, and two family members were poisoned in 2008 when they mistook Deadly Webcap for ceps, an edible mushroom. All four victims eventually received kidney transplants, including his wife, who had only eaten three mouthfuls.

Ergot or Spurred Rye (*Claviceps purpurea*)

This fungus is a parasite that grows on rye and other grasses. People never willingly eat it but rather eat bread made with infected grain. In a 1976 article in *Science Magazine*, author L.R. Caporael theorized that an outbreak of ergotism caused by *Claviceps purpurea* may have been the cause of the strange behavior that led to the execution of 20 men and women in the 1692 Salem witch trials. Those accused of witchcraft all had similar symptoms, including manic melancholia, psychosis, and delirium. Further, the author notes a weather period at the time that would have been conducive to the production of a lot of ergot on rye grown in the area's lowlands.

What happens if you eat one?

It doesn't hurt rye much, but it can do a number on humans, leading to cramps, spasms, diarrhea, hallucinations, and gangrene. Historically, the fungus has been implicated in epidemics that caused thousands of fatalities. In 1951, in a small town in France, people who bought bread from local bakeries developed burning sensations in their limbs, began to hallucinate that they could fly, and one boy even tried to strangle his mother. Although it was never proven, spurred rye is thought to have been the cause.

4 DEATHS, 30 HOSPITALIZATIONS LINKED TO RECALLED ENOKI MUSHROOMS

https://fox8.com/news/, Mar. 13, 2020

Sun Hong enoki mushrooms.

CNN - Four people have died and 30 have been hospitalized with listeria, likely after eating recalled enoki mushrooms from the company Sun Hong Foods, authorities said.

Four deaths have been reported in California, Hawaii, and New Jersey, according to the U.S. Centers for Disease Control and Prevention. The CDC has gotten 36 reports of infected people from 17 states. Six cases involved pregnant women, two of whom miscarried, the CDC said.

Sun Hong Foods recalled the mushrooms Monday because they may be contaminated with listeria, according to the Food and Drug Administration. "Do not eat, serve, or sell any recalled enoki mushrooms distributed by Sun Hong Foods, Inc." the CDC said on its website.

Listeriosis causes different symptoms in different people. For most, symptoms include headache, stiff neck, confusion, loss of balance, fever, muscle aches, and convulsions. Symptoms typically start one to four weeks after eating the contaminated food. The infections can be treated with antibiotics.

Pregnant women can have these same symptoms but the bacterial infection can also lead to miscarriage, stillbirth, premature delivery, or life-threatening infection for the newborn.

The mushrooms, labeled "Product of Korea," are white and long with small caps, the CDC said.

SCIENTISTS IDENTIFY FIRST INVASIVE CASE OF RARE MOLD IN A CANCER PATIENT

https://globalhealthnewswire.com/, Mar. 13, 2020

City of Hope scientists have found a toxic fungus previously thought to not be infectious in the sinus tissues of a man with refractory acute lymphocytic leukemia. This is the first time that direct infection of a patient with the black mold *Stachybotrys* has been recorded. The team's findings were published this week in the journal *Clinical Infectious Diseases*.

Strains of *Stachybotrys* are typically associated with "sick building syndrome," or black mold infestations in damp buildings that can make people sick by breathing in toxins that the organisms release into the air.

"We have now shown, for the first time, that this black mold can also directly infect immunocompromised people," said Markus Kalkum, Ph.D., corresponding author of the study, professor in the Department of Molecular Imaging & Therapy at the Diabetes & Metabolism Research Institute at City of Hope and director of the Mass Spectrometry and Proteomics Core Facility.

In other words, the actual fungus was found in the patient's tissues as opposed to just the toxins that are usually associated with illness from black mold. It was seen in biopsy specimens from the patient's sinuses after he had complained of facial pain during a hospitalization associated with complications from refractory acute lymphocytic leukemia. Subsequent follow-up tests using modern molecular techniques, including DNA sequencing and species-specific staining methods, confirmed the fungus as *Stachybotrys chlorohalonata*.

"Even though an infection with a rare fungus, which wasn't previously considered to be infectious, had occurred, City of Hope physicians were able to cure the infection," Kalkum said. "It is notable that the infection with the black mold was resolved by treating with the available antifungal drugs, amphotericin B and micafungin."

Unfortunately, the patient ultimately passed away. However, the likely cause of death was an infection with another species of rare fungi which are known to be difficult to treat. But the findings of the study show that certain cancer patients are at high risk for fungal infections and need to be closely monitored, especially since there has been an observed steady increase in the diversity of emerging invasive fungal pathogens in immunocompromised patients.

Black mold Stachybotrys chlorohalonata.

BROTHY POACHED CHICKEN WITH MUSHROOMS AND FRESH CHILE **Alison Roman**

https://www.bonappetit.com/

Worried about boosting your immune system? This comforting but complex-tasting take on classic chicken soup is just what the doctor ordered. *4 servings*

Ingredients

1½ lbs boneless, skinless chicken breasts (about 3 large)
1 head garlic, halved crosswise
2 bay leaves
4 whole allspice
1½ tsp kosher salt, plus more
8 oz. maitake or shiitake mushrooms, torn into bite-size pieces
1 fresh red chile (such as Fresno), thinly sliced
1 1-in. piece ginger, peeled, finely chopped
1 TBs distilled white vinegar
1 TBs soy sauce
Freshly ground black pepper
Sliced scallions and cilantro sprigs (for serving)

Preparation

Place chicken, garlic, bay leaves, allspice, and 1½ tsp salt in a medium pot. Cover with 6 cups water and bring to a bare simmer over high heat. Immediately reduce heat to medium-low, cover pot, and cook 8 minutes. Remove chicken from liquid and let cool slightly, then shred into bite-size pieces.

Strain stock through a fine-mesh sieve into a clean pot; discard solids. Add mushrooms, chile, ginger, vinegar, and soy sauce to stock. Bring to a boil; reduce heat and simmer, stirring occasionally, until broth tastes rich and flavorful, 8–10 minutes. Season with salt and pepper, then add shredded chicken and simmer just until meat is warmed through.

Divide soup among bowls and serve topped with scallions and cilantro. *Total Time: 40 min*

bonappetit.com

DO AHEAD: Chicken can be poached 2 days ahead. Let chicken and broth cool separately. Wrap up chicken and transfer broth to an airtight container; chill.

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