

SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
Number 534 September 2017



54th ANNUAL PSMS WILD MUSHROOM SHOW Milton Tam

PSMS
2017 54th Annual
Wild
**MUSHROOM
SHOW**

**Saturday
Oct 21st
NOON - 6PM**

**Sunday
Oct 22nd
10AM - 5PM**

**Bellevue College
CAFETERIA**
3000 Landerholm Circle SE Bellevue, WA

Admission—\$10
Students—\$5
12 and Under—FREE
FREE PARKING

Presented by the
Puget Sound
Mycological Society
Visit: psms.org • 206.451.1212

So plan to attend, or better yet, please volunteer for a task. Every successful show depends on volunteers. Yes, YOU! We put on a great show year after year only because of your help. If you can, please give us a few hours of your time. There are many different activities and tasks available, so sign up for one or, preferably, both days. We promise a great experience and access to the always amazing all-day potluck buffet in the volunteer break room! Sign up for various responsibilities and tasks at our September membership meeting, or online at the www.PSMS.org website under “Events.” Posters, yard signs, and postcards to advertise the show will be distributed at our September membership meeting.

Note that we are also totally dependent on our fellow members to go out and bring those perfect specimens back for the display table. So far, summer has been very dry, so mushrooms may not be as abundant this October. If so, we are counting on YOU to make an extra special effort to go out and find specimens, but this year you may need to travel farther or go higher in elevation.

For new PSMS members, here’s how the show goes. On Friday afternoon, October 20, we start setting up in the main cafeteria at Bellevue College. Members and friends who have been collecting wild mushrooms begin to drop off their finds. By early evening the main hall is humming with activity, some volunteers setting up and others sorting mushrooms to genus. On Saturday we start very early, finish set-up, select the best specimens, label them to genus and species, and artfully arrange them in trays for display. In addition to the displays we have the touch and feel table, an ID table where the public can get their finds identified, cultivation, a photography contest, posters, mushroom cuisine, and microscopy—all activities that have consistently made our show fun, educational, and one of the best and most well-attended in North America. By 12 noon, the tables are full of mushrooms and the exhibit opens to the general public. We go until early evening, when the mushrooms are covered and put to bed for the night. The next morning, Sunday, the show opens at 10 am and goes until 5 pm, when we rapidly tear down the exhibits, clean up, load our vehicles, and depart.

It’s September already! Time to start thinking of fall mushrooms and our annual wild mushroom show. October 21 and 22 are the dates for our show this year, again in the main cafeteria at Bellevue College, 3000 Landerholm Circle SE, Bellevue. This facility has been a good fit for us, with ample room for displays, exhibits, lectures, and vendors. This year, Kim Traverse, Derek Hevel, and I will be the co-chairs.

We are one of the largest shows on the West Coast and the largest and best PSMS event of the year. It’s also our opportunity to share our knowledge of and enthusiasm for the kingdom of fungi with the general public. Let’s again work together to put that “WOW” factor into the show and amaze the public with all the colors, shapes, and sizes of fungi we bring in for display.

BEN WOO MEMORIAL FORAY 2017

James Nowak & Luise Asif

We still have a couple of spots left for the Ben Woo Foray October 13 thru October 15 at Camp Berachah Ministries/Black Diamond near the Crystal Mountain ski area turnoff. The nonrefundable registration fee is \$175/person, and all registrants must be PSMS members. This includes two nights’ accommodations, five meals, speakers, and workshop.

[Click Here to Register](#)

or contact James Nowak (206-354-9015; contact@terra-fleurs.com) or Luise Asif (206-365-6741; fasif@hotmail.com).

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MEMBERSHIP MEETING

Tuesday, September 12, 2017, at 7:30 pm at the Center for Urban Horticulture, 3501 NE 31 st Street, Seattle

Our speaker for September is Alissa Allen, who we speak on "Dyeing to Cross the Rainbow Bridge."



It has been nearly 50 years since the first publication on using wild mushrooms to produce dyes for textiles. What started as a curious discovery by a natural dyer caught like wildfire through the 1970s but then smoldered for another 20 years... until the dawn of social media. Alissa Allen will take us on a journey through the past, present, and future of mushroom dyeing. She is an avowed mushroom missionary, spreading enthusiasm for mycology by enticing unsuspecting fiber enthusiasts to the darkest corners of the forest, in quest for color. On this journey, curious adventurers can't help but be enchanted by the colorful and charismatic fungi along the way, and become entangled in the web of mycology. You will see magical transformation of color born from seemingly mundane mushrooms and learn new ways to illuminate the hidden spectrum found in your own fungal wonderland. Whether you are a fiber artist, a forager, or a citizen scientist, mushroom dyes can work for you.

Alissa Allen is an amateur mycologist and the founder of Myco-pigments. She specializes in teaching about regional mushroom and lichen dye palettes to fiber artists and mushroom enthusiasts all over the country. Alissa got her start right here at PSMS in 1999 and has been sharing her passion for mushrooms for over 15 years. She has written articles for her website as well as *Fungi Magazine* and *Fibershed*. In 2015 she created the Mushroom and Lichen Dyers United discussion group and The Mushroom Dyers Trading Post. These groups have grown into a community of over 5000 members. Alissa uses brilliant colors found in mushroom dyes to entice people to take a closer look at mushrooms and their relationship within the ecosystem. To read more about her work, visit <http://mycopigments.com/>.



Bennett at Oregon State University to study *Phaeocryptopus gaeumannii* which causes Swiss needle cast in Douglas Fir. A **Field Trip Committee** is being formed to assist Wren and Erin. Anyone wishing to help as hosts or leaders let us know.

WANTED: WEST COAST PORPHYRELLUS

WE NEED YOUR HELP! We are currently conducting a research project to determine the correct names for our west coast species of the bolete genus *Porphyrellus*. The entities we are looking for have been described as follows: Cap velvety or felted, dark brown, blackish brown, or dark olive-brown; Pores light brown, vinaceous brown, dark brown, or olive-brown, bruising blue, purplish brown, or not bruising; Stem apex brown or dark brown, longitudinally streaked, ridged or reticulate (net-like), bruising like pores or not bruising; cap and stem context (flesh) when exposed slowly turning

CALENDAR

- Sept. 12 Membership Meeting, 7:30 pm, CUH
- Sept. 18 Board Meeting, 7:30 pm, CUH board room
- Sept. 19 *Spore Prints* deadline
- Sept. 23 Field trip (see PSMS website, members section)
- Sept. 30 Field trip (see PSMS website, members section)
- Oct. 10 Membership Meeting, 7:30 pm, CUH

Board News

Luise Asif

Welcome back! Board member **Anne Tarver** has attended a planning meeting in Cle Elum for the DNR lands of the Teanaway drainage area and is involved with the WTA (Washington Trails Association) advocacy committee for the area. PSMS has been in the Teanaway area for many wonderful spring field trips. We hope to be able to go as a group again. The **PSMS Fall Show** is the weekend of October 21 & 22; Derek Hevel, Milt Tam, and Kim Traverse will be co-chairs this year. The **Ben Woo Foray** is almost at capacity, only four spaces left. **Paul Hill** attended the Mycological Society of America Conference in Athens GA; look for his report in *Spore Prints* and the PSMS blog. The **Bridle Trails Study** has established its collecting protocol and will incorporate ideas and resources that Paul brought back from the conference. We hope more people will join us for the Bridle Trails Study once we resume this fall. A **Ben Woo Scholarship** was awarded to Patrick

pink, gray, or blue, or a combination of these colors; KOH (3% potassium hydroxide, a strong base) red or brown on cap surface and context; Habitat associated with pine, spruce, or Douglas fir. Here is a photo.



Typical *Porphyrellus*.

Note the variability reported for each of these features. In various mushroom field guides, the taxa have gone under the names *Porphyrellus porphyrosporus* (= *Tylopilus porphyrosporus*), *Porphyrellus pseudoscaber* (= *Tylopilus pseudoscaber*), *Porphyrellus olivaceobrunneus* (= *Boletus olivaceobrunneus*), *Porphyrellus atrofuscus*, and *Porphyrellus pacificus* (= *Tylopilus pacificus*). Many authors recognize all of these names as synonyms, and use *P. porphyrosporus* as the oldest valid name. Other authors recognize several distinct species. Of these names, *P. porphyrosporus* and *P. pseudoscaber* (considered synonyms by most authors) were described from Europe, while the other three species were described from the west coast. Our questions are: “Do we have one or several species on the west coast of the US?”; “Does the European *P. porphyrosporus* occur here?”; “What is (are) the correct name(s) for west coast *Porphyrellus*?”

You can help us solve this taxonomic riddle. We would like to obtain recently collected specimens from WA, OR, and CA to compare with material from the eastern US and Europe. What we need is dried material with notes on the macromorphological features reported above (color, surface features, and staining reactions of cap, pores, and stem; type of conifer associate), and if possible, good photographs of all parts of the mushroom. After collecting and taking notes, cut the material lengthwise into several pieces, and dry on a vegetable drier, then package into a ziplock bag, place in a cardboard box, and ship to us at the address below. We will use your material to determine all micromorphological features, and we will sequence several genes for phylogenetic analyses. Your material will be deposited into the H.D. Thiers Herbarium (SFSU) at San Francisco State University where it will be available for future study by other researchers around the world. When we publish the results, you will be acknowledged for your contribution to the project. We cannot be everywhere on the west coast during the mushroom season, and with more eyes looking for *Porphyrellus*, more material can be discovered to study, thereby allowing for better taxonomic decisions and a better understanding of the biology and evolution of this/these beautiful species.

We are particularly interested in material from the following areas:

- (1) under conifers from the Lower Tahoma area of Mt. Rainier Nat. Park, Pierce County, WA, type locality of *T. pacificus*;
- (2) under spruce near Siletz, Lincoln County, OR, type locality of *B. olivaceobrunneus*; and
- (3) under pines, Inverness, Marin County, CA, type locality of *P. atrofuscus*.

If you can help us by providing dried specimens of west coast *Porphyrellus*, please ship the material to the address below. Thank you for helping us advance science.

Catherine Callaway
c/o Dr. Dennis E. Desjardin
Dept. of Biology
San Francisco State University
1600 Holloway Ave.
San Francisco, CA 94132



THE RECIPE FOR “MAGIC MUSHROOMS”: SCIENTISTS UNRAVEL THE PROCESS THAT GIVES RISE TO THEIR MAIN PSYCHEDELIC INGREDIENT

Cheyenne Macdonald

Dailymail.com.co.uk, Aug. 15, 2017

In a major breakthrough toward medical “magic mushrooms,” scientists have unraveled the enzymes behind the ingredient responsible for their psychedelic effect.



Research over the last few decades has suggested that the compound psilocybin may have a number of therapeutic benefits, with potential to help treat anxiety, depression, and even addiction. But until now, the “recipe” for psilocybin

has remained a mystery.

In a new study, scientists have characterized for the first time the four enzymes mushrooms use to make this compound, setting the stage for pharmaceutical production of the “powerful psychedelic fungal drug.”

After identifying and characterizing the enzymes behind psilocybin, the team from Friedrich Schiller University Jena was able to develop the first enzymatic synthesis of the compound, reports *C&EN*, a publication from the American Chemical Society.

Interest in the psychoactive properties of some mushrooms from the genus *Psilocybe*—or, so-called “shrooms”—dates back many centuries, with ties to spiritual and recreational experiences. And, most recently, studies have linked it to reduced existential anxiety for advanced-stage cancer patients, among other positive results.

“The pharmacological effects are caused by modified tryptamines, with psilocybin being the major chemical constituent of these fungi,” the authors explain in the new study, published to the journal *Angewandte Chemie International*.

“This prodrug-like natural product becomes rapidly dephosphorylated following oral ingestion to yield the actual psychotropic agent psilocin,” which then interacts with a particular receptor in the human nervous system.

While previous research conducted in 1968 attempted to uncover the “enzymatic pathway” to psilocybin, the new study found that these efforts got the order wrong.



SCIENTISTS MAP SEX CHROMOSOME EVOLUTION IN FUNGI

Marla Vacek Broadfoot

<https://today.duke.edu/>, Aug. 11, 2017

DURHAM, NC - Biologically speaking, nearly every species on Earth has two opposite sexes, male and female. But with some fungi and other microbes, sex can be a lot more complicated. Some members of *Cryptococcus*, a genus of fungi linked to human disease, can have tens of thousands of different mating types.

In a study appearing early online Aug. 11 in *PLOS Biology*, Duke researchers have mapped the evolutionary turning point that transformed the pathogenic form of *Cryptococcus* from an organism of many sexes to one with only two. They found that during evolution, a reshuffling of DNA known as translocation brought together separate chunks of sex-determining genes onto a single chromosome, essentially mimicking the human X or Y chromosome.

Surprisingly, they've shown that these crucial translocations occurred at the centromeres, the twisty ties that hold together chromosomes at the center of an x-shaped pair. These regions of the chromosome are so dense that they were once thought to be removed from recombination.

"Recombination at the centromere doesn't have to happen frequently; it just has to happen often enough that it punctuates the evolution of the organism," said Joseph Heitman, MD, PhD, senior study author and professor and chair of molecular genetics and microbiology at Duke University School of Medicine. "With each translocation, the genome is altered again and again, until you have evolved an entirely new species.

Scientists have been studying the evolution of sex chromosomes for more than a century. In the 1960s, Japanese-American geneticist and evolutionary biologist Susumu Ohno proposed a theory in which the genes determining sex first arose at various spots scattered across the entire genome, but over time were "captured" on the sex chromosomes. In humans, those chromosomes go by the familiar X and Y; in birds, they are known as Z and W; in moss, they are called U and V.

Regardless of the name or species, Heitman contends that some universal principles could govern the evolution of all sex chromosomes. He and an international team of researchers focused on the last common ancestor of the human pathogen *Cryptococcus neoformans* and its nearest sibling species, a non-pathogen called *Cryptococcus amyloletus*.

In *C. amyloletus*, dozens of genes at two different locations on the chromosomes control what's called a tetrapolar, or four-part, mating system. At one location or locus known as P/R, genes encode pheromones and pheromone receptors that help the fungus recognize compatible mating types. At the other locus, called HD, genes govern the development of sexual structures and reproductive spores.

The researchers sequenced the entire genome of *C. amyloletus*, mapping the location of all the genes as well as the centromeres on each of the organism's 14 chromosomes.

They found that the genomes had undergone quite a bit of rearrangement since the two species shared a common ancestor, at least 50 million years ago. For example, chromosome 1 of *C. neoformans* contained pieces of four different chromosomes from *C. amyloletus*, providing evidence of multiple translocations, some within the centromere.

HAS ERGOT ALTERED EVENTS IN WORLD HISTORY?

Robert Harveson

Scottsbluff Star Herald 1, July 25 & Aug. 19, 2017

What is Ergot?

Ergot is a small grain disease caused by the fungal pathogen, *Claviceps purpurea*. This word "ergot" is derived from the French word "argot," meaning "spur."



Ergot sclerotia emerging on grain.

The term can also refer to the sclerotia, structures resembling a rooster's spur, that form within heads after infection and displace the developing seed. These dark brown to black structures are simply masses of fungal hyphal tissues containing the toxic chemicals that can cause disease (ergotism) in animals if ingested.

Ergot has been known for millennia, but not recognized as the cause of health issues until about 200 years ago. For example, an Assyrian tablet dating to 600 BC mentions "noxious pustules" on grain seeds.

Documented epidemics of ergotism occurred frequently in the Middle Ages (500–1500), now known to be caused by eating ergot-contaminated rye bread, resulting in the deaths of tens of thousands of people. It was most common in those colder, damp areas of Europe that were highly dependent on rye as a food source. This region extended through central and eastern Europe—the chief rye-growing areas. It was rare in the United Kingdom, where rye is not consumed as much and the climate is less favorable for ergot development.



Ergot stromata emerging.

Salem Witchcraft Theory

The worst outbreak of witch persecution in recorded history was



from Colonial Massachusetts in a single year. In 1976, behavioral psychologist, Linda Caporael proposed the concept of ergot poisoning to explain the strange events that occurred in Salem, Mass., in the fall of 1692.

During the late summer and early fall of 1692 more than 20 people were executed after being accused, tried, and convicted for witchcraft. Much of the evidence for conviction was provided by several young teenage girls exhibiting bizarre behavior (hallucinations and sensations of being pricked or bitten), all of which are consistent with symptoms of convulsive ergotism.

Furthermore, 24 of the 30 victims of the accused suffered from similar symptoms. According to English folklore, the symptoms of convulsive ergotism were also those consistent with a condition known as bewitchment, thus fueling further fears of witchcraft activity in Salem that fall.

Caporael also examined the records of weather patterns from that region and noted that cool, damp, and rainy conditions had been

present in spring and summer of 1692, following a severe winter. Rye was the staple grain for colonists at that time, and the grain consumed in the winter of 1691–1692 could theoretically have been contaminated by large quantities of ergot.

Thus Caporalet's premise for explaining the witchcraft accusations in Salem in 1692 was an ergot epidemic after consuming contaminated rye bread.

This hypothesis was highly criticized by several scientists at that time, but was also supported by others. Obviously it is impossible to determine today with any certainty whether ergotism was a factor in this historical event. Nevertheless, the evidence presented, although highly speculative and circumstantial, is very compelling, and fun to ponder and debate.

The French Revolution

One of the events leading to the French Revolution was referred to as the "The Great Fear." This event was characterized by a general panic by the population, resulting in mob mentality, violence, and riots that took place between July 17 and Aug. 3, 1789.

Grain yields were very poor that year with widespread shortages expected, and rumors swept through villages that bandits were about to seize what was left of the year's grain harvest. In response to the rumors, fearful peasants throughout the rural provinces mobilized, took up arms, and attacked and looted their overlords' manors.

The reason for this spontaneous mass hysteria remains a puzzle to today. Historian Mary K. Matossian argued that one of the causes of the Great Fear was consumption of grain contaminated with the ergot fungus. In years of good harvests, grain contaminated with ergot was discarded, but when the harvest was poor, there was little other option for food. Thus, a severe ergot epidemic may have affected the mental state of French peasants, thereby contributing to the French revolution in 1789.

Demographic Depression (1750–1850)

Matossian also contended that ergot food poisoning enhanced by climate and dietary changes also played a role in population depression in certain countries, for example, rye-consuming France compared to wheat-eating England. Fertility and mortality records showed steady growth in England with more erratic and gradual growth in France.

Records also provide strong evidence that fertility suppression was greater in France during this period with decreased birth rates and increased infant mortality. As the British became less dependent upon rye, they conceived more children while suffering fewer infant deaths during the summer months of July to September.

Furthermore, during the first half of 19th century, the summers in England were not warm enough for adequate ergot development, while in warmer France, conditions were better for ergot development. Thus it is now postulated that both fortunate weather conditions and a dietary preference toward wheat over rye allowed higher growth rates in England by reducing ergotism.

Effects on War

It is possible that ergot may also be responsible today for Russia's lack of a warm-weather seaport. In 1772, the Russian Tsar Peter the Great tried to capture several water ports on the Black Sea from Turkey. His soldiers were stopped at Astrakhan (a city in southern Russia located on the Volga river delta where it empties into the Caspian Sea) due to an ergot epidemic.

They obtained hay for their horses and bread for themselves derived from ergot-infected rye. Both man and beast were affected, destroying their ability to battle the Turks, and were forced to retreat. The desire to expand the Russian empire has still not been fulfilled today.

This article is based on material from these sources:

Carefoot, G. L., and Sprott, E. R. 1967. *Famine on the Wind. Man's Battle Against Plant Disease*. Rand McNally and Company, 231 pp.

van Dongen, P. W. J., and de Groot, Akosua, N. J. A. 1995. History of ergot alkaloids from ergotism to ergometrine. *Europ. J. Obstetrics and Gynecology*, 60: 109–116.

Lee, M. R. 2009. The history of ergot of rye (*Claviceps purpurea*) I: from antiquity to 1900. *J. Royal College Physicians of Edinburgh*, 39: 179–184.

Matossian, M. K. 1989. *Poisons of the Past: Molds, Epidemics, and History*. Yale University Press, New Haven CN, 190 pp.

Tippo, O., and Stern, W. L. 1977. *Humanistic Botany*. W. W. Norton and Company, New York, 605 pp.

YOU CAN NOW BUY TRUFFLE GIN—MADE WITH ITALIAN WHITE FUNGI

Amy Willis

Metro.co.uk, Aug. 21, 2017



If you like the fragrant aroma of truffles, you'll love this.

Someone's gone and made a gin infused with Italian white truffles (the mushroom type not the chocolate one) picked in the small town of Alba, Piedmont.

The white truffle is one of the finest in the world with intricate white veining that makes for an intoxicating taste.

The gin is the creation of a husband and wife team in Cambridge—William and Lucy Lowe of The Cambridge Distillery—who have already made a number of small batch gins.

These include Anty Gin (a gin made of actual red wood ants), Cambridge Dry Gin, Japanese Gin, Watenshi, and Cambridge Seasonal Gin.

Truffle gin is distilled in one liter batches with all the botanicals distilled in a vacuum at a low temperature using a special glass distillation method.

Apart from Macedonian juniper berries and posh white truffles, all the other botanicals used in the gin are grown in the Lowe family's back garden or locally foraged.

It is recommended to be drunk as a digestive over ice in a brandy glass.

Each 700 ml bottle is £80 with free postage in the UK.

*Alice Algae took a lichen
To Freddy Fungus
And now their relationship is
Is on the rocks
And they are living in
"Sin"biosis!*

Spores Afield
Colorado Mycological Society
August 2017

FUNGUS USES LIGHT TO INVADE, ATTACK WHEAT PLANTS

Brooks Hays

<http://www.upi.com/>, April 12, 2017

The fungus *Parastagonospora nodorum* has forged a deadly partnership with sunlight, and wheat plants are paying the price.

According to scientists at the University of Western Australia (UWA), *Parastagonospora nodorum* produces an herbicide compound called elsinochrome which destroys plant cells when exposed to sunlight.

Researchers manipulated the fungus' genome to trigger elsinochrome production, allowing scientists to observe the deadly compound's behavior inside wheat plants.

"To conserve energy, *P. nodorum* does not normally produce elsinochrome; however, it does when infecting wheat plants," Heng Chooi, a molecular scientist and research fellow at UWA, said in a news release. "This has made it difficult up until now to know the identity of such small molecules that are produced by the fungus when infecting wheat plants and understand their contribution to the disease."

Elsinochrome belongs to a family of molecules called perylene-quinones. When exposed to light, the molecules spawn reactive oxygen compounds capable of damaging cell membranes and proteins.

"When we deleted the gene in the fungus responsible for production of elsinochrome, we saw a reduced ability of the fungus to affect the wheat plant," Chooi said.

Scientists have previously observed the behavior of perylene-quinone molecules, but never inside wheat plants, the most abundant commercial crop in the world. Researchers hope their findings, detailed in the journal *Environmental Microbiology*, will protect wheat crops from destruction.

"The study opens up new opportunities to find ways to stop the fungus from producing the herbicide compound or to make the wheat to become resistant and therefore less affected by the disease," Chooi concluded.

MUSHROOM TOXINS: COMMON MYTHS AND MISCONCEPTIONS

Mike Rubin

NJMA News, New Jersey Myco. Assn., July–Aug. 2017

The following is a summary of a lecture by Dr. Denis Benjamin to the New Jersey Mycological Association, April 2, 2017. Dr. Benjamin is best known for his book *Mushrooms: Poison and Panaceas*; however, this lecture was not so much about mushroom poisoning as it was about critical thinking. We are inundated these days with information from a wide variety of sources, the internet being a huge player in information and misinformation. We get advice from friends, books, and websites. Every so often newspapers and magazines publish articles about mushrooms and mushroom poisonings.

There appears to be a disconnect between science and reality. Why is this? Primarily it's because we were not taught to evaluate what we are being told. We have a tendency to believe what we hear without taking a closer look at the information being presented. There are many sources of information that are not evidence

based; patent applications, magazine articles, approval for clinical studies, and (my favorite) proclamations from self-proclaimed mushroom experts. Sites like Wikipedia are open-sourced and can be manipulated by anyone with incorrect information. Even the prestigious *Encyclopedia Britannica* has published errors concerning mushrooms.

Let's explore a few of these myths:

• Milk thistle as a proven antidote to mushroom poisoning.

While this is a promising technique for counteracting some toxins, it has not been born out via a controlled clinical study. Also, the active [ingredient] must be administered intravenously, not orally. Hyperbaric oxygen chambers and penicillin treatments have also been espoused but not clinically proven for treatment of *Amanita* spp. poisoning.

• Alcohol and shaggy manes will make you ill.

This is a misperception; it is *Coprinopsis (Coprinus) atramentarius* not *Coprinus comatus* that contains the coprine, the chemical that causes vomiting when combined with alcohol.

• Morels are harmless.

This was an eye opener for me. According to Dr. Benjamin, there are more poisonings caused by morels than any other mushroom. This is primarily due to the consumption of undercooked or raw morels. Symptoms include tremor or dizziness/inebriation or unsteadiness/ataxia +/- associated with gastrointestinal symptoms or isolated gastrointestinal syndrome¹. Morels contain hydrazine, as do button mushrooms (*Agaricus bisporus*). Eating large quantities of undercooked morels can lead to exposure to enough hydrazine to cause these symptoms. Cooking large quantities of morels can also lead to a similar symptoms via inhalation.

Dr. Benjamin went on to discuss other misconceptions in the world of mushrooms. The bottom line is to be vigilant and critical of the information we are receiving. Mushroom edibility is somewhat subjective. Each individual is more or less sensitive than the next person. Some of our club members are more adventurous than others when it comes to consuming mushrooms [I don't recommend eating *Amanita phalloides*; as I am 100% sure you will have a problem after consuming this particular mushroom]. Do your own research into the food you are about to consume.

Dr. Benjamin makes the following recommendations when it comes to consuming wild mushrooms:

- Be 100% sure of the identification of each mushroom.
- Only eat small amounts the first time.
- Wait at least 24 hours before trying the next species.
- Never mix species.
- Save a specimen for the poison control center (800-222-1222).
- Eat a new species early in the day, as late night visits to the emergency room can be problematic, especially if they are trying to locate one of our club members to identify the mushroom that was consumed.
- Cook all mushrooms well.
- Don't feed wild mushrooms to your guests without telling them beforehand.²

¹ *Clin. Toxicol.* (Phila). 2010, 48(4):365–372.

² *Fungi*, 2014, 75(5):1–16.

A SUPER RARE FUNGUS HAS BEEN FOUND IN WOODS IN PLYMOUTH

Lauren Herald

<http://www.plymouthherald.co.uk/>, August 16, 2017

An extremely rare fungus has been found in Plymouth.

The unusual fungus—known as orange ping-pong bats—has only ever been identified in the UK three times before.

The discovery was made by Sam and Sid Rammer in Tulgey Woods, near Trefusis Park in Mannamead, on Saturday while they were working to preserve the woodland.

Sam told *The Herald*: “It’s extremely distinctive, we originally thought it was a piece of rubbish then we realized it was fungus.

“We took some pictures and used the internet to help us identify it. It was on a piece of dead wood on the floor.”

Sam and Sid brought Tulgey Woods to preserve the wildlife and protect the land development.

The woodland is situated in the heart of the city and is an ecological asset for the area.

The sighting has officially been confirmed by Dr. David Farley, of the Devon Fungus Group and British Mycological Society of Exeter University.

David explained: “This is undoubtedly *Favolaschia calocera*—the orange ping-pong bat fungus.

“I can say that for certain because it is one of the very few fungi that can be identified with certainty from a photograph as its features are unique.”

The fungus, first sighted in the UK in 2012, has a variety of names including orange pore fungus, orange pore conch, and orange ping-pong bats. It may have arrived on imported timber or timber waste products, such as bark—although this has not been confirmed.

David continued: “To the best of my knowledge this is the fourth British site as we know of two in Cornwall and only one in Devon.

“I have been expecting to hear of further records as this is a new species to Britain and has spread quite quickly in other countries where it has been introduced, but it doesn’t seem to be behaving like that here.

“It seems to favor warm locations so may not establish so easily hereabouts. It is a wood decay species which only colonizes dead wood so doesn’t pose any threat to living trees.”



Favolaschia calocera

WOMAN LOST IN WOODS SURVIVED ON “BERRIES AND MUSHROOMS” FOR A MONTH

Tamar Lapin

New York Post, August 15, 2017

A woman who said she ran into the woods to escape two men who were burglarizing a hunting lodge survived the Alabama wilderness alone for nearly a month, surviving only on “berries and mushrooms,” authorities said.

Lisa Theris, 25, had been missing since July 23, when she emerged from the Bullock County woods onto Highway 82 on Saturday and was spotted by a motorist, local channel WSFA 12 News reported. “Finally the young lady has been found and she’s alive,” Sheriff Raymond Rodgers said. “She had been out lost in the woods. She said she was drinking water out of a brook and eating berries and mushrooms.”

Theris dropped 50 pounds during her weeks in the woods, and had multiple bug bites and scratches, Rodgers said.

A massive search had been under way for Theris, and teams equipped with dogs covered a lot of ground looking for her, but couldn’t get through all of the dense woods.

Theris told officers she was constantly on the go but was disoriented due to hunger and thirst.

Investigators say Theris was with two men who burglarized a hunting lodge in the woods July 17 and have since been arrested.

Theris told officers she ran away into the woods when she discovered what the men had planned because she didn’t want to be part of it.

“She’s not familiar with this area and apparently on the night she ran, she went into the woods at night and got lost. I just thank God she’s alive,” the sheriff said.

PROPOSED CALIFORNIA BALLOT MEASURE COULD DECRIMINALIZE HALLUCINOGENIC MUSHROOMS

Mina Corpuz

Los Angeles Times, Aug. 25, 2017

California voters could decide whether the state should decriminalize the use of hallucinogenic mushrooms by adults in 2018. A ballot measure was filed Friday with the state Attorney General’s office. The measure would exempt adults 21 and older from penalties of possessing, selling, transporting, or cultivating psilocybins. At least 365,880 valid signatures are needed to place the measure on the 2018 statewide ballot.

Kevin Saunders, a mayoral candidate in the town of Marina, near Monterey, is behind the push. Saunders said using mushrooms helped him stop using heroin 15 years ago.

“I think we’re seeing something that could literally heal our brothers and sisters,” he said. “We’re talking about real cutting-edge stuff.”

Saunders said he hopes voters will be mature and have a serious, robust conversation about the use of mushrooms.

“It’s a natural progression from marijuana legalization,” he said. “I think that we are having an opportunity to lead the discussion.” Californians voted to legalize recreational marijuana use in November through Proposition 64.

Psilocybin is considered a Schedule I drug by the California Controlled Substances Act and the U.S. Drug Enforcement Agency. These drugs have no accepted medical use and a high potential for dependence and abuse, according to the DEA. Heroin, LSD, and marijuana are in the same category.

Two 2016 studies found a dosage of psilocybin helped ease anxiety and depression for some cancer patients.

PORCINI IN STEAMED STICKY BUNS WITH MISO CUCUMBER

To the Wind Bistro via *Spores Afield*,
Colorado Myco. Soc., Aug. 2017

Royce Oliveira and Leanne Adamson—gourmet chefs and owners of To The Wind bistro—were kind enough to share this recipe for porcini (*Boletus edulis*) sticky buns. To The Wind is known for exploring creative, exciting—and invariably delicious—flavor combinations, and their porcini recipe is no exception. This is a recipe in three parts. It's light, refreshing, sweet, savory, and very tasty. Excellent as an appetizer or an entrée.

For the steamed buns: (makes 16, 1.8–2 oz. buns)

280 ml water	1 TBs oil (rice bran or similar)
1 tsp active dry yeast	525g all-purpose flour
1½ TBs sugar	1 tsp salt
1 TBs rice wine vinegar	1 tsp baking powder

Proof water, yeast, and sugar. Mix all with dough hook 6–8 minutes. Divide into 16 pieces Round and store on pan spritzed with pan spray. Spritz tops of buns with spray and cover with plastic wrap. Let rest 30 minutes. Flatten dough lightly, oil, and fold in half over an oiled chopstick. Steam 8 minutes.

For the miso cucumbers:

Cucumbers
Miso
Honey
Toasted sesame seed oil



Slice cucumbers thin. For dressing, mix 2 parts miso to 1 part honey, and add a splash of sesame seed oil. Toss miso dressing on cucumbers to desired taste.

For the roasted porcinis:

Porcinis

Marinade:

Equal parts soy sauce, hoisin sauce & rice vinegar
Zest from 1 lime
Salt & pepper

Cut porcinis to 1/3-inch steaks. For marinade, mix equal parts soy sauce, hoisin sauce, rice vinegar, and add the lime zest. Lay mushrooms on roasting rack and brush with marinade. Season with salt and pepper. Flip and repeat. Bake for 25–35 minutes at 350°–375°F, or until tender.

Wrap in buns, dress with miso cucumber, and serve immediately.

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