

# MushRumors

Newsletter of the Norwest Mushroomers Association

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## June meeting features Psilocybes by Jack Waytz

The June 14, 2018, NMA member meeting (7 p.m. at the Squalicum Yacht Club) features Caleb Brown speaking on “One or two aspects of the Psilocybe group.”

Psilocybin mushrooms, often called “magic mushrooms” are interesting for many reasons, yet most consider the hallucinogenic toxins as the primary subject of interest. However, something peculiar is happening here in the Pacific Northwest, and it has little to do with pharmacology.

Washington State holds the largest number of psychoactive mushroom species in the world, with approximately twenty-five psychoactive species in five genera. Despite inhabiting the Evergreen State, psilocybin mushrooms prefer urban habitats rather than vast conifer forests. It is this phenomenon that typically results in confined areas where people live alongside psychoactive mushrooms. However, most of these species go largely unnoticed, and are often distributed throughout the landscape by anthropogenic activities such as transportation systems.

Through this action, an increase in regional habitat and populations has been observed. As the natural landscape becomes increasingly modified, it is more important than ever to study their ecological and taxonomic qualities, as well as any medical benefits to individuals. Despite a lack of peer-reviewed research within the last few decades, older publications, as well as a resurgence of interest in the medical community, has shown promising results for alleviating major psychological, and neurological pain.

Join us for an exciting night as we look at native *Psilocybin* species within the Pacific Northwest, and how academic researchers and amateur mycologists have found them useful for medical treatments.



Caleb Brown with *Psilocybes* and more, at a fall mushroom show in Bellingham. Photo NMA files

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Northwest Mushroomers Association (NMA)  
P.O. Box 28581  
Bellingham, WA 98228-0581

[www.northwestmushroomers.org](http://www.northwestmushroomers.org)  
[facebook.com/NorthwestMushroomersAssociation](https://www.facebook.com/NorthwestMushroomersAssociation)

The Northwest Mushroomers Association meets 7–9 p.m. on the second Thursdays of Apr, May, June and Sept, Oct, and Nov. Important change! Our meetings have moved from the downtown library to the Squalicum Yacht Club. Please see website for more.

Fungal forays and field trips are generally scheduled for the Saturday after each meeting. To stay apprised of forays, events and more, please join our [googlegroups](#) email list automatically by signing up as a member.

Annual membership dues are general, \$25 (includes families and individuals); benefactor, \$50; and student, \$15. Please make checks payable to NMA and mail "Attn: Membership" to the address above, or use Paypal online at [northwestmushroomers.org/join-or-renew-membership/](http://northwestmushroomers.org/join-or-renew-membership/)

The newsletter *MushRumors* is published online February 1, June 1, September 1, and December 1 at [northwestmushroomers.org](http://northwestmushroomers.org). **Club members are encouraged to submit stories, photos, recipes, and artwork.** We appreciate your interest! Submissions should be made three weeks prior to the date of publication to content coordinator Vince Biciunas at [vince.biciunas@gmail.com](mailto:vince.biciunas@gmail.com)

#### NMA OFFICERS AND VOLUNTEERS

**President:** Brennen Brown  
[360nmapresident@gmail.com](mailto:360nmapresident@gmail.com)  
**Vice President:** Jack Waytz  
[360nmavicepresident@gmail.com](mailto:360nmavicepresident@gmail.com)  
**Treasurer:** Linda Magee  
[360nmatreasurer@gmail.com](mailto:360nmatreasurer@gmail.com)  
**Secretary:** Deborah Gilbert  
[360nmasecretary@gmail.com](mailto:360nmasecretary@gmail.com)  
**Book and T-shirt Sales:** Linda Magee  
**Membership:** Eric Worden  
[360nmamembership@gmail.com](mailto:360nmamembership@gmail.com)  
**Foray Chair:** Steven Jones  
[stdojo@gmail.com](mailto:stdojo@gmail.com)  
**Science Advisor:** Dr. Fred Rhoades  
[fmrhoades@comcast.net](mailto:fmrhoades@comcast.net)  
**Website manager:** Erin Moore  
[chanterellerin@gmail.com](mailto:chanterellerin@gmail.com)  
**Newsletter content coordinator:** Vince Biciunas  
[vince.biciunas@gmail.com](mailto:vince.biciunas@gmail.com)  
**Newsletter layout artist:** Erin Moore

## Swede Heaven foray June 16

You're invited! The June member foray takes place in the forests between Arlington and Darrington on Saturday, June 16, 2018, starting at 10:30 a.m.

Steven Jones has taken up the mantle of NMA's new foray chair. For this foray, says Steve, "My Aunt Billie is allowing us to have our 'center of operations' at her home near Swede Heaven. Hope to see you soon!"

To get the foray address or to arrange carpooling from Bellingham, contact Steven, NMA Foray Chair, at 360.661.9365.

NMA thanks Christa Simmons who chaired our forays with energy and knowledge for the past several years. She's moving this fall to be with family but promises to return to us for visits to the Northwest during fall mushroom season. Thanks, Christa, and welcome, Steven!



Silver Lake foray. Photo NMA files

# Mushroom Mayhem meets Morel Madness

by Buck McAdoo

This year's Mushroom Madness (May 11–13) again fell on Mother's Day, which some believe is much too early because the Spring King Boletes won't be up until the end of the month (in case the morels fail to appear); others think it's too late because early rains would have already produced the big flushes.

For this season, we were right on the edge for *Morchella brunnea*, the name I came up with by using Michael Kuo's key for North American morels. Jack Waytz, who has a huge interest in morels, would call these 'naturals.' These are morels that come up outside of burn sites or in burn sites that happened a long time ago.

But let us start from the start. Vince Biciunas, who (along with Fred Rhoades and myself) is our longest standing member of Northwest Mushroomers Association, figured we could use a change of venue. Folks were tired of going to Lake Wenatchee every year

where desultory results had become commonplace. So she went out and discovered Alta Lake State Park. Looked good. The lake itself promised some moisture, one could see burned and isolated trees above the campsite, and there were established hiking trails around the lake. More importantly, large burn sites that happened last year were just an hour away by car. The set-up looked good too. John Whitten, former ranger at Bowman Bay was now in charge of the campgrounds. He fondly remembered the Bellingham group from past Dilly forays at Deception Pass.

So we all straggle in by late Friday afternoon and pitch tents or park vans in the spot reserved for us. There's a lot of speculation over where to go, but Evelyn Spiker seems the most organized. She has detailed maps of local burn sites. The Carlton Burn may be the closest, but that burn was maybe five years

## Good times at Squalicum Yacht Club by Martha Dyck

The NMA annual Survivors' Banquet was held on a lovely March 24 evening at our new venue, the Squalicum Yacht Club in Bellingham. It was well attended and enjoyed heartily by all.

Socializing and buying raffle tickets preceded the excellent and mouth-watering potluck buffet. Candy cap (*Lactarius rubidus*) cookies baked by Dawn Sodt, and a rich mushroom dip by Tom Wilmore invoked special compliments. (Both recipes are included on pages 12 and 13.) Photogenic slides of mushrooms and mushroomers curated by Fred Rhoades formed the backdrop to the meeting.

After eating, our president, Brennan Brown, called the meeting to order. Board member duties were discussed and a call-out made to recruit new board members and leadership candidates. Also Christa Simmons, foray coordinator, urged members to consider taking on her duties as she will be moving in fall. (Since the banquet, Steven Jones has stepped up to this job. Thank you, Steve.) Requests for volunteers were made to help guarantee a successful Wild Mushroom Show (mark your

calendars!) for Sunday, October 21.

To conclude the business meeting, Linda Magee ran through several by-law changes which were unanimously accepted by the membership.

The meeting ended with a spirited raffle drawing for some coveted mushroom-related objects d'art: lamps, books, puzzles and so much more. Clean-up of the room went swiftly thanks to so many volunteers. A great evening, great food, good company, and business accomplished!



Banquet raffle items. Photo by Martha Dyck

ago. She decides the South Navarro Burn from last year looked promising. It was only 19 miles down the road to Chelan, then about 4 more miles to Manson on the east side of Lake Chelan. From there we could pick up a dirt road called Grade Creek Rd. that switch backed for 23 miles uphill to the South Navarro Camp site. That camp site was bound to represent flat ground, the kind of terrain favored by morels. I agreed with her wholeheartedly. A burn from last year that received state wide notoriety was bound to be better than a hike around the lake. So around 9 a.m. on Saturday morning off we went in a caravan of about four or five cars. We followed Evelyn and John about five miles beyond Manson, when they suddenly pulled over in a deserted campground with a few long burnt ponderosa pines in the background. Good move. Folks poured out of their vehicles and began finding morels. Not Eldorado, but enough to keep us at the locale. These were very small brown morels with slightly darker ridges. None were more than say 2 1/4 inches tall. The prize this year should go to the person with the smallest morel, not the largest as had been our custom. As if on cue, Jo Ann Groth, held up a morel less than a half inch tall. She waved it aloft to spur us on to greater heights.

In my Subaru I had with me newcomer Matt Jones and his wife, recently here from San Diego. They did pretty well. In about an hour Matt found about 20 morels, the wife not far behind. I had found zero, but wasn't worried. Jim Groth, our main identifier from Colville, Washington, had already made my day. He had identified *Suillus pseudobrevipes*, a bolete I was manically hoping to photograph again. In the midst of this collection frenzy, Evan Sanford and Pam Anderson discovered their car wouldn't start. We tried jump starting to no avail. They then rode with us about a half-mile further to check out reports from bikers about more finds near a waterfall. This proved to be something of a pipe dream. We returned to Pam's vehicle which suddenly decided to start. Not wanting to challenge fate twice, they left for Chelan along with most of the others.

This left two vehicles for the ascent to South Navarro. The road was surprisingly good. No washboard, no deep fissures, but after about ten miles we began seeing rocks. We had also heard a muffled groaning sound coming from our rear right wheel. A suspension issue? We took care of that by turning up the reggae. Hear no evil, see no evil. The rocks became more numerous. We were now slaloming around



Sunday morning at Alta Lake campground. Photo by Mark Johnson

them, occasionally getting whacked. Then a 1,500 pound boulder in the middle of the road. We could just squeeze around on the mountain side. Then another similar boulder about a half mile further on. We had to get out and study it. But John and Evelyn had already solved it, so onward ho. The next obstacle turned out to be a tree trunk about 8 inches thick slanting onto the road. Matt solved it by sallying forth with his personal saw. Frankly I would not have thought of that myself, but it allowed us to continue. Finally, about three miles further on, we saw their truck come to a halt ahead of us. They had powered through half of a snowdrift on the road, but now were on foot to see what lay ahead. This turned out to be more snow, a lot of it. We were all forced to turn around about 1 1/2 miles from our goal! Then we realized the campsite itself must have been buried in the white stuff. Too early for the South Navarro, and judging from the semi-arid condition of some of our morels, almost too late for those.

We stopped again near our first site on the way back. I found a clump of *Myxomphalia maura*, a few more specimens of the ubiquitous *Pholiota carbonaria*, but that was it. Matt, meanwhile, had found 25 more morels. It turns out to be quite important which side of the road you are on. By the end of the little excursion, the score was 45-0, and we were in the same car. There is some talent involved after all. And back at camp, 45 turned out to be the winning number. I celebrated by drinking

*Continued on page 6*

## Mushroom Mayhem 2018 species list

*Amanita aprica*—A beautiful lemon yellow *Amanita* with white warts on the cap and minimal velar material at the stem base. Edibility unknown.

*Bovista pusilla*—A really tiny white puffball found by Mark Johnson.

*Cryptoporus volvatus*—A hollow polypore that becomes inhabited by a beetle. The beetle feeds on the interior wall. When it leaves, it carries the spores on its feet to the next location.

*Deconica sp.*—This is the collection identified correctly by Jim as a *Psilocybe*. *Deconica* is just a new name for those species of *Psilocybe* that do not blue up at their stem bases. Too dry to get to species.

*Gyromitra montana*—Formerly *Gyromitra gigas*. A very good edible when fresh.

*Hypholoma capnoides* (?)—I doubt this one. *H. capnoides* has purple-brown spores while this collection had rusty gills with no hint of purple. Possibly larger specimens of *Pholiota carbonaria*.

*Inocybe sp.*—Would need a microscope to get this one. Specimens too dried up to photograph.

*Morchella elata*—The name used by Jim Groth, who knew it had changed. Turns out *M. elata* is only known from Europe. The new name for what we found is *Morchella brunnea*.

*Myxomphalia maura*—The burn site plus the white spores on an overlapped cap gave it away. Very hygrophaneous. Caps brown at first, but dry quickly to pale ochre.



*Psathyrella agrestis*. Photo by Buck McAdoo

*Nolanea sp. (?)*—Have to disagree here. The clearly free gills and pink spores indicate *Pluteus*. The slight odor of parsnip points towards the Deer Mushroom, a.k.a. *Pluteus exilis*, but cap may be too gray for that taxon.

*Pholiota carbonaria*—Everyone found this one. The whitish stems have little brown squamules, which separates it from *Pholiota highlandensis*, which has bands of velar material on the stem. In the microscope, spores were 8 x 5 microns, elliptical with a tiny germ pore. Pleurocystidia were fusoid-ventricose, plentiful and large.

*Suillus pseudobrevipes*—Jim nailed this one. I hardly knew it. He says it is always found with pine. By the way, this made my day. I've been trying to get a better photo of this for the past twenty years.

*Psathyrella agrestis*—This was found down by the boat launch on Sunday morning, so few got to see it. They were scattered in the wet muck on the side of a mini-trail. Pale grayish ochre caps and dark purple-brown gills. Spores elliptical with a germ pore, measuring 9–10 x 5–6 microns. Keyed out well in Smith's monograph.

*Strange anamorph*—Someone handed me a specimen that looked like a tiny rust colored golf divot. I figured it could be a *Cudoniella sp.* Wrong. There were no asci at all. No basidia either. Just a mass of branching generative hyphae. An anamorph of what?

—Buck McAdoo



Stem squamules of *Pholiota carbonaria*. Photo by Buck McAdoo

*Continued from page 4*

some of Matt's home made IPA, which was a worthy challenger of Boundary Bay IPA, and then a brew that had a fine mushroom fragrance, intended or not.

The usual superb potluck followed the end of the foray. The crowning glory here was Jo Ann's Morel Medley. It was gone before I could get to it. All who had it will not forget it soon. Christa Simmons gave me the basics:

Ingredients—A pile of chopped morels. A third of a pile of chopped tomatoes. A third of a pile of chopped green peppers. A third of a pile of chopped onions. Butter or peanut oil. Salt and pepper to taste. Fry all together in a skillet. Remove when done. Exult. (See species list.)

So what's the conclusion? Do we return here next year or not? The positives first. The campsite is comfortable except for the vague swarms of mosquitoes. Nice rest rooms and sinks across the road. Attractive location with the lake nearby and the nearly barren mountains above. Friendly rangers who kept checking to see if we needed anything. And a few species we don't normally encounter. Also, there were morels within a twenty mile radius. Let's not forget that.

And now the negatives. Too few different species to warrant the long drive there. Too high a risk of early heat drying up the morels on the ground and



*Christa Simmons shows off her shirt. Photo by Martha Dyck*

rendering them inedible. An equally high risk of getting here before the snow has melted where the burn sites are. The mosquitoes. Not terrible, but enough to speculate on why they were created in the first place. Finally, the locked inner gate at night. This prevented my car from entering with its big speakers and wild reggae tunes which we could have danced to until the moon went down.

Just in case you were wondering.... on the way back I did stop by a roadside burn and found one morel! Too dry for harvesting, but now it was 45-1.

## **Another take on mayhem** by Mark Johnson

New location. New date. New members. There were 20 of us, between nineteen and ninety years old, on this year's expedition to the "dry side" led by Steven Jones. This year most of us camped at Alta Lake State Park, which is a lovely spot near Pateros, at the southern end

of the Methow River valley. The river was high and fast. The lake was 3 feet above normal. The wildflowers were out in great abundance. So, we were hopeful of our Mushroom Mayhem turning into a huge Morel Madness extravaganza. Hmmmm... Despite dire warnings that we were going too early (this trip used to be in June), and the snow having finally been cleared, and Highway 20 opened the morning of our trip... Despite all that, the mushrooms had already flushed about a week prior, according to some of the locals we met. Maybe we need to think end-of-April?

However, I believe we all did find some morels. Some pretty dry. Jim Zito found one growing out of a rock! Matt and Nikki took the "most found" award at 50 some, but that included those they found on the drive out and back—not just those found on the Saturday. The Saturday explorations turned into adventures for some. The rule is if you are too late



*Morel. Photo by Mark Johnson*

lower down—go higher. Dead-ending on a washed out road, some went up into bushwhacking country. Word of caution: tires are not that good at whacking fallen trees. In fallen tree versus high quality tire competition, the sharp branches win, and a new tire replaces the loser. Some folks, including a new member from New Mexico, made it all the way up to snow line along Lake Chelan, and yet got back in time for the potluck. The fab potluck campfire and marshmallow roast included great food and wonderful new recipes. Maybe next year someone(s) will bring a guitar(s) and we can add a sing-along to the evening?

This year's lead identifier, Buck Mcadoo, partnered with Jim Groth from northeastern Washington. Not

that there were that many fungi to identify. (We call it the dry side for a reason.) Mark suggested that the brown mushroom we found everywhere be given a new name *Cinnamonus ubiquitousus*, to be added to the family of the Ubiquitaceae which includes other species like *Beerus cannus* and *Buttus cigarettus*.

Sunday morning dawned as bright and golden as Saturday had. After leisurely breakfasts (eggs and buttered morels with coffee anyone?), some folks did bird watching, or walked their dogs. Others dissected a kind of mushroom that looks like a gall, and requires the insects to get the spores out of its permanently sealed shell. But, mostly it was a good time for conversation and making new friends.

## The Trametes that benignly engulfs

by Buck McAdoo

A couple of weeks back I spotted the common Turkey Tail on a log next to a trail. I started to peel off the shelving carpophores to send to my brother for its medicinal value. Then I noticed something odd. The pore surface had not only appeared beneath the cap but had departed the cap to engulf blades of grass nearby. I hadn't seen this before. The pores now formed straws around the grass blades. Here is the photo to prove it.

I then attempted to research this phenomena. Not much information out there, but I did discover that *Stereum ochraceoflavum*, which has typically shell-shaped fruiting bodies, can also completely surround the sticks on which they grow.

The genus *Trametes* contains strong white rotters. *Trametes versicolor* (I read in *Decay Fungi Associated with Oaks and Other Hardwoods*) can attack and colonize cambium adjacent to dead wood and then form cankers. It is not a parasite. Its presence indicates the log is already dead. We knew that. But I didn't know that it can 'engulf stems and grasses during growth.' According to another article, these grow on, unharmed.

*Trametes versicolor* surface (top) and underside (bottom), with pore surface engulfing grasses. Photos by Buck McAdoo



## Mushroom of the Month

# Xeromphalina enigmatica K.W. Hughes & R.H. Petersen

by Buck McAdoo and Richard Morrison

The recollections and notes of Buck McAdoo. It was late in the afternoon of Saturday on June 7, 2008, when Cris Colburn and family arrived at Tall Timbers with their Morel Madness haul for the day. After unloading the morels on the counting table, it was soon apparent that Cris had won the morel contest yet again. Nobody knew where he went to find these things and many of us gnashed our teeth in frustration. In the midst of all the congratulatory remarks, Cris waved me aside to show me an oddity he had found. He extracted from his basket a small clump of rusty-

brick colored mushrooms. From their condition, they had had a bit of a rough ride. I knew I had never seen these before. In fact, I didn't even know the genus.

Then, it proceeded to get a bit sketchy. By revealing the location of this collection, Cris would be giving away the location of his secret morel patch. This would not bode well for future contests. Cris finally found a way to describe the habitat without giving away too much about the location. The clump had been found on buried wood at about 4,500 feet up the Icicle Canyon. This was just east of Leavenworth, WA. The trees at this altitude were grand fir, hemlock, and larch. Cris mentioned there was a lot of old slash on the ground. I figured this was above where hardwoods would be, and knowing this might make a difference later.

By the time the specimens arrived at my office for the field description they had dried out too much to yield a spore print. I proceeded to describe them as follows:



*Xeromphalina enigmatica* specimens from Icicle Canyon near Leavenworth, WA, June 7, 2008. Identification was confirmed by DNA sequencing of dried material in 2018. Speckles on the caps are pollen grains. Photo by Buck McAdoo.

Caps—8–15 mm wide, campanulate becoming convex with depressed discs. Dry, smooth, orange-brown, not striate at margins and not hygrophanous. Context thin.

Gills—Decurrent, thickish, intervenose. Very distant and salmon colored, a few forked at margins.

Stipe—1 1/2–2 cm long and 1–2 mm thick. Wiry, tough, glabrous except for a coating of orange-yellow pruina which became thicker at the base. Dark brown, equal or tapering towards base. Base clothed with mahogany colored hairs and a few blackish mycelial strands that could be rhizomorphs.

Odor & Taste—Mild.

Habitat—A cluster on buried wood up the Icicle Canyon near Leavenworth, WA, June 7, 2008.

Spores - Amyloid, elongated ellipsoid and smooth walled. 6.5-7.3 x 2.9-3.6 microns. Q = 2.2

Basidia—4-spored, slenderly clavate, 21.9-27.2 x 5.1-6.6 microns.

Cheilocystidia—Fusoid-ventricose to subclavate, some with slightly elongated necks, 22.9-37.2 x 5.7-8.6 microns.

Pleurocystidia—Similarly shaped but larger at 32.9-51.5 x 7.4-11.2 microns. Some with appendages at bases.

Pileipellis—A cutis of subparallel and intertwined hyphae, occasionally knobbed and branched.

Caulocystidia—Big clusters of fusoid-ventricose to saccate cystidia measuring 37.2-50 x 9.9-19 microns.

Clamps—Present but not plentiful.

Hyphae of the pileipellis, stipitipellis and gill trama all had occasionally encrusted walls.

Looking back at my notes from this time, I had written, ‘This is one interesting fungus. It is not a Laccaria, despite the thickish, distant gills. It seems to be a member of the Omphalinaceae. The closest look-alike is *Chrysomphalina chrysophylla* var. *hoffmanii*, but that species has larger spores at 9.5–13.5 x 5–6 microns and other characters don’t match very well. Could this be a candidate for new species status?’

Then I began to veer towards the genus *Xeromphalina*. This genus was known for its colored mycelium. In trying to key it out with Redhead’s *Key to Xeromphalina* species in North America and northern Eurasia (5), it came out closest to *Xeromphalina campanella*, a common species found on conifer wood. Most of the microscopic features were similar. The problem was the gills. They looked nothing like any other *Xeromphalina* in the literature.

Finally, after almost ten years had passed, I sent a pair of dried fruiting bodies to Spain for a genetic analysis in the winter of 2018. The

result? An RPB2 sequence revealed a 98% match with *Xeromphalina campanella* and a 100% match with *X. enigmatica*. I’d never heard of this *X. enigmatica*. Trust Cris Colburn to find the enigmatic fungus. This turned out to be a new species described in 2015 by Ron Petersen and Karen Hughes and published in a paper by Aldrovandi, et al in the journal *Mycologia* (1).

The story of *Xeromphalina enigmatica*. In their research Aldrovani, et al (1) determined that *X. enigmatica* belonged with *X. campanella* and *X. kauffmanii* in what is known as a species complex, which is a group of closely related organisms that are difficult to tell apart. *X. campanella* is the most

common and well known member. It is a cold tolerant species found across the northern hemisphere of North America and Eurasia where it fruits on decaying stumps and wood of conifers in spring and fall. Although the orange-gold colored trumpet shaped mushrooms are small in size, they often fruit in large numbers. It is commonly known as the golden trumpet mushroom, and a large fruiting can be a striking sight in shadowy woods. *X. enigmatica* is morphologically indistinguishable from *X. campanella*, but differs in specific DNA sequences, and the two are reproductively incompatible (unable to interbreed). It also occurs on decaying conifer wood, and has a rather wide geographical distribution, occurring in NW Asia, Russia, Scandinavia and across North America, including the Pacific Northwest (PNW). Two species that are morphologically indistinguishable but cannot interbreed, like *X. campanella* and *X. enigmatica*, are called cryptic species. *X. kauffmanii* is a geographically limited eastern North America endemic. It differs morphologically from *X. campanella* and *X. enigmatica* in having slightly smaller spores, is reproductively incompatible with *X. campanella* and *X. enigmatica*, and is only found on decaying wood of hardwoods.

The recent recognition of *X. enigmatica* as a distinct species is an example of how mushroom science can bring to light new information with new technologies and cooperative research. For a portion of his 1997 Ph.D. thesis research James Johnson (3) made pair crossings of single basidiospore (haploid) cultures

that had been identified as *X. campanella* and discovered there were two reproductively isolated groups, which

he tabbed I and II. In 2015, this research, along with that of others that included classical taxonomy, basidiospore derived culture pair crossings, DNA sequencing, sophisticated phylogenetic analyses and ecology was combined to produce the 2015 publication by Aldrovandi, et al (1) on the *X. campanella/kauffmanii* species complex. From this research it was concluded that Johnson’s *X. campanella* I and II represented two biological species due to differences in DNA sequences and reproductive incompatibility. Subsequently, *X. campanella* I was regarded the “true” *X. campanella*, and a new type (neotype) specimen established, as none apparently had been designated even though this mushroom has been known since

***Commonly known as the golden trumpet mushroom, a large fruiting of it can be a striking sight in shadowy woods.***



*Xeromphalina campanella* (or is it *X. enigmatica*?) fruiting on a conifer stump. These two species are morphologically indistinguishable, but differ in specific DNA sequences and do not interbreed. Both decompose and fruit on conifer stumps and wood. Photo by Dick Morrison

1783. *X. campanella* II was recognized as a new species, and given the somewhat whimsical name of *X. enigmatica*.

The phylogenetic studies revealed that *X. campanella*, *X. enigmatica* and *X. kauffmanii* share a common early ancestor which branched to give rise to *X. campanella* on one branch, and on a second branch the ancestor from which *X. enigmatica* and *X. kauffmanii* then evolved. This research also indicated that *X. enigmatica* may have been the progenitor of *X. kauffmanii*. This is a story of speciation, the evolution of new species from ancestral species. These studies further found that *X. campanella* has no significant genetic divergence across its geographical range, so is a genetically stable species. In contrast, *X. enigmatica* is genetically diverse across its geographical range, and is likely undergoing regional geographic speciation.

Since the differences between *X. campanella* and *X. enigmatica* are based on specific DNA sequences and reproductive isolation, one might wonder about

the rationale for describing them as separate species. This requires touching on the concepts of a biological species. Ernst Mayr (4) formulated a widely adopted definition of a biological species: “Species are groups of interbreeding or potentially interbreeding natural populations that are reproductively isolated from other such groups.” Under this definition, species that are judged different may, or may not, share the same physical or physiological traits. This concept of the primacy of reproductive isolation can run into some exceptions as species within certain genera are known to interbreed, e. g., oaks; dogs and wolves; and some birds. And, prokaryote organisms don’t necessarily follow the same interbreeding “rules” as eukaryotes. De Queiroz (2) presents a good discussion on the subject of defining species, noting that the point where two populations of an organism diverge enough to be considered separate species is often a matter of judgement based on current information. And, as one might suspect, not all researchers may agree on where

to draw the line in this judgement. This can stir the cooking pot of scientific debate, and in the process, hopefully further the science, itself.

So, in differentiating *X. enigmatica* as a new species separate from the morphologically indistinguishable *X. campanella*, Aldrovandi, et al, (1) followed Mayr's definition of a biological species based on their inherent reproductive isolation, i. e., the inability to intercross. It should be noted that Johnson (3) found occasional rare compatible crosses among cultures of *X. campanella*, *X. enigmatica* and *X. kauffmanii*. However, within the broader concept of a species complex it would not be unexpected for a low frequency of interspecific compatibility to occur.

Ecologically, *X. campanella*, *X. enigmatica* and *X. kauffmanii* are secondary decomposers of decaying wood and woody substrates such as stumps and logs, on which they also fruit. They apparently follow invasion by a primary decay fungus, such as a polypore, and may have specific polypore associates. If *X. campanella* is any example, extensive colonization of woody tissues is possible, as this species has been recovered as far as 15 feet up in the decaying heartwood of conifer trees. Although secondary decomposers, these three species show a degree of host

specificity, with *X. campanella* and *X. enigmatica* being found on conifers (softwoods) and *X. kauffmanii* on hardwoods. Voitk (6), however, has noted that some strains of *X. enigmatica* from Newfoundland occur on hardwoods, not conifers, which indicates additional genetic divergence based on host substrate within this species. He also wonders if this could be the reason for the occasional reports of *X. campanella* on hardwoods prior to the description of *X. enigmatica*.

We now know that two identical looking mushroom species, *X. campanella* and *X. enigmatica*, occur in the PNW. Identification to species would not be practical for the amateur mushroomer, and would it really matter, since the common name golden trumpet fits both? Yet, giving *X. enigmatica* the common name of 'puzzling golden trumpet mushroom' would be most appropriate. There is one possibility of identifying *X. enigmatica* in the field in our region, and that is if the strains decomposing hardwoods occur here. So, if you come across a *X. campanella* look-alike on a hardwood in your mushrooming trek, please make a collection for science. Buck would be more than happy to assist in the identification and have the chance to capture new photos.

## References

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# Dessert submitted by Dawn Sodt

Here is NMA member Dawn Sodt's recipe for the candy cap meringues she concocted for the Survivors Banquet in March. Says Dawn, "these are not quite as mine were, but as they should have been." Dawn found the candy caps around December 1, 2016, growing profusely under a couple of edible chestnut trees in Burlington, and dried them for later use. She said she did not find any there in 2017 but may have just missed their flush. Make sure to check your chestnut trees for these lovely mycorrhizal edibles, uncommon to our area!

## Candy Cap Meringues

1/2 c egg whites at room temperature (3-4 large)  
1/4 tsp cream of tartar  
1/4 tsp salt  
1 c superfine sugar  
1 Tbsp dried and powdered Candy Cap Mushroom (*Lactarius rubidus*)  
1/2 tsp vanilla

Preheat the oven to 225 degrees F. Prepare the pans by cutting parchment paper to line the bottoms.

Prepare the piping bag and tip if you are going to pipe the meringue. It is recommended that you use a medium round tip. (It is possible to pipe stems and caps separately and then adhere them by coating the bottoms of the caps with melted chocolate and sticking the stem to the bottom of the cap before the chocolate sets. I haven't tried this, only read about it.)

Combine powdered Candy Cap Mushrooms with the sugar in a small bowl and set aside. Beat eggs at low to medium speed just until they start to foam. Add salt and cream of tartar to the eggs. Increase the speed of your mixer to high and begin adding the sugar/mushroom mixture one TBSP at a time, beating for about 1/2 minute between spoonfuls. Once all the sugar mixture has been added, add the vanilla.

Continue beating until the egg white mixture is able to form stiff peaks and they hold.

Spoon the batter into the piping bag, if you are piping it and create stems separately on your



*Lactarius rubidus*, the candy cap. You can see the latex exuding from the undersides of a couple of the mushrooms. Also, notice the rough texture of the caps. Photo by Dawn Sodt

parchment-covered cookie sheet trying to work fairly quickly so the egg white mixture remains stiff enough to hold its shape.

If you are not piping and just want a round cookie, drop by teaspoon full onto the cookie sheet.

Bake for 1 1/2 hours. At end of the baking time, turn oven off, open door a bit and let the oven and cookies cool down slowly. Once completely cooled, store the meringues in a tin with a tight fitting lid.



*After a long, dark winter, Northwest Mushroomers enjoy good food with friends at the 2018 Survivors Banquet. Photo by Martha Dyck*

## **Savory dip** submitted by Tom Wilmore

Another great recipe much requested at the Survivors Banquet was this warm and wonderful dish.

### **Rajas de chile con queso y hongos**

10 roasted poblano peppers, peeled and cut into strips  
 1/4 to 1/2 kilo Chihuahua cheese, or Queso Oaxacaño,  
 cut into small pieces (Tom used 1/2 kilo)

Sauteed shitakes

1 cup ½ & ½

1 cup Mexican crema

2 tblsps olive oil

4 cloves garlic

2 medium tomatoes

1 medium onion

A few drops Worcestershire sauce

1 cup frozen corn kernels

Pepper

Salt

Cut the onions into quarters and then thin slice each quarter. Caramelize the onions in the olive oil.

While cooking the onions, mince the garlic and chop the tomatoes. When onions are almost done, add the garlic. When garlic is softened add the chopped tomatoes. Cook this mixture until it is fairly dry.

Put all ingredients in a double boiler or slow cooker and heat. Try to have it ready just as you want to serve it. It might separate if heated for too long.

## **What's new at NMA?** by Linda Magee

A lot is going on.

### **A New Venue...**

Late last year, the Board learned that the Bellingham Central Library was eliminating the after-hours rental of its downstairs meeting room, beginning at the end of March 2018. We began a desperate search for a suitable venue for our events.

Richard Mollette, one of our Board members, suggested Squalicum Yacht Club. We checked out the Yacht Club and found it affordable, centrally located, and accessible. At the Survivors Banquet this year, we saw that the Yacht Club could comfortably accommodate our group.

So, for the rest of 2018, unless posted otherwise on our website, NMA meetings will be held at the Squalicum Yacht Club, 2633 S Harbor Loop Dr, Bellingham, WA 98225.

### **A New Membership Fee...**

You may have missed our previous announcement in the April edition of Mushrumors. Increased costs in renting venues, purchasing books, paying speakers and our desire to keep offering all our events and meetings led to the Board's decision to increase our General Membership Fee to \$25.

### **A New Nominations and Elections Procedure...**

Please take a look at our new by-laws approved at the Survivors Banquet to learn about the new nominations and election procedures. NMA is moving from holding our officer elections at the Survivors Banquet to e-voting so that our members will have a great opportunity to vote.

### **A New Membership Level...**

There's a new way to help NMA—become an annual Benefactor Member. The annual fee is \$50. If you have the money and wish to help us fund more speakers and events, the Benefactor Membership is for you. Thank you!

# **NMA By-Law Changes**

by Linda Magee

At the Survivors Banquet on March 24, 2018, Northwest Mushroomers Association held our annual business meeting.

Those present helped fine tune the by-law changes proposed by the Board. The members present unanimously approved the changes. The new by-laws follow with comments about their impact:

## **ARTICLE IV Membership, SECTION 1:**

### **Types of Membership**

The Association shall have five (5) types of membership as follow:

1) General Membership: General membership includes an individual or all members of a family or household.

2) Student Membership: Student membership is open to any full-time student.

3) Complimentary Membership: Complimentary membership may be either Individual or Family, and may be granted to anyone who has made a notable contribution to the Association. Complimentary membership may be of any duration deemed appropriate by the Board.

4) Life Membership: Life membership may be granted by the Board to an individual (or to the family of such an individual) whose overall long-term commitment to the Association warrants such recognition.

5) Benefactor Membership: Benefactor membership is a membership level open to any member who wishes to pay an increased membership fee to support the Association. This annual fee shall be established annually by the Board, along with any additional benefits that will accrue to a benefactor member.

**Comment: Now both an individual and a family can hold a General Membership.** The new annual membership level—Benefactor—gives members who want to pay more to help NMA a way to do so.

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## Want to Go for A Run? For the NMA Board, that is.

Here we are at first of June, and I'm trying to get you excited about the August election for the 2019 NMA Board of Directors!

Well, it's not too early for the Nomination Committee to get out members interested in running for 2018-2018 Board positions.

We believe NMA is best served when the Board has some new officers whose ideas and energy keep our organization vibrant and responsive to our members.

I would like to talk to you about how the Board operates and answer your questions about serving on the Board.

Please contact me, Linda Magee, Nomination Committee Chair,

—by email at: 360nmatreasurer@gmail.com

—by phone at: 360-205-2742

### ARTICLE IV Membership, SECTION 7:

#### **Maintenance of Membership Records**

A membership coordinator appointed by the President shall keep an electronic record for each member, which includes the type of membership, name of individual or head of household, expiration date of the membership, and member contact information.

Comment: This change allows NMA to keep membership rolls in electronic form.

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### ARTICLE V Meetings of Members, SECTION 1:

#### **Annual Meeting**

An annual meeting of the members shall be held in March of each year at such time and place as shall be designated by the Board for the purpose of transacting such business as may come before the meeting, including but not limited to voting on by-law changes. Notice of such annual meeting shall be delivered electronically to every member via the Association's membership email, not less than ten (10) nor more than fifty (50) days before such meeting, and may also be announced on the Association website.

Comment: Election of officers will no longer take place at our annual meeting. The other by-laws below will allow e-voting only. Notice of the annual meeting will now be delivered electronically by membership email only.

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*Love mushrooms, enjoy NMA? We need you. Become a board member! Serving on the board is one of the best ways you can contribute your time, energy, and ideas to the mushroom club. Photo by Erin Moore*

### ARTICLE V Meetings of Members, SECTION 2:

#### **Regular Meetings**

Regular meetings of the Association will be held monthly except in July, August, January and February, at a location and time selected by the Board. Notice of meetings, giving date, time and location will be announced to the membership on the NMA website, in the e-newsletter MushRumors, and by other means as may be determined by the Board, such notice of meetings to be at least five (5) days prior to the event.

**Comment: Notice of our regular meetings will now be given electronically.** The Board may use other means to notify members of the regular meetings, if necessary.

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**ARTICLE VIII:  
Nominations and  
Elections**

A nominating committee will be formed no later than the annual May board meeting.

By May 15, the nominations committee chair will give notice to the general membership through the Association’s member email, and the Association’s website, giving the name and email address of the chair of the nominating committee.

The nominating committee will canvas the eligible membership and nominate a person or persons for each of the open offices to be filled at the immediately following November board meeting.

The nominating committee will create a Questionnaire for Candidates to elicit information about each candidate’s interest in the Association and his/her ideas about the Association’s future. Each candidate will use this Questionnaire to develop a Candidate’s Statement to be disseminated to the membership during the voting period.

Nominations will open on September 10 and close on September 25. The nominations committee chair will give notice of the opening and closing of nominations by the Association’s membership email and the Association’s website. Each person wishing to run for an office shall submit his/her name to the nomination committee chair, along with a Candidate’s Statement. Following the closing of nominations, the nominations committee chair will send the President the slate of candidates.

Voting for the slate of candidates shall occur only by an on-line survey program designated by the Board.

No later than 5 pm on October 1 of each year, the President or an officer designated by the President, will send notice to the general membership by the Association’s member email only that: 1) voting is open; 2) voting will close at 5 pm on October 15; 3) provides a slate of candidates; 4) publishes the Candidates’ Statements, and 5) includes a link to the



*NMA’s general annual membership fee is now \$25, one rate for both individuals and families. Students are \$15. Membership fees get you in free to the big event of the year, our Wild Mushroom Show, as well as member meetings and forays six times a year. Photo by Zachary Brown*

**Timeline for board nominations  
and officer election**

- By May Board Meeting: Nominations committee forms
- May 15: Nomination committee chair sends contact information to membership with request for nominations
- Sept 10–2: Nominations accepted
- Oct. 1, 5 p.m.: Voting opens
- Oct. 15, 5 p.m.: Voting closes
- Oct. 20, 5 p.m.: Election results announced to membership
- At Nov. Board Meeting: New officers installed

online survey program for voting.

If there are no contested positions, the current President will announce the names on the slate and ask the general membership for approval. A simple majority of those voting will be sufficient to accept the slate.

By noon on October 15, the President, or an officer designated by the President, will send notice to the general membership by the Association’s member email only that voting will close at 5 pm on September 15.

By 5 pm on October 20, the Present will send notice by the Association’s member email only of the results of the election.

Any serious issues concerning irregularities with the election that are brought to the attention of the Board will be discussed, noted, and dealt with at future Board meetings.

The seating of new officers shall occur at the November Board meeting immediately following the election.

**Comment: This by-law establishes an electronic means of conducting the nomination and election of NMA officers.** The Board developed this method to allow voting for officers for a longer period of time, rather than just the evening of the Survivors Banquet.

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ARTICLE VI: SECTION 2:

**Term of Office**

Because of the changes to the nomination and election of officers in ARTICLE VIII of the By-Laws of the Association, the terms of those Association officers now seated shall be extended until the November 2018 Board Meeting, at which time those officers elected in the 2018 election are seated. All officers elected in 2017 and holding their respective positions at the time of the 2018 election shall be eligible for re-election.

This by-law shall be operative only until such time as Association officers are seated at the November 2018 Board Meeting. At the time of the seating of the 2018 Association officers, this article and ARTICLE VII: Officers and Their Duties, SECTION 1: Definition of Officers shall again become effective, and each officer shall serve for a term of one (1) year.

**Comment: This temporary by-law allows NMA time to enact the new voting procedure** and allow those officers now serving to remain in office until the new officers for 2018 are seated.



Artwork by Sue Blethen

# Tribute to Gary Lincoff

*Reprinted from the Puget Sound Mycological Society's Sporeprints, April 2018*

It with great sadness that we announce the death of mycological great Gary Lincoff on Friday, March 16, 2018. As aptly summarized by Susan Goldhor of the Boston Mycological Club:



*Gary Lincoff, 2011. Photo by Alan Zale for The New York Times*

“He was 76 years old, with the curiosity and energy of a much much younger person—say, about 11—but with a lot more knowledge and wisdom....Gary was interested in everything ...

And he could make everything interesting. I recently announced publicly that if Gary gave a talk about blackboard erasers, I'd go, and I meant it....It's an understatement to say Gary will be greatly missed.”

Lincoff was the author and editor of several books and articles on mushrooms, including the iconic *Audubon Society Field Guide to North American Mushrooms*. He taught courses on mushroom identification at the New York Botanical Garden, led mushroom study trips and forays around the world, visiting every continent except Antarctica, and was a featured “myco-visionary” in the award-winning documentary “Know Your Mushrooms.”

His most recent book was *The Complete Mushroom Hunter*.

Last year, he received the Gordon and Tina Wasson Award “for outstanding contributions to the field of mycology and efforts in educating the public about fungi” by the Mycological Society of America.

Our condolences to his wife, Irene Liberman, and their son, Noah.

## Dreamtime Questions

Sometimes mycelia must sleep...  
Right?

I mean, animals sleep; even dolphins do for 15 minutes at a time.  
And plants “sleep,” and switch from storing sugared sunlight  
to burning it when the earth hides the sun  
creating a huge shadow we name “night.”

But what about mushrooms?  
Sometimes they literally come up  
in the yard over night.  
Not much need of sunlight  
living within the soil  
or inside the woody skeletons of dead trees.  
Do they work 24/7 ??  
and put human workaholics to shame?  
What advantage would they gain by sleeping?  
Time to dream?



Photo by Erin Moore

Robots may or may not dream of electric sheep.  
But if the immense invisible network of forest fungal mycelia functioned  
like brains,  
thinking slow thoughts through the years,  
would they dream when when cooler weather arrives  
and winter is getting close?  
or perhaps at winter's end, when spring is near?

—Mark D. Johnson



## Send us your mystery mushroom

Do you have a mystery mushroom to submit to the newsletter? See if you can stump others in our remarkable membership! Deadline is August 11.

### Demystified

Last issue's mystery mushroom is (was) a much-munched *Russula xerampelina*, with banana slug.  
Photo by Erin Moore.