Summer 2025

Fungi Kingdom News

The newsletter of the Pioneer Valley Mycological Association

Lactarius volemus spotted at Cadwell Memorial Forest in July, before things got even drier.

Jonathan Kranz points out a particularly interesting Russula to members at Cadwell Forest walk in Pelham.

In this issue...

Pioneer Valley Mycological Association

OUR MISSION STATEMENT

The Pioneer Valley Mycological Association is dedicated to enhancing the public's knowledge and appreciation of the fungal kingdom by providing ongoing educational programming in the form of guided mushroom walks, lectures, newsletters, information on multi-day regional and national forays, and citizen science projects. Because fungi are integral components of complex ecosystems, we are committed to advocating for responsible and sustainable study and collection methods. We focus on, but are not limited to, the three counties of the Pioneer Valley in western Massachusetts (Franklin, Hampshire and Hampden).

PVMA is a member of the Northeast Mycological Federation (www.nemf.org) and the North American Mycological Association (www.namyco.org).

www.PVMAmyco.org

Also visit Dianna Smith's educational site fungikingdom.net for articles, fungi photos, and more.

Submissions Welcome!

This is your newsletter; we'd love to have you contribute to it! Art, prose, photos, drawing, recipes, scientific observations– send them all to:

jessicabensonevans@gmail.com or **jonkranz@kranzcom.com**

From the President

Despite the rainy spring, it has proven to be a dry summer so far. Many of us have lamented the increasingly parched woods and forests on our walks, while still enjoying both the camaraderie of getting together and the mushroom treasures we have been spotting. Even though the fungi have been sparse, we've spotted a number of interesting species this summer so far!

New members and returnees have enjoyed a number of great walks, including some new locations. There are still more walks to come this season, and we all continue to hope for rain.

Our next scheduled walk is Saturday, September 6th in Westhampton with walk leader Marty Klein. Then, we'll take a few weekends off from scheduled walks as many of us will be attending regional forays (NAMA and then NEMF). For details on the NEMF foray, see page 10. Tickets are still on sale through this weekend!

Thanks so much for your optimism, your joy, and your continued support of PVMA. See you in the woods!

~~~~ Jess

©Jess Evans

Catharellus appalachiensis, spotted at William Cullen Bryant Homestead in Cummington.
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PVMA's First Walk of the Season

Karen Hidalgo

Our first walk of the season was on May 17th. We met at the Marian Street parking area of Fitzgerald Lake in Northampton, to position ourselves as closely as possible to the area of the conservation area that experienced a brush fire last November. Peter Russell organized the walk with fungi expert Lawrence Millman. We all wondered what we might find in the blackened area where leaves and brush had burned, but the overwhelming majority of trees were intact.

As most of you know, it can be a challenge for fungi loving walkers to arrive at any particular destination except under conditions of extreme drought. We had been experiencing an early yet cool and wet spring. There weren't many mushrooms yet, but there were enough to slow down the group and jeopardize our goal of reaching the burned area, between a half and three quarters of a mile from the parking area. We naturally and without prior discussion divided into two groups - some of us putting on our mushroom blinders as best we could, and going ahead to our destination and some behind finding and looking at every fungus great and small.

I led the front group because I know the area although not as well as Peter. We vowed to keep moving but I will admit to stopping a few times. I can't help myself. We were greeted as soon as we entered the burned area by Witch's Hats aka Blackening Waxcaps, Hygrocybe conica, not that I could identify it that specifically at the time - Peter told us later. I knew they were waxcaps! The small group of us wandered around the small hillside, seeing what we could see. I scrambled up a little embankment and found myself too close for comfort to a black bear. I raced back down, the group regathered, and we returned to the trail.

Since I knew the area and the trail, I continued to lead the group and so I was most fortunate to first notice the tiny little ascomycete fungi growing just off the path in one of the areas that had burned the hottest in the fire. I had no idea what they were but iNaturalist generated names that related to fire! Stalked *Bonfire Cup - Geopyxis carbonaria and Charcoal Eyelash - Anthracobia melanoma in the Pyronemataceae family. There were tons of them! I texted photos to Mike in the group behind to hurry them along so they wouldn't miss out! I cannot explain why it is so exciting to find fire-related fungi after a fire, but it just is.*

I have observed these (so far unchanging) fungi over the last three weeks now, as of this writing in June of 2025, and I have been asking myself how they got there. Were the spores waiting there for tens or hundreds of years? Do the spores circulate widely in the air or on people's shoes and animals' feet and fur? I posed this question on facebook and mycologist Bill Yule responded with questions of his own: Do the spores have features that indicate a long shelf life in the soil? Are the spores thick walled? Dark with melanins? Are they ornamented? Do they form sclerotia? Are they long distance travelers? Is it possible they live as dormant endophytes in the roots/sapwood of forest trees? There is so much to learn, and I find myself so very short on time.

Update August 4th:

I have continued to visit the burned area and observe the fungi there as well as plants, insects and animals. When we visited the burned area with the club, we observed some LBMs or "little brown mushrooms." We are usually not able to identify these. I wondered if there was a chance they were pyrophilous fungi, but by no means assumed they were since I expected many of the regular, ordinary fungi to keep popping up after the fire - and they have! Lots of Russulas, some Amanitas, some Lactifluus, some Stereum. Most of the time, iNaturalist was as hesitant as I am to identify the LBMs. But once or twice, for a second, it thought some of those LBMs might be bonfire scalycaps. That seemed plausible so I went ahead, looked at some photos, went on a limb and labeled them as such in iNaturalist. A bit of time passed. Then someone verified that identification. I thanked her for the ID and looked her up on iNaturalist. Her name is Monika Fischer and she is an associate professor at the University of BC Vancouver. She specializes in the ecology and genetics of fire adapted fungi. She went on to identify some more of the LBMs, and to confirm iNaturalists IDs of the other fire related mushrooms.

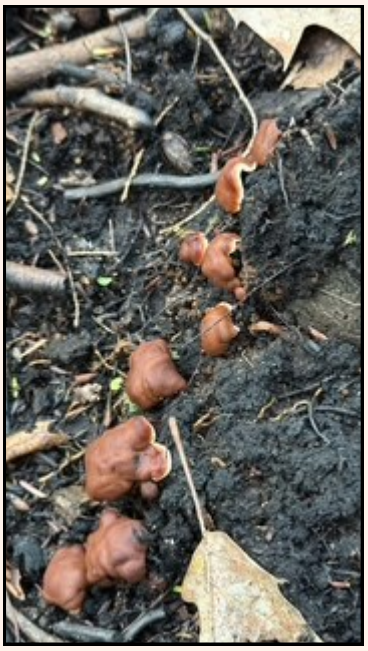
I have labeled a fungi as pyrophilous if the iNaturals group Pyrophilous Fungi of the World has labeled it as such, plus Witch's Hat which Peter Russell noted comes up in great numbers after a fire. Some of the pyrophilous fungi found and identified to date at Fitzgerald Lake to my knowledge are on the following pages.

Pyrophilous Fungi of Fitzgerald Lake

Anthracobia melanoma, the Charcoal Eyelash cup.

Geopyxis carbonara, the Stalked Bonfire cup.

Hygrocybe conica, the Witch's Hat



Rhizina undulata, the Doughnut Fungus

Pholiota cf. highlandensis

Geoscypha violacea, the Violet Fairy Cup.

All photos by Karen Hidalgo.

Pyrophilous Fungi of Fitzgerald Lake

Pyronema omphalodes.

Hygrocybe conica.

Fungi in the News

Do Fungi Influence our Brains? From BBC.com

How Plants and Fungi Trade Resources From NPR

Mycelium and Cellulose Packing Boxes From Yahoo News

Cooking With Mushrooms

First Encounter: Getting to Know You

Anna Seitz

One mushroom at a time…. Craterellus fallax

Many recipes for wild mushrooms suggest putting multiple varieties into the dish. I cannot imagine myself doing that. When I cook vegetables the idea of cooking cauliflower, broccoli, cabbage, Kale and collard green all in one dish does not make sense to me. Even though they are all Cole crops, each one of them is different. The same applies to mushrooms.

When I cook mushrooms, I like to savor each mushroom variety individually. A single type of mushroom in a single dish.

Most write-ups about mushrooms describe how they taste. This reminds me of snakes being described as tasting like chicken. Then one day a friend appeared at my door with a rattle snake. (It was either the snake or him, but that is another story.) I cooked it, and it tasted wonderful – like snake, not chicken. To comprehend the taste of a mushroom the best approach is by experience.

Consider the Black trumpet

I have only encountered a few black trumpets in the woods. However, I have found plenty online in the dried state, and they rehydrate very nicely. They also stay tender after rehydrating. Its striking and intense flavor lends itself to being the star of the show with little or no enhancements. However, be aware that too many black trumpets can make a dish bitter. Black trumpets need to be cooked for at least 10 minutes. It will stain other foods black. It can be eaten raw in small amounts, but why risk it.

Here are different ways to prepare it.

Black Trumpet Vodka – Here, it is the lone star. Take a dozen and soak it in a bottle of vodka for a few weeks. It is that simple! The result is a liquid with a lovely brown hue like cognac or light rum.

Black Trumpet sauté in oil/butter. Cook, caramelize if you have the time and patience, sliced shallots or onions with a handful of black trumpets, and serve it as a topping on leek & potato soup, steak. Scallops, fish….

Black Trumpet Cream Sauce. To the above sauté, add cream to make a cream sauce. This is great with pasta, or anything else that you want to pair it with.

For something sweet:

Candied Black trumpets and **black trumpet jam.** https://foragerchef.com/candied-black-trumpets/

It is also good to convert it into purees, incorporate it into butter or powder it, for adding flavor to many dishes.

Black Trumpet with shallots and bacon on fried eggs

2 slices of bacon
4 shallots, chopped
3 g black trumpet mushroom (dried)
½ tsp lemon juice, ¼ tsp light soy sauce
1 tsp butter.
2 eggs

1. Soak the dried black trumpets in a small amount of hot water. When the mushroom is rehydrated slice them into small pieces.
2. Cook the bacon over medium heat till crisp. Remove the bacon. Reserve some of the bacon fat to fry the eggs.
3. Add the mushroom to the bacon fat in the pan. Make sure the mushroom is coated with the fat and cook them over medium low heat for 4-5 minutes. Add the shallots and cook till the shallots acquire a touch of brown.
4. Add the mushroom soaking liquid, the lemon juice and soy sauce to the mushroom/shallot. Simmer, till most of the liquid is reduced. Add 1 tsp of butter and continue to simmer till an emulsion form and the sauce thickens. Reserve.
5. Fry the eggs till the edges of the whites are crispy and the yolks are still runny. Transfer to a plate. Cover the eggs with the shallot- Black trumpet sauce. Top with the bacon.

©Anna Seitz

Summer Finds

© Mike Ostrowski

Tiny pins of *Xeromphalina campanella*.

© Karen Hidalgo

Helvella Macropus or similar.

© Karen Hidalgo

Fistulina hepatica, the Beefsteak fungus

Summer Finds

Peter Russell

Lanmoa pseudosensibilis

© Peter Russell

Retiboletus griseus

© Jess Evans

Cantharellus cinnabarinus– Cinnabar chanterelles

Bill Yule Explores Our "Rotten" Forest Ecology

Jonathan Kranz

If you've been on forays with the PVMA, BMC, or COMA, you've probably met – and learned a great deal from – Connecticut resident and lifelong naturalist educator, Bill Yule. Appreciated for both the depth of his knowledge and generosity of spirit, Bill recently shared his thoughts on the relationship between decomposition and fungal evolution.

Bill Yule cannot recall a time when he was not eager to talk about nature. "It's the one function I'm good at in the world," he jokes. After graduating college with a degree in botany, he found himself "qualified to be either a bartender or a construction worker," an excellent foundation for graduate school where he got teacher training. Bill taught grades 5 – 8, until frustration with public education inspired alternative paths; for twenty years, he has taught Environmental Education at the Connecticut River Museum.

Every winter, Bill constructs a new, naturalist program rooted in the most intriguing discoveries he's made in previous years. Fascinated by the evolution of co-adapted species in forest ecosystems, Bill wants to "take a step back from the pop-science narrative [e.g., "wood-wide-web"] to talk about fungal nutritional nodes," specifically, the evolutionary trend from saprotrophic lifestyles to ectomycorrhizal (EM) lifestyles.

Inspired by Dr. David Hibbett's investigations into the evolution of ectomycorrhizal fungi, Bill has taken a deep dive into the scientific literature regarding the relationship between contemporary fungal biochemistry and the organisms' evolutionary history. While the co-evolution of predatory/prey relationships seems easy enough to understand – prey evolve more effective defenses while predators evolve more powerful attacks – the movement from deriving nutrition from dead organic matter to sharing resources with living symbiotic partners seems less obvious.

"There's nothing new in the fundamental principles," Bill says. "What we now know that we didn't know previously is the chemistry of exoenzymes responsible for deconstructing biopolymers. We know a lot more about what the enzymes are, what the chemical pathways are, how the evolution of white rot to brown rot occurred, and now, how saprobes evolved into ectomycorrhizal fungi."

Many millions of years ago, plants evolved cellulose, hemicellulose and lignin, not just as structural improvements in the competition for light, but as defenses against fungal attack. In fact, Dr. Hibbett has espoused the theory that the "miracle" of the Carboniferous age – when organic matter failed to decay, leaving us with the fossil fuels we depend upon now – is at least partly attributable to what fungi may not have had at the time: "the enzymatic toolkit to dismantle lignin."

But how did fungi evolve beyond this toolkit to establish mutually beneficial symbiotic relationships with trees and other plants? In recent years, researchers with the MycoCosm genome project have completed 300 whole genome sequences of fungi (toward a goal of 1,000), using the evolution of gene families as a proxy for how fungi made the transition from saprotrophic to ectomycorrhizal lifestyles.

It turns out, Bill says, that "the answer is pretty simple: fungi have to lose genes that code for wood decay and gain a gene that codes for a small-molecular-weight protein enzyme that disables a plant's normal defense response to colonization." In other words, fungi trade many genes that decompose for a gene that connects.

Why would fungi go to this trouble? "Free sugar," says Bill. "Being an ectomycorrhizal fungus is easier than having to work for a living."

But it takes two to tango; how do the plants benefit? It might be obvious: easier access to water and nutrients in the soil. Yet, today, the science is anything but obvious. Regarding these symbiotic relationships, Bill asks, "How much exchange is benign, how much is accidental, and how much is truly reciprocal?"

Much remains unknown, but the possibilities are tantalizing. Consider fairy rings, a reasonable behavior for decomposers seeking new food. But why do some EM fungi, like the Cortinariaceae, form fairy rings? Because not all EM fungi lose their wood decay genes. "The Cortinariaceae can still switch over to wood decay – it tells us that they're probably a more recent EM-evolved lineage."

"I'm only interested in one thing: the evolution of co-adapted species in ecosystems," Bill says. Fortunately for the rest of us, Bill's "one thing" continues to yield many insights that advance our understanding of fungi, forests, and how they work together.

The Northeast Mycological Federation

Jess Evans

Did you know that our club is a member of a regional federation of mushroom clubs? Across the Northeast, clubs like ours have been getting together since 1976 for a regional foray celebrating all things fungi. The Northeast Mycological Federation comprises twenty-two clubs ranging from Northeastern Canada down to Pennsylvania.

NEMF's stated mission is "to stimulate interest in mycology by providing a forum where everyone can share their knowledge and experience through cooperative study of the funga of Northeastern North America for scientific and educational purposes." To do this, each club has trustees who attend bi-annual meetings to organize foray activities and keep clubs connected. In addition, host clubs spend the entire year preceding the annual foray meeting monthly or even biweekly to plan the event. Clubs take turns hosting the regional foray, and our club's turn in the rotation came last year as we helped to host the foray in Cape Cod.

This year, the foray will be held in Ithaca, NY. Details on registering for that foray are on the next page; only a few days left to get registered if you were thinking of attending!

Attending a regional foray is a great way to immerse yourself in mycological camaraderie, learning, and adventure. One of the reasons NEMF was formed was to bring mycophiles together while sharing the responsibilities of putting together such a large event. Imagine the fun of one of our PVMA walks, amplified over 3 days with opportunities to attend lectures and workshops, try out new trails, and meet folks from across the Northeast who share your passion for fungi.

Several PVMA members including me will be attending the foray in Ithaca this year, September 18-21. Hope to see you there!

PVMA friend Bill Yule will be offering a lecture and a workshop at this year's foray.

Foray attendees may also purchase tickets to go on a Fungarium Tour to Cornell University.

The Northeast Mycological Federation's new logo, created by artist Bill Wurtzel. NEMF held a logo contest this summer, as the previous logo had not been updated in more than 15 years. You can read more about Bill and his art here: [NEMF Logo Contest Winner | Nemf]

NEMF Regional Foray: Ticket sales end soon!

Greetings members of the North East Mycological Federation community,

On **Sept 18-21** the **2025 Samuel Ristich Foray** will take place in the Finger Lakes region of Ithaca, New York.

We're down to our **final tickets** with **less than one week left to register**. If you've been thinking about going, now's the time to act!

The foray will be held at **Camp Comstock**, a scenic Girl Scout camp on the lake, surrounded by lush forests. Attendees can stay in bunkhouses, pitch a tent, or take advantage of our special motel block at the Quality Inn nearby.

There is an exciting lineup of speakers and numerous workshop options, as well as a number of forays into the diverse forests of the area. Foray details, schedule and information can be found on the NEMF website.

2025 Foray | Nemf

We are also looking for donations to fund the NEMF sequencing project. The goal going forward is to have every species collected at NEMF be sequenced! This is no meager task, but every donation, no matter how small, goes a long way.

Buy NEMF DNA Sequencing Project a Coffee

Sincerely,

Noah Siegel

NEMF President

Gallery of Optimists

Despite increasingly dry conditions this summer, optimistic members have continued to show up for walks. We are looking forward to seeing you soon– fingers crossed for fall rain!