



Fall 2021

Fungi Kingdom News

The newsletter of the Pioneer Valley Mycological Association

© Jess Benson Evans



PVMA members went home happy after finding this massive *Laetiporus sulfureus* during a club walk in Belchertown earlier this summer. There was plenty for everyone!

© Jess Benson Evans



These beautiful *Craterellus tubaeformis* were found at the Morse Hill Outdoor Education Center in Shutesbury, where our president Jess works as a teacher. The woods there have provided a treasure trove of interesting fungi this season, and our club visited there several times, including once with visiting mycologist Christian Schwarz. See the article by Jess starting on page 12.

In this issue ...

3 White Mountain Foray

6 *Humidicutis* Waxcaps

COMA Foray:

9 Emphasis on Polypores

10 A Rare Find

10 Scholarship Thank You

12 Fungi of Morse Hill

15 Book Review





Pioneer Valley Mycological Association

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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.namyc.org).

www.PVMAmyco.org

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

We Welcome Your Submissions!

This is your newsletter; we'd love to have you contribute to it!
Prose, verse, photos, drawings, recipes, scientific observations – send them all to:
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From the President...

What a wonderful season it has been! I think we've all experienced the same thing out in the field this summer and early fall: fungi as far as the eye can see. Beyond the "hauls" of edibles, club members found numerous interesting and unique fungi in quantities not seen in many years. Some of my favorite finds this year included large groupings of colorful *Lactarius* species, innumerable *Craterellus fallax*, and an entire birch tree's-worth of *Pholiota* alongside my backwoods stream.



Beyond the uncountable mushrooms, this season also brought an influx of new club members. This year, we have almost twice as many club members as we've ever had before. Welcome to all! We are so glad you've joined us. This rapid growth led to some very well-attended walks, particularly at the end of the season, and we really appreciate your patience with the larger group sizes. The more, the merrier!

I am looking forward to spending another winter teaching my elementary students outside and keeping an eye out for winter fungi. In addition, the PVMA board will be planning for educational opportunities beginning in the spring. I am feeling so optimistic about 2022!

- Jessica

2021 was a fantastic season for edibles!

The rains this summer rewarded us with plentiful fungi all summer long, but those who forage for edibles were exceptionally lucky this year! These are just a few of the common edibles that were abundant this season.

© Dianna Smith



Yellow chanterelle, *Cantharellus* sp.

© Sue Lancelle



Black trumpet, *Craterellus fallax*

© Sue Lancelle



Chicken of the woods, *Laetiporus cincinnatus*

© Sue Lancelle



Hen of the woods, *Grifola frondosa*

PVMA members report on: PVMA White Mountain Foray 2021



© Jess Benson Evans

By Dianna Smith

I have been having a small multi-day foray at my family vacation home in the NH White Mountains on an annual basis over the past several years – typically around the last week of August to accommodate members who teach during the school year. This has always been a terrific learning experience for us all, relaxing, and lots of laughs. Last year because of COVID, we were on lockdown. I wasn't even going to local parks or woodland trails. I didn't think I could have this event this year, but at the last minute, I decided to see if some of the PVMA members were interested and able to join me. I missed being with myco friends and spending time in forests. I decided to

limit participants to seven vaccinated members, so everyone would have a bed and there would be enough room for everyone to sit down together at our dinner table. Mycologist Roz Lowen and Dr. Ginny Jeffries live nearby and joined us for most of our daily walks and for dinner every night. Everyone was committed to doing research, to bringing food for meals, to cooking and



The group out collecting on a beautiful day.



Pondering the day's finds

finally to cleaning up before we left for home in MA Saturday afternoon. Anna and Rudy Seitz organized the menus and with help from our sous chefs they did much of the cooking. Most meals included foraged edible



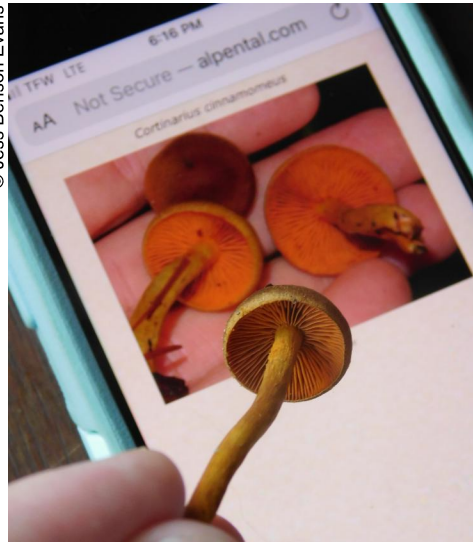
Enjoying some culinary delights at the end of the day mushrooms. We found quite a hefty load of chanterelles shortly after arriving in the woods around the house. Desserts were also on the menu every night thanks to Mary Obrzut, who baked us several yummy cakes and other sweet treats.

Every morning we met at a particular trail to search for and collect fungi. After two or three hours we returned to the house, laid out our finds by genus, and began to write down the identity of all we knew and researched our many field guides for information on mushrooms unknown to us. We found different fungi at each location. At the end of five days, we had identified about 350 different species of fungi and had another 25-30 to continue to try to figure out. Considering that it wasn't a wet year for the area (unlike Western MA), that was a spectacular achievement.

I definitely want to offer this opportunity to members again next year. However, to keep it from becoming overwhelming, I will offer one week in Late August for teachers and professors, and another around mid-September for motivated members who are retired or can take five days off from work given adequate notice to employers. If you think you would like to join me for a free five day intensive learning foray in NH next September, let me know.

By Jess Benson Evans

On day one of this year's White Mountain Foray, we journeyed to a trail I remembered from the last time I attended (2018), alongside the Ammonoosuc River. As with my previous visit, I was immediately struck by the beauty of the damp coniferous woods and incredible fungal diversity. We walked for at least three hours and discovered many, many species of *Cortinarius* (of which we identified fewer than half) alongside the ever-present *Cortinarius armillatus*. There were many



Cortinarius cinnamomeus

Hydnellums, including the gorgeous *Hydnellum aurantiacum*. We also spotted numerous *Hygrocybe* species, *Russulas*, members of *Lactarius*, *Leccinum*, and plentiful *Chalciporus*.



Hydnellum aurantiacum



Chalciporus sp. with toad

One beautiful unknown species invited deep investigation. I ducked off trail, through a maze of branches and logs, headed towards a patch of moss

some ten feet from the trail but practically unreachable. There, I'd seen a flash of yellow. As I got close, I found a well-eaten yellow cap protruding from the moss, with very little stem to be seen. Another *Russula*? I reached down into the thick sphagnum moss to discover a stem measuring almost 5 inches long. This was no *Russula*! Nearby, I spotted another younger, much less eaten specimen. I collected both and brought them back to Dianna's for further study.

Upon returning to the house, I noted the characteristics of my specimens. Both had a long, white stipe with some yellow tones, yellow caps with faint yellow fibrils at the center, and white attached gills (with a notch.) The young specimen had a long stem relative to its small cap. They were growing in mixed woods, with conifers (spruce) predominant in the area. Given all these clues, I tentatively identified my mystery species as *Tricholoma subluteum*. *Tricholoma* is a genus I'm

© Jess Benson Evans



Tricholoma subluteum

not very familiar with, but hope to study more in the coming months. When I returned home, I hoped to order a copy of *Tricholomas of North America: A Mushroom Field Guide* (Bessette, Bessette, Roody, and Trudell) only to find that it's out of print. Oh well! Fingers crossed for a lucky thrift store or yard sale find in the future. :)

By Mary Obrzut

I had an amazing time at Dianna's 2021 NH Foray. Every day we visited beautiful places to collect mushrooms. We brought them back to the house to study and identify.

One of my most exciting moments was finding a cordyceps. At first I thought it was another earth tongue, but with closer observation I could see this was different. I had watched Jessica carefully dig up cordyceps and show us the insect attached by cords. A

bit nervous, I dug around and below the one I found. I was disappointed I didn't get the insect attached, but I brought my find to the group. To my surprise this was a different cordyceps than the one we already collected, and we identified it as *Tolypocladium ophioglossoides*. I was told it's okay not to always get the insect, as it is not always directly below the cordyceps.

© Mary Obrzut



Tolypocladium ophioglossoides

Another great learning experience was using a microscope. Roz Lowen, an ascomycete specialist and NH resident who joins us on our foray, patiently showed me how to use her microscope.

The whole experience was so educational, and the wonderful meals, and fellowship are warm memories I cherish. Dianna is so generous for sharing her beautiful home and making this possible. Thank you!

By Brenda Clark

It is a pleasure and a privilege to join my fungi friends for a week of what I affectionately call, "mushroom camp," up north in the White Mountains of New Hampshire. To take a break from the busyness of farm and family to renew my soul in the depths of the forest

© Dianna Smith



Brenda and Anna, happy with the haul of chanterelles that day!

hunting for fungi is truly joyful. Usually on day two of the foray, you can hear its uncontrollable overflow as I shout “I am having soooo much fun!”

A favorite thing for me is the quietness of the specimen rooms. I bathe myself in the silence where noses are buried in books or tablets in search of the title of the specimen in hand. When my research trail leads to a dead end it is helpful to know a friend is close by to help guide or guess me in the right direction. Finally, the ID label is written and posted on the table, sometimes to remain and sometimes not, hahaha!

The fun is in the fellowship and I am forever grateful for the experience and knowledge gained. In 2021 we all even learned to airdrop our fungi photos to each other. I’m sure we were a sight to see sitting at the park picnic table laughing at ourselves trying to achieve this simple task. I know I will never forget it...

Thankful for the fond memories!

© Jess Benson Evans



One of many identified specimens on the collection table.

Shades of Orange and Yellow – *Humidicutis* Waxcaps

By Peter Russell

What a great season 2021 was for mushrooms in Laurel Park! I almost doubled my list of boletes, it seemed every oak tree hatched a hen of the woods, but most importantly I found several waxcaps and earthtongues in a little patch of partridgeberry.



Humidicutis marginata var. *marginata*, with distinctive bright orange gills, growing in a partridgeberry patch.

But this tale isn’t about all those new species; it’s about one old species which I’ve been confidently misidentifying for years, on forays and even in a previous [PVMA newsletter article on waxcaps!](#)

This tale is about my confusion between a once described variety of *Humidicutis marginata* called var. *concolor* and a separate species called *Humidicutis auratocephala*. The tale has an important moral: always smell your mushrooms!

But first some taxonomy: *Humidicutis* is a small genus of waxcaps that were previously placed in the *Hygrocybe* genus. There are thirty two entries in [Index Fungorum](#) although many of these are synonyms of current names. Most of them are found in Eastern Australia but there are three species that occur here in New England

Fungi in the *Humidicutis* genus have acutely conical caps which may be moist or viscid and crack radially somewhat as they expand. They tend to be very fragile, are usually brightly colored like the related *Hygrocybes* but have a different pigment chemistry which leads to subtle differences in shades of color.

In short, if you find a conical mushroom with a moist or viscid cap, waxy gills with a white spore print, it may be a *Humidicutis*, and if it is brightly colored it could very well be!

© Peter Russell

Some *Hygrocybes* such as witches hat (*Hygrocybe conica*) have superficially similar shaped caps. However, the pink tint to the orange cap of *Humidicutis marginata* is a good clue to differentiate it from such orange *Hygrocybes*.

The three *Humidicutis* species that have been found in our area are *H. auratocephala*, *H. pura* and *H.*



Hygrocybe conica, the blackening waxcap, has a conical cap superficially similar to *Humidicutis*, but the *Hygrocybes* have a different pigment chemistry.

marginata. The latter has three varieties that differ mainly in color: var. *marginata*, var. *olivacea*, and what has been called var. *concolor* (the latter is now only recognized as a synonym and not a variety).

H. pura has the typical *Humidicutis* conical cap with narrowly attached gills but it is pure white. Field guides say the stem bruises red though I have not noted that characteristic.



The pure white *Humidicutis pura*, found sporadically in our area.

(described as mikado orange, deep chrome to orange-chrome). This bright color persists at least on the gill edge as the fungus ages. The cap color is more variable, ranging from bright orange to dull yellow (deep chrome, cadmium yellow, zinc orange to orange), sometimes with an olive tint, and could be confused with other varieties but the gill color is quite distinctive. It is commonly found in our area.

H. marginata var. *olivacea* has a sharply conical, pointed cap and distinctive deep olive to brown-olive tones that gradually fade to orange from the edges. The gills are not bright orange like var. *marginata* but a duller ochraceous orange. The stipe is described as grape green to greenish yellow but most of the collections from our area have yellow stipes without the greenish tones. I've sequenced several collections of var. *olivacea* and they have a different barcode to var. *marginata*, so there is a genetic basis to the differences in color.



Humidicutis marginata var. *olivacea*



Humidicutis marginata var. *olivacea*, showing duller gill color than var. *marginata*.

H. marginata var. *marginata* (see the image on the previous page) is commonly known as the orange gilled waxcap because of its bright orange gills

A hurdle to matching a *Humidicutis* to the correct variety and species is a good understanding of their colors, but there are many different descriptions of

orange or yellow used in the reference books. For example: mars yellow, capucine yellow, primuline yellow, cadmium yellow, mustard yellow, pallid greenish yellow, mikado orange, ochraceous orange, zinc orange, deep chrome! All for just five combinations of species and variety!

I wonder why so many "obscure" color descriptions are used? These colors are from the original descriptions of the species, some of which date back to the 1870s. Perhaps the common day objects that are used to describe colors today (e.g., lemons or oranges) were not common in those days. For somebody like me who can just about recognize primary colors, these subtle shades make it really hard to separate the species, and this is especially true for the other two types of *Humidicutis*.

H. marginata var. *concolor* has been described as having a cap that is deep chrome, sometimes the disc orange, in age mars yellow (brilliant orange yellow) fading to near apricot yellow; gills capucine yellow to deep chrome and a stipe that is primuline yellow (clear bright yellow)

Auratocephala means golden-headed, and *H. auratocephala* is described as having a cap that is bright yellow fading to pale yellow (cadmium yellow, deep chrome, yellow ocher), gills that are capucine yellow to cadmium yellow and a stipe that is mustard yellow (pale bright yellow). It is described as having a mephitic (foul) odour and a disagreeable taste.

From the above two descriptions there is very little to differentiate what has been called *Humidicutis marginata* var. *concolor* from *H. auratocephala* on the basis of color. The only macroscopic difference that can be used is their smell. Most field guides give descriptions of var. *concolor* but few give a description of *H. auratocephala*. Where they do (e.g., on Dianna

Smith's [Fungi Kingdom website](#)), a pale orange *Humidicutis* is shown which is quite different in color to what has been reported as var. *concolor*.

For a long time I had been assuming the fairly common bright yellow *Humidicutis* fungi I had been collecting were *H. marginata* var. *concolor* because they matched the descriptions and photos of var. *concolor* in the field guides. I had never thought to smell any var. *concolor* or if had I did not register any noticeable odour.

Last season I sequenced a set of *Humidicutis* collections, including several of these that I had identified as *H. marginata* var. *concolor*, and I was very surprised when the results all matched entries in Genbank of *H. auratocephala*! Either the field guides were misleading or the sequences in Genbank were wrong! I quickly confirmed it was not the latter with Jean Lodge who is the waxcap authority!

So most of the collections I had been calling *H. marginata* var. *concolor* are indeed *H. auratocephala*. I am sure I am not the only one to have this problem, as it turns out that *H. marginata* var. *concolor* is no longer recognized as a variety in Index Fungorum, it is just a synonym linked to *H. marginata*.

There was one important point missing: In the past, I had never thought to smell any of these collections of yellow *Humidicutis*, and I was assuming they did not have a foul smell. So this season I've made a point of smelling them and sure enough, they all have the foul smell characteristic of *H. auratocephala*, not overpowering, but there nonetheless!

But one uncertainty remains: what are the pale orange *Humidicutis* that appears under *H. auratocephala* in some of the field guides? Are they just aberrant color forms of that species, or some other species entirely?



Junior Members Rock!!

We love our junior PVMA members, who often outshine adults when it comes to rooting around and finding fantastic fungi in the field. At left, Ramona proudly displays the *Pholiota* she found and identified during a club walk in Petersham. At right, Ella investigates a wet area at Morse Hill in Shutesbury while a *Ganoderma tsugae* looks on.



PVMA members report on: COMA Foray 2021

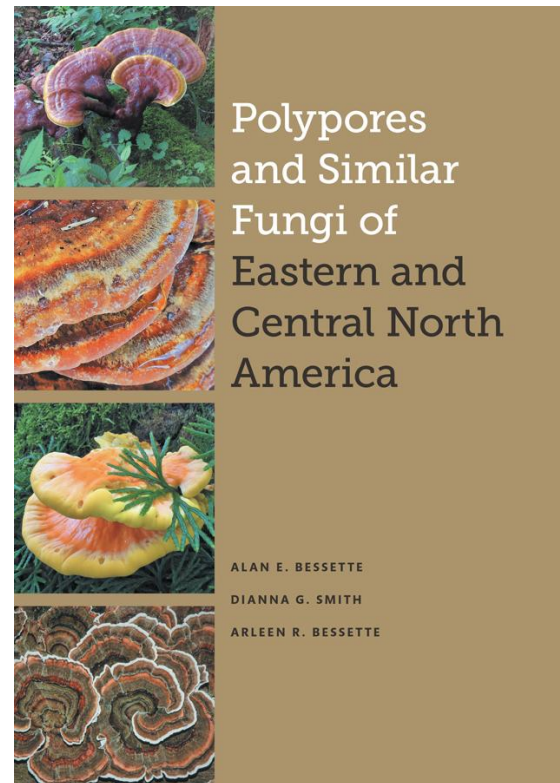
An Emphasis on Polypores

By Dianna Smith

The annual three-day COMA (Connecticut-Westchester Mycological Association) Clark Rogerson Foray held over Labor Day weekend in Hebron, CT, is the best (IMHO) in the Northeast for several unique reasons. First, it is small and more intimate than either the NEMF Foray – which hasn't met for a couple of years owing to Covid – or the NAMA Foray, which did meet in Colorado this summer, although no one from our club was represented this time due to concerns about traveling at the risk of contracting the Covid variant. The annual COMA Foray is typically limited to roughly 60 attendees. These are mycophiles from New Jersey, New York, Connecticut, Massachusetts, New Hampshire, Maine, Pennsylvania, Vermont, North Carolina and from as far away as California. It is typically a perfect mix of highly competent fungi identifiers, experienced foragers, and folks new to mycology.

This year, mornings and some afternoons were spent collecting fungi from a variety of local parks, bringing them back to our base, and working with each other to identify and record what was found. While fungi were especially plentiful this summer and autumn in Western MA due to rainfall patterns, it had been a bit drier in Eastern CT, and so not all our scheduled walks resulted in finding massive quantities of favorite edibles. However, the area produces a wide variety of amanitas, boletes, russulas and *Lactarius* and fortunately, key members of the Connecticut Valley Mycological Association, such as Terry Stoleson, Connie Borodenko, Beth Karwowski, and Bill Yule, are thoroughly familiar with the fungi of the region and extremely helpful. Our club contingent included PVMA Vice President Mary Obrzut, Membership Chairperson and Club Treasurer Michael Ostrowski, Anna and Rudy Seitz, finder of rare fungi Brenda Clark (see accompanying article), Roz Lowen, Ginny Jeffries, and me.

Joe Brandt has been serving as President of COMA since I departed from the club and New York about a decade ago. He is very good at organizing this event and especially the food. Our best meals consisted of contributions from all who attended. We also enjoyed a spectacular feast of numerous delectable dishes made with edible mushrooms. Evenings were spent



The polypore book is available for order (\$65) from the following sources: Amazon, Univ. of Texas Press (www.utexaspress.com) or by email: custserv@press.uchicago.edu

attending presentations delivered by guest mycologists. They included John Plischke, Bill Yule, Roz Lowen, Arleen and Alan Bessette and me. I was thrilled that Joe invited Alan to serve as chief mycologist for the third time in the past six years.

My presentation on polypores and their trees given at a COMA Foray several years ago was the inspiration behind Alan's decision for us (Alan and Arleen Bessette and me) to tackle producing a comprehensive book on this often-ignored group of fungi. In the interim, I was also studying and writing articles for the North American Mycological Association's peer-reviewed journal *Miclavainea* about the historical and contemporary use of polypores as medicine. Our new book, *Polypores and Similar Fungi of Eastern and Central North America*, incorporates several years of study from different aspects on these fungi. The book took us about three years to complete.

We had hoped the book would be available by the time of the foray, but it was held up on containers off the

California coast and was not available for purchase until the second or third week of October. We did, however, prepare a presentation for Saturday evening's foray program. I talked about polypores in general, their ecological functions, evolution, relationships with the life cycles of trees, insects, and seen and unseen critters in wood and in the soil, rot types, and more. Alan talked about the diverse variation in their spore-bearing structures, and Arleen assembled a mesmerizing slide show of our polypore photos accompanied by music. By the close of her part of the program everyone there felt inspired and motivated to tackle learning more about these remarkable beauties. In fact, while more ephemeral fungi have already gone undercover, annual and perennial polypores will be fruiting and expanding their range of activities over the winter. I urge you to get outside and get to know these matchless wonders of the natural world.

The publication is the first color illustrated book on North American polypores ever produced. It includes many new species, dichotomous keys, updated names based on DNA analysis, a comprehensive glossary, list of resources, and information on edibility and purported medical applications. At nearly 450 pages and three and a half pounds it is a field guide and reference work that is receiving acclaim and is recommended as an essential resource for the mycophile. Some of you received your copy of the book before the authors did! Amazon sold out immediately but has it back in stock now. Thinking the University of Texas Press never got my original order, I placed another with the University of Chicago Press, which was coordinating distribution. I was anxious to see how it came out, and to mail out 12 copies promised to contributors. I also wanted to have extras available for PVMA members who may want to buy the book. As it turned out, both orders eventually were confirmed, so now I have two extra boxes of hardcover books on hand. If anyone is interested in getting a copy for \$65 autographed by the authors, email me at diannaegsmith@comcast.net with a day and time you can pick it up at my home in Leeds.

A Rare and Exciting Find by PVMA Member Brenda Clark: *Wynnea sparassoides*

By Jess Benson Evans

At this year's COMA foray, while attending one of the scheduled walks at Devil's Hopyard State Park in East Haddam, club member Brenda Clark found and collected what turned out to be a "highlight of the foray," the rare ascomycete *Wynnea sparassoides*!

Ascomycetes are fungi that produce their microscopic

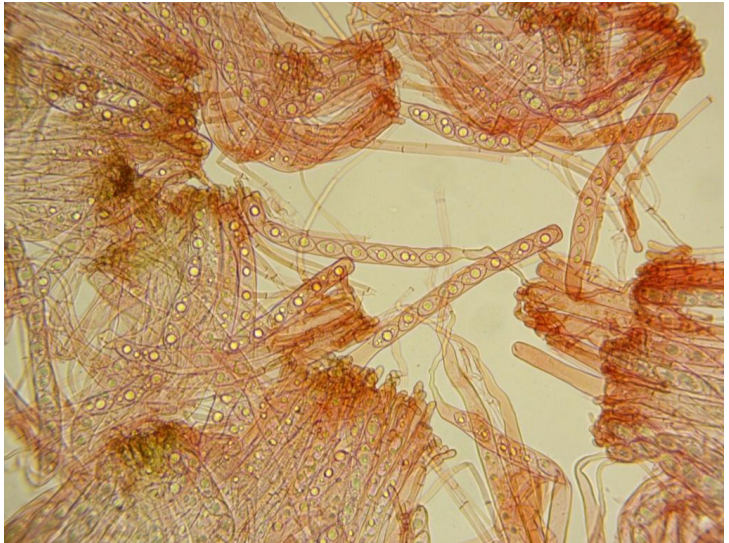
© Zaac Chaves



Brenda's specimen of *Wynnea sparassoides* in the field.

spores internally, in sac-like structures called asci. In contrast, basidiomycetes (such as mushrooms with caps and stems) produce their spores externally, in structures called basidia on the edge of the gills or lining the tubes (in the case of boletes, for example.) You can see the spores of *W. sparassoides*, within the asci, in the figure below. The microscopy on Brenda's specimen was done by Joe Lenoco and shared with Roz Lowen, who sent a portion of the find to the University of Florida for DNA sequencing and herbarium storage.

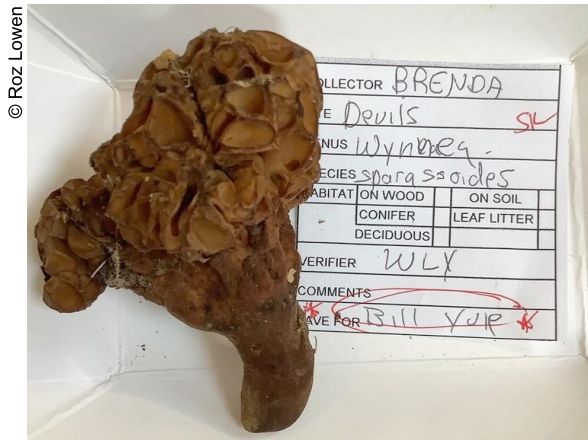
© Roz Lowen



Asci and ascospores of *Wynnea sparassoides*

W. sparassoides is an ascomycete that is related to cup fungi and is in the order Pezizales. This order contains families perhaps more familiar to mycophiles; Morchellaceae (morels), Pezizaceae (cup fungi such as *Peziza*) and Tuberaceae (truffles). *W. sparassoides* in

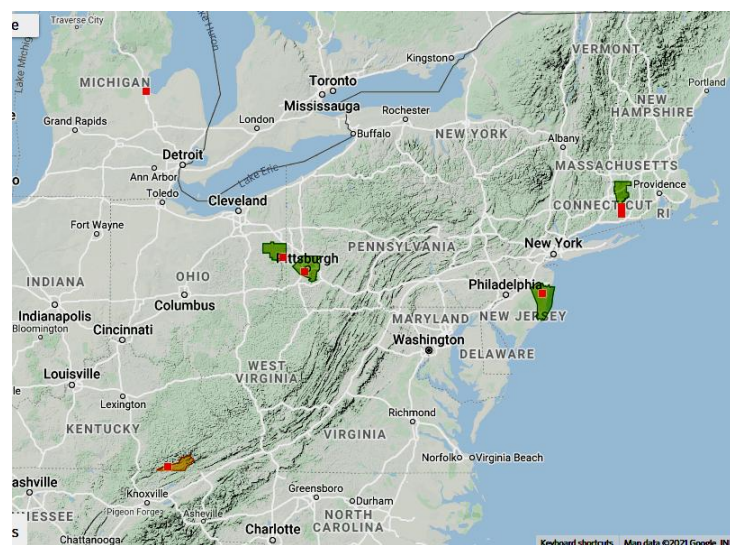
some ways resembles a very small *Sparassis* species (or cauliflower fungus) on a short stalk. When young, just the top of the fungus is visible above the surface of the soil. As it matures, the fruiting body appears as seen in the accompanying photos, which were taken just after Brenda collected the specimen. It has a tapering pseudorhiza, or root-like structure made from fungal mycelia, that connects to an underground sclerotium, which is a resting asexual reproductive structure made of hard-packed fungal hyphae.



Brenda's *Wynnea sparassoides* on the collection table at the COMA foray

Brenda noted that she found this specimen fairly deep off-trail, in an area where the recent heavy rains had washed away much of the humus of the forest floor. She was following a "trail" of washed away leaves and debris when she spotted the *Wynnea sparassoides*. She reports that she's sure she never would have seen it if the heavy rains hadn't washed away all of the surrounding leafy matter.

This find is especially notable in that *W. sparassoides* holds a place on the Global Fungal Red List, an initiative that evaluates fungal species for special protections due to habitat loss or other ecological



The iNaturalist species occurrence map for *Wynnea sparassoides*. Only a few collections have been reported.

factors. In this case, the fungus is so rarely found or encountered that further research is needed to determine how best to protect it. The type specimen was discovered in 1972 in Darien, CT by Mrs. Mary Plant, and was given to first Dr. Sam Ristich and then Dr. Donald Pfister at the Farlow Herbarium (Harvard University). There have been a handful of observations since then, but it remains a very rarely seen species. The species map from iNaturalist shows just how rare it is. At this point, mycologists are not certain which specific requirements or tree species *W. sparassoides* needs to survive.

There are just six observations of this species on iNaturalist and Mushroom Observer, with five more observations on iNaturalist all duplicating the find at the COMA foray! Folks were really, really excited about this collection. From my perspective, this rare find illustrates the power of the citizen mycologist: Brenda's sharp eye and experience spotting the unusual and not commonly collected specimens led to a major contribution to science. In the age of DNA sequencing, a fresh specimen is invaluable. Way to go, Brenda!

Source: *Wynnea sparassoides*. Retrieved 29 October 2021, from http://iucn.ekoo.se/iucn/species_view/325578/

And a thanks for the support ...

By Mary Obrzut

I would like to thank the Pioneer Valley Mycological Association for granting me a scholarship to attend the 2021 COMA Foray in Connecticut. It was a wonderful educational weekend. I foraged each day with expert mycologists who were always willing to share their knowledge. Every afternoon a table talk was held and a mycological expert would review the new finds of that day. Another highlight for me was the scheduled presentations each night. I learned a lot at the foray, enjoyed warm fellowship and ate delicious food. The COMA foray is an easily accessible, friendly gathering. I recommend that anyone who is interested in trying a multi-day foray start with this one! And remember that PVMA has scholarships available for current members to help defray the cost of attending forays. See the scholarship application [here](#).



Collection tables at the COMA foray

Fungi of Morse Hill

By Jess Benson Evans

If you follow our club's Facebook page, you've likely seen a series of posts over the last year from me, all captioned "Fungi of Morse Hill, Shutesbury." I have the incredible privilege of working outdoors year-round, as both an outdoor elementary educator and a camp director at Morse Hill Outdoor Education Center in Shutesbury. These roles have allowed me to see a beautiful array of fungi through the seasons as well as given us the opportunity as a club to visit Morse Hill for forays this past summer.

As you all have noticed, this summer and early fall was incredible for fungi! The perfect combination of frequent rains and moderate temperatures led to a literal explosion of fungi throughout the season. It was hard to walk anywhere in the woods without stepping on mushrooms, and Morse Hill was no exception. I spent my summer teaching eager campers about mushrooms while quickly taking photographs of the gorgeous finds.

Morse Hill covers 85 acres of mostly forested woodlands, with hemlocks and eastern white pines interspersed with birch, beech, maple, and oak. Many

Hill. As I become more familiar with Morse Hill, I have been able to explore many of these places, mostly off-trail, and bring my students and campers to investigate as well. The photos I share with this article represent just a very small percentage of what I've been able to identify over the past 15 months.

In late September, we welcomed West Coast mycologist Christian Schwarz to Morse Hill to host a walk for our club. As we gathered along the driveway and members arrived, fungi surrounded us. We found five different species of boletes just in the driveway



Visiting West Coast mycologist Christian Schwarz discusses a variety of boletes.



Diverse array of fungi collected by students at Morse Hill Outdoor Education Center.

seasonal streams flow from the top of Morse Hill (elevation ~1200') down to Red Brook, creating many marshy and mossy places hidden deep within Morse

area alone; *Strobilomyces strobilaceus*, *Suillus weaverae*, *Baorangia bicolor*, *Suillus spraguei*, and *Suillus americanus*. We paused as Christian discussed the differences in pore layer, staining, and stature of each of the specimens. Just a few feet away, club member Peter Russell discovered a large patch of waxy caps, *Hygrocybe squamulosa*, clustered in the ferns by Morse Hill's racks of canoes.

I led Christian and the group deep into what I call Morse Hill's most magical place; an off-the-trail area carpeted in deep humus and moss, with sphagnum moss patches interspersed with pools of water. It's an area rarely visited by campers or staff, making it perfect for finding undisturbed fungi. There, we found a large patch of *Cortinarius* specimens in section *Orellani*, or species that contain the potentially deadly toxin orellanine. These were later identified by

Christian as *Cortinarius limoneus*. Deeper into the moss, we discovered several beautiful *Pulveroboletus ravenelii* as well as two gorgeous *Lactarius* species (*Lactarius subpurpureus* and *Lactarius deterrimus*.)



The beautiful *Lactarius subpurpureus*

As the walk ended, I think we were all reluctant to leave the deep moss and head back to our cars. I feel that way often leaving the woods of Morse Hill, and it was doubly nice to have Christian along as our walk leader for the day. In addition, knowledgeable club members made it possible for folks to split up a bit – thanks to all who joined us or helped out!



Club member Peter Russell sharing his knowledge.

I've compiled a species list from our three club walks at Morse Hill, which again only represent a small percentage of what has fruited on those grounds. (Author's confession: there are likely dozens of *Russula* species represented at Morse Hill, but I don't have the knowledge or expertise yet to ID them confidently!) I am beyond excited to follow the land and fungi of Morse Hill for another year, to see trends develop from year to year and get a better sense of

how the fungi and forest work together on the land I am so deeply connected to. In the coming years, I hope to create a comprehensive survey of Morse Hill, and I look forward to hosting more club walks there next season!

Ascomycetes:

Aleuria aurantia, *Helvella macropus*, *Microglossum rufum*, *Tatrea macrospora*, *Hypomyces chrysospermus*, *Hypomyces luteovirens*, *Lophodermium pinastri*, *Topocladium ophioglossoides*, *Trichoglossum hirsutum*



Aleuria aurantia

Gilled fungi (pale spores):

Amanita brunnescens, *Amanita citrina*, *Amanita crenulata*, *Amanita flavoconia*, *Amanita frostiana*, *Amanita fulva*, *Amanita rubescens*, *Armillaria gemina*, *Armillaria mellea*, *Baeospora myosura*, *Collybia cirrhata*, *Collybia tuberosa*, *Cuphophyllus virgineus*, *Cyptotrama asprata*, *Entoloma* sp., *Entoloma salmoneum*, *Entoloma strictius*, *Gliophorus irrigatus*, *Gliophorus laetus*, *Glioxanthomyces nitidus*, *Gymnopus dryophilus*, *Humidicutis marginata*, *Hygrocybe auratocephala*, *Hygrocybe squamulosa*, *Hymenopellis furfuracea*, *Laccaria* sp., *Laccaria laccata*, *Lactarius* sp., *Lactarius deterrimus*, *Lactarius*



Lactarius deterrimus

gerardii, *Lactarius griseus*, *Lactarius hibbardiae*, *Lactarius lignyotus*, *Lactarius subpurpureus*, *Lactifluus deceptivus*, *Lactifluus hygrophoroides*, *Mycena* sp., *Mycena galericulata*, *Russula* sp., *Russula compacta*, *Russula dissimulans*, *Russula vinacea*, *Rhodocollybia maculata*, *Rickenella fibula*, *Tapinella atrotomentosa*, *Xeromphalina campanella*

Gilled fungi (dark spores):

Cortinarius sp., *Cortinarius iodes*, *Cortinarius limoneus*, *Cortinarius pholideus*, *Cortinarius rubellus* group, *Cortinarius semisanguineus*, *Gymnopilus luteus*, *Hypholoma capnoides*, *Inocybe calamistrata*, *Pholiota aurivella*



Cortinarius semisanguineus

Boletes:

Baorangia bicolor, *Boletus* sp., *Boletus pallidus*, *Harrya chromapes*, *Leccinum* sp., *Leccinum holopus*, *Leccinum snellii*, *Pulveroboletus ravenelii*, *Strobilomyces strobilaceus*, *Suillus americanus*, *Suillus spraguei*, *Suillus weaverae*, *Sutorius eximius*, *Tylopilus felleus*, *Xanthoconium affine*, *Xerocomellus chrysenteron*



Sutorius eximius with *Leccinum* sp.

Cantharelloid:

Cantharellus appalachiensis, *Cantharellus minor*,

Caterellus ignicolor, *Craterellus tubaeformis*, *Turbinellus floccosus*

Cauliflowers, clubs, and corals:

Artomyces pyxidatus, *Clavulina cinerea*, *Clavulinopsis fusiformis*, *Clavulinopsis laeticolor*, *Ramaria* sp., *Ramariopsis kunzei*



Ramaria sp.

Gasteromycetes:

Apioperdon pyriforme, *Lycoperdon perlatum*, *Phallus ravenelii*, *Scleroderma citrinum*

Jelly fungi:

Dacrymyces chrysospermus, *Hormomyces aurantiacum*, *Pseudohydnum gelatinosum*, *Tremella mesenterica*

Polypores, crusts, and stereums:



Trametes versicolor

Coltricia cinnamomea, *Daedaleopsis confragosa*, *Fomes fomentarius*, *Ganoderma applanatum*, *Gloeophyllum sepiarium*, *Irpex lacteus*, *Laetiporus huroniensis*, *Oxyporus populinus*,

Phaeolus schweinitzii, *Plicaturopsis crispa*, *Postia livens*, *Stereum complicatum*, *Trametes versicolor*, *Trichaptum biforme*, *Tyromyces chioneus*

Toothed fungi:

Hydnum rufescens, *Hydnum umbilicatum*, *Sarcodon scabrosus*, *Steccherinum ochraceum*

Slime molds:

Lycogala epidendrum

Wild Mushrooming: A Guide for Foragers

Alison Pouliot & Tom May

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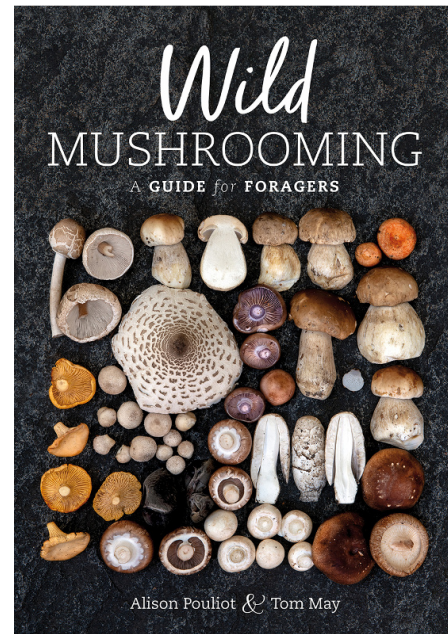
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Reviewed by Dianna Smith

Wild Mushrooming: A Guide for Foragers is different. It is not a conventional field guide that aims to provide readers with descriptions and photos of as many fungal species for a given region that a publisher will allow. The book is written specifically for Australians who are newly awakening to the pleasures of foraging in a country with many unique habitats and organisms, including fungi which may appear to be the same as those covered in most Northern hemisphere field guides, but may be phylogenetically distinct and in terms of their edibility. Alison Pouliot is an ecologist, nature photographer, author of *The Allure of Fungi*, and is involved with international as well as Australian fungal conservation. Tom May, a mycologist and a Principal Research Scientist at Royal Botanic Gardens Victoria, is a taxonomist who has also written extensively on fungal conservation and ecology. The two have artfully merged their areas of expertise and have created a thoughtfully written guide that will appeal to nature enthusiasts of diverse backgrounds. The topics addressed should be part of everyone's basic foundational education for foraging: understanding of fungi, what they are made of, how they feed, their vital functions in the ecosystem, their relationship with other organisms in the ecosystem. The writers urge readers to adopt a slow and conservative approach to starting the satisfying hobby of mushroom foraging that incorporates awareness of the diverse environments to be found on the continent.

The authors describe characteristics of the major morphological groups of fungi and provide representative photos of each. They discuss and illustrate features that should be thoroughly observed regarding color changes in a mushroom cap, hymenium, and stipe over time, how the fruiting body may be connected to its substrate, and the range of possible odors and tastes sensed. Readers are informed on the necessity and procedure for collecting spore prints, determining spore colors of the major genera, and using chemical tests. An entire chapter is devoted to poisonous fungi of Australia, their symptoms, and syndromes. Particular attention is paid to *Amanita phalloides*, *Amanita muscaria*, *Agaricus xanthodermus*, *Chlorophyllum brunneum*, *Chlorophyllum molybdites*, *Coprinopsis atramentaria*,



Omphalotus nidiformis, *Paxillus involutus* and several other fungi known to cause assorted health issues ranging from death to gastrointestinal discomfort. The meatiest chapter (nine) is devoted to descriptions and photos of a selection of just ten well-known edible mushrooms and their toxic lookalikes. These include international favorites such as *Lactarius deliciosus*, *Coprinus comatus*, *Lepista nuda*, *Tremella fuciformis*, puffballs and even cultivated mushrooms.

The final chapter entitled "Fungi in the kitchen and on the table" provides information on drying and storing wild mushrooms and on preparing them for cooking by grilling, barbecuing, baking, boiling, roasting, frying or skewering. Included are recipes for 29 different meals featuring a wide assortment of both wild and cultivated mushrooms used to create a variety of mouth-watering meals from pâté, salads, soups, pizza, curry, risotto, parmigiana, and ragout to frittatas and even pickled saffron *Lactarius*. Also provided are the total preparation times and the number of people each serving will feed. In my view the book is worth purchasing for this section alone.

Finally, Pouliot and May include a glossary of mycological terms and concepts and three pages of recommended further reading and resources for foragers with an interest in pursuing mycological information beyond the obvious culinary benefits of foraging for wild mushrooms. *Wild Mushrooming: A Guide for Foragers* is well-written and researched. The photos and illustrations are clear and instructive. The book will provide potential foragers with ecological and mycological background information everyone needs and should know to forage safely and responsibly. It is a refreshing and original read.