The Potomac Sporophore

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Make morel ice cream. See page 6

In This Issue

Fungus Notebook: 'Red Coat,' the British Soldier Lichen

William Needham
MAW Secretary

William Needham

British Soldier Lichen grows commonly throughout the northeast quadrant of the U.S. and Canada. It is found as far south as northern Florida and as far west as Minnesota.

Common Name: British Soldier Lichen, Matchstick moss — The stark contrast of the bright red at the tips of the branch-like appendages to the mossy gray-green of the support structure is reminiscent of the traditional uniforms of the soldiers of the British Army, the appellation "red coat" was a pejorative widely used in the colonies during the American Revolution. Lichen is derived from the Greek *leichein*, which means "to lick," probably in reference to the tongue-like structure of many lichens.

Scientific Name: *Cladonia cristatella* — The generic name is from the Greek word *kladon*, which means "sprout" in reference to the characteristic vegetative shrub-like appearance of the fun-

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Amateurs, Strive for a Mushroom Breakthrough

Willow Nero
Sporophore Editor

I must admit, I joined MAW envisioning giant baskets of free edible mushrooms. Nothing quite beats the feeling of a colossal chanterelle haul, the discovery of a giant puffball larger than head, or your first morel. But have you looked around to see what else is out there? Have you stumbled across a mushroom so delicate or stunningly beautiful you could not leave it behind even after being informed it was not fit for consumption?

My first such discovery was *Cortinarius violaceus*, the purple cort. I didn't know or particularly care that the mega genus Cortinarius was known for its rust-colored spores. I just knew the mushroom in my hand probably was inedible and also happened to grow in the most magical of places, the White Mountains of New Hampshire. That day, I photographed *C. violaceus*' deep royal violet gills and said goodbye, but I dreamed about her all the way up Mount Washington, wondering if I had imagined the whole experience. That purple color had been so mysterious, deep, and luxurious.

Almost a year later in West Virginia, I came across a similarly spectacular find: *Hemioporous betula*. Less mycologically inclined friends of mine have shrieked in excitement over the stereotypically mushroom-like *Amanita muscaria* or a neon green *Leucocoprinus birnbaumii*, but this was a real find! Its delightful red hamburger bun cap perched daintily atop a too-big stipe with heavy honeycomb reticulation (what the guides call "lacerated alveolation") in red and bright yellow. The underside of the cap revealed bright yellow pores as well. This bolete was so perfectly Ronald McDonaldish yet sophisticated, too.

Willow Nero

Cortinarius violaceus is a real stunner with its purple flesh, dark violet gills, and rust-colored spores.

These finds, while common, are mycological breakthroughs. They represent two occasions on which I relished mushrooms not destined for my plate. You see, if the hunt were merely about food, it'd end at the grocery store. An integral part of mushroom appreciation (and wild mushroom hunting and eating) is becoming an ambassador for the fungi — all the fungi. And fungi, being the

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gal body. The species name is from the Latin *crista*, "crest" and the diminutive suffix *ella* — literally the "small crest." This describes the tufted structure at the tips or crests of the appendages.

A lichen is a dual organism that consists of a fungus and an alga that live in mutualism, a type of symbiosis in which both constituents share the benefits of the association. The fungus is called the mycobiont and the alga is called the photobiont. The reason for the close mutual relationship is survival. Lichens occupy extremely adverse environmental habitats that range from isolated rock outcrops in the frigid rarefied atmosphere at elevations over 6,000 meters to the searing heat of the equatorial desert.

There are about 20,000 species of fungi that exist only as lichens, about 20 percent of the known fungi population. None are found without their symbiotic partner in the natural environment, though they can be produced in the laboratory when isolated under axenic conditions. The alga is thus key to the lichen's survival. However, the fungus is the dominant partner of the mutualistic association, comprising about 90 percent of the overall biomass. It forms the primary structure or thallus of the lichen and is responsible for anchoring it to a substrate and absorbing water and minerals from the environment for sustainment. Because of this primacy, the lichen is named for the fungus absent any reference to the algal partner.

Lichenized fungi are divided into five categories according to their basic morphology: crustose, foliose, fruticose, squalmulose and leprose. These correspond to crusty, leaf-like, shrubby, scale-like (*squama* is Latin for scale) and powdery. The British Soldier Lichen is of the fruticose category, as it has the appearance of a small shrub. The individual cylindrical upright branches are called podetia which provide support for the red apothecia, which are the spore-bearing organs of the fungus. Each apothecium is an open cup that releases spores according to the appropriate environmental stimulation.

The photobiont organism of the British Soldier Lichen is *Trebouxia erici*, one of the green algae. Unlike their myriad mycobiont associates, 90 percent of all photobionts come from only three genera, *Trebouxia*, a unicellular green alga genus; *Trentepohlia*, a filamentous green alga; and *Nostoc*, a cyanobacterium. Though the photobionts have the ability to exist in the natural environment without their fungal symbionts, they are rarely found; free-living populations of *Trebouxia* have never been found. This leads to the general conclusion that the algae and fungi of the lichen are totally dependent on their mutualism for survival.

William Needham

British Soldier Lichen is fairly easy to spot in the woods because of its distinctive colors. It is a fruticose lichen, meaning it resembles a shrub or fruit. The distinctive red apothecia bear spores.

The body or thallus of the lichen is divided into four distinct layers, three fungal and one algal. The top layer is called the upper cortex and consists of tightly packed fungal filaments called hyphae that protect the lichen from the environment and may be pigmented to shield from specific light spectra. The algal layer is just under the upper cortex and is permeated by the hyphae of the third layer (medulla) that is made up of loosely woven hyphal threads. The lower cortex is the bottom layer with specialized structures called rhizines that attach to almost any substrate, including rocks.

The flow of nutrients between the mycobiont and the photobiont is the essence of the mutualistic relationship. The fungal symbionts have specialized structures called haustoria that penetrate the cells of the alga. In the photosynthetic process, *T. erici* produces a type of carbohydrate called ribitol. This is transported to the *C. cristatella* cell where it is turned into mannitol, a sugar alcohol widely found in fungi as a storage product. Because of the penetration of the algal cell by the fungus, the transport and conversion process occurs quite rapidly, often in less than two minutes. It is also hypothesized the alga provides vitamins to the fungus, notably biotin and thiamine. The role of the fungus in the relationship is not as well-defined. It is highly efficient at absorbing water vapor from the air, so much so that at high humidity levels, the algae photosynthesize at nearly their maximum rate. The fungal component also synthesizes a number of unique organic compounds, some of which are chelating agents that bind to metal atoms, thus providing a source of minerals to the alga.

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Amateurs, Strive for a Mushroom Breakthrough (cont.)

Tony Waisanen

Because the woods were so full of mushrooms last fall, members got a crash course in mushroom ID at the September 2012 MAW monthly meeting.

literal underdog bottom-feeders they are, need all the friends they can get.

Professional mycologists seriously need our help. There are far too few of them and too many fungi to complete basic biology projects that have proven endlessly beneficial to the rest of the natural world. Thomas D. Bruns of the University of California Department of Plant and Microbial Biology and Michael W. Beug, NAMA *McIlvainea* editor in chief, estimate in their 2012 *McIlvainea* article mycologists are 30 times more outnumbered to fungi than botanists are to plants. Combine that deficiency with the de rigueur funding constraints and the influence of outside interests so common in science today and you've got a real issue when it comes to solving problems that are critical, biologically speaking, but not titillating enough to attract attention. The issue at hand for mycology is the lack of a comprehensive North American mycobiota. The information in the field guides we use always is changing and remains incomplete. Other domains were indexed years ago in the heydays of scientists like Charles Darwin. The fungi hid out as they're so great at doing, and even those that were catalogued tended to elude researchers with their strange behaviors. Now that DNA technology, Internet resources, and other high-tech tools are in the hands of ordinary citizenry, it's time we figured out the fungi. Mycologists are asking us amateurs to step up and collaborate on a true North American mycobiota for macrofungi. A group from NAMA, known as the North American Mycoflora Project, has already gotten started, and clubs in Illinois and California, some of which already have connections with local herbaria, are making good progress in similar efforts.

Before the sheer difficulty of such a project convinces you otherwise, think of your breakthrough mushroom. Did scientific language hold you back from reading that mushroom's entire description in a field guide? I doubt it.

MAW hasn't provided the resources for us to fully join a mycobiota project, but in the meantime, I urge you to get ready. Learn a handful of new species this summer, and help your fellow club members get better at identifying mushrooms. Polish up your photography skills, and get feedback from some of MAW's best camera wizards. Make a post or several on Mushroom Observer (www.mushroomobserver.com) to see how it's done. Let's also strive to learn about mushroom reproduction, cellular structures, unique associations, and everything else. Fungi truly are special, and we owe it to them to

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Willow Nero

The lacerated alveolation on the stipe of *Hemioporous betula* almost resembles wax that has dripped down a candle.

MAW Board of Directors

Meeting File

Jan. 8 — Jon Ellifritz Explores Commercially Available Edibles

Willow Nero
Sporophore Editor

Foray Chair Jon Ellifritz shared with club members Jan. 8 some of his experiences with dried, preserved, and fresh mushrooms from various supermarkets in the Washington, D.C., area.

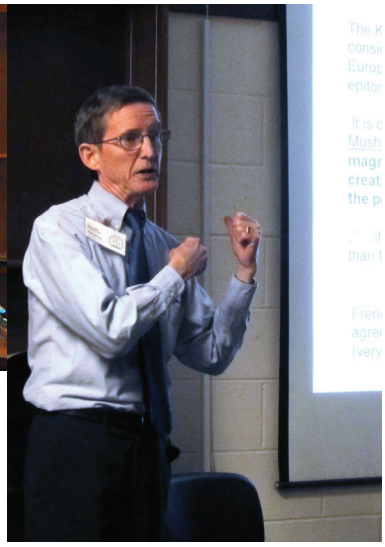
Ellifritz's favorite grocery stores for mushrooms include Spanish and Asian ethnic markets, where mushrooms often are sold under strange names for even stranger uses. Ellifritz explained he identifies many packages based on past experience with similar dried mushrooms because these items sometimes are marked only in foreign languages or carry misleading labels for anything from tea to soy products.

Some of the most common mushrooms you'll find sold in ethnic stores include:

- ☐ dried shiitake,
- ☐ dried maitake,
- ☐ dried hericium,
- ☐ fresh enokitake,
- ☐ fresh king oyster and prince oyster,
- ☐ canned corn smut, and
- ☐ dried wood ear.

Bruce Eberle

MAW Foray Chair Jon Ellifritz shares his knowledge of dried mushrooms with club members.



Willow Nero

MAW Secretary William Needham explains some of the nutritional characteristics of boletes.

Feb. 5 — William Needham Delivers the Nutrition Facts on Wild Mushrooms

Willow Nero
Sporophore Editor

Chances are if you're a fan of mycology you've heard touted the nutritional benefits of mushrooms. Some purport to cure cancers, others mysteriously help with weight loss, and all of them are celebrated as an integral part of any vegan or vegetarian diet.

At February's monthly meeting, MAW Secretary and amateur mycologist William Needham presented the real facts

Upcoming Events

April 13-14 — Forays will be held. Check Meetup.com or join the foray email list to get the details.

May 7 — monthly meeting.

June 4 — monthly meeting.

July 2 — monthly meeting.

(Monthly meetings are held on the first Tuesday of the month at the Kensington Park Library in Kensington, Md.)

Sept. 6-8 - Second Annual Joint Appalachian Foray. This year's event will be held at the Mountain Lake Biological Station near Blacksburg, Va. More details TBA.

Sept. 27-29 - MAW's Annual Camp Sequanota Foray in Jennerstown, Pa. Join the club for a weekend full of forays, identification, cooking, and more. Plus, learn from guest mycologist Dr. Patrick Leacock who will make a presentation Saturday night. The weekend with room and board is $150 per member at double occupancy. Spend Saturday with us for $45.

Oct. 24-27 - The NAMA Annual Foray will be held in Shepherd of the Ozarks, Ark. Find out more at www.namyco.org/events.

Forays

MAW regularly holds short weekend forays in the D.C. area beginning in mid-April and continuing through the fall. Many of these events are announced on short notice. Check the listings at Meetup.com/MAWDC-Public or email forays@mawdc.org to add your name to the foray email list.

Mushroom Notes

Morels typically have a strong showing in mid-April in the D.C. area. Keep an eye out. These small ascomycetes resemble pinecones and are easily overlooked. MAW's identifiers can help you learn what to look for and what to avoid. There are a few morel look-alikes out there.

As spring transitions to summer, many mushroom hunters' favorite edible mushrooms will start to pop up. Chanterelles (both orange and black) and boletes (porcini) should be on your radar. Beyond the edible varieties, there's an amazingly diverse mycoflora out there. Make it your goal to learn a few new species every time you go in the woods. Focus in on a family, a color, or a small plot of land to keep your explorations from becoming too overwhelming.

Other Events

April 20 — The Accokeek Foundation in Accokeek, Md., will host Holli Ellicot who will present on "Oyster Mushroom Cultivation." Tickets are $40 for nonmembers. Find out more at www.accokeekfoundation.org.

about mushroom nutrition. Needham said his motivation for researching mushroom nutrition stems from being a vegetarian and wanting to ensure he was getting the proper mix of nutrients.

"That's what kind of got me into it," says Needham. "It has a lot of the same properties. Fungi eat plants. Animals eat plants. Vegetarians eat plants."

Mushrooms have become a popular meat replacement over the years, primarily due to their chitin structure, Needham says. Chitin, a molecule derived from glucose and similar to carbohydrates, is the primary building block for fungi. In other terms, it's similar to the cellulose found in plants. Because it's not cellulose and is quite a bit tougher, it gives fungi the texture of meat. Plus, it's indigestible by humans and has no calories. In water, it absorbs grease, oil, and metals.

Studies have shown adding chitosan (a commercial derivative of natural chitin) to participants' diets is effective at reducing body fat and cholesterol.

While chitin makes mushrooms tasty and likely blast away fat, it's not the only beneficial factor in play. Mushrooms also have a respectable protein content of 3.5 to 4 percent by weight (fresh). That's twice the protein content of asparagus and four to 12 times the content found in an orange or apple, Needham notes. Most important, the protein found in mushrooms is complete. Protein contains up to 20 amino acids, eight of which are considered essential for adults and are needed for protein synthesis that is necessary for building new cells, maintaining body tissues, and performing basic bodily functions. Many vegetarian foodstuffs contain only a few essential amino acids and must be combined with other foods or supplements for a person to have enough of each essential animo acid present.

Mushrooms rank fairly high when compared with other protein-rich foods. Some mushrooms fall just below meat sources in the number of essential amino acids they provide. Mushrooms on the lower end have at least as many essential amino acids as carrots do (and less than soybeans, corn, and peanuts).

If you're not already convinced mushrooms are a nearly indispensable component to any diet, especially a vegetarian one, consider their vitamin and mineral content.

Mushroom Composition
(by 100 g dry weight)

Species	Protein	Carbs	Fat	Fiber	Calories
Agaricus bisporus	23.9-34.8	51.3-62.5	1.7-8	8-10.4	328-368
Auricularia spp.	4.2	56.9	8.3	19.8	351
Boletus edulis	29.7	59.7	3.1	8	362
Pleuortis ostreatus	10.5-30.4	57.6-1.8	1.6-2.2	7.5-8.7	345-367
Lentinula edodes	13.4-17.5	67.5-78	4.9-8	7.3-8	387-392

Because fungi work through symbiotic relationships to deliver nutrients to plants, they're vitamin powerhouses. One medium portobello contains more potassium than a banana, plus phosphorus, sodium, calcium, and magnesium. They also tend to be naturally high in niacin (B3), thiamin (B1), riboflavin (B2), and ascorbic acid (vitamin C). When exposed to sunlight, many mushrooms also produce substantial amounts of vitamin D. (Just 100 grams of sun-dried shiitake mushrooms can give you 7667 percent of your daily value for vitamin D!)

In closing his presentation, Needham reviewed the list of benefits: high protein, vitamins and minerals, all eight essential amino acids, low fat, low calories, and high fiber. "Eat mushrooms, be healthy, and live long," he concluded.

March 5 — Martin Livezey Brings Mycology Best Practices to MAW

Willow Nero
Sporophore Editor

When MAW Webmaster Martin Livezey joined the club more than three years ago, he was eager to contribute to mycology. While he still has yet to name his own mushroom, he did spot and document in October 2012 the first known North American specimen of *Agaricus pearsonii*. Following this exciting experience, Livezey learned more about proper mushroom documentation, the topic of his March 5 presentation "Mushroom Explorations: How to Discover a Mushroom That Is New to Science in Your Own Backyard."

Livezey introduced members to the seven steps of proper mushroom Continued on page 7

Useful ID Websites

☐ Mushroom Observer: www.mushroomobserver.org
☐ Index Fungorum: www.indexfungorum.org
☐ MycoBank: www.mycobank.org
☐ Mushroom Expert: http://www.mushroomexpert.com
☐ MycoPortal: http://mycoportal.org
☐ GenBank: www.ncbi.nlm.nih.gov/genbank
☐ Rod Tuloss: www.amanitaceae.org
☐ Tom Volk: botit.botany.wisc.edu/toms_fungi
☐ Mycoweb: www.mykoweb.com

Photography Tip

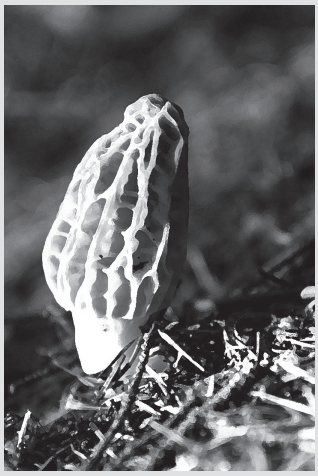
Anyone who has been photographing fungi (or really anything) for a while, knows the collection can easily become unwieldy. Martin Livezey proposes photographers organize their files in a three-part system. First, download all photos into an "A_Archive" database organized by date. Copy these into the "B_Process" database, where they will be renamed and tweaked with photo software. Once you've correctly ID'd your mushrooms, save the best images in "C_Distribute," which has a taxonomic folder tree set up. This way, you always can find every photo by date or by its correct scientific name. You've preserved your original files, too.

\A_Archive (every photo saved here)
  \2013 (year)
    \03 (month)
      \5 On the way to foray (day)
\B_Process (rename, crop, enhance)
\C_Distribute (group by species)
  \Basidiomycota
    \Agaricomycetes
      \Amanitaceae

Distribution

Rub elbows with serious mycologists and you might even see your photographs published in a field guide. Mushroom Observer (www.mushroomobserver.com) allows users to upload photos with descriptions and location data to share with the world. If you don't know what mushroom you've got, propose a name and see what the community thinks. Reliable users rack up clout and their opinions are given extra weight.

Mushroom Ice Cream



This recipe was served as a whipped cream at MAW's Fall 2011 tasting meeting.

2 tablespoons powdered dehydrated mushrooms (e.g., morels [heads only], porcini, or chanterelles)
1 cup half-and-half
1 large egg yolk
¼ cup confectioner's sugar
1 pinch salt
1 tablespoon oloroso (semi-sweet) sherry
1 cup heavy cream

Pulverize the mushrooms as finely as possible in a clean spice mill or coffee grinder. Simmer them in ½ cup of the half-and-half until it is thoroughly infused with their flavor, about 15 minutes. Strain the mixture through a very fine sieve, pressing on the solids with the back of a spoon to extract as much liquid as possible, reserving the liquid. Return the solids to the pan with the remaining half-and-half, and again simmer the mixture until it is thoroughly infused with their flavor, about 15 minutes. Again strain the mixture through the sieve, pressing on the solids with the back of a spoon to extract as much liquid as possible, reserving the liquids. Mix the two infusions; discard the solids.

Beat the egg yolk and sugar together. Add the salt and the flavored half-and-half, and whisk together. Pass the mixture through a sieve to remove any undissolved solids. Place over medium heat and cook, stirring constantly, until it has slightly thickened, coats the back of a spoon, and registers 180 F, about 7 to 14 minutes. Add the sherry. Again pass the mixture through a sieve to remove any remaining lumps. Stir in the heavy cream. Cool the mixture to room temperature, and then chill it to no more than 40 F.

Pour the chilled mixture into the canister of an ice cream freezer and freeze according to the manufacturer's directions. At the end of the freezing process, cooked bits of fresh or reconstituted mushroom may be stirred into the mixture for texture. Transfer the ice cream to an airtight container, pressing firmly to remove any air pockets, and freeze until firm, at least 2 hours.

The chilled mixture may also be prepared as a whipped cream instead of being frozen into ice cream. Simply whip it by hand (or even better, pour it into a cream whipper and pressurize it with nitrous oxide according to the manufacturer's directions). Use as a garnish.

(Recipe contributed by Ray LaSala.)

MAW Searches for Tasting Event Headquarters

The amateur mycologist who doesn't eat his finds is few and far between. That's why MAW always has celebrated fungal gastronomy and other wild foodstuffs with two annual tasting events. To continue this tradition, MAW needs your help. Please let us know of any local indoor meeting spaces that can accommodate at least 100 people and allow amateur cooking on-site (ideally with small gas stoves). Church buildings, lodges, community centers, and similar locations would be appropriate. We have a limited budget, so discounts via MAW members are a plus. Email your suggestions to Culinary Chair Cody Waisanen at cody.waisanen@gmail.com.

Mushroom Breakthrough (cont.)

Continued from page 3 ensure they're as well understood and esteemed as the other kingdoms on the planet.

A nearly exhaustive collection of mushroom descriptions, photographs, DNA sequences, and the like is of great importance to the field. These exercises might seem like thankless busy work, but only through real data and observation will we assemble the ingredients necessary for great discoveries. Early biologists observed until they were plain bored and finally saw an aberration worth investigating. With a mycobiota, we can much more easily compare and contrast our species and all their attributes, leading us to the more exciting science.

The timing also is ripe for a comprehensive mycobiota because of global warming. Great numbers of species risk extinction like never before. We barely know how this will affect fungi. Some mycologists think mushrooms will adapt or even enjoy the warmer climes. Other studies show species like the French truffle likely will perish. Either way, we owe it to our delicious friends to find out what they're up to or at least preserve their legacy before it's gone or forever changed.

A big project is one of most meaningful activities our club can sign on to. Prominent mycologist Gary Lincoff, who teaches at the New York Botanical Garden, warned us at the Joint Appalachian Foray last year about the danger of a club becoming complacent about mushroom identification. He reminded us it's a shame when amateur mycologists have to rely on someone else to identify their mushrooms. MAW certainly isn't at that point, but we all could get a lot better. In the two years I've attended large forays, it's been difficult to reliably count how many specimens we collected, never mind generate a species list. We have the expertise. All we need is the commitment. Contributing to a mycobiota will bolster both the community we've built.

As spring turns into summer, think on this proposal. MAW faces a lot of obstacles, several of which are roughly outlined in "Meeting File: March 5 — Martin Livezey Brings Mycology Best Practices to MAW." Beyond technical constraints, much of our club still could use some good identification instruction. Let the board know what kinds of programs you want to see and what you want to learn. The Internet abounds with answers for us from Lincoff's Mushroom University designed for the Connecticut -Westchester Mycological Association to do-it-yourself approaches using Mushroom Observer. Let's show our mycelial allies we've got their backs!

Meeting File (cont.)

Continued from page 5

ID he proposes club members use to contribute to ongoing mycobiota projects: 1. Photograph the mushroom in its natural environment (see tips, page 5); 2. Write a description; 3. Post to Mushroom Observer (www.mushroomobserver.com, see page 5); 4. Propose an ID and wait for its confirmation; 5. Check the ID against available information (such as website databases, page 5); 6. Get a DNA sequence; and 7. Research the DNA sequence on GenBank, a searchable online collection of publicly available DNA sequences.

Following Livezey's presentation, club members discussed the club's capability to join a mycobiota project and where such a project might begin. Program Chair Bruce Eberle suggested holding more identification meetings with an introduction to writing scientifically sound mushroom descriptions. Some obstacles to a project include a lack of storage space for specimens, a lack of DNA extraction facilities and funding, and the need for a starting point to narrow the field.

April 2 — Walt Sturgeon Introduces Fascinating Species

Willow Nero
Sporophore Editor

Walt Sturgeon delivered a colorful slideshow "Fascinating Fungi" with commentary at the April 2 meeting, inviting the audience to question the why behind the novel mechanisms of everyday mushrooms and more unusual fungi common to the Northeast. "Everything has a story," he said. "All mushrooms have a story. Unfortunately we don't know the story." Sturgeon alluded these stories typically mirror those of other species and likely provide some benefit, hence their survival through the natural selection process. Many of Sturgeon's fascinators seemingly exhibit convergent evolution by which species of unrelated lineages develop the same trait.

Sturgeon has been a guest mycologist and speaker at MAW in the past. He is a celebrated fungi photographer and is the co-author of *Mushrooms and Macrofungi of Ohio and the Midwestern States* and *Waxcap Mushrooms of Eastern North America*. Sturgeon also serves as president of the Ohio Mycological Society.

A sampling of examples from Sturgeon's lecture follow.

☐ *Globifomes graveolens* or sweet knot is a polypore so fragrant it has been known to be used as an air freshener.

Many awesomely pigmented fungi fascinate mushroom hunters:

☐ *Trichaptum biforme*, *Cortinarius iodes*, and *Cortinarius violaceus*, are only three of many stunningly purple fungi.

☐ The blue-green wood cup *Chlorociboria aeruginescens* is known primarily for staining wood a striking blue-green color and sometimes for its small saucer-shaped fruiting bodies of the same color. Wood turned blue-green by the fungi's xylindein pigment has been used since the 15th century in decorative woodworking.

☐ *Tubifera ferruginosa*, the raspberry slime mold, is not pleasant to eat, but it is a gorgeous reddish pink color.

☐ *Fuligo septica*, the scrambled egg slime or dog vomit slime is a brilliant yellow. Don't touch it though. "If you put your hand in it, it'll go right through," warns Sturgeon. "It's like *Ghostbusters*." Sturgeon advised his audience not to let slime molds get the best of them period. Gary Lincoff tells in *The Audubon Guide to North American Mushrooms* the story of one community in Texas that attempted to get the National Guard to clean up some suspicious space goo that turned out to be none other than the harmless *Physarum polycephalum*.

Some mushrooms have novel adaptations we still have yet to decipher:

☐ Lentinellus ursinus tastes peppery hot to most people.

☐ *Scutellinia scutellata*, the "eyelash cup" or "Betty Boop," is a small red cup fungi with distinct dark hairs around the edge.

☐ *Pseudohydnum gelatinosum* is a jelly fungus with toothed gills much like those seen on the Hydnaceae family.

☐ *Gymnopilus luteus* causes mild psychoactive effects in some people.

Other fungi are surprisingly friendly with insects.

☐ *Phallus ribucundus* is one of many stinkhorns that stinks of raw meat or dung to attract insects to pick up its spores.

☐ *Cryptoporus volvatus* is a polypore with a volva. Its only means of transmitting its spores is when a beetle bores into its surface and picks up spores.

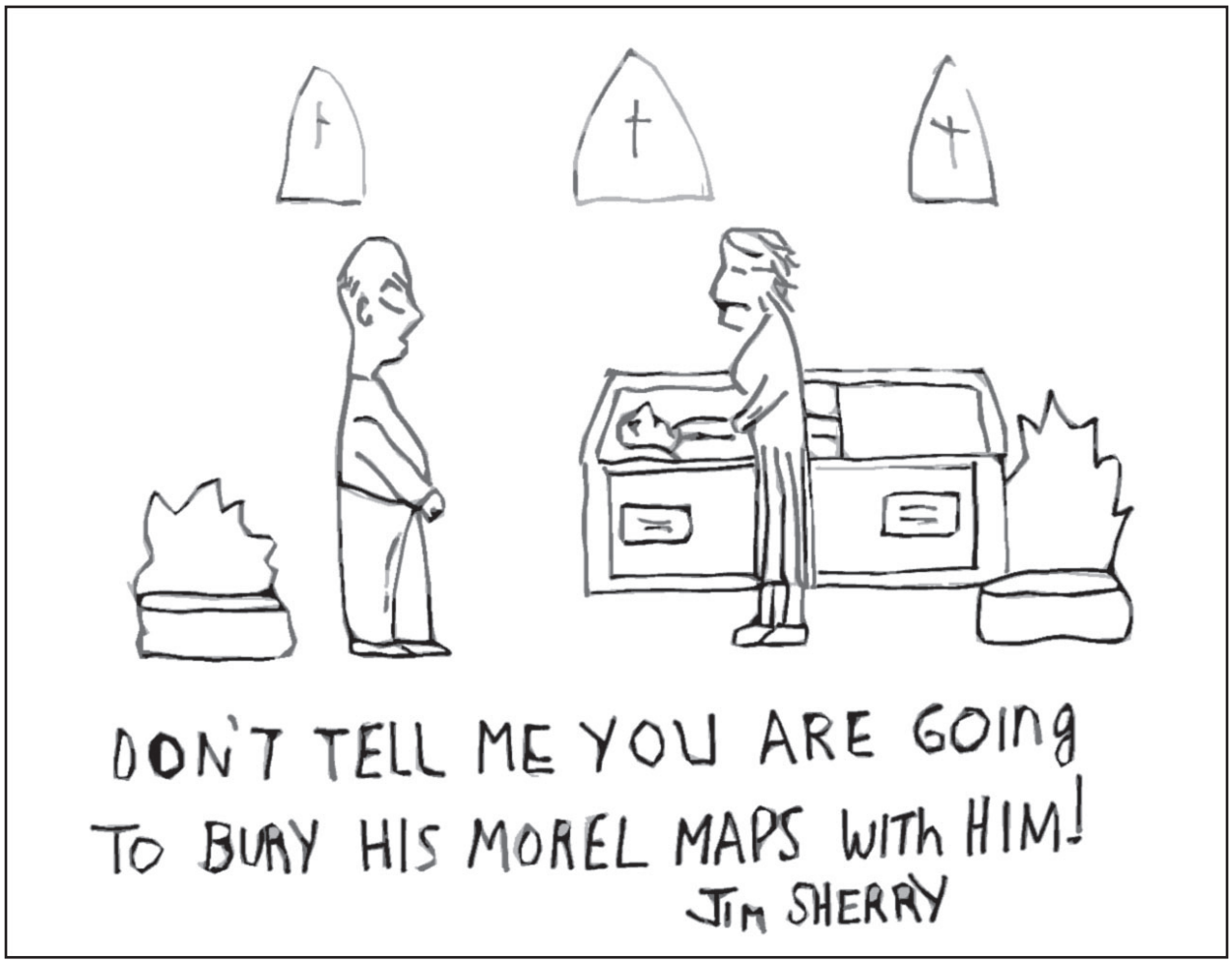
☐ *Cerrena unicolor*, the mossy maze polypore, gets a true insectarium going. The horntail wasp feeds off this fungus and helps spread spores until the mushroom emits a pheromone that attracts another wasp that keeps the horntail wasp population in check.

Moonlight0551

This toothed jelly fungi has gills that resemble those of the Hydnaceae family.

Jason Hollinger

These young eyelash cups will open into orange discs with "eyelashes" surrounding their outer edges.


DON'T TELL ME YOU ARE GOING
TO BURY HIS MOREL MAPS WITH HIM!
JIM SHERRY