

SPORE PRINTS



BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY

Number 415

October 2005

MORE ABOUT THE MUSHROOM EXHIBIT

Ron Post

As many of you go out and help us find mushrooms for the exhibit, remember two things: You don't need to know what it is you've collected, and please don't strain yourself or break a limb. Just bring in specimens!

In the words of Ben Woo, writing in a 1988 *Spore Prints*, "This is the one event of the year shared by all our members, new and old. Many tasks are simple and pleasant, and offer the opportunity to meet and work with other members. Others require more skills which can be easily acquired by working with experienced hands. Sign on for one or more shifts on one or more committees to expand your friendships and gain mycological knowledge. If you can't serve during the exhibit, you have the opportunity to be a member of the collecting committee, either wandering far afield or bringing in specimens from your own backyard."

Russ Kurtz, our collection chair, will share his advice with you at the October meeting. You can call him, too, to talk about where you might go. Even better, if you get the chance to go out and collect with Russ, take it. He's a peach.

Here are a few more collecting tips: Get the entire mushroom(s) plus some of its substrate. Don't rub the stem (if it has one) with your fingers. And bring the mushrooms in Friday night if you can, but Saturday morning works, too.

I hope to see you at the October membership meeting. Posters are available now through John Goldman (West Seattle), Patrice Benson (South Seattle), or Marian Maxwell (Renton). You can also pick them up at the CUH library during its open hours.

I hope you can work at the exhibit, but come anyway to hear Bryce Kendrick, see the mushrooms, and learn. Oh, we eat pretty well too. It's a two-day potluck, in case you didn't know, so check out the hospitality room, for members only.

The exhibit is at Sand Point Park October 22 and 23. Call me at (206) 527-2996 with your questions or e-mail me at ronp46@hotmail.com and give me a day or two to reply.

TAYLOR LOCKWOOD ID TRILOGY

Taylor Lockwood, whom many in PSMS know from his exquisite mushroom slide shows, has just announced the release of his biggest project ever, the *Mushroom Identification Trilogy* on DVDs.

This is an entertaining visual guide to mushroom identification and explains all the basics with photos, illustrations, and video footage of real mushrooms. It is approximately one hour long and split into three parts: "Introduction," "Into the Details," and "Into the Woods."

You will find images of the Trilogy cover, ordering links, and a 60 second QuickTime preview at <http://www.fungiphoto.com/treasurechest/MIT/mit.html>.

MUSHROOM ID CLASSES

Colin Meyer

Beginners' Classes: PSMS will offer a beginning mushroom identification class this fall on four consecutive Tuesdays, beginning on October 25. Classes will be held at the Center for Urban Horticulture from 7:00 PM to 9:00 PM. The first two sessions will be in the Isaacson Classroom. The third session coincides with the regular monthly meeting and will take place during the half hour before the meeting starts. The sessions will be as follows:

Oct. 25	Introduction to Mushroom ID
Nov. 1	Identifying Mushrooms with Keys
Nov. 8	PSMS Member Resources
Nov. 15	Collecting and Cooking

In addition, there will be a class field trip on Saturday, November 5, from 9:00 AM to noon at a yet-to-be-decided location near Seattle. This field trip is separate from the normal PSMS trips and is specific for the class members.

The recommended text is *Mushrooms Demystified* by David Arora. Ten copies are available for classroom use from the PSMS library. The book will be available for sale on the first day of class. Please bring fresh mushrooms to class.

The cost is \$25 for all sessions. To register, please send a check, payable to PSMS, to

John Goldman
5819 SW Horton St.
Seattle, WA 98116

For more information, please call the PSMS main line at (206) 522-6031 and leave a message with your contact information (phone or e-mail).

Public ID Class: Dr. Joe Ammirati will offer a walk-in public mushroom ID session on Sunday evenings during October (except for October 23, the weekend of the PSMS mushroom show) at the Center for Urban Horticulture. These sessions will be from 6:00 PM to 8:00 PM in the Douglas Classroom at the Center for Urban Horticulture. Bring fresh mushrooms and be ready to learn. This is an excellent opportunity for those who wish to learn at all levels, including microscopy, and to improve their mushroom ID skills.

PSMS AT THE DOWNTOWN LIBRARY Ron Post

A display on PSMS, mushroom picking, and four areas of mushroom research can be viewed on the seventh floor of the new Seattle Public Library, at 4th and Madison, between now and October 31. It's entitled "Mushrooms of the Greater Puget Sound Area." The society's literature and a poster about the exhibit are also on display. Our thanks to the following members, past and present, who made this project possible: Keiko Morris, Lynn Phillips, Emily Routledge, Dr. Joe Ammirati, Dr. Marianne Elliott, Dr. Steve Trudell, Dr. Dean Glawe, and all the people in the Shadow Lake Bog lab.

Spore Prints

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CALENDAR

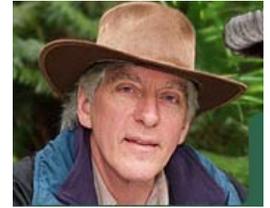
- Oct. 7-8 Field Trip, Lake Wenatchee State Park
- Oct. 9 Public ID Class, 6-8 PM, Douglas Classroom, CUH
- Oct. 11 Membership Meeting, 7:30 PM, CUH
- Oct. 16 Public ID Class, 6-8 PM, Douglas Classroom, CUH
- Oct. 17 Board Meeting, 7:30 PM, CUH
- Oct. 15 Field Trip, La Wis Wis Campground
- Oct. 18 *Spore Prints* Deadline
- Oct. 22-23 Annual Exhibit, Magnuson Park, Sand Point
- Oct. 25 Beginners' ID class, 6:30-7:00 PM, Isaacson Classroom, CUH
- Oct. 29 Field Trip, Twanoh State Park
- Oct. 28/29-30 Field Trip, PSMS/The Mountaineers
- Oct. 30 Public ID class, 6-8 PM, Douglas Classroom, CUH
- Nov. 1 Beginners' ID class, 7-9 PM, Isaacson Classroom, CUH
- Nov. 5 Field Trip, Deception Pass State Park
- Nov. 8 Beginners' ID class, 7-9 PM, Isaacson Classroom, CUH

Reminder: To join the **PSMS e-mail discussion group**, (1) e-mail psms-members-subscribe@yahoo.com or (2) go to <http://groups.yahoo.com/group/psms-members> and follow the link that says "Join this Group" to access the photo and the "file" sections and other features.

MEMBERSHIP MEETING

Tuesday, October 11, 2005, at the Center for Urban Horticulture, 3501 NE 41st Street, Seattle

Our speaker for October is the incomparable Taylor Lockwood, with his fabulous mushroom photographs. Taylor will be featuring his new *Mushroom Identification Trilogy*. You won't want to miss this entertaining, visual guide to mushroom identification.



Afterward Russ Kurtz will explain where, and how, to collect for the upcoming annual PSMS Wild Mushroom Exhibit.

Come prepared to sign up for your favorite exhibit committee. If your last name begins with the letters M-Z, please bring some goodies to share after the meeting.

BOARD NEWS

Dennis Oliver

The September meeting, the first board meeting of the fungal year, marks the change of summer to fall. We are happy to still have sunny weather but yearn for the mushroom growing rains. There have been reports of scattered chanterelle finds, but we still await the "good soak."

The education committee reports that the fall mushroom identification class will be on four consecutive Tuesdays after the mushroom show, beginning October 25 (see Colin Meyer's article in this issue). Field trips for the fall have been planned, and a good turnout was seen at our first outing at Money Creek.

PSMS will have a booth at the Issaquah Salmon Days, October 1 and 2, which is a nice opportunity to meet people and advertise our mushroom show. Daniel Winkler, a trustee, has been forced to resign his position owing to work and travel requirements.

The annual exhibit is progressing. The posters are printed and appearing all over the city. It's always great fun to volunteer and collect mushrooms for the show. Contact Ron Post to volunteer, and he will certainly put you to work.

STATE PARK AND NATIONAL FOREST PASSES: BE SURE TO GET THEM

Brian Luther

I'm sure you're all now aware that a \$5.00 day-use fee or a Washington State Park annual pass will be required for all vehicles parking at Twanoh or Deception Pass State Park on those field trips. Please note that Twanoh State Park will be officially closed, so there will be no camping available. We'll have day use on a first come, first serve basis only and will be required to leave at dusk, which in fall, unfortunately, comes rather early. A National Forest Trailhead Pass or a day-use fee is required at all Forest Service sites.

Daily passes are readily available at all of these locations, and annual passes can be purchased at State Park and Forest Service ranger stations or on line. In addition, an overnight camping fee may also be required at Forest Service campgrounds, if they're even open. People 62 and over can get a special senior deal on lifetime permits. It's worth it, if you qualify. The park rangers are enforcing the day-use fee requirements, so don't get side tracked and forget to buy one when you arrive at these locations. Have all passes clearly visible on your windshield. Free use of most all facilities is now only a memory of the past, so be prepared.

UPCOMING FIELD TRIPS

Cathy Lennebacker

Remember, many field trips have potluck dinners at the end of the day. Please bring an edible contribution and plan to stay for the culinary social.

October 7-8

Lake Wenatchee Group Site
(elev. 1800 ft, 95 miles east of Seattle)

North of Seattle, go east on State Highway 2 over Stevens Pass. Twenty miles east of the summit, turn left on Route 207. Look for PSMS signs. We have reserved Friday and Saturday nights.



October 15 La Wis Wis Campground

The campsite is reserved for PSMS overnight. *Identifier:* Hildegard Hendrickson. *Hosts:* Don and Cathy Lennebacker.

Driving Directions. Take I-5 south to exit 68 and turn east on US 12. Drive 65 miles to Packwood. Continue 7 miles east on US 12, then drive ½ mile west on forest service road 1272.

Alternate Route. Go east on 410 over Cayuse Pass, past the southeast entrance to Mt. Rainier toward Packwood. The

campground entrance is on the west side of the road 7 miles past the Ohanapcosh campground. Follow the signs to the picnic shelter.

October 29

Twanoh State Park

Alas, this lovely park on Hood Canal is closed for camping. We will meet in the day use/picnic shelter. Washington State collects a \$5 per car parking fee. *Identifier:* Brian Luther.

Driving Directions: Take the Bremerton Ferry (a half hour ride) from downtown Seattle, take Hwy. 3 southwest to Belfair, and go west 8 miles on Hwy. 106 from Belfair to the park.

October 28/29-30 PSMS/The Mountaineers Joint Field Trip

This year, you have *two options* for the annual PSMS/The Mountaineers joint field trip—a three-day trip beginning Friday evening or the usual two-day event beginning Saturday.

Three-Day Option: The first option begins at 6:30 PM on Friday, October 28, at Meany Lodge with a desert buffet and identification seminar, followed on Saturday with breakfast, a sack lunch, and collecting trips from the lodge. The rest of the weekend is as usual (see below). For this the cost is \$90, and there is a limit of 30. *Identifier:* Larry Baxter. *Host:* Coleman Leuthy.

Driving Directions. Follow the driving instructions to Crystal Springs Campground (below) and continue to the end of the asphalt and straight up. Cross the John Wayne Trail and go about 1/8 mile, taking the next left turn. (Look carefully—it is narrow and drops off the Stampede Pass road.) Continue on the main road going under the power line, cross the creek, and turn right up the hill. At the top do the 180° uphill right turn through the gate and parallel the railroad tracks to the private crossing. (Caution: the trains come very fast and quietly downhill.) Cross and continue a short distance. Go left uphill on the driveway to Meany Lodge.

Two-Day Option: For this the cost is \$45, and there is an additional limit of 45.

Saturday features collection, identification, and setting up a mini-display of wild mushrooms; a gourmet dinner including mushrooms collected earlier in the day; and an evening program about

mushrooms. On Sunday there will be local collecting, a review of the display, and a seminar on mushroom preparation and cooking.

Meet Saturday at the Crystal Springs Campground. To reach Crystal Springs, take I-5 east over Snoqualmie Pass to Exit 62, turn right at end of exit ramp, and continue ¼ mile. The campground is straight ahead at the sharp left bend in the road. Do not cross the bridge. We will break into small foray groups here and go collecting. About 3 PM, group leaders will guide you to the lodge.

There will be three sumptuous meals for your enjoyment. Coleman Leuthy, a knowledgeable mushroom guide, and PSMS assistants will lead you on the collecting forays and help with the identification of your collections.

Bring lunch for Saturday only. Bring a basket, a box, or large paper bags to carry your treasures and small wax-paper sandwich bags for small, individual collections. Bring a sleeping bag, pillow, towel, etc., for dormitory accommodations. Club policy: No alcohol in the lodge and no pets. This includes a gourmet dinner Saturday, Sunday breakfast and lunch, and overnight lodging. *Identifiers:* Coleman Leuthy and others. *Host:* Coleman Leuthy.

For additional information call Coleman Leuthy at (206) 322-2554. To sign up, call The Mountaineers clubhouse at (206) 284-8484.

November 5

Deception Pass State Park

(elev. near sea level, 80 miles north of Seattle)

A \$5 parking fee is collected at the entrance unless you are camping, in which case your camping receipt includes parking. No potluck as it gets dark so early. There are several delicious restaurants in LaConner for a friendly dinner.

Driving Directions. From I-5, take exit #226 and go west on route 536 (becomes 20). Turn south, away from Anacortes and toward Whidbey Island. Cross the bridge at Deception Pass. The park entrance is on the right 1 mile past the Deception Pass Bridge, one of the most photographed scenic places in the state. Follow the PSMS signs to the Cranberry Lake shelter.



MUSHROOM MISSIONARIES

Ron Post

Here we mention but a few who give their time to helping the public sort through the world's fascinating mushroom mysteries. **Dr. Joe Ammirati** not only led the effort to create the display "Mushrooms of the Greater Puget Sound Area" now on show at the downtown public library (seventh floor), but he also initiated a public identification group (all PSMS members who want to learn are welcome to bring specimens) that will meet each Sunday night in October from 6-8 PM at CUH in the Douglas classroom. **Dr. Steve Trudell** gave a talk in the woods (Takhlakh Lake) on September 16 to a group of 20 professionals who were touring Northwest forests under the auspices of Sustainable Northwest. **Dennis Oliver**, our secretary, is volunteering his expertise in mycobibliography to the Center for Urban Horticulture, and he will help us organize a winter exhibit about some of the rarest mushroom books you may have never seen, at the CUH library. If you are a mycophile, don't miss it! And thanks go out to teacher extraordinaire **Marcia Hiltzheimer** for her continuing mycology unit with her students each fall, and to all our other members who contribute to the education of the public on a consistent basis. You're the best!

MUSHROOM OF THE MONTH:

Amanita pachycolea

Buck McAdoo

MushRumors, N.W. Mushroomers Assoc., Sep. 2004–Jan. 2005

You can get an idea of the eventual size of *Amanita pachycolea* Stuntz in Thiers and Ammirati, also known as the Western Grisette,



Amanita pachycolea

by the almost Disneyesque dimension of the button in this photo. It looked like a small football emerging from the duff, where it fruits year after year at the same spot at the Beaver Creek site. I was first alerted to its presence by the shrieks of excitement from Margot Evers, who almost stubbed her toe on it. Although the original description limits the cap width of *Amanita pachycolea* to 12 cm, Arora writes that specimens have been found with caps up to 25 cm wide and stems 30 cm long. Now that's a world class *Amanita*!

The Western Grisette erupts from the forest duff as a shiny umber-black “egg” encased in a thick, white, felty volva. The volva eventually sloughs away, sometimes leaving a white patch on the cap but always ending up at the stem base as a thick, saccate cup attached only at the base. The caps become convex to plane, are viscid when moist, and vary in color from dark chestnut to the more common dark brown becoming paler at the margins. The margins are at first decurved, then uplifted and undulate in age. These cap margins are coarsely plicate-striate with striations up to 2 cm in length. One unique thing about *Amanita pachycolea* is that all the striations are the same length, which results in a darker band around the inner edge of the striations.

The cap context is white, rather soft, and up to 1 cm thick at the disc. Arora claims the odor can be unpleasant in mature specimens. The gills are at first adnate to decurrent by a short, inconspicuous hook, later becoming free, a hallmark of *Amanita*. They are broad, subdistant to crowded, often ventricose, and white at first, becoming pale orange brown in age but drying to a yellowish-buff. The gill edges are fimbriate and gray-brown to brown emarginate, another character unique to the species.

The stems measure up to 3 cm thick and 30 cm long. They are equal or taper towards the apex, stuffed becoming hollow as they age, and pruinose to furfureous at the apex. The color is white to orange-buff or even orange-brown, with darker appressed-fibrillose scales. There is no ring and no basal bulb. The volva attached to the base of the stem is thick and felt-like. The inner surface is white, the outer surface off-white and often developing rusty to yellow-brown stains. The spores are white, subglobose, inamyloid, and measure $11\text{--}14.5 \times 10\text{--}12.5 \mu\text{m}$.

Amanita pachycolea is found along the Pacific coast from Monterey County, California, northward, through Oregon and Washington and into British Columbia, the center of its range being southern Oregon and northern California. It is found in coniferous forests and mixed woods in the fall.

Taxonomically, it belongs in Section Vaginatae along with other *Amanitas* such as *Amanita fulva*, *Amanita constricta*, and *Amanita vaginata*. All these have conspicuously striate cap margins, inamyloid spores, and no rings on their stems.

The literary history of *Amanita pachycolea* starts with Naoshi Nakamura, a graduate student at the University of Washington, who first used the name *Amanita pachycolea* nom. prov. in his unpublished doctorate entitled “A Survey of *Amanita* in Western Washington,” in 1965. Dr. Stuntz then officially described it but didn't publish it in a scientific journal. This chore was left for Dr. Ammirati and Dr. Thiers, who subsequently published the species in *Mycotaxon*, Vol. 15, 1982. The term “Stuntz in Ammirati & Thiers” following the name of the mushroom acknowledges Stuntz as the author of the species whose description can be found in the article by Ammirati and Thiers. Twelve years later Rod Tulloss published excellent line drawings of the microscopic features of *Amanita pachycolea* in *Mycotaxon*, Vol. 52.

The look-alikes and closest relatives of the Western Grisette are *Amanita pachyvolvata* of France and *Amanita umbrinolutea* of Europe. *A. pachyvolvata* differs in having larger spores, caps that are more ochre-brown in color, no dark brown edges on the gills, and no dark band encompassing the striations of the cap margins. *Amanita umbrinolutea* differs in having smaller spores, pure white gills, and a paler brown cap. Other local *Amanitas* with strongly striate margins and brown caps, such as *A. vaginata* and *A. constricta* have a smaller, more slender stature.

The Western Grisette is considered edible. As far as I can gather, none of us in the club have tried it. Arora, at first, in *Mushrooms Demystified*, wrote that it was not choice because it developed a fishy taste in age. Later, in *All That the Rain Promises and More*, he changes tack, writing that it is “very tasty, more flavorful than other grisettes.” Blek claims “it is better than *Amanita constricta*.” Kibby concludes “edible but best avoided,” a clear reference to the genus *Amanita*, the one genus you don't want to make a mistake in identification in. As your editor Jack points out, “Why would you eat it anyway? It fruits when all the chanterelles are up. When there are plenty of edibles out there, why settle for a risk in *Amanita*?”

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Fort Stevens State Park, which is west of Astoria off Highway 101, has a new brochure on mushroom collecting which contains many color mushroom photographs by PSMS member and mushroom photographer Joy Spurr. Fort Stevens State Park is a woodsy area adjacent to the Pacific Ocean and is apparently a good mushroom hunting ground. Dane Osis, the Park Ranger, is interested in mushrooms.

BOG BLOG NO. 9 - *Cortinarius rubellus*, The 30 Year Mushroom

Colin Meyer

During July there are a surprising number of mushrooms in the bog. Christie and I collected on Sunday, July 10. It was a sunny and warm day, but not extremely hot. In addition to collecting, we had another task, which was to take detailed notes on the habitat types along the collecting transect.

This was before Robin Leshner came to the bog to help us by explaining how a trained ecologist might identify and designate the different habitats that we collect in (see Bog Blog 8 in last month's *Spore Prints*). On this day, we two bidders were carefully following the transect known as Site 3, stopping every 10 meters to take notes on the habitat. At first we also stopped occasionally to make mushroom collections. But it ended up being too difficult to do both tasks simultaneously, so we decided to finish the habitat notes and collect mushrooms on the way back. We invented seven different habitat types, with names like "Ledum-Hummocks" (for areas with *Ledum groenlandicum* (Labrador tea) and moss hummocks) and "TSHE-Lumpy Forest" (TSHE = *Tsuga heterophylla*, western hemlock).

There were lots of mushrooms out, and we were excited to have such collecting during the middle of summer. Our database records 29 mushrooms for that day, 16 of which are phenology records—those that we are familiar with from collecting previously that we note but leave the specimen in the field.

In general, we make note of mushrooms that we can recognize in the field, and we collect mushrooms that seem new, or maybe not new but too difficult to identify in the field, such as most *Galerinas* or *Mycenas*. One mushroom that stood out on this day was a beautiful bright orange *Cortinarius*. Because it was so bright and orange, and also because it was growing from wood (albeit very rotten wood), I thought that it might be a species of *Gymnopolis*. Christie was glad that we found this one, because she had spotted it on the way in and was excited to collect it on the way back.

The next day, back at the bog lab (Dr. Joe Ammirati's laboratory in Hitchcock Hall), Christie and I were excited to show the finds, especially the bright orange mushroom. We opened the box, and Joe picked that one out and said, "This could be an interesting fungus." He noted its yellow veil tissue. Because I asked if its color might mean that it was a *Gymnopolis*, Joe suggested that I take a look at it.

The other bidders took other collections, and we settled in for a regular lab session, each of us at a microscope, looking at a mushroom, looking at books, asking each other questions about the meaning of certain terminology, or maybe for another bidder to come over and verify whether or not a certain blob on a hypha is a clamp or not. We also might chat about what is going on in our non-bog lives and other such whatnots.

Sometimes Joe is chatty about fungi or about other things. This day he made a few philosophical comments. "It's worth waiting for something." It's hard to disagree with that. "Sometimes you might have to wait 30 years for something." Looking at Alissa, he added, "but you wouldn't know what that's like; you're not even 30 years old." We bidders weren't sure what he was talking about, and we chalked it up to good-mood ramblings.

At this point, I was about half way done with keying the mushroom. I had taken macroscopic notes about the size and colors, and looked at the spores and cap cuticle under the scope. I thought that it was probably a *Cortinarius* in the *Leproclybe* section. I was repeatedly trying the key, and reading descriptions of the species, to see what features might distinguish between the groups. Maybe

if I had paid attention to the lack of florescence, I might have made more headway.

I guess that Joe was excited, although you'd never have known it from his poker face. He came over to see how I was doing, and to ask me some details about the spores size and ornamentation. He couldn't leave me to puzzle my way through the species descriptions myself, and showed me a nice color plate of *Cortinarius rubellus*.

Not being familiar with that name, I didn't make any special connection. He went on to ask if I knew how long it had since it had been collected in Washington State. Of course I didn't know. "It was last collected in 1948." Oh. That's pretty neat. "Smith named this mushroom *Cortinarius rainierensis* when he collected it out here."

Oh! THAT mushroom. Just a few weeks before in the bog lab, we had discussed the paper that described the Barlow Pass Survey, which a number of PSMS members were involved with. The paper begins by talking about one of the main goals of the project, which was to look for *C. rainierensis*, described by Smith so many years before. It ends saying that, while the project did yield interesting information, they never found the fungus that they set out looking for.

Joe was so able to keep his cool about finding this mushroom, that the other bidders didn't even hear him calling it *C. rainierensis*. After the bog lab, at the bar, we had quite a chuckle about that.

Joe and the bidders will be publishing a paper on this mushroom. We'll keep you informed when it is available. If you have questions about this, or anything about the bog project, please e-mail us at bog@helvella.org.



Christie Robertson

MUSHROOMS IN THE SUBURBS

Dave Miller
The Mushroom Log, Ohio Mushroom Soc., July/Aug. 2005

I might as well lay my cards on the table right at the start: I often avoid woods, because I like to hunt for mushrooms in town. This habit began because I'd often need to quickly find a few specimens for my fungi class for testing students' observational powers and ability to key them down in David Arora's *Mushrooms Demystified*, our official text.

One enormous advantage of limiting your search to the in-town environs is that it is convenient and easy to go on a foray on short notice and with little advance planning. Oberlin has several added positives in that it's a small town, it has a large collection of rather exotic tree species, and it's flat and laid out in the familiar grid pattern typical of Midwestern towns.

Nice day, following a period of heavy rain? Perfect! Got less than an hour to spare? No problem! All you need do is grab your collecting basket, pocket knife, paper or wax paper bags, and head out from home, to launch another mycological adventure.

Cont. on page 6

Mushrooms in the suburbs, cont. from page 5

Walking is, of course, the lowest-tech way to get around and affords ample time and opportunity to spot the most elusive of quarries, be it small, camouflaged, or hidden behind some bushes. Your feet can carry you to a close-enough vantage point to determine whether what you see is worthy of further investigation, with no need to first look for a parking space. And don't forget the exercise you'll get using this means of transportation.

Another option I use is a bicycle, which affords all the above advantages with the additional plus of greatly expanding the amount of territory you can cover in the same short time. If there are sidewalks in your locale, riding on them brings you even closer to your potential prey. Just take care to avoid others who may share the sidewalks with you. The more likely case involves no sidewalks, which forces you to become even more alert to possible obstructions—be they moving or immobilized at the curb, the auto represents a formidable adversary with which to tangle. This need for vigilance inevitably detracts from your scanning capacity of the passing yards. If the weather has been inordinately generous so you can anticipate a bountiful fruiting, just shift into a lower gear and adopt a more leisurely pace. You might also try observing on only one side of the road, returning to scout the opposite side once you've reached the bottom of the street. This strategy is especially apt for cul-de-sacs.

Another advantage of the suburbs is the absence of such potential threats to your comfort and health as brambles, poison ivy, muddy paths, and clouds of mosquitoes, all of which mandate taking steps to circumvent the inevitable clash of values that encountering them entails. Despite the best efforts to manicure and sanitize the suburban landscape, you'll probably encounter at least one or two of these obstacles. But never all of them!

I've been doing this for years now. Naturally I return to the site of an earlier find, and this allows me to follow changes over the years and get an idea of mushroom succession. When a tree dies, almost within the year, *Psathyrella candoleanna*, the Common Psathyrella, will appear in great numbers, feasting on the newly dead or dying woody roots. You might find them again a few months or maybe a year later, but they seem to be short-lived saprotrophs. However, after one to three years have elapsed, I've often found *Psathyrella velutina*, the Velvety Psathyrella, growing in the same area, presumably from the now further decayed root remains. Sometimes, if the stump is left, you'll find it colonized by the Big Laughing Gym, *Gymnopilus spectabilis*, or the Aborted Entoloma, *Entoloma abortivum*, the Fawn Mushroom, *Pluteus cervinus*, or more likely, some of the many wood-decaying shelf fungi. The Aborted Entolomas I found were enormous and had me stumped, but I was lucky enough to cross paths with Dick Grimm, who set me right. The shelf fungi are great for teaching purposes, because they usually persist and can be left in place until a worsening drought might force me to use leathery or woody fungi for learning specimens.

The current fetish for cleaning up all traces of the dead tree has led to stump shredders, which leave a pile of stump and root chips mixed with the soil. This is then promptly carted away, robbing you of the chance of finding mushrooms there. One year, though, enough of the chips were left in the grass that an enormous "fairy ring" of the Reddening Lepiota, *Lepiota americana*, came up the next year, around the periphery of the tree's remains. Alas, there didn't seem to be enough chips to allow for a repeat fruiting the following year.

Of course, you don't want to restrict yourself to such a narrow habitat range. While some of our finest edibles consume rotting trees or logs, nowadays both of these are usually promptly re-

moved from suburban premises, not being permitted in the sanitized version of nature which we seem to prefer.

But around our homes, another category of mushrooms well represented are the lawn inhabitants. Among the very good edibles with a taste for well-aged grass clippings belong the Meadow Mushroom, *Agaricus campestris* (usu. found Aug. into Sept.), the Horse Mushroom, *Agaricus arvensis* (all fall, sometimes spring), *Agaricus bitorquis*, the Spring Agaricus (usu. June), the Fairy Ring Mushroom, *Marasmius oreades* (whenever the rains come), the Giant Puffball, *Calvatia gigantea*, and the Purple-spored Puffball, *Calvatia cyathiformis* (both mostly in autumn).

We had an interesting mushroom phenomenon a few years back here on Oberlin College's football field. The grounds crew had, as usual, lavished attention on the field in preparation for football season, watering, mowing, herbiciding, etc., throughout our typical hot, dry summer. About a week before the first home game, I got a frantic call from the grounds manager. The field was literally carpeted with *A. campestris*, Meadow Mushrooms or Pink Bottoms; large, robust, gorgeous specimens by the many hundreds, in prime condition, but for being laced with herbicides. The grounds crew made some extra overtime pay that week, picking the offending mushrooms by hand, so the field would be ready for the Oberlin College team to lose yet another game.

Those with a similar fondness for thatch but which are inedible or poisonous include *Leucoagaricus naucinus*, a.k.a. *Lepiota naucina* (the Smooth Lepiota), *Stropharia coronilla* (the Garland Stropharia), and *Chlorophyllum molybdites* (the Green-Spored Lepiota), which deserves some special attention. *C. molybdites* is the most common cause of mushroom poisonings because it is so obvious and common on lawns; it is large, elegant-looking, and easily mistaken for a parasol (*Lepiota procera*) or Shaggy Parasol (*Lepiota rachodes*), but this poisonous one has greenish gills and a green spore print, though young immature specimens might not yet sport their telltale coloration. Lincoff notes: "[it] can be a drastic sickener, causing one to two or more days of violent purging." It is not very common in northern Ohio, but is found more widely the farther south you go.

There are many mushrooms which seem to be growing in lawns but are, in fact, coming from the roots of nearby trees; i.e., they're mycorrhizal. I'll talk of my experiences with some of these in a future newsletter.



Disadvantages of Suburban Mushrooming

Probably the most dangerous aspect of this type of mushroom hunting, at least if you're planning to eat your finds, is the possibility that the environment in which the mushrooms grow has

been treated with potentially toxic materials. Probably the most likely such situation occurs when the grounds are treated by some kind of lawn service. Whatever the pesticides be, whether herbicides, insecticides, fungicides, or nematocides, any mushroom growing on such treated lawns should never be eaten. It's not always possible to tell for sure, but my usual clue that a lawn is contaminated is whether there are any weeds mixed in with the grass. If a lawn is practically pure grass and nothing else, and if it's a much richer green than other nearby lawns, it usually means that it's been treated and is best avoided as a source of edible mushrooms. Whether to avoid future litigation or not, companies which make and sell these toxic chemicals even go so far as to recommend that grass clippings from lawns treated by them not be used to make compost you plan to add to your vegetable garden. Sounds pretty ominous to me.

There is another, less serious, problem with restricting yourself to towns to collect: competition. One thing for sure is that if you want something, it's best to collect it on the spot rather than wait for it to enlarge or reach maturity. Two main culprits come into play here: other people may stroll by and pick them or, even worse, they might be kickers instead of pickers, so you return to find your great specimens broken into small pieces and scattered about. We have such a person who wanders the same haunts as I do, who, I'm told, when confronted about his destructive actions, says he's just helping them scatter their spores. If I ever catch him in the act, he's going to get one heck of a tirade about how kicking is not an improvement over the fruiting body so well designed to disperse its load of spores! And another thing: The other common problem I encounter is the power mower, which can shred a really great find into even more of a mess than a kicker ever can.

FUNGI ARE AND FUNGI ARE NOT

Robert J. Bartolotta

Outdoor Education Coordinator,
The Cleveland Museum of Natural History
The Mushroom Log, Ohio Mushroom Soc., July/Aug. 2005

With an estimated five million living species (Lane, 1990) and billions of fossil and future species, categorizing the diversity of life presents interesting challenges. Moses had an early handle on classification with numerous biblical references (Richards, 1989) to animals, plants, and mildew. All was good for millennia with the standard classification of two kingdoms, the plants, which included fungi, bacteria, and some of the protozoans (protocistans), and the animals, which included the remaining protozoans (protocistans). Things blossomed with Whittaker's (1959) four kingdom classification. Even Whittaker (1969) could not contain his enthusiasm for broadening the scope of classification and within a decade proposed five kingdoms. In 1982 (second edition, 1988, and third edition, 1998), Margulis and Schwartz popularized Whittaker's concept, delineated the phyla within the five kingdoms, and made it available to the public in an understandable style. Woese et al. (1990) recognizes three domains—Archaea, Bacteria and Eucarya—based on 16s mitochondrial RNA. In Woese's classification scheme, Margulis and Schwartz's kingdoms Protocista, Fungi, Plantae, and Animalia are all in the domain Eucarya, while the kingdom Bacteria is divided among the two domains Archaea and Bacteria.

So what are fungi? Fungi are mostly multicellular (yeasts are single-celled) organisms, often with more than one nucleus per cell (syncytial cells). Fungi absorb their nutrition (absorptive heterotrophy), and there are no photosynthetic fungi. Fungi are incapable of movement at all stages of their life cycle (amastigote).

Their mycelial body is composed of hyphal filaments capable of producing chitin but never wood. Included are mushrooms, yeasts, molds, water molds, wilts, rusts, anthracoses, mildews, and lichens (fungi symbiotic with algae or cyanobacteria). Uses and functions of fungi include but are not limited to decomposing organic material, being eaten as food by animals including humans, forming mycorrhizal relationships with almost every plant, and yielding antibiotic compounds which humans use in defense of bacterial infection.

What aren't fungi? Fungi are not plants which develop embryonically, have rigid cell walls, and are photosynthetic with a few exceptions. Many plants, including gymnosperms and the dicotyledonous angiosperms, are capable of producing wood. Woody fungi cannot produce wood. Their hardness is attributable to chitin. Fungi are not animals, which are capable of movement and have a mouth at some stage in their life cycle.

Animals and fungi share some significant similarities, including chitin production by both fungi and certain invertebrates including insects, centipedes, spiders, and crustaceans to name a few, and the inability to photosynthesize. Not all molds are molds. Slime molds are not molds and are not fungi. Slime molds move in their aggregation phase and utilize the proteins actin and myosin for their motility. These proteins make up animal muscle also. Slime molds are classified as protoctistans and may be related to amoebas, and possibly related to flagellated protozoa similar to the gut organisms of termites.

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MYCOPHAGY AND MONKEYS

Mycolog, Humboldt Bay Myco. Soc., September 2005

Sometimes it takes time to uncover nature's secrets. Take the case of Callimicos, also called Goeldi's monkeys, a reclusive and diminutive South American primate discovered a century ago by Swiss naturalist Emil August Goeldi. Leila Porter, a biological anthropologist at the University of Washington, has spent nearly four years observing Callimicos (*Callimico goeldii*) in the Amazon basin of Northern Bolivia. Her pioneering fieldwork has collected the first detailed data of the ecology and behavior of the

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animals, an endangered species, in the wild. Among other things, her observations show that Callimicos eat fungi during the dry season, making them the only tropical primate species to subsist on this food source for part of the year. They also have a different reproductive strategy from other small New World monkeys. Callimicos (Latin for beautiful little monkeys) have the capacity to give birth to a single offspring twice annually while their closest primate relatives—marmosets, tamarins and lion tamarins—give birth to twins once a year.

“Callimicos have been mystery monkeys of South American because they are difficult to observe in the wild,” Porter said.

The animals are all black, unlike their marmoset and tamarin relatives who have bright and showy coloration or features. Callimicos are timid and live primarily below 10 meters in the understory of Amazonian rainforests in Bolivia, Brazil, Columbia, Peru, and Ecuador. They weigh about one pound and are about nine inches tall with tails that extend another foot. Callimicos have big hands with claw-like nails and move about their habitat largely by leaping from one tree trunk to another or by walking on top of branches in a four-legged gait.

Callimicos are so timid that Porter only was able to observe them for a total of about one minute during her first three-month trip to Bolivia. However, more extended fieldwork enabled her to make more extensive observations.

Porter said fruit and, to a lesser degree, grasshoppers are the Callimicos’ primary foods. However, in the Amazonian dry sea-

son when fruit is scarce, the monkeys switch to fungi that live on bamboo and rotting wood as a dietary staple.

The animals have fairly large home ranges and are widely but patchily distributed in the western Amazon basin.

FRESH FETTUCCINI WITH CHANTERELLES AND FRESH TOMATOES

Nell’s Restaurant

- | | |
|---|---|
| 1 pound fresh pasta | 1 Tbs olive oil |
| 1 pound chanterelles, cleaned and cut into 1 in. pieces | 2 Tbs butter |
| 1 Tbs finely chopped shallot | 1 tsp fresh rosemary |
| 2 Roma tomatoes, seeded and peeled | 1/2 cup grated Reggiano Parmesan cheese |
| 1 cup chicken stock | Salt and pepper |

1. Heat olive oil in large sauté pan over high heat. When almost smoking add chanterelles. Sauté for 4–5 minutes tossing regularly to lightly brown. Add shallots and cook 1 minute more. Add chicken stock and reduce by half. Add salt and pepper to taste.
2. Cook pasta in large pot of boiling water for approximately 4 minutes. Drain.
3. Bring mushrooms back to boil, add tomatoes and rosemary, cook 1 minute, and then add butter to thicken sauce. Check seasoning. Combine in a bowl with noodles and then serve with grated Parmesan.

Serve with a good Chianti—1995, 1996, 1997, and 1998 are all good vintages. The 1995 Castello della Paneretta, Chianti Classico Riserva is a classically flavored Chianti which complements perfectly the woody flavors of the chanterelles in the pasta.



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