Mushrooms Found at the 2008 Lincoff Foray
Article and Photo by Dick Dougall, Foray Co-Chair

There are a number of mushrooms that are usually found during the Lincoff Foray. Nine mushrooms have been found every year. All of these were found this year, thanks to the one "Hen" found in the afternoon.

There were approximately 105 species of mushrooms found and identified at the 2008 Gary Lincoff Mid-Atlantic Mushroom Foray. This number placed it below the average for the seven years in our records, but not significantly so.

However, a closer look at what our mushroomers found showed some very unique results. First, the total number of mushrooms brought in from the walks was significantly below normal. I estimate we found only one-quarter to one-third as many mushrooms as a typical year. The Pittsburgh area where North Park (our main foray center) is located had very little rain for over a month. This certainly contributed to the reduced numbers.

Another indication of the uniqueness of the 2008 foray was the distribution of the types of mushrooms found. The number of edibles found was extremely low. Although the 120 attendees searched with great vigor, there was only one Hen of the Woods (Grifola frondosa) found. And that was not found until the afternoon walks! We normally measure "Hens" by the number of pounds brought in. There were several plates of Honey Mushrooms and Parasol Lepiota (L. procera) found. We usually fill tables with these mushrooms, not a small number of plates.

Continue on Page 3, see Mushroom Mania
President's Corner
By John Stuart

The Western Pennsylvania Mushroom Club is heading into its ninth year of existence. We are in good shape financially and have an active membership. Over the years we have had over 625 people join the club. Some stay for just a year or two, wanting only to learn how to identify a few good edibles and find out how to avoid poisonous mushrooms. In fact a good many of our members are in this category of interested beginners. The club is an excellent resource for this kind of information and each year we offer programs geared for the novice.

As the club matures we are also gathering an increasing number of people who find the study of mushrooms provides a fascinating hobby that is intellectually stimulating, provides great exercise, and is filled with new surprises. Mushrooming becomes a pleasurable lifelong pursuit. For this group we are also trying to provide some programs at a more intermediate to advanced level. This allows some of our own members to concentrate on more specific areas in greater detail and then give lectures or courses to teach us all. This September we had 42 people attend an Introduction to Mushrooms course and 20 attended an advanced day long Identification of Mushrooms to Genus by Macroscopic Features program. All these things have been accomplished by our own members.

There has been some debate as to whether we should invite an outside speaker to one of our monthly meetings. We do this now each year at the Gary Lincoff Foray and the expenses for the speakers are covered by the program fees. We have nine monthly meetings a year from March to November and there is room to invite other experts from outside the club to give a presentation. This may require additional expense but it could be possible to fit this item into our budget.

The club is here for everyone’s benefit. The trick is to find the right balance to educate beginners and to keep the interest of our dedicated long term members with new, interesting, up to date information.

WPMC Elections for 2008 Officers

The attendees of the October meeting elected new officers for 2009. The new lineup is as follows.

President: John Stuart
Vice-President: Jim Wilson
Treasurer: Barbara DeRiso
Recording Secretary: Mary Tadler
Corresponding Secretary: Heather Maceiko

Please join me in welcoming our new officers. Thanks to all the officers, new and old, for contributing your time to the club. Your service is greatly appreciated.

WPM C News Items

WPMC Mushroom Items For Sale
A number of mushroom-related items are sold at our meetings caps and t-shirts, mushroom cookbooks, loupes, waxpaper bags, and Field Guides to Mushrooms (both Lincoff’s and Russell’s). See Mary Ellen Dougall at the sales table at our meetings.

WPMC Yahoo Groups
Yahoo Groups is a great resource for our club members and other mushroom enthusiasts from across the country. There are always interesting discussions in the Message section on all kinds of subjects involving wild mushrooms. Find out what mushrooms are up, where people are finding them, recipes, weather, latest announcements, and other things. Also find award winning photos in the Photo section, and articles, lists, and other files in the Files section. http://groups.yahoo.com/group/wpamushroomclub/

WPMC Website
Reference our professionally designed website for information and links pertaining to our club: walks, meetings, species lists and Java data miner among other things.
www.wpamushroomclub.org

WPMC Wild Mushroom Cookbook, Volume 3
We are working on compiling WPMC Cookbook, Volume 3, but we need more recipes. We are waiting for your addition to Vol. 3. Volumes 1 and 2 have been great successes and are both available for sale. We cannot use copyrighted material or anything you have not tested and enjoyed. Send your recipes to Becky Plischke at morelbp@aol.com or mail to 129 Grant St, Greensburg, PA 15601.

Monthly Meetings

Our meetings are held on the third Tuesday of every month from March until November. They begin at 7:00pm at Beechwood Farms Nature Reserve in Dorseyville. Please see their website (www.awsp.org) for directions and other information.

November 18: Mushrooms and Art by Joyce Gross,
Workshop Chair. TBD.

WPMC Photo Contest

Time is getting short to enter the 2008 photo contest. There is a new twist to the photo categories this year. In addition to the Pictorial, Documentary, and Judge’s Option categories, there is a new category called “Only in Western Pennsylvania”. Photographs in this category must depict a mushroom theme unique to the western Pennsylvania region. Put on your thinking caps, don your cameras, and send all entries to Rebecca Miller at rmill@svolininc.com before November 17th.
Mushroom Mania, continued from Page 1

Another measure of the dryness of this year’s foray was what was not found. Not a single *Amanita* or *Lactarius* specie was found ... none! A total of three Russulas were brought in (three *mushrooms*, not three species). There were five boletes brought in, of which three were Ash-Tree Boletes (*Boletinellus merulioides*). Over previous years, we had recorded 43 different species of Boletes which was the third largest group of mushrooms found.

What did we find? We found 21 polypores, slightly below our average number for this type of mushroom. Mushrooms growing on wood made up most of our finds. Because of the dry conditions, I’m sure we brought in some mushrooms we would have completely ignored in better years; sixteen new mushroom species were added to our records from this year’s foray.

Thank you all for delivering a good collection of mushrooms under difficult circumstances. I would also like to thank our mycologists and identifiers who sorted through the mushrooms found.

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**Mushroom Mania Cooking Demonstration**

*Chef Tom Chulick*

*Risotto with Fresh Mushrooms*

1 lb fresh wild or exotic mushrooms, cleaned, sliced
6-8 cups meat or chicken stock
½ lb unsalted butter (BT)
1 medium onion or 2 shallots, chopped
1 lb Arborio rice
½ cup dry white wine
½ cup grated parmesan cheese
2T chopped fresh herbs

*S&P*

- Bring stock to a boil, keep hot
- Melt 6T of butter in medium sauce pan
- Add onion and sauté until transparent
- Add rice to pan stirring to coat with butter until shiny
- Add white wine, stirring until evaporated
- Ladle stock onto rice one cup at a time, stirring all the while until absorbed
- Continue until rice is halfway done (10-12 minutes) using about ½ of the stock
- Fold the mushrooms into the rice mixture
- Add S&P to taste
- Continue adding stock and stirring until absorbed. The rice should be al dente, about 8-10 more minutes
- Turn off heat; mix in parmesan, herbs and remaining 2T butter
- Serve

Demonstrated by Chef Tom Chulick C.E.C., owner of the Back Door Café in Johnstown, PA at the Gary Lincoff Mid-Atlantic Mushroom Foray, September 20, 2008

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*Club Identifier Jim Tunney* hard at work putting names to mushrooms.

*Congratulations! Our MM cooks prepared a fine fungal feast.*
Macrolepiota Associated with Oak Trees of Eastern North America
Book review by John Plischke

The book has a simple and very interesting approach; it is all about mushrooms associated with oak trees found in eastern North America. I have never seen anything like that, but it makes sense. Of course, some of the mushrooms are specific to only oaks, while others can also be found in association with other species of trees.

It has a host of well known authors, D. Binion, S.L. Stephenson, W.C. Roody, H.H. Burdall, O.K. Miller, and L.N. Vasilyeva. With a list of authors like this, you would expect the book to be good and it is.

Macrolepiota Associated with Oak Trees of Eastern North America is divided into three sections: mycorrhizal, pathogens, and decomposers. There is at least one photograph with each species and to my personal joy; most of the pictures are on the left hand side of the page and the description on the right hand side, which makes the book very easy to use. Detailed descriptions and colored photographs are provided for 217 species. The taxonomic group, Latin name, common name, order, family, and synonym are listed. A description of the fruiting body, the cap or upper surface, the spore bearing surface, spore print color, spore size and description, occurrence and comments are included. Many common fungi are included, but some fairly rare ones can also be found in the book.

The 467 page book is 6 inches wide, 9 inches tall and 1 1/2 inches thick. The pictures are a nice size, many being 3 by 5 inches or larger. That makes it easier to see the mushrooms and their details. The book provides an overview of the ecological relationships that exist between fungi and oak trees. Information is included on edibility, toxicity, medicinal properties and other novel uses. Also included are mushroom look alikes, mushroom cultivation, and mushrooms that can be used as a source for natural dyes. The time year they are likely to be found is also included.

In the acknowledgement section there are many names you might also know including: Donna Mitchell, Walter Sturgeon, Alan Bessette, John Plischke III, and the Emily Johnson slide collection.

At the time of writing this book review, the book is not yet available, but soon will be. You can check the West Virginia University Press at www.wvupress.com or you can call toll free at 1-866-988-7737 for updated information. The price of the book when released will be $45.

Fairy Ring Folklore
Article by Jim Strutz

Most of us have encountered arcs or rings of certain varieties of fungi in the woods or in fields. They are known as "fairy rings". Perhaps the best known of the fungal species commonly found growing in fairy ring patterns are Marasmius oreades, or the Fairy Ring Mushroom. Last year I drove past a ring of Horse Mushrooms, it was spectacular. They somehow made their way into my car in broad daylight! As with such mysterious occurrences, fairy rings have been the subject of folklore and superstition in many cultures for many centuries.

The Celts regarded fairy rings as places where elves, fairies, or witches danced. They were thought to have strange supernatural qualities and would bring bad luck. Thus, fairy rings were often feared. One superstition held that anyone who stepped into a fairy ring would die at an early age. Stories persisted of "victims" who were held captive, or were cursed, by mischievous fairies dancing in rings. Curses were said to be broken by casting herbs into the rings of mushrooms. One farmer was said to have tied a rope around himself, and enlisted the help of several friends to secure the rope as he entered into a ring to save his daughter. Celtish tradition instructed that the only safe way to break a curse was to run around the ring 9 times, preferably under a full moon. To run around the ring a 10th time was foolhardy. Entering a ring on the eve of All Saints Day (our Halloween) was especially dangerous. There was practically no hope for you in that case.

Other European folklore is similar in essence. The French word ronds de sorciere translates to "sorcerer's rings" and the German word hexenringe means "witch's rings". Other European folklore tells of fairy rings as places where the devil churned milk and where dragons scorched the ring's interior so that nothing except toadstools could grow there for 7 years. In England, fairy rings or pixie rings were places where elves danced in circles, and where mushrooms sprouted overnight. Toads sat on the mushrooms, poisoning them, thus creating "toadstools".

The fairy ring is a common theme in literature. Try doing a Google books search on "fairy rings" and thousands of examples will result. Among the most notable is Shakespeare's "The Tempest" in which "...you demi-puppets that by moonshine do the green sour ringlets make, Whereof the ewe not bites, and you whose pastime is to make midnight mushrooms that rejoice to hear the solemn curfew...".

Perhaps nothing else in nature inspires the imagination more than fairy rings of mushrooms. Do we really know why they grow in a circular pattern? Could it really be elves and witches and leprechauns? Perhaps it's wise not to chance stepping into one; take a handful of herbs, a rope, and hope that you don't fall under a witch's spell. Good luck to you!
This month's fungus is one of my favorite mushrooms for eating. Sometimes called the "hen of the woods" (not the chicken of the woods), it closely resembles the texture and meatiness of chicken breast when cooked properly. It also looks like a hen sitting on her nest in the woods—at least if you have a vivid imagination. In certain parts of the country, especially western Pennsylvania and eastern Ohio, it is called "sheephead," in reference to its resemblance to the wooly crown of a sheep that needs a haircut. In Japan, this mushroom is called "maitake," the dancing mushroom; because finders of this mushroom often dance for joy to celebrate their great find (I will admit to dancing for joy in the woods many times). And a great find it is. It is not unusual to find specimens of 10 pounds (4kg) or more—the largest I have ever found weighed in at 26 pounds (11.8 kg)! That's a feast to last a long time. My students and I found a lot of Grifola this year—maybe over 150 pounds! Fortunately it preserves well by drying in a food dehydrator or just air drying, so we will be enjoying Grifola all winter.

My favorite way to cook the hen is to slice off the "fronds" of the fruiting body and sauté them in olive oil and a little butter. I think that they are most delicious when substantially browned on the outside but still tender on the inside. However, they're also very good in stew, spaghetti sauce, and in stir fry. Yummy! You can also make a quasi-delicious tea out of the dried fruiting bodies by steeping a small piece in very hot water. Do not microwave the tea, because that is reported to destroy the active compounds, mostly the "D-fraction," reported to have medicinal properties (see below).

Grifola can be found in the fall of the year in eastern North America, typically at the base of an oak tree. It doesn't grow directly from the trunk, but fruits off the living roots of the tree. Sometimes there may be several around one tree. An added bonus is that if you find Grifola around a particular tree, you can go back to that tree in subsequent years to find more. Of course you have to go at the right time of year, and the environmental conditions also have to be correct. You can usually go back to the same tree for 5-10 years or more to find additional fruiting bodies.

However, there is a dark side to all this: Grifola is a parasite of the oak tree, getting its nutrients from the roots. Fortunately it is a "good" parasite, not killing its food source but keeping it alive as long as possible in order to maximize its own life. Unfortunately, most of the time the host tree eventually dies, probably from a combination of the Grifola infection and environmental stresses such as drought and wind. You can sometimes see a dead tree as a "tip up," where the tree has been blown down by the wind, broken off at the roots. At the right [next page] you can see my friend Jim Strutz with a blown-down tip-up of an oak tree in Pennsylvania. Jim had collected Grifola at the base of this tree for the previous 6-7 years.
Grifola frondosa is also very popular in Korea, China and Japan, where it is cultivated as maitake, the dancing mushroom. Typically its mycelium is inoculated into plastic bags filled with supplemented sterilized sawdust or other wood-containing wastes. The mycelium is allowed to grow through the bag, a process that may take up to a couple months or more. At that time the sawdust has become annealed together to produce an artificial log. As the mycelium begins to run out of food, an opening is made in the bag (in this case the top), and fresh air is allowed to enter. This fresh air, with its increased concentration of oxygen and decreased concentration of carbon dioxide, is a signal to the mycelium that it is outside of the substrate and should form its fruiting body. It is a pretty efficient process, once the grower learns to provide the right conditions for growth and fruiting.

Other wood decay fungi can also be grown on artificial logs, including shiitake Lentinula edodes, oyster mushrooms (Pleurotus), and the lion’s mane, (Hericium). Of these, Pleurotus and Hericium are by far the easiest to fruit reliably on sawdust; shiitake and maitake are a little trickier and need more attention. Some time I’ll make shiitake the fungus of the month and describe in more detail how the artificial log thing works. I’m just waiting for the whole shiite-sunni thing to blow over...

As alluded to earlier, maitake has been used in eastern Asian medicine for many millennia, reported to have a wide number of health benefits. Grifola frondosa is an apt example of a well-documented traditional Chinese medicine. The first record of its use comes from Shen Nong Ben Cao Jing (Shen Nong’s Scripture of Herbal Medicine [cited in Mizuno and Zhuang 1995]), which was compiled between 200 BC and 200 AD. This scripture states that Keisha (one type of medicine made with Grifola frondosa) “has been used frequently for improving spleen and stomach ailments, calming nerves and mind, and treating hemorrhoids” (Mizuno and Zhuang 1995). There are a variety of other Chinese medicines containing Grifola frondosa, ranging from cancer treatment to remedies for palsy, nerve pain, and arthritis. Other described uses of this mushroom include general treatments for immune stimulation and regulation of homeostasis.

Controlled experiments have found many beneficial activities attributable to Grifola frondosa and/or its extracts. The most notable of these activities are the many reports of antitumor activity from Grifola. Certain extracts of this mushroom have been shown to inhibit carcinogenesis, metastasis, and tumor growth (Hishida et al. 1988). Nanba (1997) has studied Grifola as a treatment for cancer patients in Japan and found partial or complete remissions in most cases. While these studies and a great deal of anecdotal evidence for Grifola’s use as an effective human cancer treatment can be cited, most studies have shown antitumor activities only in mice or using in vitro studies with cancer cell lines (Ohno et al. 1984, Hishida et al. 1988, Nanba 1995, Adachi et al. 1987). Although there are many studies using crude extracts of this mushroom, it should be noted that one of the most promising compounds is a mixture of complex branched polysaccharides called D-fraction (Nanba 1995, Nanba 1997). D-fraction is the hot-water-extractable, acid-insoluble, alkali-soluble fraction that has shown promise in cancer treatment.

There have been numerous reports of other biological activities of this mushroom that could have therapeutic uses. These include immunomodulating properties, mostly through the action of inducing and attenuating cytokine production (including tumor necrosis factors) by macrophages (Suzuki et al. 1988, Adachi et al. 1994, Ohno 1995, Okazaki et al. 1995). This is
likely due to interaction of the polysaccharides from Grifola with receptors on the cell surface of macrophages. Grifola has also been shown to have antihypertension and cholesterol-lowering effects (Kabir et al. 1987, Kabir and Kimura 1989, Adachi et al. 1988). Other studies have shown that extracts of Grifola can reduce the conversion of cultured cells to adipocytes (fat cells), which can result in reduction of weight gain in experimental animals (Nakai et al. 1999). Along these lines, various antidiabetic effects, such as reduction of blood glucose and modulation of insulin and triglyceride levels, have been demonstrated using extracts of Grifola (Kubo et al. 1994).

The most widely known Chinese medicinal mushrooms used are maitake (Grifola frondosa, described above), shiitake (Lentinula edodes, and reishi (Coriolus versicolor). All of these mushrooms contain potent antitumor polysaccharides. These consist mostly of branched β-(1 → 3)β-D-glucans. Many of these polysaccharides exist as a triple helix that is believed to interact with macrophages. The response of macrophages to β-(1 → 3)β-D-glucans (including D-fraction from Grifola frondosa) has been shown to result from a β-glucan receptor on the cell surface. When fungal β-(1 → 3)β-D-glucans bind this receptor, the macrophages increase release of lysosomal enzymes, active oxygen species, and cytokine (Borchers et al. 1999).

I hope you enjoyed learning about Grifola frondosa, called by many other common names. If you’re lucky enough to dance for joy in the woods upon finding this mushroom, I hope it helps you to enjoy a long and healthy life.

This month’s co-author is Nik Zitomer, who received his M.S. degree with me in 2003. As of this writing, Nik has defended his PhD thesis at Penn State and is working on the final revisions. Congratulations to (almost) Dr. Zitomer!
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