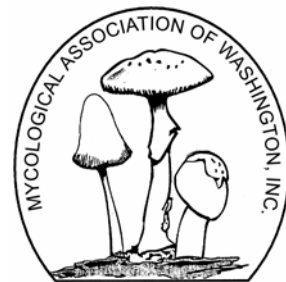


Potomac Sporophore



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BOARD OF DIRECTORS

Ray LaSala- President
202-332-8727
president@mawdc.org

Daniel Barizo- Vice President
301-824-7112
vicepresident@mawdc.org

Terri Pick- Secretary
301-916-9249
secretary@mawdc.org

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301-585-8240
treasurer@mawdc.org

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410-884-9127
programs@mawdc.org

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301-768-6788
forays@mawdc.org

Connie Durnam
Membership-202-362-1420
memberships@mawdc.org

Loretta Chi - Culinary
301-816-9188
culinary@mawdc.org

Bruce Boyer- NAMA Rep
703-863-9633
namatrustee@mawdc.org

Jim Sherry - Editor
410-531-2329
newsletter@mawdc.org

Voicemail:301-907-3053
next meeting: ext.. 33
For forays: ext. 55

MAW DUES

MAW dues are paid each year in January. Send check to:

Connie Durnan
Membership Chair
4509 Windom Place, NW
Washington, DC, 20016

Singles: \$20.00
Households: \$30.00.

NOTE:. This is the last newsletter that will be sent to those members who have not paid their 2008 dues.

Monthly Meetings
All monthly meetings are held at the Chevy Chase library on the 1st Tuesday of the month. 7:00 p.m.

April 1st. Dr. Harry Preuss will speak on: "Medicinal uses of Mushrooms."

May 6th. The Wildfood Tasting
The wildfood tasting takes place each May. Members

may bring a dish of any wild-food but must cook the wild-food at the library. Hot plates will be provided.

Bring a trivet and, if possible, bring a table.

Members may bring a cooked dish of mushrooms, if the mushrooms are store-bought.

Without a dish the cost to members is \$10.00, with a dish admission is free to members. Others must become m MAW members to participate.

June 3rd. Dr. Rytas Vilgalys. Topic: "The Evolution of Fungi."

Tentative Spring Foray Schedule- from Mitch

Remember, this schedule is tentative. To be sure any foray is still on, and to get directions, call MAW's voice mail system, (301) 907-3053, voice mail box 55, a couple of days before the scheduled foray. Or, if you would like an e-mail notification, e-mail Foray Chair Mitch Fournet with

your e-mail address, at forays@mawdc.org, and ask to be put on his list.

Sat., April 19 - Watkins Regional Park, south of Bowie, MD

Sun., April 20 - Roundtree Park, VA

Sat., April 26 - Wheaton Regional Park, MD

Sun., April 27 - Great Falls/C & O Canal Park, MD

Sat., May 3 - 4H Center, Front Royal, VA

Sun., May 4 - Skyline Drive, Front Royal

Sat., May 10 - Front Royal again (possible)

Sat., May 17 - open for another possible Front Royal foray

Meeting time is generally 10 a.m., but Front Royal forays may be later.

In Memoriam, Dr. Sam Ristich

Longtime mushroom “guru” Dr. Sam Ristich passed away at his home in Yarmouth, Maine on February 11. Dr. Sam was about 93, the founder of the Maine Mushroom (Mycological?) Association, and author of a collection of his mushroom accounts,

“Sam’s Corner - the public journal of a mushroom guru.”

It has probably been 15 years since Sam gave a presentation to MAW. He was known for his mushroom spore print artwork, as well as for his keen interest in all things mycological, including a sharply observant attention to relationships between fungi and other critters, especially insects. In addition, according to Gary Lincoff, Sam was the originator for many of the rather ironic, food-related “common names” for slime molds found in Gary’s Audubon series mushroom guide: Tapioca Slime, Chocolate Tube Slime, Scrambled-egg Slime, Carnival Candy Slime, etc. Definitely a sign of his puckish sense of humor. (I used to think it was Gary getting back at the publishers for *requiring* that he come up with common names for every species, even when there weren’t any.)

Dr. Sam’s name will live on, in the annual Northeast Mushroom Foray named in his honor, and in the minds of those who learned from him. Jon Ellifritz

BOLETES

Jim Sherry

At the MAW meeting this January, Leon Shernoff, editor of *Mushroom, the Journal of Wild Mushrooms*, spoke about eastern boletes. The first slide he showed pictured a bolete from the gulf coast; others shown were from the hinterland so I wondered what he meant by “eastern.”

Looking in Lincoff’s Audubon field guide, I found that boletes are largely an east coast phenomenon; of the 30 boletes described by Lincoff, 20 are found only on the east coast or west to Michigan; 6 are found throughout North America and the rest are found scattered west of the Midwest.

One of the confusing things about the names of boletes is that we often use the word “bolete” when we are referring to different families and different genera within families. For example the *suillus* is called a bolete but its in its own family and *tylopilus*, *leccinum* and *beletus* are genera within another family and all are referred

to as boletes.

There are over 30 genera of boletes but the genus with the most species is the boletus genus. This overuse of “bolete” as a category may stem from a time when all pored mushrooms were called boletes

Shernoff’s major theme was that many boletes are difficult to name. He mentioned five times that he and his friends argue about what to call a bolete that they find one on a foray. This has little to do with the classification system mentioned above- it’s due to the fact that boletes of the same species often have subtle differences and these differences may mean that the bolete involved is or is not of the same species.

Look at Roody’s book on boletes and you will find five pictures of the most popular bolete in the world, the *Boletus edulis*. One assumes that Roody wanted to make this very point.

Shernoff said that birders who go on mushroom forays are often the first to quit because the foray leaders sometimes cannot identify the mushrooms they find. There are 750

birds in North America!

TRUFFLES

Jim Sherry

There was a time when Giant’s was the largest supermarket and then both Safeway and Superfresh became larger and now there’s Wegmans-the colossus, with a large alcove just for their teas and over 700 cheeses.

We were interested in Wegman’s mushrooms and, in particular, its truffles, and we found them- in a locked box, resting on a bed of white rice. There were twelve of them and each was about the size of a small walnut shell. The cost for a pound was \$999.00 but the individual truffle weighted approximately 1/50 of a pound so that one truffle cost about \$20.00. We bought one.

These truffles were from Burgundy, France and were called the Burgundy truffle or “summer truffle,” (*Tuber aestivum*) – a truffle which grows all over Europe but is found more often in France and in Italy.

There are about 30 varieties of truffles but only about a handful are treasured. The most prized

is the Perigord black truffle (*Tuber melanosporum*) of the Dordogne region of France. This is the “black diamond” and is the *non pareil* of truffles.

The Italian white truffle (*Tuber magnatum*), found in Italy’s Piedmont area, is the most expensive truffle-two to five times the cost of the Perigord- because it is less abundant than the Perigord.

Recently, a man and his son, with the aid of their dog, found, near Tuscany, Italy, a white truffle and auctioned it off for \$330,000.00; it weighed 5.5 pounds. It was the second largest white truffle on record.

The truffle forms a mycorrhizal relationship with oak and other hardwood trees. It grows in lime enriched soil (pH over 7) and needs rain to flourish. The truffle grows underground (2 to 12 inches). Animals can smell it because of its pungent odor; they dig it up, eat it and pass its spores.

In the early 1900’s many truffles were harvested in Europe but there has been a very significant decline in their harvest since then (people moved to the cities or died without disclosing

their secret truffle places). Today there is great interest in establishing a *truffiere*- a truffle plantation.

Truffles grow in a number of states in America, and Oregon has been successful in growing a variety of truffles, both white and black. Their black truffle is commanding about \$1000.00 a kilogram.

Seven years ago in Chuckey, Tennessee, Dr. Tom Micheals, a plant pathologist, inoculated the roots of a hazelnut tree with the Perigord truffle and recently he found that this effort has produced a truffle that well-known chefs are praising as the first American- grown truffle that can compare with the Perigord.

Truffles are not eaten by themselves. They are added to dishes to enhance the flavor of the dish. They are commonly cooked with eggs, polenta, and risotto or added to salads. Some stand up better to heat than others and some can be eaten raw.

We also bought some sweet tooth or *Dentinum repandum* at Wegmans, which was a better buy.

The Tick Thing

Jim Sherry

Maryland is a hotbed for deer ticks- that's the tick that can give you Lyme disease. I have found a deer tick in the fold of my arm twice in the past three years. The first time I developed the telltale bulls-eye- the reddened circular rash with the tick in the middle, embedded in what could be mistaken for a pimple. The second time I had no bulls-eye but the dermatologist identified the deer tick and I again started a treatment of doxycycline- the standard treatment for preventing the disease. I never got Lyme disease; doctors don't wait for blood test results to find out if one has Lyme disease because quick treatment is absolutely necessary and, also, a test may result in a "false positive."

Recently, a number of our neighbors have found deer ticks on their bodies. There was Jack, who says that he finds a deer tick on him every year, and Whitey, who had a bulls-eye and Whitey's wife, who has found a deer tick twice in two years, and Irene, who lives in Dewey Beach, and

last year developed Lyme disease and is now suffering from all the disabling symptoms of the disease.

None of these people go into the forest looking for mushrooms, though they do garden and have pets that go into their yard.

Being bitten by a deer tick is a danger because the bite is not felt so that you might not know you were bitten. And if bitten, you have only a 50% chance of developing a bulls-eye. So you can walk around for weeks or months not knowing that you may be developing Lyme disease.

I have talked with a couple of club members who have been foraging for decades who say that they never worry about deer ticks. I don't worry that much myself, but since I have been bitten twice I am going to be more cautious: trouser legs in the socks, light-colored clothing, bug spray and examinations, well, perhaps.

The Honey Mushroom

William Needham

Common Names: Honey Mushroom, bootlace fungus, stump mushroom - The variegated yellowish

brown hues of the cap have areas that are similar in coloration to honey. The bootlace name describes the black, elongated outgrowths called rhizomorphs that extend from the mycelium (the underground body of the fungus) as it propagates vegetatively.

Scientific Name: *Armillaria mellea* - The generic name is derived from the Latin words *armilla* which means ring-shaped and *aria* which is a word signifying a connection. This refers to the annular ring on the upper stalk of the mushrooms of this genus that is "ring-shaped" and connected to the stalk. *Mellea* is derived from *mel*, the Latin word for honey. (alternatively named *Armillariella mellea*).

The honey mushroom was once considered to be a singular though polymorphic species (polymorphism applies to an organism as an expression of its capability for wide variation) and its genus *Armillaria* was once comprised of any white-spored mushroom of the agaric family (Agaricaceae) with attached gills and an

annular ring on the stem, approximately 250 species. Several decades ago *A. mellea* and its generic assignment became subject to the tumult in the field of mycology as a better understanding of taxonomy based on experimentation and DNA analysis became manifest. The *Armillaria* genus was reduced to only those mushrooms that produced long, stringy root-like structures called rhizomorphs; the other mushrooms that had been in the genus were renamed and reclassified to other genera.

The honey mushroom was originally assigned to a new genus *Armillariella* (which is still in use in some texts). However, owing in part to its polymorphism, it came under scrutiny and research to ascertain the nature of the species was undertaken by mycologists in the 1970's. Since the external features of mushroom morphology are inadequate to distinguish variance, a much more laborious process must be employed. In the case of the honey mushroom, that consisted of taking individual spores from different mushrooms and placing them together in a

petri dish filled with agar to observe the resultant growth patterns. If the spores were from different species, the resulting growth was white and fluffy indicating no genetic communication; if the spores were from the same species and compatible genetically, the growth was brown and sometimes produced rhizomorphs. Using this method, the honey mushroom was found to consist of five different species native to Europe and ten different species native to North America. The distinctions between the species are generally not manifest in any significant physical differences except one, the presence of a ring on the stalk. The honey mushroom *A. mellea* has a ring on the stalk and a viscid or sticky cap. The "ringless honey mushroom" *A. tabescens* (tabescent means wasting away) does not have a ring and has a dry, scaly cap.

The honey mushroom is one of the most damaging pathogenic fungal species; it can rapidly infest and kill trees over an extended area. The mycelial body of the fungus is underground, subsisting among the roots

of plants. Growth occurs by root-like tendrils called hyphae that extend vegetatively to exploit surrounding resources. In the case of the honey fungus, these hyphae intertwine like the strands of rope and form a protective black rind so that the resulting structure is robust and penetrating. This filamentous structure is called a rhizomorph from the Greek *rhiza* meaning root and *morphus* meaning form; it has a root-like form. Rhizomorphs can grow as much as a meter per year, extending the range of the fungus outward from the original infestation. The rhizomorph hyphae transport nutrients from one location to another; the honey fungus can thus extend its range through an area devoid of nutrition to a new food source, such as an adjacent tree or stump. Rhizomorphs travel just below the surface of the ground until they reach the roots of an adjacent tree. An infected tree will die once the fungus has girdled it; the vascular system of trees depends on a flow of water and minerals up the inner part of the bole called the xylem and the flow of nutrients from the leaves

down the outermost layers below the bark called the phloem - when a tree is girdled the outer layer flow of nutrients is curtailed.

Foxfire is a name given to the observed phenomenon of decaying wood that glows in the dark; "fox" connotes not only the woodland habitat of the light (fire) but also confusion: the fox is sly and cunning and foxfire is perplexing. This ethereal nocturnal glow is caused by bioluminescence, the production and emission of light by a living organism in converting chemical energy to light energy. The pigment luciferin (from the Latin *lucifer*, meaning light-bearing) reacts with the enzyme luciferase, ATP (adenocytosine triphosphate) and oxygen to produce light. Though there are a number of fungi that luminesce, the honey fungus is the most extensive and notable (in some references, the glow of *A. mellea* is defined as foxfire). This is because the rhizomorphs of the honey fungus extend under the bark of an infested tree and the extending hyphae permeate the wood as it decays. Thus, the wood

itself appears to glow. Other fungi that glow in the dark like the Jack-O-Lantern (*Omphalotus olearius*) are in the form of a mushroom fruiting body that grows as an entity distinct from the wood. It is thought that the bioluminescence of fungi evolved to attract insects to the fruiting body to assist in spore dispersal.

The honey mushroom is also the "humongous fungus" that has periodically risen to national prominence. It started in Michigan in 1992, when researchers evaluating the biological effects of the installation of an extremely low frequency (ELF) transmitter for submarine communication mapped out the geographical dispersion of a type of honey fungus (*A. bulbosa*). They found that it extended over an area of 15 hectares (37 acres) and estimated that it weighed about 100 tons and was about 1500 years old. Later in 1992 an even larger honey fungus (*A. ostoyae*) of 600 hectares was found in southwestern Washington. The current record is held by the state of Oregon, where a honey fungus (also *A. ostoyae*) of 900 hectares

(3.4 square miles) was discovered in August, 2000. It is estimated that this fungus is at least 2, 400 years; at an assumed steady state rate of rhizomorph growth of 1 meter per year, it would take that long for it to reach its current extension. It could be much older. Since it is 60 times larger than the Michigan fungus, its weight by extrapolation is about 6,000 tons, about 5 times the estimated weight of the giant redwood (*Sequoiadendron giganteum*). This gives the honey fungus the dubious distinction of being the largest and oldest living thing on earth.

The honey mushroom is edible and is generally classified in mushroom field guides as "choice, with caution." The caveat enjoins the mycophagist to cook the raw mushroom thoroughly before eating; even then, it is known to cause gastrointestinal discomfort in some people. But the real caution is that there is a deadly mushroom with very similar characteristics; the *Galerina autumnalis* is commonly known as the Deadly Galerina because it contains the same toxins as

the Destroying Angel
(*Amanita virosa*).

On the Last Day of...

Jim Sherry

On the last day of the last month of 2007 Maria and I decided to go for a walk in the woods but couldn't decide where - all of our usual places seemed a bore. So we got in the car and drove through Ellicott City and then on to Oella- an old mill town next to Ellicott City.

Oella was built on hills and has narrow, winding roads, which gives one a slight anxiety when rounding a bend. One can easily see that the town has been gentrified, but one does wonder how its residents handle a 10 inch snow storm.

At the edge of Oella we came to the Bannaker museum. Benjamin Bannaker (1731-1806) was a black man who was a self-taught inventor, mathematician, astronomer and surveyor. He helped to survey Ellicott City and Washington DC.

His museum was closed but we were interested in the grounds and started walking. After a couple of minutes Maria caught her

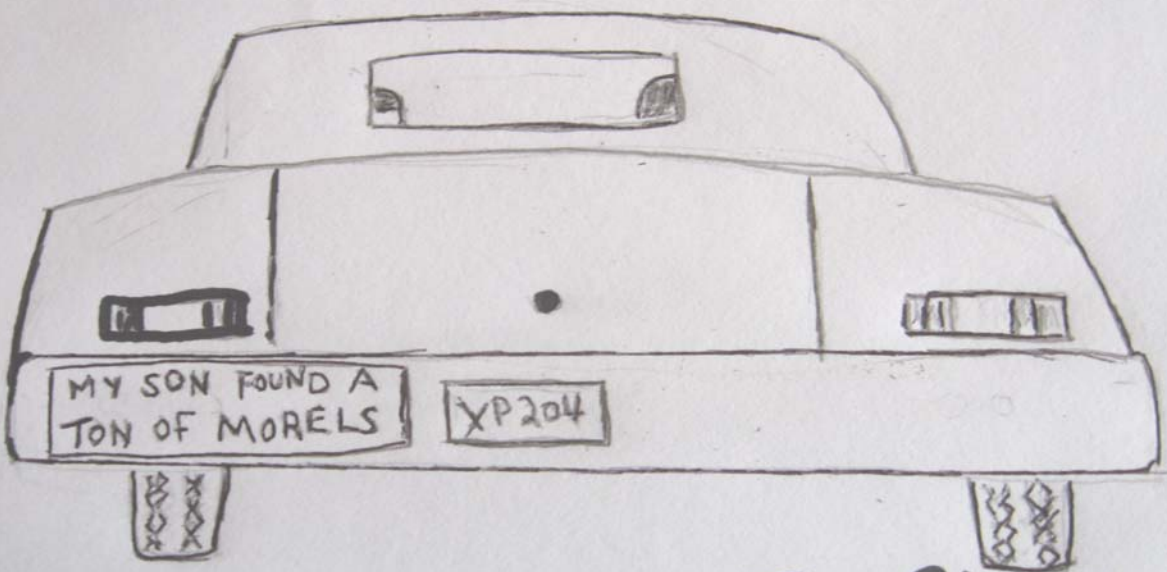
breath because she spied mushrooms bubbling out of the seams in the logs that were put down as a frame for the path we were on.

The logs were tulip poplar and the mushroom was the oyster mushroom. They were in an early stage of growth and we picked enough for two meals. Two days later I returned on a biting, cold morning to find that most of the mushrooms had been picked and the few that were remained required a hammer to dislodge.

Was it a human or an animal that picked the mushrooms. I don't know. Most of the pleurotus that I pick are not disturbed by anyone, though there's more deer than humans on my hunting grounds.

And you don't need a stream to find pleurotus because I didn't see one. I never did accept the idea, held by some, that pleurotus needs a stream in order to bloom, though I admit that it helps.
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The Potomac Sporophore is published four times a year by the Mycological Association of Washington, DC (MAW).



Jim Sherry