

Potomac Sporophore



March 2007

Volume No. 22

Issue No. 1

Website: <http://mawdc.org>

BOARD OF DIRECTORS

Ray LaSala- President
301-422-7517
president@mawdc.org

Daniel Barizo- Vice President
202-797-2344
vicepresident@mawdc.org

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

Agit Gadre -Treasurer
301-881- 610
treasurer@mawdc.org

William Needham -Programs
410-884-9127
programs@mawdc.org

Mitch Fournet -Forays
301-656-9379
forays@mawdc.org

Catherine White-Horne,
Membership-301-937-9656
memberships@mawdc.org

Ann Dorsey - Culinary
903-714-2887
culinary@mawdc.org

Bruce Boyer- NAMA Rep
703-803-0404
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 2007 dues are due now.
Please send your check to:

Membership Chair
1903 Powhatten Rd
Hyattsville, MD 20783

Singles \$20.00/Households
\$30.00

THE MAW BUDGET

The main source of MAW'S income is membership dues. We have about 140 members plus about 30 family members. Another source of income is the money paid at the "tastings" and we get some interest income. These amounts total about **\$3000.00**

The major expense is the cost of the monthly meetings. This year we expect to spend about **\$1900.00** for the speakers, the library room, and the food. The budget for the 2007 newsletter is **\$800.00**.

We are planning to buy a digital projector for **\$750.00** and to spend another **\$1000.00** on the Voice Mail, the Web Mail, education and a few other items, such as the fair.

There is a question about the Voice Mail that came up at the last meeting, which was: should we continue it? The great majority of members can obtain club news on the internet and it

costs the club **\$300.00** to maintain the voice mail system, per year. *How many members want the club to continue to fund the voice mail system? Let us know.*

FORAYS

Schedule for spring 2007

April 15th: First morel scout at [C&O Canal Park](#), Great Falls, Maryland

April 21th: Second morel scout at [Wheaton Regional Park](#), Wheaton, MD

April 22th: A try at [Rosaryville State Park](#), Rosaryville, MD

April 28th: This slot to be determined as season progresses.

May 1st: The hunt continues at [Watkins Regional Park](#), Upper Marlborough, MD. We may have our speaker for the evening, Gary Lincoff, join us as guest mycologist on this foray. (weekday foray).

May 5th: A day at the [Northern Virginia 4-H Educational Center](#) in Front Royal, VA

May 6th: If Front Royal is looking good we will try out [Shenandoah National Park](#) on Skyline Drive

May 12th: A tentative foray at the [Northern Virginia 4-H Educational Center](#) in Front Royal, VA.

May 19th: Another tentative foray slot depending on the progression of the season. Stay tuned....

July 1st: The hunt for Chanterelles begins, [Scott's Run Nature Preserve](#), McLean, VA

This is a tentative schedule, as usual, and I will check out some sites earlier to see if I can find some early arrivals. If you are able to get out and see things starting please feel free and let me know. I can be reached at forays@mawdg.org.

There may be additions or deletions due to weather or depending on the season. As many know, this is not a precise science and if we are having a warm wet spring the whole schedule may be bumped up. I will be sending out an e-mail with the time date and location before each foray and have begun to send out a species list after each foray. If you would like to be on the list let me know and I will add you.

Thanks and see you soon! -
Mitch

MONTHLY PROGRAMS

March 6th. Tuesday.
Elizabeth Barron will speak on the effects of harvesting morels on future morel fruiting. Dr. Barron is studying this question by searching for morels in local woodlands and would like our help with her project.

April 3rd, Tuesday
Dr. Amy Rossman will talk about the mushrooms that we can expect to find in our gardens and on our lawns. Dr. Rossman is with the Department of Agriculture.

May 1st. Tuesday
Gary Lincoff, author of the highly regarded Audubon mushroom field guide and very popular speaker will talk on a topic that is of concern to many: the classification of fungi.

June. The tasting that is normally a May event will take place in June.

Tom Volk will NOT be visiting us this year.

MORELS

Morels are the most hunted mushroom in America and certainly the most talked about.

Morels grow in many places and yet they are difficult to find. They are easy to identify, but hard to see.

*Oh morchella, my morchella
I couldn't see you there.
"It's right there by your foot",
she said .And all I said was
"where."*

There are club members who have found very few morels over the years, yet others have loaded up the truck with them.

My neighbor's yard grew morels for five years- I found 40 the first 2 years and only one last year. I doubt that this year will be a bonanza year.

Waldemar found morels in his back yard which were hiding

against his house in a somewhat stoney area that he rarely visited. These morels were found last year on April 7th!

So who knows the morel story? People have their secret patches and many walk miles into the forest to visit them. It is said that anyone who tells you where he finds his morels is lying.

What we do know is that they come up in the spring. In this area, May 1st is a target date. Hopefully, by that time, the ground will be 50 degrees F. for 3 days running (stick a meat thermometer in the ground). We also know that they are found associated with a variety of trees: they are found around the tulip poplar, the ash and near the dying elm, in this area.

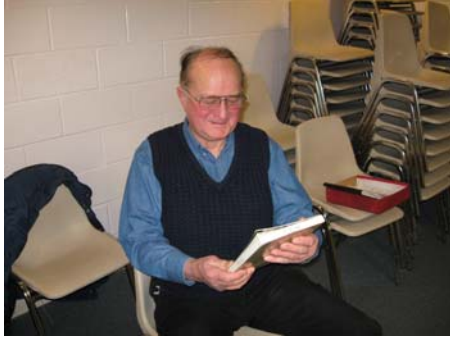
*Oh Morchella. My morchella
You'r such a ghoulish guy
You plan a sumptuous feast for us,
Just when the elm's to die.*

With all of the study of morels we still don't know whether they are mycorrhizal with trees, though some have said that they can be, at times, and that at times they can also be saprophytic.

Harbingers of the morel are the redbud tree and the mayapple flower. And rain.

The mid-west, especially Michigan, seems to be the place where people make the most noise about morels. There are festivals each year and people arrive from around the world to look for morels. There are prizes given out to those who find the

most. I haven't gone yet, but would like to. Look at our schedule and join us for a moray. J.S.



Fred Seymour-MAW'S Librarian

Fred has been bringing a selection of the club's mushroom books to our monthly meetings for over two years.

Fred has a background in microbiology and in addition to studying mushrooms and their cultivation he is a member of the national food and wine club.

If you find articles about mushrooms that you think club members would like to read, or books about mushrooms, bring them to Fred at one of our monthly meetings.

MORE ON MORELS

There are a number of facts about morels with which most people would agree: 1. they are very tasty, 2. they dry well, 3. they should not be eaten uncooked, 4. they should not be consumed with alcohol, although they can be eaten if cooked with alcohol.

Another fact about morels is that they have a lot of names. Just in the colors we have

yellow, black, white and grey, then there's big foot and half-free or peckerhead.



Black Morels, Plantpath

When I went on my first morel MAW foray down in the mountains of WVA I asked a waitress about the mushrooms people look for in the area and she said that they find "miracles" at this time of the year. I told Maria that there's a mushroom called "miracle" around here. Later I learned that the young lady was saying "merkle," which was a local name for morels.

Then there's all those names for false morels that really don't look like morels and don't taste like morels, and, in fact, are not morels, but people eat them thinking that they are morels and some people eat them knowing that they are poisonous and these are usually the people who know a lot about morels.

But, in fact, there are a couple of false morels that could be taken for a true morel, particularly for the half-free morel: they are the *Verpa bohemica* and the *V. conica*. The half-free morel and the verpas have triangular-shaped caps but half of the cap of the half-free is attached to its stem whereas the *verpa* cap sits on its stem like a lamp shade on its post. On the picture of the half-free below, you can see a fold on

the cap; below that fold the cap hangs free like a skirt.



Verpa bohemica:
Mushroom, The Journal .



Half-free morel: Mushroom, The Journal

The other morels have lots of names too.

The black morel, according to Michael Kuo (mushroomexpert.com), has been called: *angusticeps*, *eleta* and *conica*. The yellow morel also has other name: *esculanta*, *deliciosa* and *crassipes*.

DNA studies have distinguished 16 morels but their differences cannot often be seen by the unaided eye. So at this point we can say, for our purposes, that there are three morels: black, yellow and half-

free; these are easily distinguished. J.S.



Daniel Barizo (MAW Vice-President)

Blessing:

My fascination with mushrooms goes back to my boyhood days in the Philippines when after a rain my grandmother would encourage us, her grandchildren, to forage for a certain type of mushroom that only grew out of decomposing banana stalks. She would roast these succulent mushrooms in banana leaves over live coals and then serve them to us hungry kids for lunch or supper.

Then in high school I went to a Christian boarding academy located on the slope of a dormant volcano. After a rain during the months of July and August, huge brown grey mushrooms would sprout seemingly out of nowhere in the grasslands. We, starving young students would go out to the fields and gather these wild mushrooms, boil them in water, add a little bit of salt for taste, and we would enjoy a heavenly meal.

When I came to Canada in 1977, I noticed that the changing seasons brought about different kinds of mushrooms. To expand my knowledge, I went on many forays, which were led by a botany professor from a Canadian University. Unfortunately for me, this "expert" falsely identified a mushroom for me, saying that it was edible. When I got home I cooked that mushroom, ate it, and had the worse stomach ache in my life. From then on I decided that I would not depend on so-called "experts" for my knowledge of mushrooms. I bought several books to expand my personal knowledge on mycology.

When I immigrated to the United States, where I now work as a financial representative with the Northwestern Mutual Financial Network, I discovered the Mycological Association of Washington DC where the membership's goals and interests coincided with mine—that of expanding our knowledge about mycology.

I joined this organization about three years ago and have greatly enjoyed and benefited from it. People in the Association are very unselfish in sharing their knowledge with others. One thing I like about this Association is the so-called "experts" are cautious in advising people to eat mushrooms that they are not sure of.

Also, I am grateful that, in applying for life insurance, membership in a mycological association is not considered a dangerous avocation. Danny

MUSHROOM CHRONICLES

William Needham

Toxicity

Among the hundreds of thousands of fungal species and the tens of thousands of those recognizable as gilled mushrooms, only about 100 would qualify as poisonous of which only about 10 are deadly. Nonetheless, poisonous mushrooms cast pallor on the consumption of fungi as food; the epithet toadstool elicits emotions that inappropriately and unfortunately associate the innocent mushroom with loathsome warty uncleanness and therefore promotes mycophobia, the fear of fungi. The word toadstool itself has an etymology that is suggestive of Stygian origins; it is a calque word of German provenance. "*Todesstuhl*" means "death stool." One reason for mycophobia is identification since many of the deadly variants are similar in appearance to those that are edible; in many cases only an expert can tell them apart and even they can make mistakes. Another reason is indication; there are no sine qua non proofs of mushroom toxicity, poisonous mushrooms do not all blacken silver spoons and do not all taste bitter, popular nostrums aside.

History has impugned the mushroom as the source of the poison that has dispatched any number of notables, among them Claudius, the fourth Roman Emperor. The

perpetrator is alleged to have been his fourth wife Agrippina who wanted her son Nero to succeed to the throne in lieu of Britannicus, the son of Claudius by his third wife Messalina (who had incidentally been put to death for her part in a previous assassination attempt). The death is recounted by the philosopher Seneca the Younger in December 54, only two months after the event occurred. According to his account, it happened quite quickly, the onset of illness and death being separated only by about an hour. The idea that mushrooms were the cause is perpetrated in later writings by Tacitus, Suetonius and Dio Cassius, the latter adding a description of Agrippina serving Claudius a plate of mushrooms. The mushroom death of Claudius is almost certainly apocryphal, as deadly mushrooms are relatively slow to act; those that act rapidly generally cause gastrointestinal distress that is rarely if ever fatal.

It is more likely the case that mushroom poisoning occurs as a result of volition, the decision to consume a mushroom of dubious identification resting with the victim. There have been occasions where arrogant decisiveness has overridden caution. The most notable case is that of Johann Schobert, a composer who was employed by the Prince of Conti in Paris in the latter half of the 17th Century. He wrote harpsichord concertos, opera and sonatas that purportedly served as the basis for some of the later work

by Mozart, his contemporary. Schobert may have had a talent equal to that of Mozart; we shall never know, as he succumbed to mushroom poisoning. According to the historical account, he had gathered some mushrooms in Pré-Saint-Gervais near Paris with his family and proceeded to a restaurant to have the chef prepare them. When he was told that they were poisonous, he proceeded to a second restaurant with like result. Undeterred, he went home to Paris and made mushroom soup for dinner. He was joined in death by his wife, one of his children, and a friend, a doctor; fittingly, it was the doctor who had proffered the mushroom identification in the first place.

Mushroom poisoning is generally categorized into four types according to the symptoms that result. It is not practical to use the type of toxin as a basis for classification, since there is a paucity of knowledge about the nature and chemistry of fungal toxins in general; this is particularly true for fungi whose consumption may yield an unpleasant though not fatal result. In addition, for all practical purposes, the identification of the mushroom that caused the condition under evaluation is usually a matter of conjecture since the victim has succumbed to the condition after having eaten the evidence. The four types are protoplasmic poisons, neurotoxins, gastrointestinal irritants, and those that are toxic only in combination with other substances, notably alcohol.

The protoplasmic poisons

are those that destroy cells that can lead to the failure of major organs. These are the deadly mushrooms. They are mostly of one genus, the Amanita, though there are some deadly species in the genera Lepiota and Galerina. The common names of the most prominent of the Amanitas are grim evidence of their virulence: the Death Cap (*A. phalloides*) and the Destroying Angel (*A. virosa*). The common names of the mushroom of the other genera are equally foreboding: Deadly Lepiota (*L. josserandii*) and Deadly Galerina (*G. autumnalis*). The so-called Amatoxin is called amanitin, reflecting the primary generic provenance - Amanita. It is a bicyclic octapeptide, which essentially means that it is comprised of ring-shaped structures with eight peptides, compounds of amino acids. Cell destruction is incident to the inhibition of RNA polymerase; the lack of messenger RNA precludes protein synthesis. Since the liver is one of the primary areas of protein synthesis in the body, it is particularly susceptible to amanitin.

Amanitin poisoning is characterized by a long latency period ranging from about 6 to 15 hours during which there are no adverse symptoms (it is for this reason that the rapid death of Claudius is not likely of mycological origin).

This is followed by symptoms that are typical of a gastrointestinal irritant: abdominal pain, vomiting, diarrhea, and dehydration. A

period of apparent recovery ensues, only to be followed about a day later by a gradual deterioration that includes a loss of strength, restlessness, and jaundice, the result of irreversible liver damage. The mortality rate ranges from about 30 to 90 percent according to the amount of toxin consumed and on the age and general health of the victim.

Treatment follows diagnosis which usually depends on an evaluation of the symptoms and a knowledge of dietary history. Although there is a commercially available radioimmunoassay (RIA) test kit available, it takes about two hours to get a result; since the timeliness of treatment following poisoning is crucial, it is rarely used for initial diagnosis. If immediate and determined remedial action is taken, the mortality rate is reduced to as low as 5 percent. Inserting a stomach pump to evacuate the bile from the duodenum is crucial to the treatment, as the impairment of the kidneys causes the amanitin to be recirculated to the liver where the bile carries to the intestines, a vicious cycle. There are two other types of protoplasmic poisons that are found in mushrooms: hydrazines and orellanines. Methylhydrazine is found in the False Morel, *Gyromitra esculenta*; its chemistry is very similar to rocket fuel. Orellanine is found in the Sorrel webcap mushroom, *Cortinarius orellanus*. The symptoms of both toxins are similar to but less severe than that of amanitin.

The neurotoxins, as the name suggests, cause neurological problems which can produce symptoms that range from convulsions, hallucinations, anxiety, depression, and coma to profuse sweating and spastic colon. The most well known of the mushrooms that produce neurotoxins is the *Amanita muscaria*, commonly known as the Fly Agaric for its traditional use as an effective pesticide against the insect. In Eurasia, it is bright red with white cottony patches on the cap, the epitome of the forest fungus. In North America, it is less conspicuous, typically with a yellow-orange hue. It has long been noted for its mind-altering properties, having been ostensibly used for this purpose by the Koryak tribesmen of the Kamchatka peninsula and by the Norse warriors known as the berserkers. The active ingredient is ibotenic acid and its derivative muscimol, the latter having about five times the potency of the former. Ibotenic acid is an excitatory amino acid; it simulates the effects of natural transmitters on neurons in the central nervous system. The symptoms occur about an hour after ingestion and are characterized by an initial period of dizziness that may succeed to drowsiness followed by intense activity, excitement, hallucinations, and delirium. The depression-mania sequence may repeat several times in cyclic fashion before abating in a few hours. It is almost never fatal unless large quantities are ingested, as may

be the case with young children infatuated with its aesthetic appeal.

The *Amanita muscaria* also lends its name to the other major neurotoxin, muscarine; it was first discovered incident to investigations into the chemical constituency of its namesake mushroom. Muscarine is found at levels as much as one hundred times the level in the Fly Agaric in mushrooms from the genera *Inocybe* (e.g. *I. geophylla*, or White Fiber Head) and *Clitocybe* (e.g. *C. dealbata*, or Sweating Mushroom that often grows near the edible Fairy Ring Mushroom - *Marasmius oreades* - and is mistakenly consumed with it). The initial symptoms of muscarine poisoning are fluid related, manifest in increased perspiration, salivation, lacrimation and urination about 15 minutes after ingestion. Follow-on symptoms include vomiting and diarrhea that continue for up to 24 hours; the administration of the antidote atropine results in rapid remission and complete recovery. Though fatalities are rare, severe cases can cause cardiac and/or respiratory arrest.

The gastrointestinal irritants are the least defined and most widespread of the mushroom toxins. Their virulence ranges from mild, short-lived stomach discomfort to vomiting and diarrhea that can last for several days. Fatalities are very rare and are usually associated with desiccation of otherwise

debilitated individuals, the very young or the very old. The specific toxins are generally unknown as the need for detailed chemical analysis is mitigated by the ubiquity of the potential causes and the by the non-fatal nature of the affliction. What is known is largely anecdotal, as few cases that are traced to mushroom poisoning are reported relative to the number that occur. This is exacerbated by the degree to which susceptibility to specific toxins varies from one individual to the next; some people become mildly ill after eating almost any wild mushroom. Therefore, the mushrooms that are unequivocally identified with gastrointestinal distress are those that are relatively widespread and which resemble an edible species; they are therefore mistakenly consumed with some regularity. Examples include the Jack-O-Lantern (*Omphalotus illudens*) that closely resembles the Chanterelle (*Cantharellus cibarius*) and the Green-spored Lepiota (*Chlorophyllum molybdites*) that closely resembles the Parasol Mushroom (*Macrolepiota procera*).

The most peculiar of the mushroom toxins is coprine, an amino acid produced by mushrooms of the genus *Coprinus*, notably *C. atramenarius*, the Alcohol Inky. Coprine is converted to cyclopropanone hydrate in the human body. This compound interferes with the breakdown of alcohol; because of its similarity to Antabuse in blocking the

oxidation of alcohol in the acetaldehyde stage, it is sometimes called a disulfiram-like toxin. The symptoms are generally mild, consisting of flushing of the head and neck, tingling of the extremities, cardiovascular disturbances such as heart palpitations, headache and nausea. It is listed in field guides as edible, with caution; it has no adverse side effects if alcohol is not consumed for about three days.

Mushroom poisoning is a complex phenomenon, the complexity a result of the variation in fungi according to geography, genetics and local environmental fluctuations; the toxic content of individual mushroom species can vary from non-existent to virulent. A contributing and no less perplexing dilemma is the variability of susceptibility; the idiosyncratic response of different individuals who consume the same mushroom can range from gustatory pleasure to violent purging. The more extreme reactions do not tend to follow the typical vectors of age or general health of the victim, but seem rather to correlate to something syllogistic to an allergic reaction; this is thought to be attributable to certain constituents of wild mushrooms that are not found in other foods, such as the sugar trehalose.

The only safeguard against mushroom poisoning is knowledge and caution; the only other option is abstinence. In order to safely eat wild

mushrooms, it is necessary to be able to recognize those which are edible. But this knowledge is not sufficient to prevent a potentially unpleasant, if not life-threatening event. One must also be able to recognize the poisonous species and have the knowledge of the subtleties of taxonomy that can lead to improper identification (as was the case the composer Schobert). Caution is necessary in consumption; only a small portion should be eaten on the first occasion of any individual's consumption of a wild mushroom. Since an adverse reaction is always possible, a smaller dose will yield a less harmful result. It is both safe and rewarding to eat wild mushrooms, if only a little care is exercised.

Our annual Pennsylvania foray will be at Sequanota again, in October. Contact Jon Ellifritz

The Potomac Sporophore is published quarterly by the Mycological Association of Washington, DC.

