

NJMA NEWS

THE OFFICIAL NEWSLETTER OF THE NEW JERSEY MYCOLOGICAL ASSOCIATION

VOLUME 42-3 MAY-JUNE 2012



CALENDAR OF UPCOMING EVENTS

NJMA OFFICERS

President - Phil Layton
Vice-President - Patricia McNaught
Secretary - Igor Safonov
Treasurer - Bob Peabody

DUES

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Send ONLY newsletter submissions to the Editor. All other correspondence should be sent to the Secretary:

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NJMA EVENTS HOTLINE

908-227-0872 for information on NJMA events or cancellations due to bad weather. It is NOT for general inquiries or to contact officers!

Saturday, May 5

9:30 am - 12:00 pm
12:30 pm - 3:30 pm

EDUCATION CLASSES

Pleasant Valley Park, Bernards Township

INTRODUCTION TO MUSHROOMS (Terri Layton) FREE

COLLECTION & FIELD I.D. OF MUSHROOMS (Jim Barg) \$10 fee
Registration required for both classes.

Sunday, May 6
10:00 am

FIRST FORAY OF THE YEAR
Princeton Water Works (Institute Woods)

Leader: Terri Layton

Saturday, June 2
10:00 am - 1:00 pm

EDUCATION CLASS:
CULTIVATION WORKSHOP

Instructors: A.J. Bozenmayer and Dr. Gene Varney

Registration required. See last issue of NJMA News for info.

Saturday, June 9
10:00 am - 1:00 pm

EDUCATION CLASS:
MUSHROOM PRESERVATION

Instructor: Bob Hosh

Registration required. See last issue of NJMA News for info.

Sunday, June 10
10:00 am

BOB PEABODY WILD FOODS FORAY & PICNIC
Deer Path Park, Round Mountain Section

SPECIAL GUEST EXPERT: Nathaniel Whitmore,
herbalist. See page 2. www.barefootplantwalks.weebly.com

Leaders: Bob Peabody and Bob Hosh

Saturday, June 23
10:00 am

FORAY:
LAKE OCQUITTUNK FAMILY CAMPING AREA
Stokes State Forest, Leader: Jim Barg

Saturday, June 30
6:00 pm

NJMA CULINARY GROUP: MOROCCAN DINNER
Unitarian Center, East Brunswick

Contact Jim Richards (908) 619-1438 or Bob Hosh (908) 892-6962 to register or for additional info. See article on page 7.

Sunday, July 1
10:00 am

FORAY:
RANCOCAS AUDUBON NATURE CENTER

Leader: Glenn Boyd

August 2 - 5

NEMF ANNUAL SAMUEL RISTICH FORAY
East Stroudsburg, PA

December 13-16

NAMA ANNUAL FORAY Scotts Valley, CA

Directions to the Frelinghuysen Arboretum, Morristown

Traveling from the South: I-287 Northbound to Exit 36A (Morris Ave.). Proceed East approx. 1/2 mile in the center lane, past Washington Headquarters (on left). Take left fork onto Whippany Road. Turn left at 2nd traffic light onto East Hanover Avenue. Proceed for about 1/4 mile. Entrance is on left, opposite the Morris County Library.

Traveling from the North: I-287 Southbound to Exit 36, following signs for Ridgedale Avenue (bear right in exit ramp), past Washington Headquarters (on left). Turn right onto Ridgedale Avenue. At 2nd traffic light, turn right onto East Hanover Avenue. Proceed for about 1/4 mile. The Arboretum entrance is on the right just past the traffic light at the Morris County Library.

Traveling on New Route 24: New 24 West to Exit 1A, (also labeled as Rt. 511 South, Morristown) onto Whippany Road. Stay in right lane. Turn right at 1st traffic light onto East Hanover Avenue. Proceed for about 1/4 mile. Entrance is on left, opposite the Morris County Library.

Directions to the Unitarian Society are on page 4.



PRESIDENT'S MESSAGE

For those of you who go by the calendar it is now spring. For those who go by the weather, you are not really sure how long spring has been here. When I go for a walk these days, the plants and animals just display a confused look asking what they should be doing. It will be interesting to see how the weather in February and March affects the mushroom fruiting schedules.

In the last newsletter, I mentioned several large projects that we would be undertaking this year, one of which is the library. The Library Committee has had at least one meeting and has started the somewhat tedious task of inventorying our collection. This is necessary for the members to be able to use the library and to be able to insure it.

The new membership process is working very well. Our current membership is higher than it has been in a while and everyone seems pleased with PayPal®. Our class registration is also being managed by Membership Secretary, Igor Safonov, and class fees collected through PayPal®.

The By-Laws Committee is still in the early stages. We are kind of at the stage where you dig a hole in the ground for the foundation before you start building the skyscraper – It looks like you are going in the wrong direction, but without a good foundation the building will not last very long.

Preparations for NEMF are going well. Everything that should be done by now is done. The faculty list is very impressive. It will be a great opportunity for you to meet several famous mycologists, some you have heard about and some whose books you have read. If you have never been to a NEMF foray, this is a good time to start.

One new project has been added to the list. We are creating a PowerPoint® presentation telling the NJMA story. It will be used for our outreach programs and at other functions where people would like to know who we are and what we do. If you have any photographs that exemplify any of our various functions or activities, current or historical, please let me know. The finished product will be available on CD for a small fee. This way when your friends and family ask “What’s a mycological association?,” you will have a ready answer.

One last thing, our forays will be starting soon. Long time members: When you see a new face (of which there are many) introduce yourself and make them feel welcome. Thanks.

–Phil Layton

GUEST LEADER - JUNE WILD FOODS FORAY NATHANIEL WHITMORE

Our Wild Foods Foray will be led by special guest Nathaniel Whitmore, who leads walks throughout the Upper Delaware River region, in both Pennsylvania and New York.

He teaches from his experience as a wild food and medicinal herb forager. Well-versed in botany, folklore, and the medicinal use of herbs, Nathaniel teaches about identification, harvesting, preparation, and use. Nathaniel weaves American Indian and various ancient Chinese practices, including herbal medicines, martial arts and acupuncture, into treatments for his patients.

In Far Eastern medicine, it is traditional to use the herbs in one’s area rather than to use herbs from faraway places. Nathaniel and other herbalists are working on integrating Chinese and Native American medicine with other traditions while we rebuild our understanding of herbal medicine and our relationship to the earth.

Nathaniel is President of the recently-formed Delaware Highland Mushroom Society in Pennsylvania and is a Herbalist at the Honesdale Wellness Center.

Come out and join Nathaniel as he leads us for a walk on the wild side.

Check out his interesting website at:
<http://barefootplantwalks.weebly.com>



IMPORTANT NOTICE ABOUT THE WILD FOODS FORAY

After the walk, we will share a picnic lunch at the pavilion. Bring a dish to share with NJMA members. Bring enough for eight people so we can all share in the bounty. Bring your own dishes and utensils. Tablecloths would be a nice touch.

The Walk is open to the public free of charge, but *the picnic lunch is limited to NJMA members only.*

WELCOME TO THE ONLINE EDITION OF NJMA NEWS

For the great majority of you who are viewing the online PDF of this newsletter, please note that **most web links and email addresses are now clickable**. Clicking on a web or email address will launch your web browser and take you to the specified page or open your email software so you can send us an instant email. Just look for the “click finger” when you hover your mouse over these items.

**No more clumsy “writing it down”
or copying and pasting!**



**DON'T FORGET TO
REGISTER FOR NEMF 2012!**

Registration form is in the
January-February issue of *NJMA News*

THE TYROMYCOLOGIST

by Patricia McNaught

A “tyro” is a beginner in learning, a novice. So which of us are tyromycologists? At the NJMA Victor Gambino foray last October, John Pleschke was our guest mycologist. Before he gave his evening lecture, John needed to gauge the expertise of his audience. “How many people here know at least 50 mushrooms?” he asked. The show of hands told him what he needed to know for his lecture. And I’ve been thinking about his question ever since.

What does it mean to “know a mushroom”? Sometimes when I see a mushroom in the field, I throw out a name and feel good when a more experienced identifier later verifies my identification. Is that “knowing a mushroom”? I probably did know the genus, and pulled out the species name that I judged to be most probable, based on NJMA’s species lists from forays. But if that mushroom was in a “line-up” with the other species that closely resemble it, I’d be in trouble. And I’m usually far from being able to describe its preferred habitat and identifying characteristics in the absence of an actual specimen.

At that evening lecture, John told us that one of his goals is to learn one new mushroom at every foray he goes to. He made me think of how many times I come away from a foray with a passing familiarity with three or four new species, and a deep understanding of none. Maybe it’s time for a different approach.

NOTEWORTHY TIPS relating to this article

- Go to the **“Of Interest” page** on the **NJMA website** to find our foray species list, broken down by foray site. (The site key and foray dates are on the last page of each species list.) Use the list and a field guide to “preview” the species you are likely to find on a particular foray.
- After a foray, we move the identified specimens to a display table or area. Occasionally, the identification ticket is marked “save”, but usually those specimens will be tossed into the woods before we leave. Check with the foray leader or an identifier as a courtesy, and you probably will be given permission to take a specimen home with you. Try to choose a specimen which you collected, so you know its habitat. Without looking at a field guide, write down all the characteristics of the specimen. Then check with a field guide to see which characteristics you missed or got wrong. When you get home, make a spore print; note the color of the spores.

– Patricia McNaught, Associate Editor

FUNGUS ATTACKS BLUEBERRIES “MUMMY BERRY” THREAT CAN WIPE OUT ENTIRE HARVESTS IN OREGON

from *Spokesman.com*, February 21, 2012, via *The Spore Print*, the *Journal of the Los Angeles Mycological Society*

Eugene, Oregon - What Bill and Anita Cook should have been doing once the weather cleared last Wednesday was pruning their 60-year-old Atlantic, Jersey, Dixie and Stanley blueberry bushes – snipping away at older, weaker limbs crowding out the stronger ones as they prepare to bear fruit this summer.

Instead, the Cooks’ eyes are fixed on the muddy ground beneath the bushes on their one-acre farm in west Eugene. They were preoccupied with a painstaking task: picking up “mummy berries,” one by one, and pocketing them.

This job has become as necessary as pruning because of the growing threat that the mummy berry fungus, *Monilinia vaccinii-corymbosi*, poses to Northwest blueberry farmers.

The fungus has wiped out half of the Cooks’ yield, for two years in a row. Other farms have seen entire blueberry patches devastated.

And because the mummy berry is particularly adept at not just surviving winter but shooting millions of spores that are carried by the winds from one field to the next, every bad year could mean the next one is worse, if the fungus isn’t properly controlled.

Berries attacked by the fungus are called mummies because they look like mummified berries: dried, shriveled and gray-white, instead of plump, juicy and blue.

The fungus is discovered only at the same time blueberries are nearly ready to harvest, and they look like what they are: duds, ugly useless fruit. It’s after they drop to the ground that the mummy berry threatens to do the most damage to future crops.

At that point, the mummies act more like zombies. They “over-winter,” lying peacefully in the mud, often obscured by leaves. Come spring, they sprout tiny mushroom-like structures with small cups on the end, called apothecia.

A single cup can produce a million spores in less than a week and can spread to the leaf buds and young shoots of neighboring plants in a matter of hours or days.

(continued on page 22)



Got a mushroom story to tell?
Share your experience with fellow mushroomers!
tell it here!
Send your articles and photos to njmaeditor@gmail.com



MEMBER FINDS

Photos on this page are random submissions from our members, and represent unusual, out-of-season, and/or especially attractive fungi which they've captured as photos. Enjoy the views!

Dave Wasilewski and his wife sent these two pictures of the black morels they found on March 23, which beat their old "earliest record" by two weeks.



Directions to the Unitarian Society, Tices Lane, East Brunswick
From New Brunswick via Route 18: Take U.S. Highway 1 south, exit at Ryders Lane to East Brunswick, continue to the second light, and turn left onto Tices Lane. The Unitarian Society is the 2nd drive on the right before you go under the NJ Turnpike.
From the south via the Garden State Parkway: Take Route 18 north toward New Brunswick to Tices Lane exit (take jughandle from right lane of Route 18 across to Tices Lane). Follow Tices Lane until you pass under the Turnpike. The entrance is in the woods on the left just after you leave the underpass.
From the NJ Turnpike: take Exit 9 to Route 18. Take Rt 18 South into East Brunswick. From Route 18, turn right onto Tices Lane at the third traffic light. Follow Tices Lane until you pass under the Turnpike. The entrance is in the woods on the left just after you leave the underpass.

Paul Funk came across this one on April 12, 2012. After surveying the whole 100 acre park in Central NJ, this was the only one he found. This morel was small – only about 2 inches tall. See the snail shell; it's about 3/8 inch in diameter.



Paul also sent pictures of this unidentified gilled mushroom, which he found on March 23, the first day this year to reach 80 degrees in New Jersey. The inset shows the underside. Can you name it?



MYCOPHAGY 2012 WITH CHEF RON SUHANOSKY

by Jim Richards

On February 19th, the largest number of members (over 80) to participate in any NJMA event other than Fungus Fest attended a cooking demonstration and tasting by Ron Suhanosky, chef/owner of Nonna's Table in New York.

Ron co-wrote the James Beard 2010 award-winning cookbook *Pasta Sfoglia* with his wife. His second book, *The Italian Table*, was published in November 2011. Ron had been chef/owner of the highly-regarded Sfoglia restaurants in Nantucket and New York.

When he arrived at the Unitarian Center, he went immediately to the kitchen to start work on the dishes he was planning to demonstrate. He went to the array of mushrooms that Phillips Mushroom Farms had donated for Mycophagy: oysters, creminis, beech mushrooms, king oysters, pompoms, shiitake and maitake (Hen-of-the-Woods) and he decided on the ones that he wanted to use in each of the three dishes he was going to prepare. He started by selecting shiitakes, which he gave to the waiting assistants Mark Streitman, Mike Rubin, and Pete Bohan, to remove and discard the tough stems. Ron then combined the shiitakes with maitake, oysters, creminis, and king oysters. These were sautéed and then chopped in the food processor and added to a giant pot of béchamel sauce that he was making. This was the base for the first dish, Mushroom *Sformato*, to which he added sautéed maitakes that were left in larger pieces for texture. The mixture was poured into two waiting baking dishes that were then set into a water bath in the oven. By that time the auditorium had filled with a large and enthusiastic audience.



Ron demonstrated his first dish for the waiting crowd: Mushroom Paté served on toasted baguette slices and garnished with sautéed beech mushrooms. The finished dish was taken to the back where the kitchen crew promptly assembled and distributed trays of crostini to the waiting audience where they rapidly disappeared.

Next, he demonstrated the *sformato*, after which the two pans that he had started earlier were served. Interestingly, both of these recipes are in his cookbooks, but not with mushrooms. The paté recipe was originally written for chicken livers, and the *sformato* was made with butternut squash. One of the main points that the chef was trying to get across was that many recipes can be adapted for using mushrooms.



The final dish that Chef Ron made, a *Risotto al Frutti di Boschi* (Rice with “Fruits of the Woods”) was written for mushrooms, in this case, fresh shiitakes and dried morels (donated by Jim Barg) with two other seasonal ingredients,

asparagus and strawberries (yes, you read right – strawberries). Throughout his demonstration Chef Ron gave lots of helpful hints on technique and ingredients, *i.e.* the differences between the several varieties of Italian rice that are used for risottos.

All in all, it was a very, very satisfying afternoon, both from an educational and a gastronomic point of view. Our thanks to Chef Ron for a great experience. And thanks to all the NJMA members that help make it work: the kitchen crew that I mentioned earlier (Mike, Mark, and Pete) for chopping, cleaning, serving, and so on. Mike Mudrak deserves a hand as well for dealing with a couple of recalcitrant coffee makers. Special thanks goes to new NJMA member, Pete Bohan, whose connections in the world of publishing made Chef Ron's appearance a reality. And, once again, another hearty thank you to Tina Ellor of Phillips Mushroom Farms and our own Jim Barg for providing us with the mushrooms that were used for Mycophagy.

The mushrooms from Phillips that were not used for Mycophagy, plus a mother-lode of dried mushrooms (boletes, black trumpets, morels, etc.) from Jim Barg, along with Bob Peabody's cache of mushroom-themed books and *tshotchkies* were the main items sold by Bob at our highly-anticipated myco-auction. Again, a new record was set by our very generous and highly-competitive myco-bidders: over \$1100!

Now, the only thing that is left is to figure out how we are going to match these standards next February. 🍄

NJMA CULINARY GROUP GERMAN DINNER RECAP

by Ellie Hess

You could almost hear the sounds of tubas floating through the branches of chestnut trees in the evening air as you entered the Unitarian Center for the Culinary Group's German Dinner on March 10th. Provocative aromas from the kitchen and fanciful place settings, complemented by homemade ales, German beers and wines, set the tone for a festive and delicious evening. German food is characteristically rich and substantial, featuring spectacular baked goods, preserved foods like pickles and sausages, and cruciferous vegetables like cabbage and kale.

To start, dinners were treated to *Eine Auswahl der Wurste*, a marvelous assortment of sausages and wursts curated by Igor Safonov. The Chicken Liver Mousse with Caramelized Apple Slices was a melt-in-your-mouth delight served on Jim's yummy array of hand baked German breads. The appetizer course was accented by cucumbers stuffed with ham and sour pickles, and an assortment of pickles and mustards.

The splendid flavors of Poached Meatballs in Lemon and Caper Sauce with *Spatzle (Konigsberger Klopse)*, fragrant *Sauerbraten*, and Cod in Mustard Sauce anchored the main course. Ina's personal preparation of Red Cabbage, a Celery Root Salad, and Kale with Double Smoked Bacon served as a counterpoint to the wonderful flavors. German favorites Potato Pancakes with sour cream or applesauce, Sauerkraut and Apples in Wine, and Mushrooms in Cream Sauce rounded out the robust selections.



PHOTO BY STEVE ZAHORBENSKI

Ina made the Red Cabbage...

The dessert course offered some typical pastries as well as some lesser-known selections. The moist and luscious Black Forest Cherry Cake, a classic German torte, was delectable, and would have been a very satisfying finale to the meal, but there were additional wonderful choices. *Rote Grutze* was a fresh and delightful red fruit and berry 'pudding', and the *Zimtsterne*, or iced cinnamon star cookies, were light, crisp and delicious. The most unusual



PHOTO BY BOB HOSH

...and Igor brought the wursts!

and intriguing dessert was the *Apfelbettelmann*, an apple and pumpernickel crumb dessert reminiscent of a fruited bread pudding.

Like a great meal at a German *Biergarten*, Culinary Group members enjoyed a delicious evening of skillfully-prepared fabulous foods, traditional beverages, and engaging conversation.



PHOTO BY JIM RICHARDS

Jack and the Mousse



PHOTO BY STEVE ZAHORBENSKI

Many people chatting and enjoying German culinary creations



EDITOR'S NOTES

It is that time again. It happens every other month. I have to sit down at my computer and try to find something to fill some newsletter space. I seem to be repeating myself every issue: "Please, please, please send us articles, photos, drawings, poetry, musings, suggestions, and so on to fill these pages. Occasionally, I am successful at encouraging you to make this *your* newsletter. Sometimes you respond to the reminder that Jim and I send out two weeks before the deadline. Thanks to Norbert, Paul, Dave, Vladamir and Joe for your photos and notes about collecting and your finds, Paul and Dave for letting us know just how meager a collecting season this ultra-early and very dry spring has been. Thank you, Norbert and Vlad, for reminding us what a good collecting year looks like. And thank you to Nina, for bringing us up to date on the finds at Franklin Parker Preserve as well as the unexpected threat that earthworms pose to our woods.

As I am writing this, it is beginning to rain and the forecast is for several more days to come this week and next, so the first official foray of the year at Princeton might actually turn out to be OK. One can only hope!

And then there are the more technical articles by John and Igor. John adds his thirty-first chapter to the ongoing series *Who's In A Name*, giving us more background information into how and for whom mushrooms are named. Igor has contributed his first book review to this issue, which is an insightful examination of the new book on waxcap fungi. Thanks to Yasemin Esmek and Sorana Tarmu for their artwork – there must be other artists hiding their talents from us as well. And Sorana, as well as Pete Bohan, must be thanked for their culinary contributions to this issue. Keep them coming! And thanks to Ellie Hess for her mouth-watering description of the Culinary Group's foray into German cooking.

When you meet any of our contributors at club functions, it would really be nice to personally thank them for their additions to *NJMA News*.

Katie Coluccio has written about her first (and I am afraid, her last year with NJMA). But, hopefully we will get some articles from her about mushroom collecting in Australia. You will note when you read Katie's article that, under the guiding hand of Associate Editor-Patricia McNaught, some articles now feature a "Noteworthy Points" section. These are points of information that should be of particular interest to budding mycologists that will eventually be gathered together in one "Beginners" section on the website.

We would very much like to get your contributions for this area, and in particular, bits of information or

helpful hints that you just don't find easily in the guidebooks. To make this work, we do need your contributions, however short. You can send them to me (njmaeditor@gmail.com) or to Patricia McNaught (pjmcnaught@gmail.com)

As welcome as all your contributions are, it is still a bit discouraging that, after we had record attendance at Mycophagy, there was not a single contribution to *NJMA News* – no commentary, no photos, no nothing. The same was true of the photography lecture by Jim Barg and Al Simpson in January. As we have said too many times before: This is *your* newsletter – we need your input.

– Jim Richards

NJMA CULINARY GROUP MOROCCAN DINNER - JUNE 30TH

If you like great food and good conversation and want a chance to get to know your fellow NJMAers better, then you need to sign up for the next Culinary Group Dinner, A Trip to Morocco, on Saturday, June 30th. As usual, the dinner will be held at 6:00 pm at the Unitarian Center in East Brunswick and space is limited.

Moroccan cooking is being regarded by a lot of "foodies" as the next great cuisine, and it is one we have not explored before. It is cooking that uses lots and lots of spices like cinnamon, cumin, saffron, turmeric, ginger, cardamom, and more, including preserved lemons and a little heat, to produce extremely flavorful food. There is a broad range of dishes, from a myriad of salads using the freshest seasonal produce to long-simmered *tagines* and *couscous*. And, of course, there are the grilled foods of summer like kebabs, and wonderful breads and desserts as well. The one thing that we will not be doing is preparing and serving the food in the most traditional Moroccan fashion, where the women do all the cooking and the men do all the eating.

So sign up now by contacting Bob Hosh at gombasz@comcast.net (908-892-6962) or Jim Richards at jimrich17@me.com (908-619-1438).

For those of you new to the Culinary Group, we put on dinners three or four times a year. These are planned events, not potluck. The coordinators (currently Bob and Jim) plan the menu, select and distribute the recipes, and offer advice along the way. Participants keep track of the cost of the ingredients used in their dishes and, at the end of the meal, the costs are added up, a donation for use of the space is added in, and then the costs are divided evenly among the participants. Usually the dinners average between \$16 and \$18 per person, which is a bargain considering the quality and quantity of the dishes served. Each diner brings his or her own tableware (plates, cutlery) and beverages. Coffee and tea are provided. If you have any questions please do not hesitate to contact Bob or Jim. We hope to see you in June.



FRANKLIN PARKER PRESERVE UPDATE

Article and photos by Nina Burghardt

Winter and early spring are a wonderful time to visit the Franklin Parker Preserve, especially with the mild weather so far in 2012. Because the fungi are less plentiful, there is more time to explore.

In prior years, most of NJMA fungi collecting at FPP has been done in the section of the preserve lying south and east of the north gate entry on CR 532. This winter, an energetic group has explored the areas to the north of CR 532 that feed the beautiful lake visible from the road near the main North Gate entrance and hiked through on newly built paths from the North Gate entrance to Speedwell. We look forward to expanding our collecting activities in the extensive uplands as well as the wetlands and beautiful cedar swamps in the northern parts of the preserve. New habitats always provide new species of fungi.

The Franklin Parker Preserve was full of surprises in early 2012, and here are some of them: On January 19, on a walk from the North Gate south to Speedwell on the red and yellow trails, we found *Hypholoma sublateritium* (Bricktops) as well as brilliant red, yellow and green sphagnum mosses which Virginia and Gabriella Kelly took pictures of. Later in the month, on the north side of Chatsworth Lake we found *Cantharellula umbonata* (the mushroom with the gills that branch many times), *Cortinarius sanguineus*, and *Russula silvicola* (very red).

In February, we found *Marasmiellus rotula* and *Geastrum quadrifidum (coronatum)* off of a path between two large stands of Atlanta White Cedar. This *Geastrum* is new on the NJMA species list. Later on in the month, Igor Safonov found a live, shiny horned black beetle which was identified by an entomologist as an ox beetle, a type of scarab beetle.

In March, Virginia Kelly and John Burghardt found



Geastrum quadrifidum (coronatum)

what appeared to be *Peziza sylvestris (arvenensis)*, a cup fungus, growing out of decayed pine tree in Speedwell.



Peziza sylvestris (arvenensis)

Our last trip, on April 1, played an April's fool trick on me. John and I heard that the Batona Trail had been rerouted, so we decided to see if this would be a good foray site. We found the normal fungal suspects on trees but that seemed to be it. I got home and downloaded my pictures and there, next to some moss, was a perfect little pixie cup. I sent the picture to Dr. Gene Varney, thinking that an ID based on a photo of a fungus I had not even seen, much less collected, was a long-shot. But Dr. Varney identified this pretty mushroom as a pathogen which attacks the blueberry, causing it dry up and get wrinkled. The name is *Monilinia vaccinii-corymbosi*, or mummy berry.



Can you spot the *Monilinia vaccinii-corymbosi* (mummy berry)?

Dr. Varney explained, "The ascospores infect new twig growth which becomes blighted and then covered with conidia that in turn "pollinate" the flowers. The berry develops but the berry tissue is replaced by fungal tissue or a sclerotium. This is the right time of the year for the cups to discharge ascospores."

As you can see, there are lots of amazing happenings in the Franklin Parker Preserve fungal world. We will be going again in April, towards the end of the month. Dorothy will come with us in May to identify lichens. If you are interested in collecting and identifying and don't mind ticks and chiggers, let us know. You can contact us (Nina and John Burghardt) at jnburghardt@verizon.net.



WHO'S IN A NAME?

The genera *Heuflera* and *Hohenbuehelia*

by John Dawson (thirty-first of a series)

Aside from the fact that both begin with the letter 'H', what else do the genera *Heuflera* and *Hohenbuehelia* have in common? The first is a monotypic genus in the phylum *Ascomycota* whose placement in the taxonomic hierarchy is otherwise uncertain, while the second is a genus of fifty or so pleurotoid agarics that trap and eat nematodes. What is not apparent, though, is that both genera are named for the same person: Ludwig Ritter von¹ Heufler zu Rasen und Perdonegg, who in 1865 was awarded a baronetcy and thereafter added "Freiherr von Hohenbühel" to his already prodigiously long name. (He published under the name Heufler before 1865 and Hohenbühel from then on.)

Heufler was born 26 August 1817 in Innsbruck, Austria, and committed suicide on 8 June 1885 in the village of Altenzoll, near the town of Hall in Tirol. Little information about his childhood seems to be available, but in 1835 he undertook legal studies in Innsbruck, which he continued in Vienna two years later. After finishing his education, he found employment as a government official, first in Trient, Switzerland, and then on the Adriatic coast. From 1846-49, he served as district commissioner for Istria (now part of Croatia, but then part of the Austro-Hungarian monarchy), where he drew attention to himself through his public opposition to the leader of the local Italian political party. Consequently, he was transferred in 1849 to the Ministry of Commerce, and later that same year to the Ministry for Education. Charged with reorganizing the school system in Transylvania, he was able to institute voluntary reforms there that had already been carried out in other parts of the monarchy.

In 1871, now Baron Hohenbühel, Heufler became president of the Central Statistical Commission and section chief. The following year, however, mental disturbances forced him to retire from public life. Nevertheless, after his retirement, he continued to publish works in a wide variety of fields, including geography, politics, statistics, history, genealogy and heraldry, as well as poems and epigrams.

At some point during the years before his mental troubles began, Heufler's interest in botany and phytogeography was awakened by a longtime friend of his, O. Sendtner, and afterward Heufler devoted himself especially to the study of ferns and fungi. He published descriptions of individual species as well as local floras, in which he compared the flora of north and south Tyrol. He wanted to be the first to describe the flora of all of Tyrol, but for lack of time he eventually turned his notes over to a colleague, Franz von Hausmann, who made full use of them in his *Flora von Tyrol*.



PHOTO BY JOHN DAWSON

Hohenbuehelia mastrucata from above and below

Beginning in 1838, Heufler became active in the running of the natural history section of the Tiroler Landesmuseum Ferdinandeum (founded in Innsbruck in 1823), and later he became director of the botanical division, for whose reorganization and expansion he received deserved recognition. He also gave numerous lectures at the zoological and botanical society in Vienna, and after 1852 he served several times as vice-president of that organization.

In addition to *Heuflera* and *Hohenbuehelia*, the genera *Heufleria* and *Heufleridium* are named after Heufler, as is a dome-shaped mountain in the Stubai Alps southwest of Innsbruck.



Author's note: Except for the first and last paragraphs, the foregoing profile of Heufler is my English translation of the entry on him by Helmut Dolezal in *Allgemeine Deutsche Biographie* — the only detailed source of information on Heufler that I could find.

¹ That is, "knight of".

MUSHROOM BIOLUMINESCENCE - ILLUMINATION RUMINATIONS

by Kendra Bavor, reprinted from *Mainely Mushrooms*, Maine Mycological Society, April-June 2012

David Porter presented his enlightening topic of bioluminescence at the Belfast Library on February 4, 2012. We learned a luciferin is something that produces light. Two “light” producing methods are known: phosphorescence, which is the reflection or energizing of minerals to emit light; and bioluminescence, which is a chemical reaction to produce visible light. The bioluminescence can be seen in both terrestrial and marine organisms such as marine bacteria, jellyfish, fireflies, glow worms, spring tails; and, of course, our topic – mushrooms.

What to look for: There are three known species of mushroom that are bioluminescent in the green visible spectrum. *Armillaria* (Physalacriaceae) has five world-wide species. *Armillaria ostriae* is known as one of the “fox fire” in the northeast. The black rhizomorphs under the hardwood tree bark can guide you to look for the white mycelium to see the glow.

Another white-rotting saprobic mushroom is the “Jack-o-Lantern” is widely known as a glow-in-the-dark mushroom. *Omphalotus illudens* is common in the northeast. There are nine other species in this genus that have glowing gills on the fruiting body. We witnessed photos of examples from Australia “ghost fungus” (*O. nidiformis*), Japan “Tukiyotake” (*O. japonicas*) and Brazil’s *fleur de coco* (*Neonothapanus garderni*) that grows at the base of palms.

The *Mycena* have over 50 of the 500 species. This gives another reason to pay attention to the little guys. *Mycena* are small white-spored mushrooms on wood that often require microscopy to identify their individual characteristics. This genus is highly diverse that has various parts that glow. *M. luxaetema* (Brazil) – stipe glows, *M. chlorophos* (Japan) the cap glows. “Sister” groups include: *Panellus*, *Dictyopanus*, *Filoboletus*, and *Gerronema* (a tropical *Panellus*). *Panellus stipticus* is commonly found on our forays. The cystidia on the underside of the cap and the mycelium glows on fresh specimens. Discussion suggested that even a dried specimen that has been rehydrated would glow.

So what’s in it for the mushrooms that have bioluminescence? It has been suggested that insects may be attracted to the light, graze on the mushroom and spread the spores around. Other thoughts are in line with other species where showy colors may be a warning to predators. Recent research suggests that the bioluminescence provides another type of protection from oxidative stress (antioxidant). White rot fungi “eat” lignin with the resulting residue remaining after the break down of the lignin being the white cellulose. Antioxidants are reactive and destructive of cellular structures. The luciferin acts as an antioxidant

protecting the mushroom from cell damaging free radicals. Antioxidants can be explained with chemistry and electrons (this topic is left for you to look up to further understand). Simply stated, superoxidizing compounds are needed to oxidize the lignin.

As always in our learning, we are lead to more topics to investigate and research. What do other white rot fungi use to protect themselves from the stress of free radicals? How many other organisms give off energy (light) at frequencies beyond the light spectrum that the human eye can see? Go out in the dark and let your senses explore.

Reference: Dennis Desjardin (2008) research on Mycenae bioluminescence in *Mycologiae Magazine* for those of you who could not attend. There also was an article in *Fungi magazine*.

NAMA HOSTS ART REGISTRY

Prepared by David Rust, NAMA webmaster

The North American Mycological Association is pleased to announce that the Registry of Mushrooms in Works of Art has returned to our website, after a five year hiatus. The Registry was compiled and curated by Elio Schaechter, Daniel Thoen, and Nancy Mladenoff, with earlier contributions by Hanns Kreisel and Tjakko Stijve.

The purpose of the Registry is to contribute to the understanding of the relationship between mushrooms and people as reflected in works of art from different historical periods, and to provide enjoyment to anyone interested in the subject.

This new version has over 1,200 entries, includes many sample images, and covers mushrooms in art from the early Renaissance to today. The Registry can be found at:

http://namyco.org/art_registry/index.html

For those of you who know Elio or heard him speak at a mushroom club meeting, the Registry is just part of his passion for mushrooms. He has contributed greatly to amateur mycology over the years.

Schaechter edited the *Bulletin of the Boston Mycological Club* from 1973 to 1995 and received the NAMA Award for Contributions to Amateur Mycology in 1993. He also helped found the San Diego Mycological Society. In 1997, Schaechter wrote *In the Company of Mushrooms*, published by Harvard University Press. He co-authors a fascinating blog, *Small Things Considered*, where he often expounds on unusual and unexpected phenomena in the microbial world.

NAMA would like to credit member Marjorie Young who tirelessly formatted the text for all these entries, and Nancy Mladenoff and Daniel Thoen, who curated the contemporary sections. Mladenoff’s work was featured in 2005 in *The Mycophile*, Nancy Mladenoff: *Portrait of a Mushroom Artist*.



HERBARIUM WORKSHOP

by Patricia McNaught

The first NJMA workshop of this year brought a group of mushroom enthusiasts to the basement workroom of the Biology Building at Douglass College in New Brunswick on April 14th. Since 1978, NJMA has maintained a herbarium of dried fungal specimens. Our herbarium, which is now housed in Room 011 of that basement, now contains more than 2,500 collections. The workshop was led by Dorothy Smullen from NJMA's Taxonomy Committee.

NJMA publishes species lists from the sites where we foray. Obviously, the list is only as good as the ability of our experts to correctly identify specimens. Our herbarium specimens are available to researchers who may need them to verify our identifications, or for other research projects. Our objective is to have in the herbarium several specimens of each species, one from each county in NJ. In addition, we sometimes use herbarium specimens for our workshops.

We discussed how to prepare specimens for drying, how to dry them, and how to prevent insect infestation of the dried specimens. Dorothy reviewed for us the record keeping and filing system (to enable retrieval of specimens), and then we set up an assembly line to log in and file the backlog of dried specimens that needed to be added to our collection. It was fascinating to file in the NJMA drawers and notice species logged in from unexpected locations, by collectors long gone.

If you've been to our forays, you know that frequently some fungal specimens cannot be identified on that day and are brought to a taxonomy work session where microscopes and chemical reagents are available. At the taxonomy session, we can usually determine the genus, but sometimes we are still unable to identify the species. After much work, the mystery specimen is eventually discarded (a mistake). At the workshop, Dr. Gene Varney (also on the Taxonomy Committee) explained that an unidentified specimen really shouldn't be pitched. Instead, it should be dried and added to the herbarium, along with a written description of the fresh specimen, a spore print, and the spore size measurement, if available. The specimen may represent a previously unidentified species, and a later researcher may seek it out, based on the genus and description.

If you are interested in helping with the maintenance of the herbarium, contact Dorothy Smullen. If you want to learn more about preserving mushrooms by drying (and make a dryer) consider registering for the June 9th workshop. And if you dry an identified specimen for our herbarium, don't forget to treat it for insects (for example, by putting it in a chest freezer for several days). One improperly treated specimen would put the entire collection at risk!

We are grateful to Rutgers University (and to Douglass College in particular) for housing our herbarium.

my very own mushroom basket

The dilemma: How do you store mushrooms for the identification table when walking through the forest? I used to put the mushrooms in individual baggies in my backpack, but I ran into a serious issue – the poor delicate *Mycenae*, *Russulae* and *Conocybes* would get crushed under their shifting neighbors' weight inside the pack. Surely these little guys deserve better treatment!

The popular solution is to carry around a wicker basket. This instrument is not perfect though. The basket can only hold so many mushrooms before they start piling on top of each other, and again the petite fungi suffer. This renders most of the basket's depth as pointless.

Determined to create the ideal mushroom transportation apparatus, I devised the Custom Duct Tape Purple and Red Basket. It's made completely out of duct tape, with the exception of a cardboard sheet on the bottom to provide a flat surface. The obnoxiously bright colors also make it easy to spot in a verdant environment. Before the season kicks into full spring, I plan on creating functionality with removable cardboard inserts to maximize the use of the basket's depth. Once completed, I'll be proud to have a basket I can call my own.

– Joseph Borysko



REFLECTIONS ON MY FIRST YEAR WITH NJMA

by Katie Coluccio

[Early last summer, Katie Coluccio showed up at her first foray with some friends, armed with a bag and enthusiasm. By a few weeks later, the friends had fallen away, but Katie was traveling to forays from Stokes to the Pine Barrens, now with a basket and hand lens, and she remained enthusiastic. She was clearly serious about this mushrooming thing. To our loss, Katie has relocated to Australia. She left some impressions from her first year with us, and we hope she will, in the future, contribute her experiences of mushrooming “Down Under” to this newsletter. – Patricia McNaught, Associate Editor]

For as long as I can remember, I’ve wanted to meet knowledgeable people who could take me for walks in the woods to learn about mushrooms. I found that, and so much more, when I discovered NJMA. During my first season with the club, I accomplished what I set out to do: I learned a whole lot about fungi. But of course, I won’t forget all the great friends I’ve made, the new places I’ve explored in NJ, and all the delicious potluck food. While NJMA is most definitely a club where having fun is of the utmost importance, these folks don’t mess around – they are serious about their mushrooms! So here I have provided a few tidbits that I learned during my first season in hopes they may help newcomers fall in love with fungi the way I have!

During forays, I try to stick close to the trip leader or someone else I know who is keen to talk a lot about the fungi they are finding. While it’s important as well as fun to do some collecting on your own, during walks, seasoned veterans can provide valuable tips on proper collecting technique as well as information about the kinds of materials fungi grow on and types of trees in the surrounding area. Another good reason to stay close to more experienced members is that they will often have a well-trained eye for fungus spotting. They’ll often see excellent specimens that you may have walked right over!

It only took me one foray with the club to see that I needed to find myself some good collecting tools. I found that I had nearly all these things around the house. First, I found myself a decent-sized basket that was wide and shallow so it wouldn’t be necessary to pile samples on top of each other. I grabbed a small notebook and pencil for any notes I wanted to take while on a foray. I added my pocketknife and hand lens to my basket. I had to do a bit of searching for waxed paper bags for storing specimens, as they seem to have fallen out of favor as the sandwich bag of choice these days (I finally had success at ShopRite). For collecting specimens, I also occasionally use small plastic produce containers (like the ones that raspberries come in) while others choose egg cartons or old pill bottles. Both can be handy for small samples. Last, but certainly not least, I always carry bug spray for the array of pestering insects we are blessed with in New Jersey.

After one’s first foray, it is easy to be overwhelmed with the plethora of fungi that fill the specimen tables.

Typically, more experienced club members will encourage newbies to choose a specimen to identify by using a field guide. This introduces you to the use of identification keys, which are essential if you even want to narrow a specimen down to its genus. Getting started using the guides early also puts you on the path to becoming more self-sufficient at identifying specimens you’ve found rather than solely relying on IDs by the experts. That said, however, listening at the sample table to the seasoned veterans talk about the identifications they’ve made and the processes they took to arrive at their conclusions (though sometimes tentative), can be invaluable. So, when it’s time to spread out all the samples and get to work on identification, I try to find a balance between burying my nose in a field guide and trying to soak in all the useful tidbits of knowledge that other members can provide.

As a newcomer to the fungal world, if you don’t have a background in biology, botany, or some other related field, your head may spin at the casual ease with which complicated Latin names are thrown about when discussing fungi. I don’t think I was alone as a newbie when I asked myself, “How will I remember all these names?” Rather than let myself become overwhelmed, I set a goal of learning one new Latin name each foray. Typically I would choose what I thought was the most interesting specimen I found that day. After only a few forays, I found that I was picking it up faster than I expected. Despite having high aspirations of poring over my field guides and studying in between forays, I mostly depended on listening closely to more experienced club members describe specimens. I also recognized that it is commendable to be able to identify a specimen’s genus even if you can’t determine the exact species. Often it requires work beyond what can be accomplished during a foray, like spore prints and microscope work, so even an expert may only get as close as the genus.

I hope these tips help newcomers to the world of mycology. Most importantly, have fun! 

NOTEWORTHY POINTS from this article

- ♦ **Spotting fungi in the woods is a skill which you don’t learn from books. During a foray, spend some time with the foray leader (or other club veterans) in addition to collecting on your own.**
- ♦ **At the identification session, strike a balance between working through a specimen on your own and listening in to the discussions of the experienced identifiers.**
- ♦ **Being able to identify to genus is a good goal, especially for gilled mushrooms and boletes.**

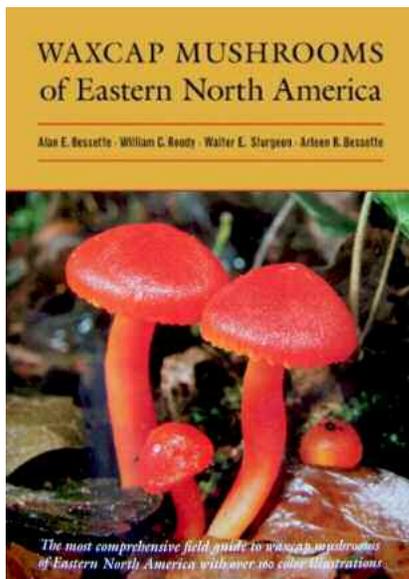
– Patricia McNaught, Associate Editor

BOOK REVIEW

WAXCAP MUSHROOMS OF EASTERN NORTH AMERICA

by Alan E. Bessette, William C. Roody, Walter E. Sturgeon, and Arlene R. Bessette. Published by Syracuse University Press, 2012.

a review by Igor Safonov



From the authors of the popular *North American Boletes* (some of you in NJMA know how instrumental this reference was in establishing my proficiency in the fleshy-pored mushrooms) and Walter Sturgeon, who paid us a memorable visit last summer, comes to you an exquisite pictorial guide to the family *Hygrophoraceae*, commonly known as waxcaps. The sole fact

that a team of four respected American mycologists, both professional and amateur, joined efforts to compile the first profusely illustrated non-technical monograph dedicated to North American waxcaps speaks volumes about the quality and significance of this publication before one even begins to admire its contents printed on a high-quality glossy paper. Indeed, it's no secret to those who like to pore over the fungal literature that the prolific Bessettes have authored and co-authored close to a dozen notable mushroom books and field guides since the mid-1980's¹, while Bill Roody is perhaps best known to us as the sole author of the voluminous *Mushrooms of West Virginia and the Central Appalachians*.

The physical dimensions of the book (10.25" by 7.25" and 0.70" thick; about half of the thickness comes from the sturdy cloth-clad hard covers encased in a dust jacket) make it portable enough to be conveniently used at forays, though, considering its hefty retail price of \$95², I would personally object to getting any of its 192 handsome pages dirty and, instead, gladly opt for an inexpensive field version, provided the latter becomes available in the future.

Inside, the book comes in three major sections – introduction (ten pages), detailed species description (70 pages), and color plates (79 pages), followed by a glossary, pertinent bibliography and index to common and scientific names. Before commenting on each of the above sections in detail, it is worth mentioning that I find the sequential arrangement of detailed species descriptions and photographs (as opposed to mixing the two³), to be of key practical advantage pertaining to

the usability of this book. Namely, you first flip through the “mug shots” of fungal entities to assemble a narrow group of “suspects” that may closely resemble a particular specimen in your basket. Then you look up their respective “rap sheets” in the book to match the reported information with your own empirical observations. You thus successfully conclude your “investigation” and hopefully close the “case”.

The introduction section first goes over the history of classic taxonomic studies of *Hygrophoraceae* in broad strokes. The reader will be pleased to recognize the names of several American mycological giants, such as Peck and Murrill, who made significant contributions to the early classification of waxcaps found in the United States. Next, the general macroscopic characteristics of *Hygrocybe* and *Hygrophorus* are conveniently laid out for comparison on opposing pages – don't forget to study this information before digging into the technical part of the monograph. In addition to the key morphological differences that necessitate placement of waxcaps into two genera, the authors also comment on the various ecological aspects pertaining to this group of fungi. Finally, the section concludes with a surprisingly thorough discussion on the edibility of European and American waxcaps.

The mushroom description section provides detailed information on 65 species of *Hygrocybe* and 41 species of *Hygrophorus* distributed in 37 American states – from the Rocky Mountains in the west to the Atlantic shores and from the Great Lakes in the north down to the Gulf of Mexico – and eight Canadian provinces. While both genera tend to be adequately represented in most contemporary field guides, albeit with a substantial species overlap and all typically lumped into a single genus *Hygrophorus*, none of these references can compete individually, or in concert, with this monograph in terms of the comprehensive coverage of waxcaps⁴. The font is fairly large and easy to read, and the overall arrangement of the text is uncluttered and relaxing to the eye. In addition to the exhaustive morphological description of major macro- and microscopic “body parts”, as well as standard comments on the edibility and occurrence, each mushroom dossier also contains a wealth of other useful information, including synonymous scientific names found in older references⁵ and insightful observation notes. The latter are particularly helpful because they facilitate field identification by emphasizing critical characteristics of a given mushroom and drawing a direct comparison with other similar-looking waxcaps. And, of course, no species description would be complete without translating the mysterious Latin names into plain English. Did you know that *paludosus* actually means “of swamps or marshy ground”?

There are 157 color plates associated with the 87 species reported in the book⁶. The photographs are large,

remarkably crisp and quite revealing. They show the true aesthetic beauty of these flamboyant fungi *in situ*, while also providing crucial technical details, such as clear gill shots, palpable surface textures and very realistic colors. To further assist the reader with the identification process, the authors cleverly arranged the photographs within each genus not alphabetically (as it was done with the descriptions), but in discrete groups according to the basidiocarp color. The *Hygrocybe* pictorial sub-section is also split into “monochromes” and “chameleons”. The degree of color variability in *Hygrocybe psittacina* var. *psittacina* is truly spectacular! As I conclude my review of this book, I would like to refer to the preface, wherein the authors explicitly state their reasons for putting this monograph together. First of all, it is the most thorough pictorial celebration of the “colorful and eye-catching” fungi in the genera *Hygrocybe* and *Hygrophorus* since the publication of the seminal scientific work on waxcaps by L. R. Hesler and A. H. Smith fifty years ago. Secondly, in the authors’ own words: “The work presented here is not intended to be a scientific treatment of the Hygrophoraceae, but we believe it will fill a gap between sporadic coverage in general mushroom field guides and the more inclusive technical monographs”. As such, this inspiring publication will undoubtedly appeal to a wide spectrum of mycophiles.



¹ Be sure to check out their impressive bibliography online at www.openisbn.com.

² Check out NJMA book sales for a discounted price. Contact [Herb Pohl](mailto:Herb.Pohl@njma.org).

³ Incidentally, this logical layout was used by the authors in prior works, such as the bolete encyclopedia.

⁴ For instance, Gary Lincoff’s *National Audubon Society Field Guide to Mushrooms* and Bill Roody’s *Mushrooms of West Virginia and the Central Appalachians* each describe only 21 waxcap species, while Roger Phillips’ *Mushrooms and Other Fungi of North America* details 40 waxcaps and briefly mentions a few more.

⁵ “As with most groups of fungi, the systematics in Hygrophoraceae have undergone review in recent years”. For example, *Hygrocybe lacmus* (Schumacher) P. D. Orton and Watling has previously been documented elsewhere as *Camarophyllus subviolaceus*, *Hygrocybe subviolacea*, *Hygrophorus subviolaceus*, and *Hygrophorus rainierensis*!

⁶ There are no illustrations for thirteen *Hygrocybe* and six *Hygrophorus* species, all of which are listed as either rare or uncommon, or of a very narrow distribution range. Since these are unlikely to be encountered in the field, we can live with these intentional pictorial omissions.

THE TROUBLE WITH EARTHWORMS

by Nina Burghardt

Spring is here, and many of us will be heading for our favorite fishing hole, and we’ll hopefully be finding mushrooms along the way. Earthworms have traditionally been used for bait. It turns out that earthworms cause a surprising amount of damage to hardwood forests, so this year you might consider using some other bait.

Earthworms are an introduced species. Before Europeans came, there had been no worms in our hardwood forests after the glaciers receded. Our hardwood forests developed a balance system based on fungal growth devoid of worms. Where worms have entered our forests, they have destroyed the duff and changed the soil pH.

In a healthy forest, fungi break down organic matter into nutrients very slowly. This slow rate of decomposition produces a thick duff which provides moisture, nutrients, and protection for emerging seedlings. Small animals find duff a safe warm place to live and fungal hyphae spread out creating a mycorrhizal mat. A thick duff also protects the soil from runoff and compaction. Earthworms disrupt this system by efficiently and rapidly breaking down organic material and not allowing duff to build up. Earthworms decompose matter five times faster than fungi, throwing off the timing of nutrient delivery.

Worms also change the chemistry of the soil. A healthy forest tends to be acidic but worms like alkaline soil and actually raise the alkalinity of the soil. Worms have calciferous glands near their gizzards which neutralize acidic organic matter by producing calcium carbonate thus changing the pH in the soil. Worms, by the way that they consume organic matter, release nitrogen in the form of nitrates which release nitrogen rapidly into the soil (this benefits fast growing plants) unlike the pre-worm state, which produce ammonium nitrates which release nitrogen slowly (which benefits slow-growing plants like trees).

Many ecologists are concerned about the effect that earthworms are having on our hardwood forests. For example, the Schuylkill Center in Philadelphia, and the Cary Institute at Colgate University in upstate New York, are studying these effects. Purdue University, John Hopkins, the USDA and the Smithsonian Environmental Research Center are collaborating on a large study examining earthworms’ effects on CO₂ sequestration and ectomycorrhizal and endomycorrhizal fungal-tree relationships.

What can we do? Don’t use worms as fishing bait or dump garden soil in the woods.

You can read more about this on the following websites:

www.wvnps.org/earthworms

www.nrri.umn.edu/worms/forests/plants_fungi

www.serc.si.edu/labs/plant_ecology/mccormick_mycorrhizal.aspx

<http://www.wildlifegardeners.org/forum/feature-articles/5284-invasive-earthworms-northern-hardwoods-forests.html>

(Note: Dashes in these web addresses are important!)



DISTANT HARVESTS

(MORELS, TRUE & FALSE; CURRENT FICTION, AND THE BENEFITS OF MULTICELLULARITY)

by Susan Goldhor

reprinted from the *Boston Mycological Club Bulletin*, Vol. 67 No. 1

This has been a weird winter, with a lot of it feeling like spring. It's early February; we've had a single snowfall, now visible only in memory and an occasional small, dirty drift, and I saw snowdrops yesterday, but anything could happen before spring is really, truly here, bringing with it ticks, mosquitoes and – since hope springs eternal – morels. And I can't resist reprinting here what I've written earlier about morels. I know... it's a mania. Apologies.)

In order to think about morels in an orderly fashion, instead of the usual emotional chaos they arouse in my brain, I've taken two books out of the library: *Morels* by David Kuo, and *Morel Tales* by Gary Alan Fine. I wish I could tell you that as a result, I have logical information to impart, that will fill your baskets and clarify your understanding. Alas, the information I've garnered is useful mainly to bolster our egos in that even the experts regard morels with strong emotion but weak understanding. When Tom Volk spoke to the Boston Mycological Club several years ago, he stated that morel systematics is "a big mess", with estimates of the number of species ranging from 4 to 65. Altering the adjective, Michael Kuo writes, "An enormous mess surrounds the species name *Morchella deliciosa*." As for *Morchella esculenta*, the yellow morel, there are at least two genetically distinct types of this morel which are (according to Kuo) indistinguishable by morphology, microscopic examination, or spore prints. (Volk simply says that *M. esculenta* and *M. deliciosa* are the same.) *Morchella crassipes*, with its long, wide stem, turns out to be just an odd growth form of the yellow morel, under wet, warm conditions. Gray morels turn out to be merely alternate color forms of yellows. There are black morels that really do differ from the yellows, but they divide genetically into five different species, one of which, *M. conica*, Kuo suggests "may be the most confused name in morel taxonomy." And I'm not even going to mention *M. semilibera*, which I regard as a microcephalic yellow morel with jowls, turning black with age (think Richard Nixon on a tough day).

Well. Now that I've clarified the taxonomy and

nomenclature for you, I'll move on to the explication of when and where to find morels. In 2004, Kuo charted sightings of morels documented on selected bona fide morel internet bulletin boards. Each sighting was mapped as a red dot. Our region, New England came in from April

27th to May 10th. Of course, this is different in different years and the general rule of thumb for my region is "May." A quick glance at Kuo's time maps demonstrates just how pathetic our region is, with its few, rapidly dissipating red dots, while the midwest and parts of the west coast have



Black Morels (*Morchella elata*, *conica*, or ???)

rich harvests of dots going on and on for months. I've occasionally wished that New England had forest fires (just kidding, Smokey!), but Kuo assures us that burn sites yield morels only west of the Rockies. (Plus, Tom Volk has pointed out that burn morels have less flavor; perhaps because they contain no yeast or bacteria.) As to the other harbingers of a good morel year, Kuo finally gets so frustrated trying – unsuccessfully – to link moisture and temperature to morel fruitings, that (in a wonderful chapter entitled, "Theorizing Morels") he finally links the 2004 fruitings to whether the state voted for Bush or Kerry. It was the blue states that had the good year. I suppose they deserved something. Unable to come up with a good theory to predict morels, he satisfies himself with a good theory about morel hunters: they love theorizing.



Half-free Morel (*Morchella semilibera*)

He does the same for where morels grow and when. After giving a long and totally contradictory list of where he's been told to look for morels ("on south-facing slopes; on north-facing slopes; in sandy soil; in clayey soil; in soil with a high pH value; in soil with a low pH value" etc.) He argues "that all of these theories - even the ones that are opposites - are correct. By this I mean that they all produce morels for the people doing the theorizing... At the same time, however, most of these theories are probably dead wrong, by which I mean that none of them holds much water when the standards of empiricism are applied... When someone says 'morels grow on south-facing slopes,' what we have learned is that the speaker finds morels on south-facing slopes. We have probably also learned that the speaker does not look for morels on

north-facing slopes.” Tom Volk at least ventures the guess that “maybe morels do better at higher pH”; i.e., in less acidic soils, and both Tom and Michael are willing to link morels to dead elms and very old orchards. I have found morels in a very old orchard (I have also looked in vain for morels in very old orchards), but the one thing that people seem to agree on is that morels are mushrooms of disaster, doing best where there have been serious disturbances. They seem to appear in affiliation with dead trees, perhaps because as long as the tree is alive (acting, as Andrus Voitk suggests, as a literal “sugar daddy”), they’re perfectly content to carry on their mycorrhizal lifestyle rather than wasting energy on fruiting bodies. One theory about morels that many of us subscribe to is that the place to find morels is where someone else – preferably someone else in a distant part of the country – is looking.



“Yellow” Morel (*Morchella esculenta* and cousins)

The one thing I know for sure about morels is that most of us feel that they’re special. In *Morel Tales*, Gary Fine calls morels “the mushroom with the greatest cultural resonance.” He points out that morels are linked to the divine (by us hunters – not by theologians), with references to morels as the forbidden fruit in the Garden of Eden, or – in a more pagan framework – as the food of the Gods. Morel hunters are “driven” in a way that hunters for other species are not. As one writer comments about her own drive, “It’s meshuggonah.” Morels are invested with animate traits; more than one hunter has sworn that they are capable of becoming invisible. Fine quotes one as saying, “The way I generally get (morels) is to get my chainsaw running at the edge of the woods. I put it on the ground while it’s still running, so that the mushrooms think I’m cutting wood. I sneak up, pick off the lead mushroom, then round up the rest.” Fine comments: “These collectors ‘know’ that they are kidding, but they also ‘know’ that they are telling the truth.” As for Kuo, one of the many pleasures of reading his book is his willingness to confess his (actually pretty pathological) morel mania, which has led him on two-month-long, incredibly

uncomfortable (since he describes himself as “among the few morel hunters who do not have six-figure incomes and private jets”) and frequently failed hunts. My friend Larry Millman, who took me on my first morel hunt, won’t even start to look until he has sacrificed a coin on the chosen site and intoned a prayer to the goddess Morchella. (When our hunts have failed, I’ve blamed him for being too cheap; why should goddesses be immune to inflation?) Larry doesn’t bother with prayers when he sets out for other quarry; who ever uttered a prayer that they would find *Armillaria* or *Pleurotus*? Fine (a sociologist who seems to collect collectors the way collectors collect mushrooms) quotes Morchellaphiles who claim that morels are the most delicious of mushrooms, but points out that their ineffable flavor “may be as much in the mind as in the palate.” Although hunting morels has me quivering with excitement and hyperventilating as nothing else does, there are other mushrooms I’d rather eat. And, although I know that the addition of a few small morels to a restaurant dish raises the price by about a dollar per morel, I also know that the chef’s sauce probably drowns out whatever flavor the morel has to offer. So, I don’t think it’s the eating. I think that Larry and Gary have it right: we’re dealing with a goddess here. For those of you who haven’t read any mythology recently, let me remind you that gods and goddesses are powerful, seductive, arbitrary, capricious and whimsical, and have a long history of luring us humans into destructive relationships. They appear or disappear at will, shape-shift, and inhabit wild places; in short, *Morchella* is probably a direct descendant of Zeus, that master of disguise and seduction (although in his case, perhaps rape is a more accurate descriptor).

Terry Hayes has an admirable essay in an old *NY Mycological Society Newsletter*, entitled “Why I fell in love with mushrooms,” in which s/he writes, “...am I the only one who has noticed how much mushrooming has in common with being in love? This may be caused by the extraordinary focus we bring to the objects of our delight. Then again, it may just be the inevitable result of all that crawling around in the brush. Whatever the reason, we are gluttons in mushrooming as we are in love. We jealously guard our private preserves, exhaust ourselves in the service of our passion, rest only when we have no choice, when the secret springs run dry...Mushrooming is like being in love – forever.” Well, Terry, there’s love... and then, there’s love. And if finding chanterelles or oysters or honeys in the same place each year is like the married love you can count on to support you into your dotage, finding morels has more in common with the heavy breathing and hormonal maelstrom of illicit passion. (Although maybe those folks in Michigan, who find morels by the hundreds each year, regard them with jaded eyes, caring only about finding enough to win the annual contest.) So, to return to those questions which have tortured so many of us for so long, such as where morels grow or

what causes a good morel year (to say nothing of their systematics), Michael Kuo's bottom line is that morels are so arbitrary and capricious that we humans, unable to deal with this behavior, simply invent rules for the object of our love to follow. Those of you who have delved into the French literature of the late 19th and early 20th century will, of course, recognize the parallel with passionate, adulterous and ultimately tragic love; the tragedy stemming from the obdurate refusal of the love object – whether Odette or Morchella – to follow those rules. At first I thought that all of our heavy breathing was due simply to the facts that morels appear *a)* after a long mushroomless spell, and *b)* at a time when few if any other delectables are around. But now I think it's the goddess thing; the illicit passion thing; the arbitrary, capricious movie star behavior thing. And you know what? I can't believe that I'm falling for it. Damn you, Morchella!

The flame of my largely unrequited love is fanned by where I live. New England is not the best region for lusting after morels. No, let me change that. It's a great region for lusting after morels; it's just not a great region for finding them. So a few years ago, when I found that I'd be in the Pacific Northwest in May, I realized my chance had come. I emailed a myco-penpal, Jane Eert, who lives on Vancouver Island, and asked her if she'd be around then and if she could point my husband and me towards a possible morel site. Well, Jane did far more than that. She actually took us hunting with her. It is, of course, well known that morel hunters share their favorite spots with about the same frequency that Mafia members rat on their bosses. (And yes, I've heard the one about the old guy who willed his favorite morel spot to his son but didn't tell him where it was.) But Jane could do it because *a)* the area was slated for development; *b)* we couldn't find our way there again if our lives depended on it, *c)* we live on the opposite coast, and – most importantly – *d)* she is an exceptionally kind and generous person. When we set this up, I had a vision of our hunting in one of those gorgeous, furry, ultra-green temperate rain forests. But nothing could be further from the truth – we hunted in a scrubby, partly logged, overgrown area criss-crossed with rutted logging roads and with no trails at all; just stepping over and under fallen trees and scratchy brush. The morels were far apart; one here and another there, with no pattern of affiliation that we could see (morels, like Zeus, are actually extremely promiscuous in their mycorrhizal attachments), each one having to be spotted as some minute fraction of it peered from behind leaves or under a log. Jane not only left us behind, stumbling and entangling ourselves as she leapt nimbly through the undergrowth, but also was by far the prime spotter. The three of us gathered two grocery bags of morels; an exciting and unheard of experience for me. Then she took us home, where her partner, Rod, had prepared an amazing meal of local spot prawns, local asparagus, local potatoes, local lamb and – of

course – local morels. I wish to state here that the morels cooked by Rod far out-classed anything I've ever eaten in a fancy restaurant.

Rod is a truly great cook. But part of the savor was that we had picked those morels ourselves. We'd stalked them, gotten banged up and scratched for them, played hide and seek with them – each one of them represented a small but very sweet victory over the forces of nature, chaos and protective coloration. Had we bought them in the market, they would not have tasted so delicious. And had they been cultivated, they would have had almost no savor at all.

There are morels, and then there are false morels: the *Gyromitras*, *Helvellas*, and *Verpas*. The two latter genera are often described as more or less edible (the *Helvellas* generally getting the warning “edible with caution” because of the gastric distress they have caused in a fair number of consumers), although most reputable experts warn against them. The *Gyromitras*, however, are truly (i.e., more rapidly) poisonous. (I actually believe that the real difference between the H. & V.s and the Gs is not the presence of toxin but the



False Morel (*Gyromitra* sp.)

concentration – it just takes a lot more H. and V. meals to build up a lethal level in your liver.) It's a pity, really, since one has only to consider the species name of *Gyromitra esculenta* to understand why so many people eat it. As I was told by a Swedish botanist, when I asked her why she consumed a mushroom known to be toxic, “because it's so delicious.” (I might note here that the last words of some folks dying of *Amanita* poisoning were to the effect that it was a great meal.) The *Gyromitras* are eaten mostly in northern Europe, and

are generally boiled to remove toxins, and subsequently dried. (A raw *Gyromitra* salad would most likely rate right up there with a delicious offering of sauteed *A. virosa*.) It probably works, but I really don't advise it. (In fact, when a friend returning from Sweden offered me a small packet of dried *G. esculenta*, I refused it – despite my warring instincts that I was both *a)* being rude and *b)* missing a delicious treat.) The poisonous component in *Gyromitras* (and, to a lesser extent in the other false morels) is (duh) gyromitrin, an unstable compound which metabolizes to monomethylhydrazine, which can be lethal and is also known as a component of rocket and jet fuels, and it was the resemblance between the two types of poisonings that led to the discovery of hydrazines in false morels. (An old copy of Montreal's *Le Mycologue* stated that false morels may actually be flammable, and that the discovery that they contained hydrazine was made by a NASA researcher whose tent was set on fire by mushrooms during a fishing trip. I regret that my French is not good enough to know if this is serious reporting or light-hearted badinage.)

There are two interesting points about this unique toxin. One is that whether or not it burned down that tent, this is the only mushroom toxin I know where fumes from heating can actually poison the cook. And the other is that hydrazines can build up in the body so that repeated meals of these apparently harmless mushrooms will cause severe illness and even death. (Even in very small doses, the chemicals build up in the liver and are carcinogenic.) This explains some of the puzzling aspects of past poisonings by these mushrooms; for example, that some people eating a meal of them would become ill but others would not. Every reputable American expert agrees that you should not eat any false morels. Period.

As to how you tell a false morel from a real one (although most false morels don't look anything like the real ones), just slice it in half the long way. The real ones have hollow stems, the false ones solid. Or, for that matter, just weigh it in the palm of your hand. If you have a wonderfully heavy morel, dump it.

When you go out hunting morels (or oysters or honeys or whatever), the Humboldt Bay *Mycolog* points out that the bags inside cereal boxes are excellent for mushrooming. Or, I'd add, brown paper lunch bags or wax paper sandwich bags. Or, twists of newspaper. Try to keep each variety separate and clean them BEFORE you put them into the bag. Otherwise bits of duff and soil will be so deep into each crevice that you'll never get them clean. All the newsletters and experts say don't put them in plastic, and I wouldn't dare advise differently. Still, I used plastic bags for years before I learned not to, and almost all my specimens survived just fine. So there. And for unexpected urban finds, many's the time I've blessed those little bags they offer in parks for dog turds. (Of course I only used the clean ones! Shame on you for even thinking otherwise.)



TREE HUNTING MORELS

by Willie May, Excerpts from the March, 2012 *Earthstar Examiner*, Newsletter of the Missouri Mycoogical Society.

Our 2012 morel season approaches rapidly. I was asked to write about tree identification. How to do that? They must be shown to someone driving through or walking in the woods. You really need to put your hand on the bark and you must learn to spot the elm and ash trees from a distance. Here is a start to tree I.D. Elm trees have olive bark and are champagne shaped with thin wispy alternate branches. Ash trees have dark grey bark with cross-crossed ridges, a 60/40 trunk split and very thick opposite branches.

When spring finally nudges winter out of the way, mushroom hunters comb the woods and scan the ground for yellow sponges. I search for the trees with which morels coexist. Ever since reading Tommy Tomkins book, *Morel, a Lifetime Pursuit* in 1994, I have become obsessed with finding elm and ash trees...I'm not searching for individual trees but groves of elm and ash. We search for tree groves in 2 ways: walking and driving. All my hikes during the year have this mission...

But morels appear elsewhere. During 2000 and 2011 we found a bounty of morels under sycamore trees. I suspect that in 2012 we will again be picking beer can size yellow morels around huge live sycamore trees. Don't forget groves of cottonwood trees along the major rivers. The largest or injured cottonwood trees are usually the best producers. Every year we also find yellow morels around several large oak trees. Last year we found 300 black and delicious (hickory chicks) morels around huge live tulip poplar trees, persimmon trees, maple trees and black cherry trees. I'm sure many of you have found morels around other trees as well. Lastly we find morel where no trees seem to be available.

So to improve your odds of a morel bounty this year, get those legs in shape, take a hike with someone who knows trees, and find a new grove of trees to pick from for years to come.



POISONING BY RAW MORELS

The 2011 NAMA Toxicology Report warns of the danger of raw morels. The report cites 22 cases of poisoning from eating raw morels, about 20% of all poisonings reported. Symptoms included vomiting and diarrhea. However, none of the poisonings by morels were fatal.

Morels must be thoroughly cooked. They contain a small amount of a hydrazine toxin that is inactivated during cooking.

A note of caution - the report warns that you can become sensitized by eating large quantities of morels. If you experience mild symptoms, your next indulgence can lead to a more serious event.

– from *Mycological Society of Toronto Mycelium*, issue 38-2

Foraging

I get thank-you notes from those people
I take out to hunt matsutake.
In the afternoons we see the sky
Dripping into the shiros while we
Don't get wet at all. On the stove top
The earthy bounty just fries itself,
We make gourmet soup without even
Washing our hands or removing grit.
Mountains seem to await our return,
Keeping their fairy rings dewy, fresh.
In spring, music of the spheres annoints
the green path where we walk in mornings
among puffballs, lemon-gold corals,
Morels. It could be that way, it could.

-Anonymous

BOOK REVIEW

FIELD GUIDE TO COMMON MACROFUNGI IN EASTERN FORESTS AND THEIR ECOSYSTEM FUNCTIONS

April 2011, United States Department of Agriculture Forest Service, Northern Research Station, General Technical Report NRS-79, 82 pages. Reprinted from *Mainely Mushrooms*, Maine Mycological Society, January-March 2012.

Written by three plant pathologists, two employed by the Forest Service in Minnesota, the third a professor emeritus from the University of Minnesota, this little spiral bound book has lovely photos and limited text. The introduction is brief but repeats a common misconception: *Amanitas* have white gills. In fact most do, but not all. It is divided into sections by forest ecosystems: Aspen-Birch, Northern Hardwood, Upland Conifer and Lowland Conifer. Under each forest type the mushrooms are divided by how they make a living: mycorrhizal, saprobic or pathogenic. I was quite surprised to see that *Calvatia gigantea* is considered mycorrhizal by the authors. Several photos don't seem to match the description, and appear to be of other species. Edibility is listed and each page has a line: DO NOT eat any mushroom unless you are absolutely certain of its identity. Perhaps they should add that the mushroom is also regarded as edible.

If you are a member of NAMA, you may ask for a free copy. If not, it may be ordered through the U. S. Forest Service, fax (740) 368-0152. Order a copy and look through it this winter, enjoying the photos.

Test your identification skills by looking for photos that are apparently mislabeled!



WELCOME TO ALL OF OUR NEW NJMA MEMBERS!

We'd like to extend a warm welcome to the following members who joined us between February 11th and April 26th. We look forward to seeing you at lectures, forays, and other NJMA events. Happy 'shrooming!

Eric & Sasha Aber
Robert F. Ardito
Jason M. Barrows
Stephanie Dorè &
Brent Cordero
Sophie Dutkowski
John J. Funk
Terrence M. Jackson
Virginia Kindig
Joseph J. Maloney

Newark, DE
Glassboro, NJ
Lyndhurst, NJ

Newton, NJ
Lafayette, NJ
Philadelphia, PA
Pemberton, NJ
Lakewood, NJ
Ewing Township, NJ

Laura Maurier
Vladislav Mogilevski
Rey & Amy Montes de Oca
Ryan M. Nelling
Jayne A. O'Neill
Joey Smith
Alfred Sterphone
Linda Vinecor
Jerry M. Weaver

Barnegat, NJ
Bayonne, NJ
Clifton, NJ
Philadelphia, PA
Oakland, NJ
Red Bank, NJ
Califon, NJ
Nyack, NY
Clarksburg, NJ

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CHANTERELLE RECIPE FROM A NEW MEMBER

submitted by Sorana Tarmu

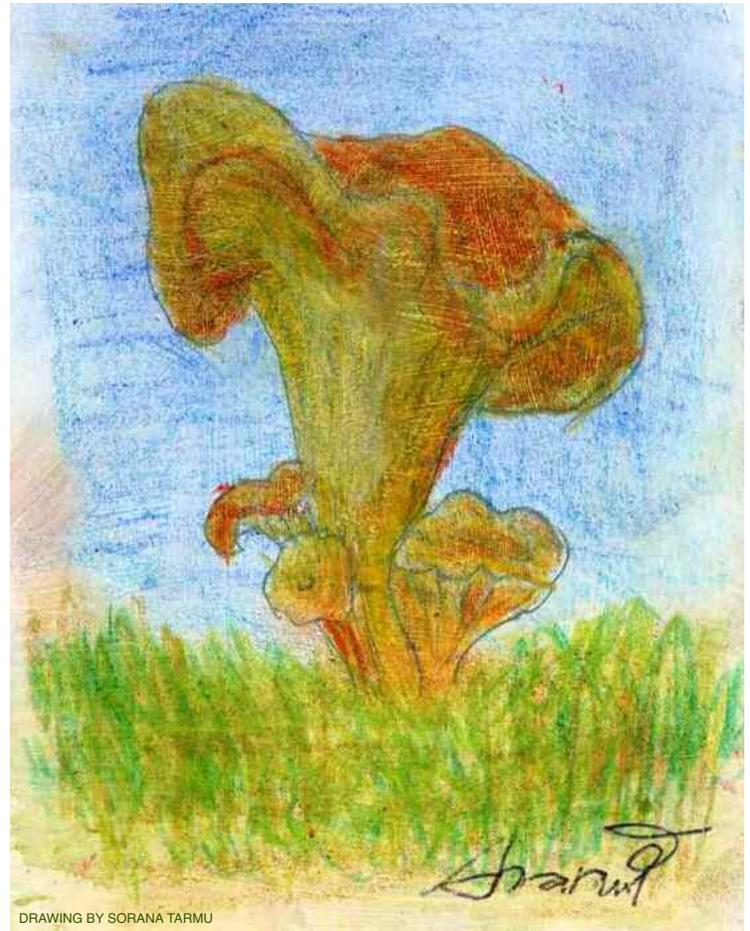
I am a new member of NJMA (together with my husband, Eldad, who is a musician). I am a licensed wildlife conservationist and graphic artist. I have attached the mixed media drawing of a chanterelle (see below). It comes with a recipe for chanterelles, which happen to be my favorite mushrooms. It's a recipe from NW Romania (which is where I was born). I hope the newsletter readers will enjoy it just as much as I do.

Austro-Hungarian Chanterelles "Paprikas" with Polenta

- 1 medium white onion
- 4 tablespoons of cooking oil
- 2-4 garlic cloves
- 1 tablespoon of paprika
- 1 pound of chanterelles coarsely chopped and steamed for 10 minutes in four cups of water
- 2 cups of fat milk
- 1 tablespoon of all-purpose flour
- 2 cups of cornmeal
- 4 tablespoons of corn oil
- flat parsley
- Salt and freshly ground pepper

Fry, on medium-low heat, the chopped onion and the steamed chanterelles and the paprika in oil until they become soft and the water is evaporated. Add the milk combined with the flour and the chopped garlic and boil while stirring continuously, until the sauce thickens. Stop cooking and add the chopped parsley, salt and pepper. Cover.

Make the polenta in a non-stick sauce pan by continuously stirring a mix of cornmeal, salt and the water resulted from steaming the chanterelles, until thick (around five minutes on medium heat). Add a few tablespoons of corn oil to the cooked polenta. Serve with the chanterelles.



DRAWING BY SORANA TARMU

a very good year, 1994 was

my name is norbert rousseau
i was born in normandie
i grow up on my mother farm
as a kid every spring time i pick up morels
my mother recipe was *le ragout de veau aux morilles*
60 years ago i did move in canada and i did find there
40 years ago i did move in new jersey.
ever since i find a good spots for morels
my best year ever 1994
i send you the pictures
but now i can't go in the wood anymore alone

too old??





RECIPE FILE

Back in high school, a friend showed me her family's stuffed mushroom recipe, which were at the time the best I ever had. I soon started tweaking it at home; and while I've kept the integrity of the original, I think I've made a few improvements. Ever since, they've become a favorite of my entire family, and we make them every holiday season. They're the perfect side dish or hors-d'oeuvres. Somewhat labor-intensive, but worth the effort!

Classic Stuffed Mushrooms

by Pete Bohan

Ingredients:

- 1 lb. large white button mushrooms**
- 1 large loaf white bread (sliced, like Wonder bread. Nothing fancy.)**
- 1 large onion, minced**
- 5-6 (or more) large cloves of garlic, minced**
- 6-8 slices of bacon, cooked till slightly crispy, but not crumbly, and finely chopped**
- 1 stick of unsalted butter, plus 1 tablespoon or so to top the mushrooms**
- 1 can of beef broth**
- 3 tablespoons chopped fresh flat leaf parsley**
- 2 teaspoons Italian Seasoning OR a mix of finely minced fresh thyme, oregano, and rosemary**
- 1 teaspoon salt (or more to taste)**
- Fresh ground pepper to taste (be generous)**

Equipment:

- 1 large baking pan (metal or glass) that will hold all the mushrooms side-by-side.**
- 1 large mixing bowl, 1 large skillet**

Method:

- 1.** With a damp paper towel, wipe off any dirt from the mushrooms.
- 2.** Carefully remove the stems from the caps by gently turning the stem from side to side while holding the cap cupped in your hand so it doesn't break. If desired, scoop out a bit more from the insides of the mushrooms with a small spoon so there is more room for the stuffing.
- 3.** Mince the stems, the onions, garlic, and fresh herbs (if you're using them).
- 4.** Take the loaf of bread and break each slice by hand into very small pieces into the mixing bowl.
- 5.** In a large skillet, melt ½ stick of the butter.
- 6.** Sauté the onions, garlic, and mushroom stems over medium heat for about 10 minutes until the mixture is all very soft. Season with salt and pepper and the Italian seasoning (or fresh herbs).
- 7.** Add the other ½ stick of butter to the mixture, and as soon as it's melted, turn off the heat.
- 8.** Pour the mixture over the bread pieces, toss in the bacon bits, and add the chopped parsley. With a large wooden fork or mixing spoon, mix everything together. You really have to mash it up. You want the bread to break down and you want the consistency of stuffing, but more moist. Add a little beef broth if it's too dry, but don't make it too mushy.
- 9.** With your hands, take the stuffing and fill each mushroom cap tightly, pressing down so it filled the inside and shaping it into a nice round dome over the top. Place into the baking pan and top each of the mushrooms with a little piece or dab of butter.
- 10.** Pour enough beef broth into the pan just so it covers the bottom. This helps the mushrooms from sticking and also reduces down with the mushroom juices into a rich sauce.
- 11.** Bake at 350 degrees for 40-45 minutes. They might need more time – the tops should be a nice golden brown and slightly crispy.

Serves 4 - 6

"MUMMY BERRY" (continued from page 3)

Then comes secondary infection, a second kind of spore produced by the infected shoots, called conidia, that moves from blighted shoots to nearby flower blossoms. This spore doesn't rely on the wind alone for safe transport: rain, bees and other insects can ship it far and wide.

It's the conidia that germinates with pollen and infects the fruit slowly, as it develops, which is why there's no way to tell if a bush has mummy berry until its fruit fails to ripen.

"Your crop looks great," said Jay Pschiedt, a plant pathology professor at Oregon State University. "Right up to harvest."

The timing is particularly frustrating for Oregon's 300 growers because the global market is starved for blueberries, which are prized for their antioxidant prowess and flavor.

In 2003, there were 23.5 million pounds harvested statewide. By last year, the number had climbed to 65 million. Acres in production jumped from 2,800 in 2002 to 7,600 in 2011.

But blueberries can't be sold if they come out shriveled and gray. And unless all growers dedicate themselves to battling the fungus, they're all at risk of diminished yields, and profits. Last year's production rates were down by about 10 percent statewide, said Bryan Ostlund, administrator of the Oregon Blueberry Commission, although he attributed that decline in part to the cold weather that hampers the berries' growth.

Therein lies another frustration about the mummy berry: The weapons in a grower's arsenal are weak, especially for those who want their crops organic. While commercial fungicides are mostly effective, organic options don't seem to work all that well, said Ross Penhallegon, Lane County agent for the Oregon State University Extension Service.

"For anybody trying to grow organically, it is a major issue. Every mummified berry that hides in the grass is going to cause a problem," Penhallegon said. "It is a real threat to the blueberry industry."

The Cooks have tried lime sulfur, raking and some combination of spraying, organic and otherwise. When all that failed, they returned to the approach that's hardest on the back and knees: picking them all up, one by one, by the hundreds.

Then, the mummies go straight to the dump.

"I have taken a torch to them," Anita Cook said. "They don't burn."

Editor's note: The Mummy Berry fungus is also present in New Jersey. See Nina Burghardt's report on the forays at Franklin Parker Preserve on page 8.



JUDGE SEES TRUTH BEHIND MISS MUSHROOM'S VEIL

reprinted from *Spore Prints*, newsletter of the Puget Sound Mycological Society, April 2012.

APRIL 1, SEATTLE - The recently crowned Miss Mushroom North America will have to give up her crown after a judge ruled that she lied during the week-long annual talent and beauty contest held last month at the Seattle Center.

Miss Hebe Loma of Chula Vista, Calif., who registered for the pageant under the name of Corti N. Arius, was disqualified for lying about her identity, among other disqualifying violations.

"I wore a veil and thought I might get away with it," she said after the judge's ruling. No reason was given for trying to deceive the judges, but Miss Loma, during her performance for the talent show portion of the contest, also claimed that she had juggled flaming conks, when she actually juggled rotted sticks that were aflame but held resupinate fungi "not even resembling conks," said pageant judge Ron Post.

Miss Haema T. Opus Mycena, the runner-up who won the pageant's dance competition even though her legs are attached to a log, will now assume the title. For the winners of other individual competitions during the Miss Mushroom contest see...



PRICE OF CATERPILLAR FUNGUS RISES TO MORE THAN US \$30,000 PER KILO

<http://www.wantchinatimes.com> (January 16, 2012)

via *Spore Prints*, newsletter of the Puget Sound Mycological Society, April 2012.

The price of a kilogram of the caterpillar fungus – "dong chong xia cao," literally meaning "winter worm summer weed" – has risen to more than 210,000 yuan (US \$31,600) in Chengdu since January 2, after a price increase of 5,000-10,000 yuan (US \$790-\$1,580) compared to the previous month.

A kilogram of premium caterpillar fungus produced in Qinghai costs 212,393 yuan (US \$33,636), 5,000 yuan more than the previous month. Sichuan's fungus goes for 210,000 yuan (US \$33,257) per kilogram, 15,000 yuan (US \$2,375) more than a month ago. Caterpillar fungus produced in Tibet is also traded at around 210,000 yuan.

An owner of a caterpillar fungus shop said that the price is usually stable apart from the Lunar New Year period when people stock up on goods for the holidays. He said prices will fall back to normal after the New Year and consumers don't have to be in a rush to buy the fungus.



LOCAL SUPER FOOD: CHAGA MUSHROOM

by Anna Sienicka, reprinted from *Mycelium*, the newsletter of the Mycological Society of Toronto

Chaga (*Inonotus obliquus*) is the latest super food that everyone is talking about. The great news is, it grows in Ontario. (Ed. – also in New Jersey) It can be found on birch trees as well as alder, and once you learn how to identify it, you can never make a mistake.

Chaga is a rather odd and unique looking mushroom, with a black, deeply scarred outer surface (resembling charcoal), and a brown-reddish inner layer. The Chaga conk grows with the birch tree for 20 years or longer during which time it absorbs nutrients and phytochemicals from the wood. Chaga can be harvested throughout the year, preferably after a full moon. After harvesting, Chaga can regrow to harvestable size again in three to 10 years, and can be repeatedly harvested until the tree dies.

The whole Chaga mushroom contains over two hundred constituents with health promoting properties.

- **Antioxidant:** Compounds in Chaga scavenge free radicals which are unstable and reactive compounds that damage cellular structures such as DNA and RNA.
- **Hypoglycemic:** Chaga may help lower blood sugar levels.
- **Antimutagenic:** Chaga inhibits changes in DNA and RNA sequences that can cause genetic disorders, cancer and degenerative diseases.
- **Antitumor:** Chaga extracts inhibit tumour growth, initiate apoptosis (cell death) of cancer cells, and stimulate the immune system to fight cancer.
- **Immune System Stimulation:** Chaga extract has been found in several studies to stimulate the immune system to fight infection, cancer, and immune diseases.

Chaga can be made into a tea or mother tincture. It is surprisingly tasty, resembling vanilla flavour.

Chaga can be found in forests north of Barrie or at most farmers' markets where it is sold ground or in small chunks. The less processed it is, the better. If you decide to buy some, make sure that it was collected at least 2-3 hours north from the city as mushrooms absorb nutrients from the surrounding environment and they may be harmful if collected in a polluted area.

Here is how I make my own tea:

Take 3-4 pieces of Chaga and add it to 3-4 cups of cold water. You can add a cinnamon stick or some cardamom for flavour. Let it boil on low heat for a couple of hours. When water becomes dark brown, it is

ready to drink. Add some raw honey or stevia. Enjoy.

The Chaga chunks can be then reused by storing them in the fridge until you are ready to make another tea. All you need to do is add more water and boil it on a low heat. Once the water stays pale, it is time to use a fresh chunk of Chaga and put the used pieces into your compost.

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If you have any additional questions about Chaga or any other medicinal mushrooms, please email Anna at anna@homeopathiccare.ca



Chaga (*Inonotus obliquus*) growing on a birch tree.

Anna is a graduate of the Canadian College of Homeopathic Medicine (CCHM) and has her own practice in the heart of Roncesvalles Village. She has extensive experience in edible and medicinal mushrooms which she happily incorporates in her practice. She recently joined the Mycological Society of Toronto and is open to learn new things as well as share her knowledge with the rest of the membership.



NJMA NEWS

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FIRST CLASS MAIL

NJMA is a non-profit organization whose aims are to provide a means for sharing ideas, experiences, knowledge, and common interests regarding fungi, and to furnish mycological information and educational materials to those who wish to increase their knowledge about mushrooms.

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...plus more!

Pseudocolus fusiformis **The Stinky Squid**



No, it's not dinner time for humans at the NJMA crab shack!
This brightly-colored smelly stinkhorn attracts flies and other insects who "dine" on the fetid spore mass and then fly off carrying the spores to other locations.
And what a "fragrance" it is!