



Symbiosis[©]

The newsletter of the Prairie States Mushroom Club

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<http://www.iowamushroom.org>

Advice on Drying Mushrooms by Mike Krebill

PSMC member Mike Plate gave his wife a tabletop mushroom farm for Christmas. The oyster mushrooms have put on a growth spurt, and Mike emailed me asking for advice on harvesting and storing them. My reply is below the photo.



Hi Mike!

Thanks for the photos and for giving permission to use them in *Symbiosis*. The mushrooms are ready to harvest now. Quality peaks when the mushrooms are young, so don't wait. Take a sharp knife and cut them off near the base. Use the biggest ones for tomorrow's mushroom soup. (You'll want enough to produce approximately 2 cups of diced mushrooms for the soup.) Save a quart of the others by putting them in a labeled paper sack to keep in the refrigerator. Within a week, try them in another recipe. All the rest of the mushrooms ought to be dried.

You can dry them in a number of different ways. Regardless of which of the following methods you select, cutting the mushrooms up in pieces roughly 2" square will speed up the drying. Properly dried mushrooms will feel leathery

(cont. on pg. 3)

Morel Articles to be in Iowa Outdoors

by Mike Krebill

Alan Foster, Managing Editor of *Iowa Outdoors* magazine, shares a passion with us. He is passionate about morels. I sent him a copy of *Symbiosis* 28:2 from Spring 2011. It contained Don Huffman's article – "PSMC and the 10-Year Morel and False Morel Study in Iowa," my article – "Tips on Spotting Morels," and a bit of morel humor. I encouraged him and Editor-in-Chief Brian Button to consider the possibility of an issue focused on morels for 2012.

While the March/April 2012 issue will not be exclusively on morels, I have given Alan permission to use "Tips on Spotting Morels," and after a thorough reading of the research report Dr. Huffman mentioned, I submitted "Key Findings from Iowa's Ten-Year Study of Morels and False Morels." I anticipate that both of those articles will make it.

Since *Iowa Outdoors* is well known for its attractive layout with many superlative photos, finding and sending in photos was a big part of my effort. Alan wanted quite a few. The 10-year study identified five morels and four false morels as being found in Iowa, and I felt it important to have nice color photos of each one. Contributors include Jim Frink, Linda and Robert Scarth, Glen Schwartz, Roger Heidt, Dave Layton, Marty Augustine, Dave McDowell, Jeni Reeves, Michael Kuo, and František ŠAR• liK. František is from Slovenia, is in the same league as Jim Frink and the Scarths, and has 600+ mushroom photos on his sites. Through the magic of Google Translate, I was able to ask him for permission to use one of his morel photos. He replied "OK" and included a smiley face. However, while I submitted many photos, the decision on which ones to use is up to the editorial staff.

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FUNgi FOTography: Photography Tips


by Linda Scarth

Lichens

As we continue deeper into winter, I have found myself revisiting some of our most colorful abstract images to add warmth to a dreary day. Chief among them are the lichens – those fascinating combinations of fungi and algae. Like the mushrooms we love to photograph, they are found on living and dead wood. They also make beautiful patterns on rocks and many other surfaces. So do not pass up opportunities to make intriguing abstract images of lichens. In the accompanying image, the yellow and orange ones were on a downed tree limb; the green filigree on a living aspen tree and the yellowish-green and gray on pink quartzite.



Since the individual organisms may be small within a cluster, getting close reveals more to the eye and camera. Placing the center of the lens parallel with the lichen produces sharper images across curved surfaces like branches and tree trunks. Lichens don't move, so slow shutter speeds and higher f/stops can be used, even at low ISOs. The slowest shutter among these three was 2 seconds at f/16 at ISO 200. The flatter crustose and foliose species are often easiest to keep in sharp focus edge to edge in a photograph. The leafy and filamented ones offer more challenges but still can make beautiful images.

Of the thousands of algae in the world, only a few genera have a symbiotic relationship with fungi and form lichens. Their origins in geologic time are still being learned. It is likely that lichens were among the early terrestrial colonizers. They are thought to have been a way that early fungi received nutrition as some continue to do to this day. Like all other organisms, lichens continue to evolve. 

Lichens in Iowa

by Mike Krebill

In 1978, Malone and Tiffany estimated there were 263 species of lichen in Iowa. The University of Minnesota's Bell Museum has one of the largest and oldest collections, with 156,000 specimens. (This includes a 10,000-specimen collection from the University of Iowa.) As far as I know, Iowa is the only state in the union with a Lichen Trail. This interpretive nature trail is in Ledges State Park and has 41 specimens. Go to this link for a slide show:

<http://s103.photobucket.com/albums/m149/JoPears5/Ledges%20Lichen%20Trail/?albumview=slideshow>



Advice...

(cont. from cover)

and tough, and when torn or cut apart, will have no sign of moisture in the center. Here are some options for drying:

1. Spread them out on top of newspaper sheets on a table, and set up a fan to blow over them. Every few hours, flip the pieces over. This procedure may take two to three days.
2. Set a dehydrator to 120° F and dry the mushrooms for 8 to 12 hours, stirring occasionally and rotating trays once or twice.
3. Dry in a conventional oven at 120° F for 12 to 18 hours, stirring occasionally and rotating trays once or twice.

4. Dry in the sun for one to two days, bringing the trays in at night. (Squirrels can be a problem.)

Dried mushrooms can be stored in capped canning jars out of the light.

There are a couple ways to rehydrate them:

1. Place them in a bowl; pour in boiling water, chicken stock, beef stock, or vegetable stock to cover, and let soak for 20 to 30 minutes. Strain through a coffee filter, reserving liquid to use in soup, stew, or sauces.

2. Place in a microwave-safe bowl, cover with cold water, and stir to make sure all pieces are immersed. Microwave on high (100% power) just to the boiling point. Remove from the oven and let sit until the mushroom pieces are tender.

By the way, you should be able to find lots of recipes using oyster mushrooms on the Internet. The Illinois Mushroom Club has an interesting sounding soup you might enjoy: <http://illinoismushrooms.com/Recipe%20chile%20oyster%20soup.html>



Looking Forward

by President Glen Schwartz

Fellow mushroomers, welcome to a new year with the Prairie States Mushroom Club. This promises to be a great year for the club, and a great year to hunt mushrooms. In fact, I can confidently predict that this will be a bumper year for morels. Of course, I have been making that same prediction for the last several years, and we all know how accurate those predictions were. Well, I do expect this morel season to be better than last year, but only because 2011 was the worst year *ever* for morels.

All of the PSMC officers and bylaws are the same as last year. We still have a few official positions to fill if you would like to get more involved with the club. Roger is acting as the foray scheduler again this year. He could use an assistant to help plan the club forays this year, and maybe take over that duty next year. We also need a publicist for the club to help spread

the word about forays and other events. Every year, several opportunities arise to present a mushroom program. Most of the club officers have presented programs or led forays. If you would like to try your hand as a presenter, let us know. We have a few canned power point presentations you could use, or you could come up with your own original material.

During the summer of 2010, Dave and Jim created a 2011 club calendar using Jim's amazing photos. We were able to sell all 50 of them, and could have sold more if we tried. We never got around to making a calendar for 2012, but we will make one for 2013. At the annual meeting last fall, I agreed to coordinate our efforts for the 2013 calendar. Mail your outstanding mushroom photos to me or via the club email at iowamushroom@gmail.com for

consideration. Let me know if you would like to help select the photos or help create this calendar.

This year we plan to get back to our roots in one important area. We intend to send fungi samples to the Herbarium at Iowa State. See the article in this issue that describes the method we will use. The club was founded as a way for the public to help build the knowledge base, and this is a great opportunity for us. The year after I joined the club, I found a mushroom in Linn County that had never been recorded west of the Mississippi River. This example proves you do not have to be a degreed mycologist to make a meaningful contribution.

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Looking Back - The Forays of 2011

by Glen Schwartz



Jackson County Conservation's Naturalist, Jessica Wagner, orients foray goers to two possible collecting areas at Maquoketa Caves State Park.

We're always interested in finding new places in Iowa to hunt mushrooms. This year, at the suggestion of Dave Layton and Mike Krebill, we teamed up with four nature centers/County Conservation Boards to provide an opportunity for the public to learn about mushrooms in their area. Naturalists promoted the foray. It was a win-win situation for them and for us – they had an event where people could find out about mushrooms from knowledgeable people; we had new locations to hunt and the opportunity to share our passion and love of mushrooms with more Iowans. We look forward to extending the partnership to other counties in 2012.

Here's what took place at our forays in 2011:

April 30th, Palisades-Kepler State Park, Mt. Vernon, Iowa.

The day started out cold and blustery, but warmed up by 11:00 a.m. We had a huge crowd looking for mushrooms, most here for the morels. Unfortunately, only one patch of morels was found, by Marty of course. There were a few other edibles in the woods, like inky caps and pheasant back. Sticking with tradition, Dean examined the day's find and gave a mushroom identification lesson to all within

earshot. The list ends up at 28 identified fungi, not bad for this early in the year.

It is officially the worst year ever for morel hunters. Our second foray in 2011 was on **May 8th, at Squire Point near North Liberty**. We had a small crowd, but some new friends showed up late. After 2 hours in the woods, only a half-dozen morels were found. We found some morels that looked almost totally black. These were not black morels though. A true black morel has black ridges and lighter colored pits. These had black pits with lighter colored ridges. These are yellow morels, even though they don't have much yellow on them. A few cup fungi are starting to show up, like the *Peziza badio-confusa*. Isn't that just the best scientific name ever?

Saturday, June 11th at Brushy Creek State Park near Ft. Dodge was the site for our third foray of the season. The weather was great but the crowd was a bit smaller than last year. We came here to try to find the rare "Ivory Candle", *Underwoodia columnaris*. Last year on this same weekend, we found many *U. columnaris*. We were not so lucky this time as none were found. Last year, the weather was warmer than normal

with an excessive amount of rain. This year, the temperatures have averaged lower than normal, with about an average amount of rain. The forest also appeared different than last year. The undergrowth was so thick it was hard to see the ground. It was a good thing that Mike and Barbra brought along Lucy and Bella, as their young eyes spotted many mushrooms us old guys missed. Lucy found the first *Russula* of the season, and Bella found a large stick covered with tree ears. Mostly we found springtime fungi as the summer mushrooms are just getting started. The best find of the day was the lemon meringue pie that Roger's parents brought for desert.

Saturday, July 9th at the Amana Nature Trail. The strange year continues. The weather has been hot and dry, so we were not too surprised we did not find any Chanterelles. We expected more from these great woods however. We found plenty of *Meripilus giganteus*, but very little else. There were many varieties of slime molds and other small fungi in the woods. We found some tiny orange disks with even smaller gray cups. See the SmugMug page for photos.

(cont. on pg. 5)

Looking Back...

(cont. from pg. 4)

All right, now it is getting ridiculous. Two weeks after the Amana foray, we had our next club foray at **Pinicon Ridge Park in Central City**. The weather has been extremely hot and humid, yet we have gone several weeks without rain. Well not exactly accurate...we did have lots of rain the day before this foray. We did not expect to find anything, so we were pleasantly surprised when we found some Chanterelles and a few Lobster mushrooms. Not much else in the woods though. We did find an area with many Dead Man's Fingers fungi (*Xylaria polymorpha*) and a toad watching over them. Maybe it was a poison toad and these were his trophies.

Sherman Park in Clinton County was the site for our August 6th foray. These woods are a favorite of Dave L., but this is the first time for a club foray at this location. Dave M. camped overnight at the site, so that is where we met for the foray. We first looked in the woods near the campground, and then some of us took canoes across the river and searched on that side. The number of fungi found was reasonable, but not outstanding. Everywhere we looked, we found boletes. Unfortunately, they all seemed to be the same species, and most of them were covered with the white bolete mold. The other side of the river was great, as we found some smooth chanterelles right in the walking path.

The September 10th foray was held at Maquoketa Caves State Park. The Jackson County naturalist did a great job with promotion of this foray as we had about 30 people show up. Since the group was so large, we split up with half going north and the other half going south. After a quick glance in the woods, I did not expect to find much. This time, I was happy to be wrong. We found over 60 species of

fungi, and everyone was able to get in on the action. There were lots of *Mycena luteopallens* growing out of walnut shells, some *Russulas* to demonstrate the peeling of the cap, some large Earth Balls, and large Carbon Balls. In fact, most of the fungi found were oversized. One couple even brought along their mushroom hunting dog! He was pretty good at finding fungi. We could have used him last spring when morels were hard to find.

September 24th, we had a foray at Pioneer Ridge Nature Area, six miles south of Ottumwa, Iowa. We partnered with Annette Wittrick, Naturalist for the Wapello County Conservation Board, for this foray, and were joined by six other people from the Ottumwa area. In spite of bone-dry conditions in the large oak-hickory forest, we found perhaps 52 species, and had a delightful time on a beautiful fall day.

Our last scheduled foray of 2011 was held at the **Wickiup Learning Center, near Cedar Rapids, on October 1st.** We had more than 25 people show up, so we split the group, with half searching the woods near the Learning Center, and the other half going a mile north to the Wickiup Natural Area. Each group found some fungi not present where the other

group was searching, a total of about 46 species. After the foray, we had a potluck lunch with many mushroom dishes served. A special treat this year was the door prizes given away after lunch. Bob Scarth won the big prize, an African market basket. We also held the annual meeting, with all club officers reelected for 2012.

Overall, 146 species were discovered in the nine club forays in 2011. The species were listed in our Fall 2011 newsletter – *Symbiosis* 28:4. Roger Heidt developed an excellent spreadsheet that compiles all of the species found and shows in which of the nine forays they were seen. The spreadsheet may be downloaded from our website: <http://iowamushroom.org>.

There were four additional forays in November 2011. Only Roger and Glen were present at these forays; however, about 30 species of fungi were found each time. There are links on our website to the species they tallied.

1. November 5th, Wickiup Hill Natural Area, Linn Co., Iowa.
2. November 12th, Wapsipinicon State Park, Jones Co., Iowa.
3. November 19th, Lake MacBride State Park, Johnson Co., Iowa.
4. November 25th, Dudgeon Lake, Benton Co., Iowa. 



Dean Abel tells participants about the fungi they found at Maquoketa Caves State Park.

Milk Thistle Stops Amanita Poisoning

by Mike Krebill

Kudos to PSMC member Peter Hansen of Iowa City, for sending me a link to Chemical & Engineering News, Nov. 14, 2011. The link referred to a CEN blog posting regarding mushroom poisoning, specifically the Amanita mushroom poisonings that I mentioned at our annual meeting in early October. The information provided material and more links that helped in reporting this story.

States bordering our East Coast were soggy than usual in September 2011 as a consequence of heavy rains and flooding generated by hurricanes and tropical storms. This led to a tremendous and widespread fruiting of mushrooms. Emergency rooms and regional poison centers began to see a leap in poisonings from mushroom ingestion, due primarily to misidentification of the fruiting bodies.


Among the poisonous mushrooms, *Amanita phalloides* is perhaps the most deadly. The person becomes very ill with gastrointestinal symptoms, and the liver enzymes become abnormally high. Amatoxins destroy the liver and cause kidney failure. The only recourse in the US has been an organ transplant, not always available on such short notice. There is no Food and Drug Administration (FDA)-approved therapy for mushroom poisoning as of yet, even though research has been ongoing for some time.

However, an intravenous preparation of milk thistle seed extract has been available in Europe for over 20 years: Legalon® SIL. This herbal product is

common in emergency rooms in France, Germany, and Belgium for the treatment of mushroom poisoning. The extract from milk thistle (*Silybum marianum*) has protective effects against liver toxins.


Fortunately, our FDA allows certain experimental compounds to be investigated and tested in humans, but only under strict guidelines at designated centers, where use of the research protocol has been approved by an institutional review board (IRB). It is the responsibility of the IRB to protect people who participate in research of unapproved drugs, medical devices or procedures.

Three cases in the US – one in 2007 and two more in September of 2011 – were given emergency approval of this European product. In 2007, Legalon was used to save four of five family members who had ingested *Amanita phalloides* while on a New Year's Day picnic outside of Santa Cruz, California. And in September 2011, a team led by Dr. Jacqueline Laurin at Georgetown University Medical Center [successfully treated two men for accidental ingestion of Amanita.](#) Georgetown is now an approved referral center for this intravenous preparation of Legalon®, and their efforts were greatly assisted by the Santa Cruz team who handled the 2007 cases.

The grand news is that there is an herbal preparation that is effective in treating Amanita poisoning, an antidote to the Death Cap. 

Morel Articles...

(cont. from cover)

The May/June issue of *Iowa Outdoors* – which will appear in mid-April (still during morel season) – may have a short article I've written: "How to Avoid Getting Poisoned from Eating Morels." (That's no joke; people have!) In the Wild Cuisine section, you'll find Dave Layton's mouth-watering recipes for stuffed morels and morel quiche. They were highlights of the morel cooking class that Dave and Marty Augustine conducted a couple years ago for the New Pioneer Food Coop in Coralville. Dave's recipes and the photos I took have been sent to Alan. 

Looking Forward (cont. from pg. 3)

The mushroom club exists to serve you, the PSMC members. Do you want more forays? Have you found a great woodland to explore? Do you want to share your secret morel spot with others? (Just kidding!) Are you interested in edible fungi? Please communicate your needs to us by sending an email to the club at: iowamushroom@gmail.com 

On the Lighter Side

A man was arrested for trying to sell shiitake mushrooms as magic mushrooms. Apparently he has no morels. – Roger Heidt

Collecting Fungi Samples

by Mike Krebill

When PSMC – the Prairie States Mushroom Club – was organized in 1983, one of our first missions was to help Iowa do what no other state has done: undertake a 10-year study on the distribution and abundance of morels and false morels within our borders. That study was published in the *Journal of the Iowa Academy of Science*. [Tiffany, L. H., G. Knaphus and D. M. Huffman, 1998. Distribution and Ecology of the Morels and False Morels of Iowa 105(1): 1-15.]

We have an opportunity to help out again. We have found mushrooms on our forays that are not listed on the Fungi of Iowa website (<http://www.herbarium.iastate.edu/fungi/>). Roger Heidt emailed Rosanne Healy (also a PSMC member) about that fact, since she helped create the site. He asked her what was necessary before a mushroom could be officially recorded as being in Iowa. Her response was that the Herbarium needed to have a voucher specimen. Roger emailed me back, so I asked Rosanne to describe what that entailed. Here's her very specific reply:

Ideally, a voucher specimen will include

- 1. Collection:** a fully mature (but not overly mature sample), and also a young one. It is good to collect several to show variation, but only if they are from the same collection spot - It is best not to mix collections.
- 2. Spore print:** make sure to get a spore print if the specimen is a mushroom or bolete. For this, use a piece of white paper, cut the cap off, place it gill side down on the paper, and cover it with a bowl of some kind to prevent the cap from drying out before it can discharge its spores to make a print.
- 3. Adequately dried** to prevent rotting: It is best to dry the specimen(s) by air (if small enough to quickly dry - a fan can be helpful), or in a food dehydrator with the setting on lowest heat possible. If it is large like a bolete, cut through it to get a representative portion of the cap and stalk, and dry that.
- 4. Sized to fit a herbarium packet:** When deciding whether to cut or not, imagine putting your specimen into an envelope that is ~ 4.5" x 4". Sometimes, you can simply bend an overly long stalk rather than cutting. For large things that can't be cut for some reason, there are boxes that can accommodate, but try to avoid counting on this, because the boxes are expensive, and space is an issue.
- 5. Have valuable collecting information and description:** After the specimen is dry, it can be put in a plastic bag with all the information that goes with it:
 - a. What it is (genus, species if known),
 - b. Where it was collected (site),
 - c. What it was collected on, habitat information (savanna? mesic-deciduous woods? prairie? marsh? Etc.),
 - d. GPS info if available,
 - e. When it was collected (date),
 - f. Who collected it, along with their collector number (if there is one),
 - g. Who determined what it is (if different from the collector)
 - h. Description of the fresh specimen: color(s), size (e.g. if it is a mushroom or bolete, size of cap, length and width of stalk), spore print (if it is a mushroom or bolete), does it bruise or change color after being collected? Does it produce any latex (as in *Mycena haematopa* or a species of *Lactarius*)?
- 6.** To make it even more valuable, there will be **images of the specimen when it was fresh.**
- 7. Mail either in a bubble wrap envelope or wrapped in dry paper in a box, to protect fragile dried fungal specimens,** to a herbarium that includes fungi. Deborah Lewis is the curator of the Ada Hayden Herbarium at ISU, which is the only large fungal herbarium in the state. The address to send specimens to is:

Deborah Lewis
Ada Hayden Herbarium
Iowa State University, Bessey Hall
Ames, IA 50011

Her email address is dlewis@iastate.edu

I thought it wise to get in touch with Deborah Lewis, and check with her about whether or not she would welcome our doing this. After introducing the PSMC and myself, here's what I wrote:

Our group would like to assist in building the Herbarium's collection by supplying dried voucher specimens along with the photos and data that need to accompany them. However, my concern is whether or not this would meet with your

(cont. on pg. 13)

Mushroom Flavor Ratings

by Dave Layton

Often mushrooms are rated as edible, fair or mediocre, good, excellent or choice, but little more is said about them. I find this frustrating, because those ratings are often arbitrary and they don't take into account the types of foods they are most appropriate in. I first learned the subjective nature of mushroom flavors when I proudly shared a meal of wild *Agaricus bitorquis* with my brother and he said they were too strong for him. I always thought the stronger mushroomier flavor was the best. But he was right, for that very strong *Agaricus* overpowered my whole meal.


An opposite case is *Lyophyllum decastes* (fried chicken mushroom.) Decades ago I thought this mushroom was pretty flavorless and books rating it as mediocre confirmed my opinion. But, in recent years, I found *L. decastes* fresh and abundant. Despite their perceived lack of flavor they had a nice meaty texture so I tried them again, this time in chili. They were excellent in it, providing a nice counterpoint to the strong chili flavors. Since then I had very similar mushrooms in China, but fixed in different ways. The preparation of *L. shimidje*, for instance, gave me more ideas on how to prepare *L. decastes*. I no longer consider them mediocre and Kuo's *100 Edible Mushrooms* book rates them "Great," and even recommends recipes into which they may be substituted, where they have an opportunity to attest to his rating.

Sulfur mushrooms (*Laetiporus sulphureus*) never made the top of my list either until I was given a huge clump and my friend Sally experimented with an Alfredo-like recipe from one of my books. It was

one of the most delicious mushroom meals I'd ever eaten. The unique tangy sulfur mushroom flavor was just perfect for it. A couple other examples are morels. My son doesn't like "mushrooms" but he likes morels and no one would waste morels in mushroom soup with a bunch of other species. Puffballs on the other hand aren't real great sautéed like morels in my opinion, but they're one of my favorite soup ingredients. I tried feeding *Grifola* to my son thinking he might like its different flavor. He said, "Dad that's exactly the mushroomy flavor I don't like."

I could cite many more examples of mushroom flavor differences, but I'd like to share some useful information too, so I've created a chart that rates strong/mild and mushroominess/uniqueness (okay maybe those aren't real words). The common commercial mushroom, *Agaricus bisporus*, is dead center or neutral in the chart making it the species I measure all others by. This is not a measurement of excellent to poor. I like all of the mushrooms I list and all could be excellent in the right recipe. Instead

this chart will hopefully give a little clue as to whether different mushrooms could mix or if they might be better in their own individual recipe. A couple general rules I'd follow are: Mushroomy mushrooms go well together but use lesser amounts of strong ones so you don't overpower mild ones. Likewise strong unique mushrooms are probably best in a dedicated recipe but mild unique mushrooms could go well with other mushrooms especially if they have an enjoyable texture or create a consistency like *Auricularia* or *Flammulina*.

Finally, I must say that I produced this chart in January and many of these flavor ratings come from a too distant memory. The chart would be more accurate if others provided their own input as to the mushroom flavors and the final grid location would be an average of opinions. My hope is that other mycophagists will find this chart useful and add their own observations and/or species to the grid. I also hope this grid will help us all remember that delicious is only delicious if prepared deliciously. 

Book Reviews

In 2011, Eugenia Bone's book, *Mycophilia: Revelations from the Weird World of Mushrooms* (Rodale, New York), was hot off the press. Two PSMC members read it and offer their very different take on a book you'll likely enjoy.

Mycophilia

by Mike Krebill

Let's start off with what this book is not, before describing what it is. It is not a field guide to mushrooms chock full of incredible photos, distinctive descriptions, and easy to use keys. With the exception of the front cover's illustration of morels and false morels, only a sprinkling of black and white

photos grace its pages. You will not find tips for filling your mushroom basket or for storing an abundant harvest; nor will you find a series of mouth-watering, company-pleasing recipes.

(cont. on pg. 9)

Mushroom Flavor Rating Grid

Species
Number Mushroom Species Grid loc.
v,h

Species Number	Mushroom Species	Grid loc. v,h	Flavor Rating Grid									
			Mushroomiest	Mildest								Strongest
			1	2	3	4	5	6	7	8	9	10
1	<i>Agaricus bisporus</i>	6,6										
2	<i>Agaricus bitorquis</i>	10,10										
3	<i>Agaricus campestris</i>	8,8	10									2
4	<i>Agaricus subrufescens</i>	3,8	9						7			12
5	<i>Armillaria mellea</i>	4,5	8		8	19			17	3		
6	<i>Auricula auricularia</i>	4,2	7							21		
7	<i>Boletus edulis</i>	9,7	6		10			1	15			
8	<i>Calvatia gigantea</i>	8,3	5					18	13			
9	<i>Cantharellus cibarius</i>	3,9	4		6		24	5	14	14		
10	<i>Coprinus comatus</i>	6,3	3		11					23	4	9
11	<i>Flammulina velutipes</i>	3,2	2		20			25				22
12	<i>Grifola frondosa</i>	9,10	1									
13	<i>Gyroporus castaneus</i>	5,6	Most Unique									
14	<i>Hericium coralloides</i>	4,6										
15	<i>Lactarius hygrophoroides</i>	6,7										
16	<i>Laetiporus sulphureus</i>	3,10										
17	<i>Lepista nuda</i>	8,7										
18	<i>Leucoagaricus americanus</i>	5,5										
19	<i>Lycoperdon pyriforme</i>	8,4										
20	<i>Lyophyllum decastes</i>	2,2										
21	<i>Marasmius oreades</i>	7,8										
22	<i>Morchella esculenta</i>	2,9										
23	<i>Pleurotus ostreatus</i>	3,7										
24	<i>Russula virescens</i>	4,4										
25	<i>Stropharia rugosoannulata</i>	2,5										

The species number is placed in the grid to indicate where that mushroom rates in terms of the flavor components.


In this rating, mushroom flavor has two components: how strong it tastes (which is assigned a number on the horizontal scale from 1 to 10, with 1 being the mildest and 10 being the strongest tasting) and how mushroomy it seems (which is assigned a number on the vertical scale from 1 to 10, with 1 being the least mushroomy and most unique taste to 10 being the mushroomiest).

Book Reviews

(cont. from pg. 8)

What you will find is a book true to its title: *Mycophilia – Revelations from the Weird World of Mushrooms*. Its chapters give you a fair idea of its content: Forays and Festivals, Conferences and Collectors, Truffles, All About Buttons, and The New Superfood, to select a few. Author Eugenia Bone describes herself as a mushroom groupie. She has traveled around the nation going to local, regional, and national events, and she takes you there as you begin the book. She introduces you to Gary Lincoff, Tom Volk, Paul Stamets and dozens of other famous mycologists. Have you heard of “fire” morels? She flew from

her home in New York out to Montana to vie with commercial mushroom pickers for the tens of thousands that might be found. Her stories are fascinating, her revelations the kind that you will be eager to share with family and friends. Are you aware, for instance, that the button, crimini, baby bella, and portabella mushrooms available in our stores are all the same species? Were you aware that mushrooms really do have nutritional value? Have you heard of the fast growing field of mycoremediation, where mycelium can be used to break down toxic pollutants and render them harmless? Did you know that there is

a company now producing a biodegradable alternative to Styrofoam™, where blocks of mushroom mycelium bind agricultural crop waste into any shape needed for packaging – packaging now in use for Steelcase, Dell, and Bloomberg products? 

Barbara Ching’s take on *Mycophilia* is quite different. It starts on page 10.

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Book Reviews

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Mycophilia

by Barbara Ching

Eugenia Bone's love of mushrooms started small, and early. Born into an Italian-American family of foragers, she learned early to identify choice edible mushrooms. (Her father is food writer and artist Edward Giobbi, and his *Pleasures of the Good Earth* (1991), long one of my favorite cookbooks, opens with an extensive chapter on wild edibles, including mushrooms.) When she grew up, she left the New York's bucolic Hudson Valley and moved to Manhattan. Raising her family in a Soho apartment, she limits her mushroom hunting to restaurant menus. Eventually, she and her architect husband, a hiking enthusiast, buy a cabin in Colorado. In the mountains, Bone returns to mushroom hunting out of loneliness when she accepts an invitation from her masseuse to go on a foray. I can imagine your eyes rolling because while reading these early pages, mine did, too, and Bone's teenage children never stop cringing. But *Mycophilia*, in a large sense, is about Bone getting over herself. What I'm going to remember from the book is the story of mycophilia, or love for fungus. As a love story, this book succeeds fantastically.

Most mushroom books are written by experts; Bone may be an expert now but her book tells how and why she gained her knowledge. There's lots of interesting information about mushrooms in this book but that's not what makes the book interesting. The theme of connection runs like a mycelium through the book. Once home from her Colorado summer, Bone joins the New York Mycological Society. (In fact, the book is dedicated to the Society's members.) Like a puppy whose motivation comes mainly from treats, or like the child she once was, Bone initially focuses her

attention on how to find good edibles. To do so, she becomes as gregarious as a honey mushroom. Once a reluctant hiker, she eagerly joins her husband on Rocky Mountain hikes (although she admits she keeps her eyes on the ground while he gazes at peaks). Before falling in love with fungi, Bone always refused overnight camping. Now, she will forsake a well-made bed for a bunk that will get her into the woods at sunrise. She crisscrosses the country to attend conferences and forays, seeking out budget accommodations and boldly befriending strangers.

Surely Rodale does not pay advances or expenses of the size that would cover all of the coast-to-coast travel that Bone undertook in this book. I don't make this observation (solely) to vent my envy but to admire the no-expenses-spared passion she shares. I'd do the same if I had the time and money. Bone isn't gloating about her travel and leisure. The words she uses to describe her motives are almost religious in their emphasis on sin and redemption: her initial interest in the mushrooms she knew from "restaurant menus" reveals her "basic venality." During her first forays, when she comes across a flourishing path, she gathers with "greed and gluttony." After a few extensive forays, though, she undergoes a conversion. She marvels at the beauty of redwoods and beech trees and the beautiful way the sun shimmers in a forest.

She still loves to eat mushrooms but she also comes to love their very being. She stays up nights studying mycology journals and seeks out scientists for interviews. The chapters in which she explains various theories about fungal biology and evolution are not my favorites although I did learn

from them. They serve an important function to the story, though, as Bone's understanding of mushrooms, and her relationship to them, grows. As she puts it, "everything changed after I learned about fungal lifestyles and how key they are to the functions of nature. Now, when I look at anything . . . I realize I am also looking at fungi. I'm seeing more than meets the eye." The name she gives her emotion and knowledge is "ecstasy," and it comes, she says, from science rather than faith.

Still, as she becomes ever more immersed in mycology as a science, she also grows more attached to her fellow mycophiles across all ranges of the social spectrum from the educated urbanites in the New York Mycological Society to the professional pickers, many of them Asian refugees, whom she shadows in west coast picking camps. Her most memorable mycophile friend is Larry Evans, an old hippie and picker who writes songs about mushrooms (such as "Breakfast of Champignons") and tools around to forays in his red Subaru decorated with white magnets that make it look like a vehicular *Amanita muscaria*. I would love to read his story. (If you've seen *Know Your Mushrooms*, you've seen him, and you can also catch a glimpse of Eugenia in this fun documentary set mostly in Telluride).

Most of the forays and conferences that Bone attends emphasize science or food. But the Telluride mushroom festival celebrates psychedelia, and after some cautious planning, she tries magic mushrooms. Like all her experiences with mushrooms, this one affirms her love for them. Nothing especially hallucinatory happens; as she puts it, "I felt like I had my own

(cont. on pg. 14)

Join NAMA!

The North American Mycological Association (NAMA), founded in 1967, is a non-profit organization of professional and amateur mycologists with over 75 affiliated mycological societies in the United States, Canada and Mexico. It maintains a contact list of those affiliates, so if you should ever move to another state, or if you have a relative or friend who doesn't live in Iowa, you can check the list at NAMA's website: <http://www.namyco.org>

Our Prairie States Mushroom Club has been an affiliate since we were organized in 1983, thanks to Dr. Don Huffman, a good friend of the founder of NAMA.

One of the benefits of joining NAMA that is above and beyond the experiences we can offer is the opportunity to attend annual conferences and forays in different parts of North America, often with short courses in mycology, and always with lectures by professional mycologists including some of the best known people. The next annual foray will be held in Scotts Valley, California December 13–16, 2012. Details will soon be posted on the website.

NAMA also sponsors regional forays. These are intimate gatherings limited to 40 NAMA members where learning and social time are encouraged.

Their newsletter, *The Mycophile*, gives mycological news and reports, notice of events of interest to members, reviews of recent books, and poison information.

NAMA publishes *McIlvainea*, a peer-reviewed journal with scientific papers on all aspects of fungi, toxicology reports, and topics of general interest – with articles by leading professional and amateur mycologists.

NAMA also conducts an annual photo contest and publishes the results.

You can now join NAMA or renew your membership dues online. You can pay with either your PayPal account or with a credit card. When you start the application, be sure to tell NAMA how you would like to be involved. Please include your current telephone number. If you join through PSMC, you get a small discount, so be certain to write Prairie States Mushroom Club when it requests the name of the affiliated club.

For those of you who don't do computers, the back of this page contains a paper application form that you can remove from the newsletter, fill out and send in with a check.

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North American Mycological Association

To promote, pursue and advance the science of mycology

Membership Application

Name(s) _____

Street Address _____

City/State/Zip _____

Phone _____

Email _____

Joining as:

- \$32 for members of affiliated clubs (please state your club) Club name:

Prairie States Mushroom Club

- \$35 for other North American members (individual or family)
 \$35 for foreign members getting email delivery (non North America)
 \$45 for foreign members getting regular delivery (non North America)
 \$15 for full time students (state your school)

School name: _____

- \$60 or more for a sustaining membership
 \$500 for a lifetime membership
 \$30 for an affiliated club

Send check payable to **NAMA** to:

Ann Bornstein
61 Devon Court
Watsonville, CA 95076-1160

- I would be interested in making a donation to fund educational activities. Please contact me.

- I am interested in participating in the following activities: _____
_____ (See list at <http://www.namyc.org>.)

If you have questions about this application, contact NAMA Membership Secretary Ann Bornstein at annstitcher@charter.net.

Creamy Oyster & Porcini Mushroom Soup with Wild Rice

1/4 cup butter
1/4 cup flour
1/4 cup chopped onion
1/2 cup chopped celery
1/2 cup chopped carrots
1/4 cup chopped fresh
Italian parsley

1 pkg. dried oyster mushrooms
1 pkg. dried porcini mushrooms
4 cups chicken broth
1 cup whipping cream
1/2 c. shredded mozzarella cheese
2 cups cooked wild rice

1. You need to do two things ahead of time before you can assemble the ingredients:
 - a. Cook the wild rice. Put 1 cup of wild rice and 2 1/2 c. water in a pot, and bring to a boil. Reduce heat to a simmer. At the end of 20 min., start watching closely until water almost disappears. (This makes extra, which you can enjoy later.)
 - b. Rehydrate the dried oyster and porcini mushrooms by placing them in a bowl together, and pour two cups of boiling chicken stock over them. Let soak 20 minutes. Strain through a coffee filter and save the broth. Chop the mushrooms and set aside.
2. Melt the butter in a large saucepan. Sauté the onion and celery over medium heat for about 5 min., or until the onion is translucent.
3. Add the mushrooms, the mushroom and chicken broths, the carrots, and the parsley. Cook 15 minutes over medium heat.
4. Add the mozzarella cheese and whipping cream. Stir over medium heat until the cheese has melted. Salt and pepper to taste and serve immediately. Garnish with additional sprigs of parsley if desired.

Recipe courtesy Mariposa Farms, Inc., P.O. Box 206, Grinnell, IA 50112, with the addition of porcini and wild rice as suggested by Mike Krebill, 150 Oakcliff Lane, Keokuk, IA 52632. MikeKrebill@aol.com. Additional recipes may be found at www.mariposafarms.com

Mushroom Paraprosdokian Challenge

A *paraprosdokian* is a figure of speech in which the latter part of a sentence or phrase is surprising and unexpected. It is popular among comedians and satirists. “Where there’s a will, I want to be in it,” is a type of paraprosdokian. Here are a few with mushroom content:

1. Finding mushrooms to cook is easy when you know where to look; being sure they won’t poison company is harder.
2. My \$6,000 morel mushroom hunting dog is absolutely awesome at finding morels, but he wants to keep every one.
3. Sounds like my truffle hound, but he buries his somewhere.

Try creating a few. Email your entries to MikeKrebill@aol.com, or mail them to my address (Mike Krebill, 150 Oakcliff Lane, Keokuk, IA 52632) and look for them in the Spring 2012 *Symbiosis*. 


Collecting...

(cont. from pg. 7)

approval and whether it might pose any problems for you and your staff. Problems might include things such as a lack of staff or time they might devote to adding to the Hayden collection of fungi. It might be inadequate storage space. If those are deterrents, if you don’t want us to proceed with this project, kindly let me know.

Here is her enthusiastic and encouraging reply:

Part of me wants to say, “Yes, yes, yes!” to accepting, preparing and accessioning the voucher specimens! But first, I suppose I should ask about how many do you think would come in? We can deal with up to ~100 pretty easily – do you think there might be significantly more than that? If so, it may take us a while to get them accessioned and into the database (although it would happen “sooner or later”...).

Deb and I will work out the details, and I may travel up to Ames to look at their collection, take photos, bring back a collection envelope, etc. so that I might train whoever wants to help. This could be an opportunity for us to make a significant contribution to the knowledge of our state’s mushrooms. 

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Book Reviews

private 3-D glasses on.” As the mushrooms wear off, she arrives at an important turning point in her life, letting go of her anxiety about aging and losing her looks. Instead she begins to see her body as a vessel carrying her through life.

With her heart, soul, and body given over to mushrooms, she’ll bar no holds to learn more. At the Annual Mushroom Conference at Breitenbush Hot Springs in Oregon, described in the book’s last chapter, she even sinks naked into a hot spring bath in order to interview mycologist Thom O’Dell, equally naked, about “how profoundly DNA analyses have affected the study of fungi.” Her notes, she says, looked like “runny mascara” thanks to the steaming springs but this chapter cleverly moves from the ridiculous to the sublime as Bone describes the role of microbial fungi in the human body.

The interaction between all forms of life, she concludes, changes “the eternal question.” It’s not “Who am I? but Who are we?”

What I’ve written is more of an appreciation than a review of *Mycophilia*. My reservations about this book seem trivial. The tiny, high school yearbook sized photographs, printed in grainy black and white, add to the personal, unglorious story Bone tells although I imagine many people will wish the images were bigger and clearer. And I do wonder about parts of the story that surely were omitted: the mushrooms that turned her stomach, the forays that weren’t fun, and even bad trips. But these are things true lovers overlook. 

(cont. from pg. 10)

The Complete Book of Mushrooms

by Mike Krebill

Jordan, Peter and Steven Wheeler. *The Complete Book of Mushrooms. An Illustrated Encyclopedia of Edible Mushrooms and Over 100 Delicious Ways to Cook Them, with Over 800 Photographs*. Southwater, Blaby Road, Wigston, Leicestershire, England. LE18 4SE. 2011. This book became available in late 2011. Like Gary Lincoff in the US, Peter Jordan is a well-known author of several mushroom guides in Europe. And yes, the fungi he has chosen for this book are ones that can be found in both Europe and the US. While an updated reprint of *The Ultimate Mushroom Book*, this one has an eye-pleasing layout with superlative photos and a mouthwatering recipe section. A delightful book in every sense of the word, it can be purchased from <http://www.amazon.com> 