



Symbiosis[©]

The newsletter of the Prairie States Mushroom Club

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Summer

<http://iowamushroom.org>

Looking Forward

by Glen Schwartz

Spring seemed to come fast this year. I headed into the woods early to look for morels, knowing that I probably would not find any (I didn't). The next weekend, I went out, both Saturday and Sunday, and again, I was skunked. I know other people were finding morels, but they were hiding from me. The next weekend, I found a few morels that other people had missed. It was enough for a taste, but not enough for a meal. The next weekend, we had the "Mushroom Ramble" at Wickiup. We were able to help almost everyone present find some morels. I took home enough for another taste. I went out one more time to look for morels, but the season is now over, and I only found a few. Maybe next year.

We need your help setting up the forays for this year. We had a planning meeting, but failed to set dates for this year. We did select the locations we want to go to...in fact, we have too many locations for the number of forays that we normally have each year.

As of right now, we have a foray June 10th at Macbride State Park, and one for October 14th in Poweshiek county, but nothing between. Normally, we have a foray about once every 4 weeks until late summer, at which time we start having a foray once every two or three weeks. Here is the list of locations we discussed:

- Van Buren Co. (private property)
- Tama Co. Otter Creek Park
- Johnson Co. Big Grove
- Iowa Co. Amana Nature Trail (probably short notice foray)
- Linn Co. Ellis Park (probably short notice foray mid-summer to mid-fall)
- Johnson Co. J. Harold Ennis Park
- Jackson Co. Bill and Marles Brown (private property)

- Muscatine Co. Wildcat Den Park
- Polk Co. Browns Woods
- Marion Co. Lake Red Rock Park
- Dubuque Co. (no specific park selected)
- Delaware Co. Backbone St. Park

Here is what you do: Select a park you really want to foray, and a date that works for you. Send an email to the club at iowamushroom@gmail.com and we will try to set up the foray for that date. Be aware that there might be a conflict with someone else asking for a different park on the same date, so we might have to shuffle things around a bit. As for me, I really want to go back to Wildcat Den and Browns Woods. If you are interested in going to these parks, or any other on the list, now is your chance to have the foray on your schedule!

See you in the woods,
Glen



Book Review

The Scout's Guide to Wild Edibles: Learn How to Forage, Prepare & Eat 40 Wild Foods

2016, St Lynns Press, Pittsburgh

ISBN-10: 1943366063, ISBN-13: 9781943366064

192 pages; Product Dimensions: 4.6 x 0.5 x 6.9 inches

\$18.95 at stlynnspress.com

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I have to admit that I was a little apprehensive when I received a copy of *The Scout's Guide to Wild Edibles*—I see a lot of guide books and how could this one possibly stand out in an already crowded field?

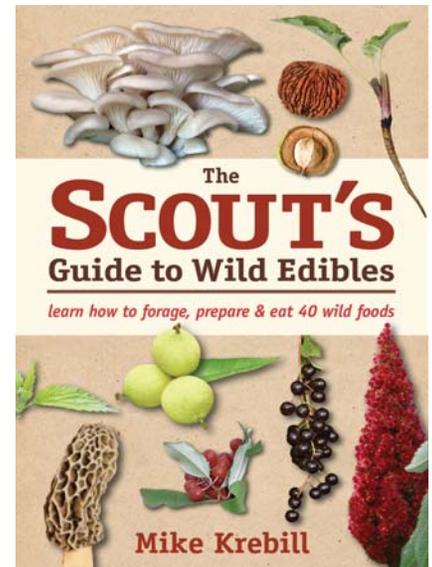
Turns out, this little guide book (it's pocket-sized, as a true guide book should be, and comes in under 200 slim pages) has much to offer! The book covers many of the most commonly-foraged wild edible mushrooms and plants from across North America; mushrooms included are of the “foolproof four” and their ilk (puffballs, morels, sulfur shelf, chanterelles, etc.); and the plants range from “forbs” like dandelion greens and stinging nettles, to berries and nuts. All good so far, but no doubt you already have books that cover those. Author Mike Krebill adds in many other features, though, with each and every description. Very good photos, plus how and when to collect, as well as information on preparation and storage. On preparation and storage there are of course some recipe ideas, all of which would be easy to do with kids. On harvesting stinging nettles there's great advice on how to prevent severe skin irritation (been there, done that). On harvesting and hulling black walnuts, how to keep from ruining your clothes and irreversibly staining your hands (been there, done that too!). And when collecting acorns, how to sort good from bad (they tend to get grubs inside, which the author says his aquarium fish love!), shell, and soak before turning into delicious gluten free flour. Another really nice feature is that each description discusses *sustainable collection and harvest*. Thank you Mike Krebill, this is something all books that endorse foraging should be doing!

The author is very well suited to author a guide book geared towards Scouts (but not exclusively to Scouts—

more on that in a minute), and a household name

among foragers in the Midwest. Mike Krebill is an award-winning life science teacher (retired after 35 years). He has been active in Scouting at every level, from Eagle Scout to Scoutmaster to leadership at the District and Council levels, and is the recipient of multiple awards for outstanding service (50 years as an edible wild plants educator). Considered by many to be one of the best foragers living today, he is a sought-after speaker at foraging events across the USA and is very active on social media foraging sites. He has been a featured presenter at the Wild Food Summit for eight years in a row and was botanical technical editor for nine recent books on foraging (including Sam Thayer's *Nature's Garden* and Leda Meredith's *The Forager's Feast*). He acknowledges many other authorities who assisted in producing this book, including many members of Iowa's Prairie States Mycological Society who contributed excellent photos of mushrooms and reviewed the text for accuracy.

As stated, *The Scout's Guide to Wild Edibles* is certainly pitched to Scouts and has many great ideas for projects, fund raisers, and activities, but any of this information would be fun and engaging for any beginner or group wanting to organize a foray or outing. And there are many great ideas to introduce kids of all ages to foraging for the first time! The size and scope is just right for beginning foragers. And so is the price. The book is under \$20 at the St Lynns Press website (where you will find many other really interesting titles); I've seen the book listed at many online discount book sellers for a third less than the list price. - *Britt A. Bunyard*



Can Mushrooms Treat Depression?

by Eugenia Bone

Eugenia Bone is the author of “Mycophilia: Revelations From the Weird World of Mushrooms.”

I TRIED magic mushrooms out of curiosity and in middle age. I’d been on the amateur mycological circuit for a couple of years, but hallucinogenic species were rarely mentioned at the foraging expeditions and conferences I attended. It’s almost as if they were the black sheep of mycology: embarrassing to serious taxonomy jocks. I read some books on the subject, but most were tripper’s guides that didn’t utilize, um, specific language or current science. Psychoactive mushrooms had been in a kind of scientific ghetto ever since they were criminalized in 1968. But now the drug derived from the mushroom, psilocybin, is finally being re-examined for its medical applications.

A [study](#) published last month in the Journal of the Royal Society Interface compared M.R.I.s of the brains of subjects injected with psilocybin with scans of their normal brain activity. The brains on psilocybin showed radically different connectivity patterns between cortical regions (the parts thought to play an important role in consciousness). The researchers mapped out these connections, revealing the activity of new neural networks between otherwise disconnected brain regions.

The researchers suspect that these unusual connections may be responsible for the synesthetic experience trippers describe, of hearing colors, for example, and seeing sounds. The part of the brain that processes sound may be connecting to the part of the brain that processes sight. The study’s leader, Paul Expert at King’s College London, told me that his team doubted that this psilocybin-induced connectivity lasted. They think they are seeing a temporary modification of the subject’s brain function.

The fact that under the influence of psilocybin the brain temporarily behaves in a new way may be medically significant in treating psychological disorders like depression. “When suffering depression, people get stuck in a spiral of negative thoughts and cannot get out of it,” Dr. Expert said. “One can imagine that breaking any pattern that prevents a ‘proper’ functioning of the brain can be helpful.” Think of it as tripping a breaker or rebooting your computer.

Psilocybin is present in a wide range of mushrooms, especially in the genus *Psilocybe*, though why it exists in the mushroom is not fully understood. When ingested, psilocybin metabolizes to psilocin, which resembles the chemical structure of serotonin — a neurotransmitter that regulates mood, appetite, sleep, cognitive functions like memory and learning and feelings of pleasure. Psilocin may simulate serotonin, and stimulate serotonin receptors in the brain.

Psilocybin was first synthesized in the late 1950s, by the chemist Albert Hofmann (who also synthesized LSD from a fungus). In the years following its discovery, a number of studies were conducted, on psilocybin’s efficacy in treating [alcoholism](#), as a tool in therapy and as a mechanism by which the terminally ill might better cope with despair. But clinical research into psilocybin became professionally marginalized, and research funding dried up about the same time it entered the mainstream as a recreational drug. Outlawed in 1968, it was swept up in the counterculture panic of the Nixon era and classified as a Schedule 1 drug, like heroin, under the Controlled Substances Act of 1970. A Schedule 1 drug means it is considered to have the highest potential for abuse and no currently accepted medical use.

It’s taken over four decades for the cultural taboo against psilocybin to relax enough for the drug to be re-examined for its medical applications, though a license to use it in a lab must be approved by the Drug Enforcement Administration and strict, time-consuming protocols must be met to ensure it is used safely. Still, doing this kind of research is no longer guaranteed to tank your career, and a small number of studies have been completed, with more underway, many of them building on the work accomplished by scientists in the 1960s.

A range of studies have suggested that controlled doses of psilocybin can help the user escape cognitive ruts of all sorts. One [study](#), published in the British Journal of Psychiatry in 2012, rated the vividness of autobiographical memory of subjects on psilocybin and found the drug

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Can Mushrooms Treat Depression? (cont. from pg. 3)

enhanced their recollection, and “subjective well-being” upon follow-up. The researchers concluded that psilocybin might be useful in psychotherapy as an adjunct therapy to help patients reverse “negative cognitive biases” — a phenomenon common in depression by which one has a greater recall of negative memories than positive ones — and facilitate the recall of important memories.

Other studies have suggested that psilocybin may modify obsessive compulsion by reducing symptoms like repetitive counting or hand-washing, and in a [paper](#) published in *Neurology* in 2006, the authors interviewed [cluster headache](#) sufferers who had used psilocybin to treat their horrific condition, and learned that even low doses — less than is needed to actually trip — could bring about remission. (I also know someone who claims psilocybin cured his [stuttering](#).) A study published last year in the journal *Experimental Brain Research* found that psilocybin eliminated conditioned fear responses in mice, which has implications for sufferers of [PTSD](#). And psilocybin has been shown to relieve anxiety, depression and despair in terminal [cancer](#) patients, who describe their experience as giving them a new perspective on their lives.

Anecdotally, psychoactive mushrooms may positively affect even nonsufferers. They did for me. I ate the mushroom as part of research for a book. The experience lasted about four hours, much of which I spent outdoors, but seemed to last much longer. I think because everything I was seeing was so new: the way the air was disturbed behind the flight of a bee, the way the trees seemed to respire, how the clouds and breeze and rocks and grass all existed in a kind of churning symbiosis.

I experienced a number of small epiphanies — self-realizations actually — but one in particular remained with me. As the drug wore off, I went indoors to take a hot bath. For a moment I thought that might not be a good idea, as bath time is when women in middle age can be very self-critical and unforgiving, and I didn’t want the sight of my waistline to veer me into a bad trip. But while in the tub I envisioned my body as a ship that was taking me through life, and that made it beautiful. I stopped feeling guilty about growing older and regretful about losing my looks. Instead, I felt overwhelming gratitude. It was a tremendous relief that I still feel.

Psilocybin could have enormous impact on the lives of many Americans. But at the moment, its Schedule 1 status makes it a difficult drug to study, and only a handful of scientists are engaged in its research. This needs to change. Rescheduling psilocybin won’t make it legal; it will make it easier for research to be conducted, leading to more scientists exploring its potential, while reducing investor concern and allowing for compassionate use provisions.

Don’t get me wrong: I’m not suggesting 16-year-olds take magic mushrooms. I’m not suggesting they be used to party at all. What I am advocating for is a mind open to the possibilities of their use to help people in need. Because illiberality doesn’t cure disease; curiosity does.



Ticks and Lyme Disease

by Ron Meyers

While Lyme disease does not seem to have received nearly so much publicity in recent years, that does not mean it has gone away. Indeed, the Center for Disease Control and Prevention recently reported that the number of cases in the United States has increased twofold since 1991, and these numbers are probably underestimated. We all need to be aware of the seriousness of this disease and take whatever steps we can to prevent it. Lyme disease is one of the fastest growing infectious diseases in the United States. It is the most prevalent tick-borne disease, but others are also on the increase. It has been reported from 49 states and 87 countries.

Ticks

Ticks are divided into two families: the hard ticks, (Family *Ixodidae*) and the soft ticks, (Family *Argasidae*). There are four genera in each family, and as many as 90 species in one genus. They can cause a variety of diseases, including Master's disease, Ehrlichiosis, Rocky Mountain spotted fever, Tularemia, and Babesiosis strain MO-i. More than one disease can be acquired from a single tick bite, making diagnosis and treatment more difficult. The ticks which carry and are known to transmit Lyme disease are deer ticks, also called black-legged ticks, and lone star ticks. American dog ticks, the only tick many of us remember from childhood, can carry the Lyme bacteria, but it is not known whether they transmit the disease. Deer tick and lone star tick nymphs (baby ticks) are very small, about the size of a poppy seed, and may go unnoticed. They feed on mammals, birds and reptiles, which may become infected with tick-borne diseases without becoming ill, but which can serve as reservoirs to infect other ticks. (For more information regarding the species of ticks I recommend the excellent website of the Greater Kansas City Lyme Disease Association: <http://www.lymefight.info/>).

Prevention

It was once believed that prevention of Lyme disease was fairly simple: Stay away from ticks. Unfortunately, none of us who regularly hunt mushrooms will be able to do that. Further some Lyme expert physicians, referred to as Lyme literate doctors (LLMDs) now suspect the bacteria responsible for Lyme may be spread through sexual contact, body fluids and other insect carriers such as

mosquitoes. Given that we are probably going to be in areas where ticks are present, we need to take the best measures to protect ourselves. Obviously the best prevention is to keep ticks off of us. While this is rather obvious it may not be taken seriously enough. Probably most people are at least fairly conscientious in checking for ticks after outings. But the ticks which cause Lyme are so small as to be almost undetectable as adults, and are infectious even in earlier stages. Therefore the solution is to keep ticks off of you. The conventional methods of preventing ticks; wearing light clothing so they can be spotted, tucking pants into socks or boots, and wearing long sleeve shirts are all effective and recommended. But it is more effective to keep them off your clothes completely. According to the July 1993 issue of *Consumer Reports*, some of the previously accepted methods for this are *not* effective. Deet products, which are widely used as insect repellents did an inadequate job of repelling ticks. Similarly, Avon *Skin-So-Soft* may be effective against mosquitoes, at least for some persons, but don't depend on it to save you from ticks. What is effective in repelling ticks are permethrin products, which when properly used are safer than deet compounds anyway. In tests by the U.S.D.A. and the U.S. Army an 0.5 percent solution of permethrin was effective in killing, on contact, virtually 100 percent of the species of ticks on which it was tested. It also dispatches mosquitoes and biting flies.

Permethrin sprays, including *Duranon* and *Permanone*, are available in outdoor stores as well as discount stores. It should be sprayed on the outside of exposed clothing and shoes at least two hours before wearing, then allowed to dry. One treatment should last through a few washings, but I don't take that chance. Since 1993 I have used *Permanone* faithfully, and until this year I only had two ticks on my hands, which were not protected. On a recent hunt, I neglected to spray my boots and probably did not thoroughly spray the bottoms of my trousers and consequently found two ticks on my legs, the first in 14 years.

Removal

To compound the problem, I had not taken seriously the recommended procedure for removing an attached tick, which has changed in recent years. To appreciate the

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importance of this you need to understand a little more about how the bacteria is transmitted to your body. Researchers have found that the Lyme disease germs are usually in the tick's gut rather than its mouth. Therefore it is more important to keep the tick from injecting the germs from its gut rather removing all the mouthparts. After the tick has been feeding for several hours, it regurgitates the germs from its gut back into the bite site. Therefore, even though some ticks have germs in their saliva and can transmit diseases as soon as they bite, it is extremely important (and a help in preventing infection) to remove the ticks promptly. But you must remove them by a method which does not cause them to vomit more Lyme bacteria into the bite site. Old methods of burning the tick with a lit match, covering it with nail polish, alcohol, lighter fluid, or other chemicals are not successful. Using fingers or blunt tweezers to remove it can squeeze the tick's abdomen and inject more bacteria into the site. A research study shows that all these methods make it more likely to transmit the disease. One possible way to safely remove a tick is by sliding something underneath it such as a credit card. This does not always work. The best procedure is to remove ticks is with finepointed tweezers available at some drug stores, or a tick remover tool available on the internet from the Lyme Association of Greater Kansas City. Grasp the tick as close to the mouth as possible and pull it out slowly. It does not need to be twisted or turned. Allow the tick about a minute or two to release itself. If mouthparts are left in the skin, they can be removed by a sterile needle or a doctor. They will work themselves out in a few days, but may cause itching. After removing a tick, disinfect the area and wash carefully. You should also disinfect your tick removal tool.

Identification

Whether or not you are concerned about the possibility of infection, you may want to save the tick for identification and testing. Certain ticks are more likely to carry certain diseases, and tick tests for diseases, although not 100% reliable, are more accurate than human tests, which are not very reliable, especially in the case of Lyme disease. But even a test of a tick has limitations. Sometimes it may test negative and still carry the disease, and even if it tests positive it may not have transmitted the bacteria. You can make at least a preliminary identification of the tick

yourself. Look at it under a magnifying glass. If it has black legs, it is likely a deer tick. Red or orange legs, it probably is a lone star tick. As noted, either can transmit Lyme, but the strain from the lone star tick is more likely to produce negative antibody tests. There are a number of web sites that claim they will test ticks, depending on your location. The price per test seems to run around \$75. Most labs prefer live ticks, but will test dead ticks also. Check with the lab you select before you dunk it in alcohol, smash it, or burn it if you want it tested. It will live for a long time in a container with a few blades of grass and a cotton ball dampened with water to keep it moist. If you do elect to destroy the tick, you can kill it by putting it in a container and a cotton ball soaked in rubbing alcohol. One site advised that ticks don't drown, so flushing it down the toilet will not kill it. However, I am willing to give odds that you will not see it again.

Lyme Symptoms

If after all the precautions, you have suffered a bite and did not get the tick removed promptly or properly, you will want to know the symptoms of Lyme disease, whether or not you get the tick tested. Lyme blood tests which are not totally reliable at the best are not useful within a few days of a tick bite, since it usually takes a person several weeks to develop antibodies. Further, a Lyme patient can test positive one week and negative two weeks later, due to the nature of the bacteria which can hide in the body's immune system. Early diagnosis, which is very important, is based on signs, symptoms and exposure to ticks. Unfortunately, some people do not develop symptoms immediately after being infected. It is not known how long the bacteria may lay dormant, and the disease is frequently misdiagnosed as many other illnesses. Some Lyme experts estimate that up to 50% of patients diagnosed with autoimmune diseases have Lyme's the cause or as a contributor. Lyme may cause achiness and extreme fatigue, but it doesn't simply cause flu-like symptoms and joint pain and not everyone develops the characteristic bull's-eye rash. Untreated Lyme can be devastating, and professional misdiagnoses results in many patients going untested for Lyme, and the symptoms worsen. Symptoms vary from patient to patient and the stage of the disease. Symptoms include: extreme fatigue, skin rash, palsy, arthritis, neuralgia, vertigo, light sensitivity, nausea,

Ticks...

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arrhythmia, nervous system disorders, headaches, TMJ, mood swings, cognitive disorganization, hallucinations, hearing loss, facial paralysis. Doctors who are educated about the tricky nature of testing for Lyme agree that when the symptoms are characteristic, treatment should begin even as test results are pending.

Treatment

The American Medical Association and the Center for Disease Control recommend a standard protocol of thirty days of antibiotic treatment for Lyme. Some LLMDs recommend a longer course of antibiotics, but insurance companies may not be sympathetic. On the two occasions when I already had an appointment with a physician and mentioned that I had been bitten, they elected to prescribe antibiotics as a preventive measure, but for a much shorter period of time. I did not contact Lyme, but I seriously doubt I was infected. Antibiotics administered in the first few weeks after infection seem to be effective for most

patients while patients in the later stages of the disease must stay on antibiotics for extended courses, even years. (However, the American Academy of Neurology says there is no evidence that long term antibiotic treatment provides any benefits). The best oral antibiotic seems to be doxycycline. While amoxicillin and some other oral antibiotics may be effective, there is not enough evidence to recommend their use.

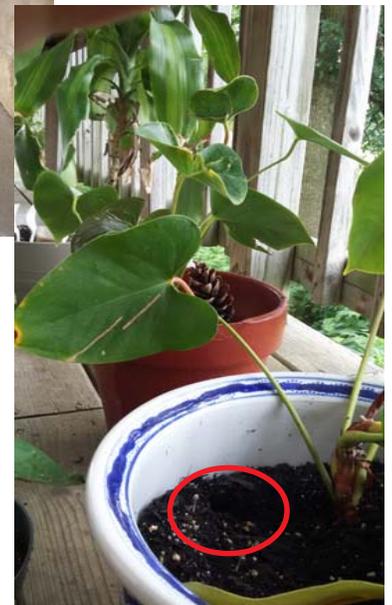
Vaccine???

Finally when I first addressed this issue in my newsletter in 1993, I reported that a Lyme vaccine was on the horizon. As many of you may know, on February 26, 2002, GlaxoSmithKline, the maker of the Lyme vaccine "LYMERix", pulled the vaccine off the market. While they cited poor sales there seems to have been a lot of problems with the vaccine and currently I can find no information indicating the possibility of a new vaccine. We must learn to avoid ticks. 

Mushroom Hunting

Here is something fun to keep our mushroom eyes on their A game. Can you find the mushrooms, living or non-living?

Answers for the previous Mushroom Hunting



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