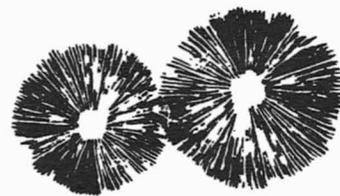


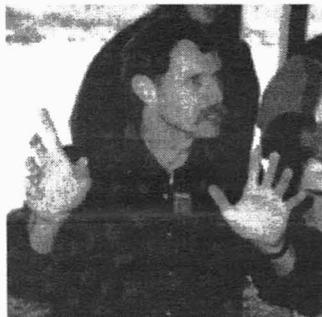
SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
Number 350 March 1999



PSMS FIELD TRIP HOSTING—A CALL FOR YOUR HELP!

Brian Luther



Here's a great opportunity for everyone, no matter if a new member or old, to get involved and really help where help is needed. If you've always wanted to do something to contribute to PSMS, but didn't really know how to get involved, this is your chance! This is a call for your help, only this year there's a new twist and benefit to hosting. Read on for details!

Field trip hosting is not only a strong tradition with PSMS, but a really important part of a smooth and organized outing, and it's a rewarding experience to get involved in. The last couple years we've had trouble finding people willing to volunteer as hosts, but I'm convinced that there's a lot of you out there (out of hundreds of members) who are just waiting for a way to help. No special experience is needed, just the willingness to lend a hand and meet a lot of great people as well. Also, there's no reason that hosting responsibilities can't be shared or divided between two or more separate volunteers, for example, one group picking up the supplies and a different group taking them back at the same field trip.

As hosts you need to pick up the field trip supplies in your car or truck, which can be several boxes of stuff (coffee pots, Coleman stove, picnic supplies, maps, etc.) but is not overwhelming. Then take it to the field trip site as early as possible, set everything up, and serve as a greeter, making everybody feel good that they've come to the right place. Coffee will need to be made, and maybe a jug or two of OJ or some other kind of juice brought as well as some continental breakfast type goodies, allowing for at least 40 people. You will be reimbursed for any money you spend on food or necessary supplies. I'm going to make some new sign-up sheets which can be left on a table for people to fill out when they arrive.

All field trip locations will have picnic tables at a minimum, and normally a nice shelter as well. Having everything set up on the tables by 9:00 in the morning or earlier would be great, because people start to pour into the field trips right about that time. Normally an identifier or two are already at the site and are setting up nearby; also sometimes people camp the night before, so you'll have plenty of help to unpack in the morning and pack the supplies back up in the evening after potluck dinner. If it's a two-day field trip, then most everything can just be left out overnight in the shelter. Field trips are a great way to meet people and definitely the best way to learn about mushrooms first hand, and, of course, the big potluck at the end of the day beckons one and all and makes for a terrific social time.

The good news this year is that someone has decided to donate \$10 of gas money to each field-trip host (one gift per field trip, which can be divided if more than one host shares the burden) for the entire Spring field-trip season, as a pilot program and incen-

tive. Wow, what a deal! This is purely a private gift from a concerned member and does not come out of the PSMS budget. Please call me or send me an e-mail to volunteer for field trip hosting. Let's get involved in our great mushroom club and have a good time as well. So, what do you say?

How about scheduling? Well, the complete spring PSMS field trip schedule is not ready yet, but you'll be able to select from field trips in April, May, and possibly into June (depending on this year's conditions). Also, we'll work on having the field trip supplies in one central location (CUH most likely) for pickup and return.

Please call me and I can at least get your name on the Let's Go Hosting and Have Fun List. Thank you!

Brian S. Luther, Identification Chairman,
(206) 522-1051; e-mail: a2zluther@sprintmail.com

DERIVATION OF FUNGUS NAMES

Spores Afield, Colorado Mycological Society

Agaric: from Latin "Agaricum" and the Greek "Agarikon," called after Agaria, a town in Sarmatia where it grew abundantly.

Fungus: from the Latin "fungus," a cognate or derivative of the Greek "sphoggos" (sponge). The Romans used the term for certain varieties only, not for fungi as a whole.

Morel: from a Teutonic word represented by Old High German "morhila," from which the modern German "morchel" is derived.

Mushroom: various hypotheses as to its derivation. (1) from French "mousseron," generally considered to be from "mousse" (moss) because the species grows in moss or short grass, or is soft. (2) from a combination of the Welsh/Old British "maes" (a field) and "rhum" (a thing that bulges out). (3) from the French "mousche" (from the Latin "musca"), a fly.

Puffball: a corruption of "puck" or "pouk"ball; "puck" is of Celtic origin and means elf, hobgoblin, or demon.

Toadstool: various hypotheses. (1) toad and stool. From the animal. Toads were regarded as poisonous. From the Anglo Saxon. Stool from its shape. (2) from the Icelandic "tad" (dung). This is Webster's derivation. (3) from the Norse "tutna" (to swell or be blown up). (4) from Saxon "tod," meaning bunch, cluster or bush. Stool from its shape.



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CALENDAR

- March 13 Survivors' Banquet and Annual Meeting,
6:30 PM (dinner 7:30 PM), Edmonds Commu-
nity College
- March 15 Board meeting, 7:30 PM, CUH Board Room
- March 19 *Spore Prints* deadline (a week early)
- April 10 Field trip, MacDonald County Park, Carnation
- May 22-23 Spring Foray, Meany Lodge—reserve this date

BOARD NEWS

Agnes Sieger

Doug Ward reported that he had inventoried the field-trip equipment; he donated a camp stove and purchased needed items. Irwin Kleinman is drawing up the spring field trip schedule. At least some field trips will be on Sundays instead of Saturday. We're hoping to get a field trip to Paul Stamets' Fungi Perfecti mushroom farm. Joanne Young reports that an overnight foray is scheduled at The Mountaineers' Meany Lodge on May 22 and 23; Lorraine Dod will look into suggestions for a cook. A fall foray is scheduled at the Kiwanis Lodge on Lake Quinault October 30 and 31. New mushroom labels are needed for the fall exhibit. A labeling committee is being formed. Webmaster Steven Bell reports that the field trips will be on PSMS web site soon and can be accessed by password. The Cultivation Group has been rejuvenated with Ed Foy and Jennifer Cochrane as co-chairs. Lynn Elwell would like to start an album of PSMS activities, beginning with our booth at the Flower Show.



MEMBERSHIP MEETING

This month is the Annual Meeting and Survivors' Banquet, held Saturday, March 13, at Edmonds Community College. Directions are in the February Spore Prints. See you there!



FUN WITH FUNGI *The Economist*, Dec. 20, 1997
via *Mycofile*, Vancouver Myco. Soc., April 1998

Fungi have been around for a long time, a lot longer than people: probably 500 million years. Scientists used to consider fungi to be part of the plant kingdom, but now put them in a kingdom of their own: they cannot synthesize their own food and differ from plants fundamentally in their biochemistry and structure.

Nobody knows how many there are, but think of a number and multiply it. Fungi of all kinds described by science so far add up to well over 70,000 already, and new discoveries are being added at the rate of about 1,700 a year. The figure most widely quoted is around 1.5 million worldwide. It comes from Professor David Hawksworth, the director of the International Mycological Institute at Egham, near London. If his method is right, it suggests that over 95% of all the fungi in the world are still unknown to science.

Whatever the numbers, fungi (including yeasts and molds, which also belong to the same kingdom) are indispensable to life on earth. They help to break down dead plants and animals and provide food for a variety of creatures. Many of the larger fungi are mycorrhizal, feeding off the roots of trees and plants and in turn helping their host to absorb essential nutrients. At least 80% of plants are reckoned to rely on "mutualistic" relationships with mycorrhizal fungi, without which they would not flourish. Man, too, would find it hard to manage without fungi. They help produce, among other things, antibiotics (such as penicillin), beer, wine, and distilled alcohols, bread, cheese, fermented foods, fuels such as ethanol and bio-gas, herbicides, pesticides, and preservatives.

The mushrooms that people collect are just the fruiting bodies which some fungi produce in order to manufacture spores for sexual reproduction. The fungus itself consists of an almost microscopically fine web called a mycelium, made up of long, thread-like structures usually buried beneath the soil. Most of the preparatory growth takes place out of sight, so the mushrooms themselves can appear quite suddenly.

They come in a wonderful variety of shapes, sizes, and colors, from tiny cup fungi to giant puffballs bigger than a man's head; *Tuber magnatum*, which looks like a small stone and smells of garlic and old socks, can retail at up to E2,500 (\$4,200) a kilo.

Not surprisingly, in many countries the best edible mushrooms are avidly pursued. When the choicest ones become scarce, the easy conclusion is that they have been overpicked and need protecting. Earlier this year a total ban on mushroom collecting was imposed in southern England's New Forest area after an invasion of commercial pickers. But most experts think that picking mushrooms is a bit like picking apples: it leaves the plant intact. The only thing that might harm the fungus itself is the trampling of too many human feet.

Much more serious threats to many species of fungi are pollution, intensive agriculture, and the disappearance of many of the fields, forests, meadows, and verges where they used to flourish. Yet fungi can prove surprisingly flexible. In the Middle Ages the nail fungus, *Poronia punctata*, which grows on horse droppings,

was extremely common. As horses were replaced by machines, it became increasingly rare. Now, as more and more horses are kept for recreation, the mushroom has popped up again. But don't eat it.

THE EARLY MOREL

Agnes Sieger

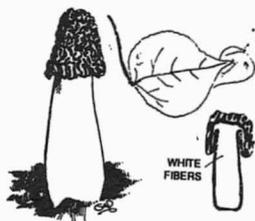
On March 30, we will hold our annual pilgrimage to the Tolt River to pay tribute to the first mushrooms of the Spring season, *Verpa (Ptychoverpa) bohemica*. Often called the early morel because of its timing and superficial resemblance to the true morels, *Verpa bohemica* fruits from late February through April, depending on the season. In the Pacific Northwest, it is associated with cottonwoods, often fruiting right around the drip line of mature trees "when the cottonwood leaves are the size of a mouse's ear." Once you learn to recognize the cottonwood, a tall, dark, poplar-like tree with wrinkled bark that grows in damp river bottoms throughout western Washington, you can spot your hunting ground from afar. Finding your quarry amid the debris of the previous fall, however, isn't that easy.



Verpa bohemica is a medium-sized (3–8 in. tall), tanish mushroom with a wrinkled, bell-shaped cap which is attached only at the top, forming a skirt over the stem. The stem is long, at first whitish to cream in color and becoming tan with age, and filled with cottony fibers.

In contrast, true morels have pitted, not wrinkled, caps that are attached to the stems at the bottom (or in some cases part way up); their stems, while hollow, are empty.

Unlike other verpas, and most large ascomycetes, *Verpa bohemica* has only two spores per ascus instead of eight. For that reason, modern taxonomists have split it into its own genus, *Ptychoverpa*. What each ascus lacks in numbers, however, it makes up for in size; the spores are huge.



Although considered a good edible by many, this mushroom causes gastrointestinal upsets and loss of muscular coordination in some people and should be approached with caution. Many field

guides recommend parboiling it and throwing away the water and eating only small amounts at a time. The effects may be cumulative, so don't pig out on it several days in a row, even if it is the only edible mushroom out at the time.

CULTIVATION GROUP

Ed Foy

The Cultivation Group will meet again at noon on Sunday, March 7, at the Arboretum greenhouse. We will inoculate pasteurized straw with both grain and sawdust spawn of *Hypsizygus ulmarius* purchased from Fungi Perfecti. Phone Jennifer Cochrane at (206) 282-6227 if you wish



to participate. Space is limited, and a donation of \$5.00 is requested to help defray costs. The group welcomes members who wish to exchange information and learn how to grow gourmet mushrooms at home.



SPRING FIELD TRIPS

Our first field trip is a half-day excursion (9–noon) to Mac Donald Park in Carnation on Saturday, April 10, to look for *Verpa bohemica*. The schedule for the rest of the spring field trips will be in the April *Spore Prints*.

General Instructions: The meeting time at field trips is 9:00 AM at the chosen site. Please bring a basket, knife, wax paper, compass, whistle, water, lunch, and a dish to share if you wish to join the potluck. Wear warm clothes. Include rain gear in your car or pack and wear hiking shoes or boots. Feel free to bring your friends, family, and sociable dogs.

From 9:00 to 9:30 or 10:00 AM, we check in, have munchies, and talk about the mushrooms we'll be searching for and the area around the camp site. We then head out to hunt in small groups. Identification is from noon to 4 PM. Potluck time is between 4 and 6 PM, as decided on by the participants in the morning. The potlucks are always delicious, fun, and HIGHLY RECOMMENDED!

April 10

MacDonald Park
(30 miles east of Seattle)

This is our traditional half-day trip to introduce newcomers to the mushroom *Verpa bohemica* and its habitat and whet the appetite for the spring mushrooming to come. MacDonald Park is on the Tolt River about ½ mile south of Carnation in King County. Enter the park on N.E. 40th Street from State Hwy. 203. Watch for PSMS signs on the corner and use the day-use parking lot. We will meet at the main shelter across the suspension bridge at 9:00 AM for a general introduction to mushroom hunting. Then we will break into small groups and go out to gather specimens. Identifiers will be available around 10:30 AM. There should be *Verpa bohemica* under the cottonwoods in the surrounding area. We'll meet rain or shine. You may want to bring lunch.

MUSHROOM POEM

Emily Dickinson

The Complete Poems of Emily Dickinson
edited by T.H. Johnston, Little Brown & Company
(via the *Boston Mycological Club Bulletin*, December 1998)

*The Mushroom is the Elf of Plants -
At Evening, it is not -
At Morning, in a Truffled Hut
It stop upon a Spot*

*As if it tarried always
And yet its whole Career
Is shorter than a Snake's Delay
And fleeter than a Tare -*

*'Tis Vegetation's Juggler -
The Germ of Alibi -
Doth like a Bubble antedate
And like a Bubble, hie -*

*I feel as if the Grass was pleased
To have it intermit -
This surreptitious scion
Of Summer's circumspect.*

*Had Nature any supple Face
Or could she one contemn -
Had Nature an Apostate -
That Mushroom - it is Him!*



MYCORRHIZA CONFERENCE

Steve Trudell

condensed by Susan Goldhor from the Fall 1998 issue of
Mushroom, The Journal of Wild Mushrooming
(via the *Boston Myco. Club Bulletin*, December 1998)

The Second International Conference on Mycorrhiza was held in Sweden in July 1998. Steve perceived five main themes at the conference: (1) interactions of mycorrhizal fungi with organisms other than their partner plants, (2) practical applications of mycorrhizae for human benefit, (3) ecological community studies, (4) effects of human disturbance and global change on mycorrhizal associations, and (5) biochemistry and subcellular structure and function. The first four of these themes are summarized in the following paragraphs

Interactions of Mycorrhizal Fungi with Other Organisms

Mycorrhizal fungi are important components of ecosystems and interact with a broad array of organisms besides their plant partners (of which each fungus may have several). A large number of presentations dealt with mycorrhiza/bacteria interactions. In some situations, helper bacteria may facilitate or even be necessary for the formation of mycorrhiza; in others, the presence of mycorrhizal fungi promotes the growth of bacteria. Fruiting bodies of chanterelles and truffles contain millions of bacteria, and it may be that substances produced by these bacteria are responsible for the resistance to rotting that these fungi show. Another interesting mycorrhizal-bacterial topic is the complex interactions between mycorrhizae and nitrogen-fixing bacteria.

Practical Applications of Mycorrhizae for Human Benefit

Humans have an infinite capacity for assuming that the natural world is there to serve them. Among our species' schemes for mycorrhizae are using them in less developed nations as a means of enhancing the growth of agricultural crops without the use of costly and energy-intensive fertilizers and pesticides, and using them to restore land degraded by human activities such as logging, mining, and industrial pollution. (Many mycorrhizal fungi can protect plants from the toxic effects of metals in soil and may be able to break down polluting organic compounds.) And, of course, growing mycorrhizal fungi as crops.

Ecological Community Studies

The same DNA techniques that help catch criminals have allowed the identification of the mycorrhizal fungi on plant root specimens, which has allowed workers to study the diversity of fungi in different communities. It seems that communities of mycorrhizal fungi are highly diverse (contain many species), but often the abundant fruiters within that community make up only a small proportion of the below-ground fungus populations. This indicates that, in most cases, collecting ectomycorrhizal mushrooms does not give an accurate indication of the mycorrhizal picture below ground.

Effects of Human Disturbance and Global Change

Steve says here, "To me, there are two clear results from these studies. First, continued application of nitrogen fertilizers reduces the abundance and diversity of mycorrhiza. This suggests that the amounts of fertilizer being applied in many areas need to be reduced if we want to retain or regain the many benefits of the mycorrhizal community. Second, mycorrhizal fungi vary widely in how they respond to human and natural disturbance. This tells us that we have to figure out which fungi are in an area before we can predict the outcome of a particular type of disturbance. All mycorrhizal fungi definitely are not the same!"

Abstracts of talks and posters will be available at the ICoM-2 web site www.icom2.slu.se for a year, so log on and learn!

Grace Before a Mushroom Feast Frances Heard *Spores and Stipes*, North Idaho Myco. Assoc.

*We thank Thee, Lord, for recent rain,
That made our mushrooms grow again. Forgive
the callused folks who pray
For sunshine each and every day.*

*Protect the heedless soul who eats
Muscaria or red boletes.
And make us mindful that we need
Avoid the deadly sin of greed.*

Amen.

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