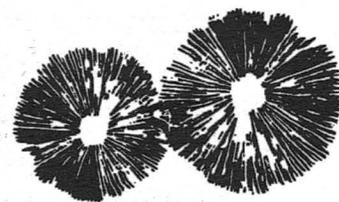


SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY
Number 352 May 1999



FUNGUS MENACES GARLIC CROP

Maria A. Gaura,
The Spore Print, LA Myco. Soc., Oct. 1998
via *The Arizona Fun-Gi*, Spring 1999

When tens of thousands of people visit Gilroy's garlic festival this weekend, there's one thing they won't notice while sampling the garlic cheesecake and 40-clove pizzas—California's garlic crop is fighting for its life.

An orange-colored fungus, *Puccinia porri*, never before considered a serious threat to the pungent bulb, reproduced madly during the damp El Niño spring and cast countless spores to the winds.

"You could see it spread like wildfire through the Central Valley, from field to field," said Kris Van Elswyk, a garlic industry representative based near Fresno. "One day you'd see small spots of it, and 3 days later it looked like the field was on fire."

Known to plant pathologists as "garlic rust disease," the ruddy invader is a cousin to the disfiguring smut frequently found on rosebushes, snapdragons, and peaches. But even though garlic rust disease was first found in California in the 1930s, it has not attacked the crop on a large scale for at least 58 years.

In 1934, Californians farmed only about 300 acres of garlic, and the economic damage from the rust was small. Today, garlic is a major crop, covering 37,000 acres and valued at \$262 million last year. The precise extent of the damage to this year's crop will not be known until after the harvest is completed, as late as October. But in some areas, it appears that half to two-thirds of the yield has been lost. Because of the rust, much of California's fresh garlic supply this year will have to be imported from Mexico and Argentina, Christopher said. Only the best of California's crop will be served at the garlic festival, he pledged.

The rapidity of the rust's spread and the thoroughness of the infection have jolted the garlic industry, which has been enjoying a comfortable expansion in recent years. This year's crop had been in the ground for 6 months before the rust problem emerged, but by May, scientists found it in almost every field they checked.

A BIRD'S NEST IN THE HAND

Dick Grimm

Although many of us are familiar with the "Bird Nest Fungi" we perhaps don't realize the complexity of this small mushroom.

This interesting little mushroom is considered a Gastromycete because it has its spores encased inside of a pouch much like the familiar and larger puffballs. In effect, the tiny eggs that one sees resting at the bottom of the small nest could be likened to miniature puffballs. I personally like to refer to them as lentils or eggs.

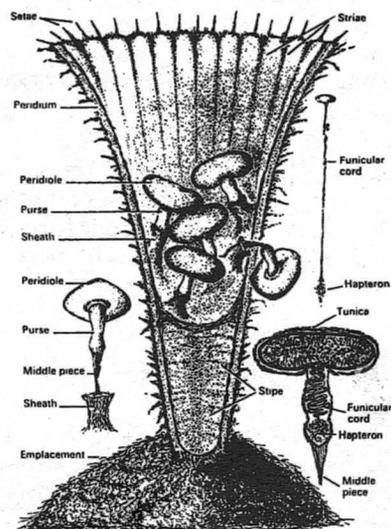
There are two generally encountered genera—*Crucibulum* and *Cyathus*. *Crucibulum* has a shallow "nest" which contains white eggs. *Cyathus*, on the other hand, has a longer and deeper nest that could be likened to an inverted bell or perhaps a vase. The "eggs" in *Cyathus* are black or at least not white. They vary in deeper colors, cream, gray, black, etc.

We find these oddities typically on wood chips, mulch, or dead packed leaf mold. They show themselves usually in clusters of several or many. Before they open and exhibit their eggs, they are simply "blips" of hard whitish mini-mushrooms with very tiny, hard caps. When these caps break open, the little lentils exhibit themselves.

This is only the tip of the iceberg regarding these interesting fungi, however. Actually it is the dispersal of spores that makes them truly a wonder. The spores, which reside within the little egg, are disseminated in a unique way. The nest that holds these little eggs is shaped in a manner (wide at the top diminishing to a smaller base) that a single drop of rain, splashing into the nest, ejects the egg with enough force to fire the projectile as far as 3 or 4 feet. Whereas this in itself is a unique concept, there is an even more surprising ending to the story. As the projectile (egg) is splashed from the nest, it releases an umbilical (funicular) cord which can reach a length of 4 to 6 in. This cord has a "goopy," glue-like stickum on the end that grasps the first thing it comes in contact with. Actually, the entire event is much like the throwing of a Mexican bolo. If the sticky end (the hapteron) slaps into a plant, for instance, it sticks fast and the lenticle wraps itself around the plant stem in the bolo-style action. The egg, being heavier than any part of the overall device, ends up hanging down vertically so that when it opens the spores may be disseminated much like those from the gills of an agaric which are oriented so that the spores drop downward.

If you have these unusual fruitings along your driveway and park within range of this fungal cannon, the exposed exterior of the vehicle could become "goo" coated with mycosplotches, so don't always blame the flies.

The next time you admire the unique style of the little eggs within their nest, you might realize that this is not necessarily a sweet and innocent view of Mother Nature's artistic work. This fungal cannon is a weapon, perhaps not of mass destruction, but a good missile launcher unique among its more glamorous and larger fungi compatriots.



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PUGET SOUND MYCOLOGICAL SOCIETY

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Annual dues \$20; full-time students \$15

CALENDAR

May 8	Swauk Creek field trip
May 11	Membership meeting, 7:30 PM, CUH
May 15	Crystal Springs field trip
May 17	Board meeting, 7:30 PM, CUH Board Room
May 21-23	Spring Foray, Meany Lodge
June 5	Bridge Creek field trip
June 12	Fungi Perfecti field trip

BOARD NEWS

Agnes Sieger

Income and expenses for the March Survivors' Banquet are expected to be about even. Judy Roger will present a microscopy class some weekend in July. The classes will be held for 4 hours each day. The date is as yet undetermined. Fall workshops are planned on topics other than the general ID classes. Education Chair Lisa Bellefond would appreciate some suggestions regarding possible areas of interest. We are still in need of someone to chair the annual exhibit. Identifiers and co-hosts are still needed for a few of the field trips. The need for a field trip chair was discussed. We are in need of an editor for the electronic version of *Spore Prints*. Colin Meyer offered suggestions for improving the Web site. Another volunteer is needed to handle PSMS voice mail and identifier referrals.

MUSHROOM MISSIONARIES

Dick Sieger presented "Mushroom Neighbors" to the Andover Park Garden Club in Kent on February 22. He also spoke to the Olympic Peninsula Mycological Society on March 10 about "How to Identify Morchellaceae and Stalked *Gyromitra*."

MEMBERSHIP MEETING

Tuesday, May 11, at 7:30 PM at the Center for Urban Horticulture, 3501 NE 41st Street, Seattle

It's May, and the height of morel season—and we are going to learn all about matsutake. Our featured speaker this month is matsutake expert, Professor and Chair of Biological Sciences at Central Washington University, Dr. David R. Hosford. His topic will be "Matsutake."

Dr. Hosford studied and received his Ph.D. in 1972, under the supervision of Daniel E. Stuntz at the University of Washington. The period of 1965-69 was the highlight of his student years because of Dr. Stuntz (an unequaled scholar, teacher, and friend). Before coming to the U.W. Hosford worked under the supervision of Dr. James M. Trappe, studying mycorrhizae at the regional forest science lab. in Portland. It was then that he began to appreciate fungi, and it was Dr. Trappe who put him in touch with Dr. Stuntz for graduate work. Since 1969 his first love has been teaching, e.g., mushrooms, general mycology, plant pathology, algology, and a variety of botany and biology courses.

His research has centered on the systematics and ecology of Gasteromycetes and Hymenomycetes. His Ph.D. thesis was a taxonomic study of *Rhizopogon*. He has conducted field studies in Central Mexico, participated in a research expedition to the Amazonian rain forest, and conducted research in Japan on matsutake and false truffles.

A 1997 publication, "Ecology and Management of the Commercially Harvested American Matsutake Mushroom," is a culmination of these studies in Japan and in Central Washington State.

Would persons with last names beginning with the letters A-E please bring refreshments for the social hour?

When colors come to be taught in the schools as they should be, both the prism or the rainbow and these fungi should be used by way of illustration and if the pupil does not learn colors, he may at least learn mushrooms, which is perhaps better.

Henry David Thoreau

ROCKPORT FIELD TRIP

Joanne Young

The field trip to Steelhead Park in Rockport on April 17 was noted for the beautiful weather and the lack of mushrooms. At 9:00 AM, hosts Lynne Elwell and another couple arrived at shelter A2. Identifier Sara Clark showed up in the afternoon, after she and Dick Sieger missed the signs and waited at another shelter. Six or eight people signed in. There was one mushroom, a *Discina* sp. Sara's husband, Jeff, spent an enjoyable time fishing.

MacDONALD PARK FIELD TRIP

Stephen Bell

Over 35 fungi seekers enjoyed the warm spring sun that welcomed the official opening day of the PSMS 1999 mushroom season on April 10. Dan Tanabe was the host, and Brandon Matheny identified. The eager hunters split up into about four different groups and came back with baskets of *Verpa bohemica* up to eight inches tall. Despite the late arrival of Spring, the following mushrooms were also able to make their debut: *Hypholoma fasciculare*, *Trametes versicolor*, *Ganoderma applanatum*, *Pleurotus ostreatus*, *Gyromitra esculenta*, *Crepidotus mollis*, *Verpa conica*, *Melanoleuca melaleuca* gr., *Helvella* sp., *Tubaria* sp., *Psathyrella* sp., *Melanotus* sp., *Peziza* sp., and *Omphalina* sp.

COLORFUL NAMES

Richard Aaron

Mycelium, Mycological Society of Toronto, Jan.–March 1999

Greys and browns may not be nature's most exciting hues, but try telling that to the majority of the higher fungi.

Grey

While it may not be the cheeriest of colors, gray certainly doesn't deserve its gloomy reputation. Yet despite leaping to this color's defense, I could find no examples in the Audubon guide to help dispel this notion. Consider the following: *Clitocybe nebularis* (*nebula* = mist, cloud, fog), i.e., mist-gray in color; *Tylopilus plumbeoviolaceus* (*plumbeus* = leaden gray); *Amanita cinereo-pannosa* (*cinereus* = ash-colored, gray); *Mycorrhaphium adustum* (*adustus* = blackened, scorched), cap bruises smoky gray; *Nematoloma capnoides* (*capno* = smoke), referring to color of the mature gills; *Lactarius lignyotus* (*lignys* = thick smoke), referring to sooty color of the cap

Kinda makes you want to pull the covers over your head and stay in bed the whole day, doesn't it? Don't despair though, these mushrooms are vastly more exciting than their names imply.

Brown

To the mushroomer, this is surely the most frustrating of all colors, summed up in that defeatist acronym, LBM (little brown mushroom). Even after discovering that not all browns are alike, they still all seem to be. Despite the apparent sameness, there are many color terms employed to describe the various fungal shades of brown.

Our friends the amanitas provide us with two of these terms. *Amanita brunnescens* means "the Amanita that becomes brown," from the Latin *brunneus* (brown) and *escens* (becoming), owing to its tendency to discolor reddish-brown. *Amanita fulva* is fulvous (tawny), which color is variously described as yellowish-gray, yellowish-brown, or reddish-yellow. With all this variability, no wonder brown drives most amateur mycologists to distraction.

At the darker end of the brown scale is where you will find the Latin *fuscus* (very dark blackish brown), which pops up from time to time in names like *Inocybe fuscodisca*, with its dark-centered cap, and the genus *Fuscoboletinus*, with its dark vinaceous brown spore deposit. There is nothing "bad" about *Boletus badius* and *Polyporus badius*. *Badius* is simply Latin for reddish-brown, dull brown, or chocolate-brown.

A number of color terms are drawn from other parts of the natural world. Take *Gloeophyllum sepiarium* for instance, a common polypore. If you are familiar with the warm brownish tones in photographs of yesteryear, then you should instantly recognize the species name, which refers to the zones of sepia color on the cap. Sepia is a brown pigment obtained from drying and grinding ink from the ink bladders of cuttlefish and squid in the family *Sepiidae*. The ink is a brownish-black fluid that these creatures eject to cloud the water as a defensive maneuver. The word comes from the Latin *sepia*, meaning cuttlefish. *Clitocybe avellaneialba*, on the other hand, has a nut-brown cap and stalk. Fittingly, its species name is based on the Latin *avellaneus* (hazel or nut-brown), which in turn comes from *avellana* (a hazelnut). Then there is *Gyroporus castaneus*, which the Audubon guide calls the Chestnut Bolete. And wouldn't you know it, *castaneus* means "of the color of chestnuts," from *castanea* (chestnut).

As you can see, colors are a major component of mushroom names. Why not learn a color a week. Not only will it enable you to understand and remember mushroom names much more easily, it is also a guaranteed way to make you a more, ahem, colorful individual.

FORAYS, CLASSES, CONFERENCES

Fungi of the Sierra Nevada Field Course, June 6–11, at the Sierra Nevada Field Campus of San Francisco State University. Information is available on the following World Wide Web site: <http://thecity.sfsu.edu/snfc>

1999 NAMA Foray, August 12–15, Cape Girardeau, Missouri. For members of NAMA only. For registration information, write Brad Bomanz, 909 Woodside Village Lane, Ballwin, MO 63021, phone (314) 225-0555, or e-mail brad_bromanz@yahoo.com

Telluride Mushroom Conference, August 26–29, Telluride Colorado. For further information write Fungophile, P.O. Box 480503, Denver, Colorado 80248-0503 or phone (303) 296-9359.

Uinta Mountain Foray, Francis, Utah, August 27–29. For more information phone Don Johnson, (801) 942-0637, visit the Web site <http://www.users.uswest.net/~dwjohnston>, or e-mail [dwjohnston@uswest.net](mailto:djohnston@uswest.net)

Fifth Annual Samuel Ristich Foray September 3–6 in central Maine at Sugarloaf Mountain Resort. Write Linda and Clayton Clarke, 56 Quebec St., Portland, ME 04101, phone (207) 772-4014, or e-mail CClarke1@maine.rr.com

A NOTE ON MYXOMYCETES

Dick Grimm

The Mushroom Log, Ohio Mushroom Society, Jan./Feb., 1999

Did you ever know that the Myxomycetes were for many years considered to be members of the animal kingdom? They were classed a protozoa. This is not so far-fetched considering they do move about. They would obviously cross the finish line well after the hare, and even well in arrears of the tortoise. One would need to draw a chalk line in front of the movement, if, in fact one could determine which direction they were moving, and observe when the somatic body edges across the mark. I would suggest you bring along a good book. There will be no tires squealing here.

Myxomycetes in motion contain flagellate cells (like sperm cells and rather twinlike in structure) which cause movement in the mass. This mass of plasmodium millimeters along, eating bacteria as it roams over its habitat like amoebae.

Eventually the cells conjugate to form a resting fruit body. Thus when one discovers this fruiting structure, whatever form it may take, it is usually accompanied by a transparent slime mass of varying thickness and dimensions. Look up such fruitings such as *Lycogala epidendron* and *Fuligo septica* to witness the long and short of it—*Fuligo* is a "biggie" and *Lycogala* a smaller one.

FUNGI PERFECTI FIELD TRIP

Paul Stamets has invited PSMS members to Olympia to tour his mushroom cultivation complex, Fungi Perfecti. The date and time are Saturday, June 12, at 11:00 AM. Directions and maps will be available at the May membership meeting or can be obtained by calling Joanne Young at (206) 633-0752.

We are saddened to report the death of long-time member Beth Schnarre, winner of the PSMS Golden Mushroom Award. Remembrances can be sent to the American Diabetes Association (www.diabetes.org/ada/mem.asp) or to St. Peter by the Sea Lutheran Church in Edmonds.

TOP TEN LIES TOLD BY MUSHROOM HUNTERS

Fungifama, South Vancouver Is. Myco Soc., March 1999
from <http://www.morelheaven.com/talltales/>

10. They taste terrible. It's the fried butter I like.
9. Yes, as a matter of fact, I do own this property.
8. No, I'm not mushroom hunting. I love crawling through briar patches.
7. I don't know any good spots. Let's check yours.
6. Sure, I'll tell you where I found 'em.
5. No. I didn't find any.
4. Of course I have permission to hunt here.
3. It's too early for morels.
2. I think those are poisonous—better give them to me for proper disposal.
1. The biggest mushroom I ever found had a shadow that weighed 3 lb.

MISPERCEPTIONS

New York Mycological Society Newsletter
via *NJMAnews*, New Jersey Myco. Assoc., March/April 1999

The editor of the New York Mycological Society newsletter thought that the photo in the *New York Times* being read by the woman across the way on the subway was of two succulent mushrooms and was dying of curiosity as to the content of the accompanying article. It turned out that the photo was of two silicon breast implants!

But she needn't have been embarrassed. The instructions for the NEMF foray in Canada suggest that everyone bring a kit of "Boules de petanque (traditional CMM tournament)." Boules de petanque are the heavy metal balls used in Southern France town parks. Gary Lincoff thought the item said to bring a snakebite kit, probably because he mistook the word tournament for tourniquet!

FRENCH ONION, SHALLOT, GARLIC AND CEP SOUP

Patrick Hamilton

Mushroom, the Journal of Wild Mushrooming, Spring 1999

- | | |
|---|---|
| ¾ lb yellow onions (4 med.),
sliced 3/16-inch thick | ½ tsp thyme, dried |
| 3 each shallots (large)
sliced 3/16-inch thick | 2¼ TBS flour |
| 6 cloves garlic (large)
chopped small | 1½ qt. bolete stock, boiling
(see note below) |
| 2 cups dried bolete pieces,
rehydrated & chopped small | ½ cup white wine, dry |
| 2 TBS butter | Salt and pepper to taste |
| 2 tsp olive oil | 2¼ TBS brandy |
| 1½ tsp salt | 6 French bread slices,
1 cup Gruyere or Emmentaler
Swiss cheese |

Note: Bolete stock can be made by reducing down stock made from the tubes of older boletes, or from dried boletes pureed with their soaking water, or from reduced soaking water, etc. Obviously the stronger the stock is, the more pronounced the flavor of the soup will be.



1. Cook the onions, shallots, garlic, bolete pieces, and thyme slowly in the butter and oil in a heavy covered pan for 20 minutes.
2. Uncover, raise the heat a bit, stir in the salt, and cook for 45 minutes more.
3. Sprinkle in the flour, and stir for 3 to 4 minutes until all the visible flour is mixed in.
4. Remove from heat and slowly add the boiling stock. Add the wine, salt, and pepper, and cook covered for 30 minutes. Correct the seasoning. If the soup has become too thick, simply add any hot stock, milk, or cream.
5. Just before serving, stir in the brandy. Allow to cook for a minute, then pour in individual cups over the bread. Pass the cheese. *Serves 6.*

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