

SPORE PRINTS

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Spore Prints

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PUGET SOUND MYCOLOGICAL SOCIETY

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Annual dues \$25; full-time students \$15

MEMBERSHIP MEETING

Tuesday, December 12, 2006, at 7:30 PM at the Center for Urban Horticulture, 3501 NE 41st Street, Seattle.

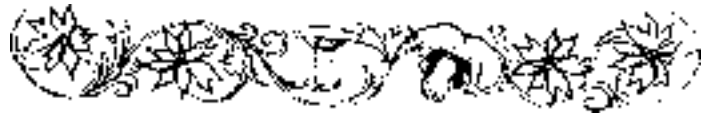
Food & Festivity. It's time for our annual holiday gathering, the "Cookie Bash." Our December meeting features the creative work of PSMS members in the form of artwork, cookies, hors d'oeuvres, and fungal finery. Please bring a dish of your favorite finger foods to share. Beverages will be provided.



Art Show & Contest. A chance to reveal your inner Myco-angelo! Bring your fungal-themed artwork to be judged by popular vote (artwork of edible media encouraged). Prizes await the winning entries. Please arrive by 7:15 PM to enter your work in the contest.

Program. "Adventures in Apulia: Mushrooming in the South of Italy." PSMS members will present a short slide show from their recent foray to the "heel" of Italy's boot.

Please wear any fungal attire you may have. After all, where else can you wear it?



CALENDAR

- Dec. 12 Membership Meeting and "Cookie Bash," 7:30 PM, CUH
Spore Prints deadline (**early**)
- Dec. 18 Board Meeting, 7:30 PM, CUH
- Jan. 9 Membership Meeting, 7:30 PM, CUH

PSMS LIBRARY

Kim Traverse

In addition to hundreds of books on all aspects of mycology, the library also has a good selection of basic identification guides for general botany and Pacific Northwest flora. If you ever looked closely at a "moss" only to discover your first leafy liverwort (as I have), you'll appreciate that at a glance many different types of organisms show overlap of features. *101 Common Mosses, Liverworts & Lichens of the Olympic Peninsula* by Hutten, Hutten, and Woodward has great applicability to the east side of the Sound and may be just what you need to sort out the similar forms of very different groups of living things. It's a small book, but most of the photos are clear and the descriptions are easy to follow. Icons tell you at a glance what you are looking at and an almost literal bar graph at the left side of the page shows you the elevation range for the species.

Try to make time in the hour before meetings to visit the library in the office and look through what is available. Such a wonderful resource needs to be used more.



TWANOH STATE PARK FIELD TRIP

Brian Luther

On October 21, the day of the field trip to Twanoh State Park, Larry Baxter and I got up at 5:15 AM and, after the mandatory hot cup of coffee, drove the mile and a half to the park, arriving around 6:00 AM. We swept the shelter, rearranged the picnic tables in the dark using flashlights, and then got the ID display all organized. About that time Larry Otto, the Head Park Ranger, came around, turned the power and lights on in the shelter, and brought us a garbage can with a couple of liners.



Host Lynne Elwell arrived around 8:00 AM. Even though she didn't have the regular PSMS hosting supplies (they were still in North Seattle), she set up a greeting station with muffins, coffee to wake everybody up, hot water, maps, and a sign-in sheet and was there all day meeting new arrivals. Thanks, Lynne, You started the day out right for everybody.

I had printed copies of a map of the park and my two-page information sheet and protocol for collecting in Washington State Parks and had collection data slips for everybody to use. Fifty people signed in, and the weather was perfect, with morning fog over the water leading up to a gorgeous and comfortable sunny day at this spectacular park on the shallow-water section (Great Bend) of Hood Canal. It had rained a few days earlier, but conditions had been pretty dry up until then, so there wasn't the plethora of fungi we usually encounter at this park. Nonetheless there was a surprising selection of mushrooms fruiting. One hundred and thirty different species were brought in from the park and surrounding areas.

Good edibles were not found in great abundance, but some nice collections of yellow and white chanterelles came in with people who I had directed to go to the Tahuya Peninsula. Some collections

of *Pleurotus ulmarius* (= *P. elongatipes*) were found in the park, several color forms of *Russula xerampelina* showed up, and a couple of different species of *Pluteus* were very common. The prettiest mushroom found was probably *Pholiota astragalina* with its beautiful orange caps. Interesting or unusual species included *Astraeus pteridis*, *Clitocybula atrialba*, *Xylaria polymorpha*, *Lepiota flammeatincta*, and a small, unknown species of *Lepiota* with a beautiful purple, vinaceous cap. Larry Baxter worked with me all day doing identification and I couldn't have done it without his help. I kept the fire going and at times it felt really good to take a break and stand near it to warm up.



Stacy Ruland, who's one of the park rangers I had been communicating with, stopped by several times during the day and was very interested and complimentary of our efforts and display. She had printed and posted our required public notice letting nonmembers know that we were available to identify their mushrooms on that day. We invited her to our modest potluck around 4:15 PM, which was quite adequate and with some tasty dishes. Special thanks to Dave Manus for assisting me in getting all the collections documented. We had to use Lynne's lantern for awhile because it was getting too dark to see well, but we left the shelter in better shape than when we had arrived. I think everybody who came was glad they had.

DECEPTION PASS FIELD TRIP

Brian Luther

It was just getting light out when I reached the large shelter overlooking pristine Cranberry Lake at 7:00 AM on November 4. I brought the hosting supplies and got all the food, snacks, and coffee set out and the ID tables organized and still stood around for a long time before anyone showed up. The cold, rainy weather was, I'm sure, discouraging to most people, who decided to stay home where it was much more comfortable, which explains why only 13 people signed in. Fortunately, Larry Baxter and Dave Manus showed up with a good supply of firewood, so we at least were able to keep warm all day. After a minor problem getting both the lights and power turned on, we plugged in a couple of crock pots of hot soup that Christy Jobe and Larry and I had made.

Coincidentally, and unbeknownst to any of us, the Snohomish Mushroom Club had planned a field trip to this same shelter, but I beat them there. I gave them a copy of my two page regulations summary and collecting protocol that I wrote, and they were unaware of the new specimen (nonedible) regulations for state parks requiring a State of Washington scientific collecting permit and seemed very put out that they couldn't collect as they always had in the past. Nearby, at the Cornet Bay Environmental Center, there was another mushroom group, the Pacific Northwest Key Council, holding a foray. So, there were a lot of mushroom collectors in the area that weekend.

Andy, the new Interpretive Specialist (= park naturalist) for the park, was delighted to see the display and was eager to get our help for nature walks and special events in the future.



Most of the collections brought in were pretty old and soggy. Dave Manus and Larry Baxter helped with ID all day. Fifty-three species were displayed on the ID tables. Very few edibles were found, with most collections being over-mature and too far gone. Interesting finds included the

very fragrant *Hebeloma sacchariolens* and the rare *Hygrophorus pratensis* var. *pallidus*.

All the goodies I had brought, plus our hot crock pots of soup, took the place of a regular potluck. Special thanks to Charles Pregaldin, Marilyn Denney, Larry Baxter, Christy Jobe, and Dave Manus for helping to clean up. It was fun to get out even if it was a very cold, wet day, but I will admit I was happy to get home, where I was greeted with a glass of red wine and a warm fire and some dinner.

SEWARD PARK FIELD TRIP

Brian Luther

The shelter I chose for the field trip to Seward Park on November 11 was somewhat exposed, with open sides, so we were all pretty cold. Co-host Colleen Compton resorted to filling a coffee cup with hot water I'd brought from home and holding it as a hand warmer. There was no electricity in the shelter, which was unfortunate, because I'd brought a crock pot and a gallon jug of apple cider to put in it. So we had cold rather than hot cider.

Colleen Compton and I hosted and Josh Birkebak identified. It was a cool, breezy day but we still had 28 people sign in, along with several curious, nonmember drop-ins. Not a bad showing for the last field trip of the year.

Eighty species of fungi were identified and displayed. Edible findings included a couple of Wood Blewits (*Clitocybe/Lepista nuda*), one or two over-the-hill Shaggy Lepiots (*Macrolepiota rachodes* var. *rachodes*), a few *Suillus luteus* in good condition, and a Shaggy Mane or two. The most frequently collected edible, however, was the Candy Cap (*Lactarius fragilis*), which seemed to be everywhere in the park. Unlike most years at this location, not a single chanterelle came in. Interesting fungi included *Stropharia aurantiaca* and *Oligoporus fragilis*. The two rare finds of the day were a single collection of *Auriscalpium vulgare* on a Douglas Fir cone and the fall-fruiting ascomycete *Heydaria abietis* on a clump of conifer duff.

Everybody seemed to enjoy the outing and got to learn a few mushrooms, and most got good exercise tromping through the woods. We were all cleaned up and out of the park by about 3:30 PM.

A special note of thanks to all who contributed to the field trips this year by either planning, hosting, helping with ID, or just helping out for the day. Please remember to step forward and volunteer next year for hosting, and, as always, good collecting to you.

WHERE DO THE DATA GO?

Brian Luther

I thought you might be interested in knowing that the extensive report that I submitted to Robert Fimbel, the Director of The Washington State Parks and Recreation Commission, for last year's field trips was met with lots of compliments from State officials. Further, Larry Otto, the Park Manager/Head Ranger at Twanoh State Park, told me that it was a crucial document submitted on the environmental impact of the current septic renovation work there.

The time involved in satisfying the requirements of my scientific and educational collecting permit for Washington State Parks is significant. The documentation and final report at the end of the year are extensive and detailed. Data must be collected on each specimen, and the information discussed and disseminated to the members. It's good to know that the data being compiled are not just being filed away and never used.

PRESIDENT'S MESSAGE

Patrice Benson

Thank you to all of the hard-working members of PSMS who helped with the Annual Exhibit. A larger-than-expected number of mushrooms and mushroom fanciers appeared despite the dry summer and fall. A report will be available after the board meeting of the attendance numbers and income. Now we come to the long winter where we dream of the next season and recall the good mushrooming times.

The December meeting will be a special time to get together and remember and celebrate our association. A special report will feature the extraordinary opportunity which some of our members experienced this fall meeting our Italian brothers and sisters of the fungi.

Thanks are in order for the leadership and work that our chairpersons have exhibited for the good of all. Brian Luther, as identification chair, was assisted by Don and Cathy Lennebacker and Colleen Compton in providing field trips which were enjoyed by many, many members, who hopefully used the opportunity to learn some mushroom ID and have fun while learning. Most of us will agree with Ron that we missed Agnes and Dick Sieger while they were traveling and that we also appreciate all that Ron Post has done with directing the troops for the mushroom exhibit and producing the newsletter while Agnes was abroad. The board members have been hard at work making decisions for our society and doing the leg work to put things into place. The treasurer pays the bills and reports to the board. Vice-President Joanne Young contacts speakers, arranges for their accommodations, and hosts them while they are here. Our secretary, Dennis Oliver, keeps track of what we do at board meetings and reports to the newsletter editor. Our education committee—Colin Meyer, Dennis Oliver, Ron Post, and Dr. Ammirati—plan and execute the classes and projects used for education. Membership Chair Bernice Velategui keeps all of the member information straight, and Placita Roberts keeps us in the computer database and prints labels each month for the newsletter. We have a webmaster, Colin Meyer, and a website editor, Molly Bernstein, who keep our website going and current with the information needed by our members and members of the larger mushroom community who use our website for information. Our book chairs, Younghee Lee and John Goldman, schlep and sell to line our coffers and provide us with the latest mushroom books and items. Louise Asif and Magda DiGiovanni provide hospitality at our meetings.

At this time the board invites you all to join us in celebration of our community at the December meeting and to become active members in the new year.

NAKED US TOURIST AMOK IN SWISS TOWN MAY HAVE BEEN HIGH ON MUSHROOMS

The Spore Print, L.A. Myco. Soc., Oct. 2006

(AFP) An American tourist who ran naked through a peaceful Swiss town, vandalized a church, and escaped from police clutches by jumping into a lake could have been on hallucinogenic mushrooms, a local magistrate said.

The 34-year-old from Massachusetts, who has since been allowed to return home, ran amok in the western town of Morges, by Lake Geneva, last July. He started babbling incoherently in the hotel lobby, stripped and ran naked along the quayside, broke a stained



glass window in the nearby protestant church with a stool, and set a precious 1898 bible alight, police in Morges said.

After being seized and handcuffed by police, he made a leap for freedom into the lake and bit two people who tried to help him while he was hanging on to a boat.

Having recovered his senses, he later appeared before investigating magistrate Gilles Riva and “coherently” explained that he had eaten “magic mushrooms” that he had bought in the Netherlands during a trip through Europe. “He said he had lots of regrets and said ‘sorry’ at least fifty times,” Riva told the Swiss news agency ATS. Riva said the mushroom theory was “possible.”

The tourist, who also offered 250 dollars for each of the people he bit, was not named.

IGNOBLE ROT SPELLS TROUBLE FOR PINOT NOIR, ZINFANDEL

W Blake Gray

The Spore Print, L.A. Myco. Soc., Nov. 2006



If you like dessert wines, 2006 is shaping up as an amazing year in California, thanks to a bumper crop of the fungus *Botrytis cinerea* that is currently foremost in many winemakers' minds.

Botrytis is called “noble rot” because of the honeycomb character it gives some of the world's greatest white dessert wines, and also because it seems to give those wines the ability to age for decades.

But for red winemakers, there's nothing noble about it—it's just rot. If it gets into a cluster of red wine grapes, those grapes are best discarded because they can produce a wine with little color and unpleasant off flavors. Bouchaine Vineyards winemaker Michael Richmond describes the taste as “rancid tea leaf.”

Botrytis fungus usually enters grapes through broken skin. Pinot Noir and Zinfandel are particularly at risk because of their thin skins and tightly formed clusters. Some wineries rushed to harvest these grapes last week shortly after a day of rain.

“Everybody is scrambling to get these susceptible grapes off the vine,” says Douglas McIlroy, director of vineyard and grower operations for Rodney Strong Vineyards in Healdsburg. “It is nice to get warmer weather.”

But premature harvest is also a risk, as some Pinots and Zins may end up with harsh tannins or under-ripe fruit.

The good news is that Cabernet Sauvignon—the benchmark variety for judging the quality of California's vintages—is extremely resistant to *Botrytis* because of its thick skin. Cabernet grapes are still hanging on the vine in most areas.

“Cabernet's extremely tough,” says Cathy Corison, owner of Corison Winery in St. Helena. “I can't remember a year we weren't rained on at least once. The vines have been out there with no rain, and the rain refreshes them.”

With Chardonnay—America's favorite wine, according to AC-Nielsen—*Botrytis* is a mixed blessing. Too much can turn Chardonnay into a dessert wine by shriveling the grapes so that the remaining fruit has an extremely high sugar content. But a

small amount of botrytized grapes mixed in with a larger amount of unaffected grapes adds complexity.

Like most fungi, *Botrytis* thrives in cool, wet conditions. Heavy rains this spring encouraged large colonies of *Botrytis*, which were strengthened by last week's rain. Because the harvest is later than usual this year, *Botrytis*-susceptible grapes are still hanging on the vines in many areas.

"Last year, we were picking Pinot Noir on August 18 and 19. This year, we were picking the same vines on September 18 and 19," says Bouchaine's Richmond, whose winery is in the Carneros region of Napa Valley. "We think it's all due to global chilling."

Indeed, with the exception of an early July heat wave that brought temperatures above 100 degrees in many areas—thus actually slowing down ripening, because the vines shut down—this has been a long, cool ripening year. And generally speaking, that's a good thing, though Rodney Strong's McIlroy says that high sugar content in the grapes means that the trend toward higher-alcohol wines will not abate in 2006.

However, California is famous for differing microclimates. Richmond says, "It's going to be quite a variable year from producer to producer and from vineyard to vineyard. There's lots of variety of fruit even from neighboring vineyards."

Adam Lee, who makes single-vineyard Pinot Noir from both California and Oregon under the Siduri Wines label, says while he's happy with his fruit from the Russian River Valley, he's concerned about the late development of Santa Barbara and Santa Lucia Highlands Pinot. He also says, "The grapes from Oregon are spectacular, as good as we've seen from there."

Kendal-Jackson Wine Estates finished picking all of its Chardonnay in Mendocino and Lake County before last week's rain—a surprise, says spokesman George Rose, because Mendocino in particular is normally cool and grapes there are late to ripen.

At the same time, Rose says Monterey and Santa Barbara are well behind schedule, and *Botrytis* is all over Santa Barbara, which has been rained on by a few storms that missed areas farther north.

"There is more *Botrytis* down there than most people can recall," Rose says. "It's an amazing thing to watch. You can see it grow. We're picking around it."

Regarding quality, for wineries that avoid the *Botrytis* problem, the signs look good.

"I know California winemakers always say, 'It's another great vintage,' but this, as far as I'm concerned, truly is a great vintage," says Richard Arrowood, wine master at Arrowood Vineyards & Winery in Glen Ellen. "Everybody was concerned, including yours truly. But the grapes taste great. The flavors are all there, with richness and complexity."

And for dessert wines, it really might be a vintage to remember.

"We try to do a late-harvest Chardonnay every year, but it doesn't always work out," says Kendall-Jackson's Rose. "This year it will happen. We might have a couple thousand cases."

Bouchaine's Richmond says: "I'll be leaving an acre or two of Chardonnay out" for the *Botrytis* to colonize. "It's going to be very sweet. I'm not a fan of sweeter wines. If it's sweet, I want it very, very sweet."

13 October 2006.



THIS TRUFFLE'S NO TRIFLE

14 November 2006 (AP) - A Hong Kong property tycoon and his wife have reportedly paid US \$160,406 for a huge Italian white truffle, which may be the world's most expensive ever.

Gordon Wu and his wife outbid connoisseurs from France and Italy to win the 1.5-kilogram Alba white truffle from an international auction on Sunday, said a spokeswoman for the Ritz-Carlton hotel, which hosted the Hong Kong part of the auction.

"They're very unique. They're found all together and they've got a beautiful shape," said hotel cook Umberto Bombana of this year's prize truffle, made up of three palm-sized portions.



Chef Bombana will prepare the giant truffle for a five-course banquet hosted by Wu on Thursday.

Italian chef Umberto Bombana with 1.5-kg Tuber magnatum, the Italian white truffle

ONE DOSE OF THIS DRUG HAS LIFE-CHANGING POWERS, DUDE

Malcolm Ritter

Seattle P.I., July 11, 2006

NEW YORK - People who took an illegal drug made from mushrooms reported profound mystical experiences that led to behavior changes lasting for weeks—all part of an experiment that recalls the psychedelic '60s. Many of the 36 volunteers rated their reaction to a single dose of the drug, called psilocybin, as one of the most meaningful or spiritually significant experiences of their lives. Some compared it to the birth of a child or the death of a parent. Such comments "Just seemed unbelievable," said Roland Griffiths of the Johns Hopkins University School of Medicine in Baltimore, the study's lead author.

But don't try this at home, he warned. "Absolutely don't." Almost a third of the research participants found the drug experience frightening, even in the very controlled setting. That suggests people experimenting with the illicit drug on their own could be harmed, Griffiths said.

The study is one of the few rigorous looks in the past 40 years at a hallucinogen's effects. The researchers suggest the drug someday may help drug addicts kick their habit or aid terminally ill patients struggling with anxiety and depression. It also may provide a way to study what happens in the brain during intense spiritual experiences, the scientists said.

Funded in part by the federal government, the research was published online today by the journal *Psychopharmacology*.

Psilocybin, like LSD or mescaline, is one of a class of drugs called hallucinogens or psychedelics. Psilocybin has been used for centuries in religious practices, and its ability to produce a mystical experience is no surprise. But the new work demonstrates it more clearly than before, Griffiths said.

Even two months after taking the drug, most of the volunteers said the experience had changed them in beneficial ways, such as making them more compassionate, loving, optimistic, and patient. Family members and friends said they noticed a difference, too.

REAL MUSHROOMERS **Ron & Bob Roseberry**
Mycelium, Mycological Society of Toronto, July-Sept., 2000

Are you a real mushroomer? Following is a guide to determine whether you are really qualified for entry into this elite society or just a wannabe.

Real mushroomers:

Can be identified by their funny walk. They walk with their heads down, looking at the ground, until they come to a tree, when their head suddenly comes up and they appear to be looking at the sky. And they frequently look behind themselves just to make sure they haven't missed one. Other identification features include the burrs on their socks, the constant scratching of chigger bites, and either waterproof boots or wet shoes and socks.

Spend more on mushroom books than on the furniture in the room where the books are kept. When entering a bookstore they always head for the "nature guides" area first. They can identify most mushrooms without a field guide, and have never had a "near death experience" due to misidentification.

Can be found in the woods any month of the year, in any kind of weather, and with complete disregard for the temperature.

Would rather spend half a day lost in the woods than be found by somebody who is not lost but is hunting their favorite mushroom patch.

Can spot a mushroom from their car window at any speed up to 45 miles per hour. The true professionals can sometimes perform the same feat at 60 miles per hour using their rear view mirror.

Will gladly crawl through poison ivy or stinging nettles to harvest a single choice mushroom, and are as adept as circus performers at the three-person-stack (feet on shoulders) to harvest the high growing edibles.

Can frequently be seen wandering across the centerlines or on the shoulder of roads with their automobiles because of their habit of constantly evaluating the wooded areas they are passing for their hunting potential and checking in their rear view mirror for poachers who might be following.

Have half their refrigerator shelves occupied by mushrooms they hope to identify.

Are careful in identifying anything they intend to eat, but will find some good quality in any nonpoisonous mushroom. "It adds texture." "It adds color." "It smells like anise."

Have a real problem enjoying the scenery when visiting parks because they are always looking for mushrooms.

Give honest answers when asked where they find mushrooms. "In the country." "North of town." "In a pasture." "Down by the river." "Out in the woods."

Are noted for their distinctive dress. In addition to oddly matched clothing they frequently carry fancy walking sticks and almost always wear very funky hats.

Think almost every mushroom is beautiful.

Can be spotted walking around their yard shaking spores off mature mushrooms or dumping the wash water for choice edibles in the hopes of starting their private mushroom patch. The more ingenious ones use their rotary mower or their garden hose sprayer to distribute the spores evenly.

Always carry a bag in their automobile just in case they suddenly discover a fruiting in an unexpected location, and carry eight or more concealed bags on their person in case they find the "Mother Lode."

Can smell "stinkhorns" at 100 yards. Normal people must be within a few feet. (These are considered beautiful and worth collecting, even if they must be strapped to the hood of the car to avoid the odor.)

Will walk miles through the woods on a foray when they are too sick to sit in a chair at work.

Will select the "wild mushroom" dish on restaurant menus, which usually contain portobella and shiitake mushrooms.

RARE CORDYCEPS FUNGUS CULTURED

chinapost.com, July 7, 2006
via the Los Angeles Mycological Society
via *NJMA News*, New Jersey Myco. Assoc., Nov.-Dec., 2006

Singapore - The technology has been developed to culture microorganisms for large-scale production of a rare Chinese medicinal fungus, a Singapore company said in a report published Thursday. According to the company, Auric Pacific Nutritech (APN), the development has resulted in the cultivation of the fungus *Cordyceps sinensis* in 9.5 days, compared with 12 months in nature.



"Wild *Cordyceps sinensis* is only to be found in places like China, Tibet, Nepal, and Qinghai at altitudes above 3,500 meters," The *Business Times* quoted APN general manager Mark Xu as saying. This product is rare with "demand greater than supply."

A kilo of the mushroom, known in Tibet as summer-grass winter-worm, sells for 20,000 to 50,000 yuan, depending on quality and origin; five years ago, it sold for about half that, and a decade ago, for 3,000 yuan. "The whole world wants it, so worm grass is like gold," says Deng Yazhi, a stall holder at the Henhauachi traditional medicine market in Chengdu, capital of Sichuan.

Studies have found *Cordyceps sinensis* to contain bioactive compounds that support healthy lung and kidney functions, and anti-oxidant and anti-inflammatory properties.

PSMS DISCUSSION GROUP

John Goldman

The PSMS e-mail discussion group maintained by Yahoo Groups is an easy way to keep in contact with other members, circulate information about PSMS events, and post general mushroom information. By signing up, you can send a message using only one address (psms-members@groups.yahoo.com) and have it reach everyone who also has registered, with no need to maintain individual e-mail addresses for all PSMS members!

There are two ways to sign up. The simplest way is to e-mail psms-members-subscribe@groups.yahoo.com and you will be added to the list and only get e-mail. If you also want to have access to the Web-based features of Yahoo Groups, go to <http://groups.yahoo.com/group/psms-members>. Follow the link that says "Join this Group." (You will need to sign up for a free Yahoo Groups membership.) This way, you can access the e-mail from any computer (not just your computer), search messages, and have access to the photo section and the "file" section where other documents are stored (recipes, PSMS bylaws, etc.).

LONG-TERM MATSUTAKE STUDY

condensed from *The Spore Print*, L.A. Myco. Soc., Nov. 2006

Matsutake mushrooms are revered by the Japanese as a delicacy that symbolizes fertility and good fortune. In turn, thousands of people—many of them Asian immigrants—harvest matsutake mushrooms in the Pacific Northwest and sell them to buyers, who quickly ship them overseas as a million-dollar business.



The swarm of pickers and their nontraditional harvest methods—such as raking debris from the forest floor to find small matsutake lying underneath and then not replacing it—prompted fear that mushrooms would not withstand the demand. So the Forest Service took a closer look.

In 1994, they established five study sites, including a couple near Chemult and Crescent in matsutake harvest hot spots on the east side of the Cascades. Those five spots are now down to one because of lost funding.

That spot is a few miles north of Diamond Lake, Oregon, and is maintained by volunteers Rick Abbott and Andy Moore. Once a week when the mushrooms are fruiting, Moore and Abbott check on matsutake clusters that for 13 years have been affected by all kinds of harvest torment. They also tally matsutake consumption by animals at their study site.

The site produces about 150 to 200 matsutake a season, enough for Moore and Abbot to use as data. Some matsutake clusters produce just once every five or six years, Abbott said, so long-term data are needed in the study.

Their findings show that animals rely heavily on matsutake. Fifty to 90 percent of the clusters are eaten by small and large animals alike. They can tell if a matsutake was eaten by a small animal by the mushroom shreds left on the ground. In comparison, deer and elk chomp them in one bite.

They've discovered that raking for mushrooms can put a mushroom cluster out of production for about 10 years. The best management practice, they say, is to gently rock a mushroom out of the ground and replace the forest litter if moved and lightly pack it back.

With a proper picking technique, they maintain, matsutake can be a reliable source of food for people and wildlife. "The public can continue using the forest's production and not affect the ecology," Abbott said.

The duo's study is to be published soon in the *Journal of Forest Ecology and Management*.

MUSHROOM DYE WORKSHOP

Alissa Allen

When: Saturday, December 16, 1–5 PM

Where: Douglas classroom at CUH

Cost: \$30, includes yarn samples to take home!

Create beautiful, earthy colored yarn using fungi in this afternoon workshop. We will go over the use of mordants and pH to alter dye colors, different color and texture possibilities using natural animal fibers, and the storage of dyes and fungi for later use. Participants will leave with multiple colors and samples of their yarns and the knowledge to recreate the process at home.

Class size is limited so sign-up early!

CHERNOBYL STILL HAUNTS

The Spore Print, L.A. Myco. Soc., Nov., 2006

Tougher controls on the slaughter of sheep have been imposed in Norway after they were found to be contaminated with unusually high levels of radioactivity from the Chernobyl disaster in 1986.

The Norwegian Radiation Protection Authority (NRPA) says the problem has arisen because the sheep have feasted on an unusually large crop of mushrooms, which were more plentiful than usual because of wet weather. Previous research has shown that fungi take up more radioactivity from the soil than grasses or other plants.

There are 36 areas of upland Norway where Chernobyl contamination still requires controls on sheep. According to NRPA, levels of caesium-137 from the Chernobyl disaster reached 7000 becquerels per kilogram in sheep this year, more than twice maximum levels in previous years.

Farmers can reduce the level of radioactivity in sheep by giving them non-contaminated food for a month before slaughter. For some farmers, this period will now have to be doubled to reduce caesium-137 levels to below Norway's safety limit of 600 bq/kg.

Per Strand, the NRPA's head of environmental radioactivity, stresses that the precautions mean that lamb on the market is safe to eat. He says, though, that the discovery of such high levels of radioactivity so long after the Chernobyl accident came as a surprise.

"No one at the time expected contamination to be so high more than 20 years after the event," he says.

28 October 2006. Newscientist.com.

MAIZE FUNGAL GENOME DECIPHERED

Ann Ambrose

The Spore Print, L.A. Myco. Soc., Nov. 2006

6 November 2006 - The fungus *Ustilago maydis*, commonly called corn smut fungus, is the bane of maize farmers around the world, severely damaging corn ears with spore-filled tumors that break open, spreading the pestilence into the wind to infect other plants.

But for others, particularly in Mexico—where maize was first domesticated centuries ago—the infected ears of corn are a culinary delicacy called huitlacoche that is incorporated into a variety of dishes.

The genetic basis for how this particular fungus operates is the topic of a study titled "Insights from the genome of the biotrophic fungal plant pathogen *Ustilago maydis*," published in the November 2 issue of the science journal *Nature*. An international team of 25 researchers, including Flora Banuett, a professor of biological sciences at California State University Long Beach, is involved in a major genetic study of this fungus.

"One of the major findings is that there are clusters of genes that code for secreted proteins, and these appear to be major virulence factors," said Banuett. "That means that if you eliminate them, you eliminate or reduce disease."

"Clusters of virulence factors have not been found in fungi thus far," Banuett continued. "We don't know what they do, but they appear to be induced in the infected plant. That means their expression increases during the infectious cycle. They are not expressed to a high level when you grow the fungus in the lab. It's only when it's growing in the plant. We think there is communication between the plant and the fungus that influences these genes; that's the hypothesis." (cont. on page 8)

Fungal Genome, cont. from page 7

The eventual goal is to figure out what these genes do. “Different clusters appear to be involved in different steps of the infectious process...you have events that occur early, mid-way, and late,” she said.

“The other major finding is that *Ustilago* does not contain a battery of enzymes that destroy the plant cell wall like many other pathogens that destroy plant tissues,” she said. Plant cells have a thick wall and many fungi that kill the host during infection have a battery of enzymes that destroy these cell walls. These are necrotrophic fungi, meaning that they kill the host. *Ustilago* is biotrophic, meaning that it lives in a certain harmony with the plant host until later in the infectious process when it destroys host tissue in the process of forming spores. This is the first biotrophic fungus sequenced. This sequence may provide important insights about other biotrophic fungi.” csulb.edu.

AMERICAN MATSUTAKE

Elizabeth Schneider

Food Arts, July/August 2000,

via *Mycolog*, Humboldt Bay Myco. Soc., October 2001

The American matsutake, white matsutake, or pine mushroom (*Tricholoma magnivelare*), primarily from the Pacific Northwest, is a relative of the Japanese matsutake—a seasonal prize second only to Alba and Perigord truffles as luxury items. Impressive mushrooms, large, heavy, and pale, they may weigh in at ½ lb each.



Aroma: Authorities extol the magic of matsutake’s powerful spicy aroma, which I have never discovered, although I have enjoyed the mushroom. Perhaps I am too far from the forest? Unlucky? Impervious? The ones I have cooked are more memorable for texture—comparable to firm, fiberless white asparagus. The aroma has been subtle and fleeting, pine-tinged and peppery, with a touch of mint; the flavor sweet and balanced. Turning to others for

description, I discover that either matsutake or responses vary considerably. Elizabeth Andoh, Tokyo-based authority on Japanese food and culture, finds a “deep, woody, green fragrance.” Higgins loves “the amazing cinnamon-musk pheromone pungency.” Anne Gingrass (chef/co-owner, Hawthorne Lane, San Francisco) tastes a “rounded, elegant, and soft flavor, with citrus and sherry notes.” Lincoff describes “the special cedary scent.”

Use: “They are so expensive, and such concentrated flavor bombs,” says Higgins, “that we use them as the principal in a dish. It’s not a mushroom meant for Western ingredients, particularly dairy. Rice, dashi, and fermented soy products are what it needs—or to be grilled dry.” Roast, steam, or cook en papillote or in stock. To sauté is taboo.

Selection: Choose rock-hard mushrooms, as aromatic as possible, from fall to winter. Squeeze the stem to check “give”—which means insects lurk—or split mushrooms to check. Grades and prices are based on shape. The astronomically priced closed-cap No. 1 is desirable for its lack of insect infestation. The least pricey No. 6 may be opened out, browning, and broken but may taste fine. Choose according to use and budget. “Pricing is driven by Asia. If their season is poor, U.S. prices are out of sight,” says Higgins. “If they’re available, then all grades are usually to be had.”

Preparation: Clean matsutake need only be rubbed with a damp towel. Some require trimming, peeling, brushing, and rinsing, which does not harm the solid interior. While clean to the eye, embedded grittiness is common. It’s prudent to peel stems, which may be fibrous; save trimmings for stock. The mushrooms do not discolor when cut and remain white for hours. Break into irregular pieces or slice. For grilling, cut apart stem and cap; flick gills clean with brush. Trim and peel stems, then halve lengthwise.

Note: All PSMS memberships (except those of people joining at or after the annual exhibit in October) are officially up as of the end of the year. **Please use the enclosed form to renew your membership now!**

page 8



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