

# SPORE PRINTS

BULLETIN OF THE PUGET SOUND MYCOLOGICAL SOCIETY  
Monroe Center, 1810 N.W. 65th St., Seattle, WA 98117

January 1986

Number 218



**OLD-FASHIONED MOREL CULTIVATION** Wendla McGovern  
[Mycena News, the Bulletin of the Mycological Society  
of San Francisco]

It is fairly easy to grow morel mycelium, but it is difficult to get morels to fruit. Some members of the Mycological Society of San Francisco and other enthusiasts have succeeded in cultivating them but never in sufficient quantities to make this venture commercially feasible.

Here are quotes from M.C. Cooke's intriguing book, British Edible Fungi about the early cultivation of morels. "The culture of the morels has scarcely been taken seriously into account, and yet it is one of the possibilities, if an announcement made by M. Simar is to be taken into account. He says, 'I brought to the meeting, in January 1872, a pot of arum garnished with large morels, and I had them in like manner on almost all my pots. After long searching I came to suspect that it proceeded from the composition of earth which I used for potting; nevertheless, I could not be positively certain of it. My earth for the purpose is thus composed -- (1) one quarter of two year old tan, well rotted; (2) One quarter of heath mould or leaf mould; (3) one quarter of ordinary vegetable mould; (4) one quarter of fresh loam.' A writer suggests the addition of a fifth proportion of mould from some spot where the morel is known to thrive." [Ed. Note: This is one of the most important ingredients for good results. Sal Belleci, one of the originators of the Mycological Society of San Francisco, has succeeded in cultivating morels in his garden using this method.]

M. C. Cooke continues, "M. Simar directs that the whole is to be carefully mixed together. When the composition is made, you refill your pots with the fresh compost. At the beginning of October you make a bed of fresh tan, in the state it comes from the tanner's hand, six or seven inches deep, the fresher the tan the better. In this you set the pots as close together as possible, and let them remain without touching them; in three weeks or a month you will find mycelium on the surface of each pot; about three weeks afterwards it disappears. There is no occasion to be alarmed, for five weeks after its disappearance you will find on all your pots hundreds of morels of the size of pin's heads; you have then only to give frequent sprinklings with soft water. The most suitable temperature is 47 degrees F. at the beginning of the culture, and 50 degrees towards its close."

Vincent Marteka in Mushrooms: Wild and Edible discusses morel cultivation. "In experiments in the early part of the twentieth century, morels were grown successfully in beds of artichokes and in beds containing a residue of apple and paper waste -- an unusual combination. In these experiments, spawn grown by the scientists was used to start the growth of morels. In one study, nearly a pound of morels was obtained from every square yard planted. There is no problem in growing morels from spawn, says Rolf Singer in Mushrooms and Truffles. The problem occurs

when scientists try to adapt the results of these small-scale operations to the large-scale production of commercial morels."

## MUSHROOM MEDICINES

[Mycelium, the Mycological Society of Toronto Newsletter]

Stephen Peele's Florida Mycology Research Center has just become the world's only legal supplier for psilocybin-containing mushrooms. Lest this sound like a come-on for obtaining psychoactive drugs, it should be pointed out that the Drug Enforcement Agency granted Stephen a Schedule 1 permit thanks to his conscientious effort to work within the law while conducting and assisting scientific research on psychoactive compounds in mushrooms. In the past, physicians who have wanted to explore medical applications of these compounds have often been frustrated by legal restrictions on obtaining them.

One psilocybin-containing mushroom which is presently of medical interest is Panaeolus subbalteatus. This species, which can be found in southern California growing on mixtures of horse manure and straw, has shown effectiveness against polio virus in mice.

Another psychoactive compound under study is the muscimol in Amanita muscaria. An analog (altered version) of the muscimol molecule is effective in blocking pain and maybe can be used in place of morphine -- thus avoiding addiction and control problems of the latter.

When Stephen looked at a diagram of the deadly molecules in Amanita phalloides, he noticed their similarity to the molecules of snake venom. This gave him an idea, and after exploring it with an antivenom expert at the University of Arizona (Dr. Sullivan), he believes it is feasible to find an antigen in animals that would counteract the deadly mushroom toxins just as antigens from animals can be used as an antivenom to treat snake bites. (The antigens would be produced as an immune system response to toxins given to the animals.) Antigen injected into a mushroom poisoning victim would neutralize Amanita toxins circulating in the blood stream.

Stephen is also interested in abilities of the shiitake mushroom (Lentinus edodes) to regulate serum cholesterol, eliminate tumors, and stimulate interferon production in humans. Shiitake is a richly flavored edible mushroom cultivated in Japan and to a limited extent in this country. Stephen has supplied the Environmental Protection Agency with a strain of shiitake which is very high in lentinin, which the EPA will test for antitumor activity in fish. In addition, says Stephen, RNA extractions from shiitake have shown effectiveness against influenza virus.



P.  
S.  
M.  
S.  
*Spore  
Prints*

is published monthly, except July and August, by the  
**PUGET SOUND MYCOLOGICAL SOCIETY**  
Monroe Center, 1810 N.W. 65th St., Seattle, WA 98117  
Direct all mail to this address

**OFFICERS:** Margaret Dilly, President, 1986 (1)  
Gilbert Austin, Vice President, 1987 (1)  
Ferris Anderson, Treasurer, 1986 (2)  
Betty Hamilton, Secretary, 1987 (2)

**TRUSTEES:** Term expires March 1986: Ed Bush (1),  
Sally Ann Hansen (1), Betty Okura (1),  
Pacita Roberts (1), Ron Skoor (1).  
Term expires March 1987: Ernie Boa (2),  
Judi Boa (2), Dennis Bowman (1), Andy  
Green (1), Charlotte Turner-Zila (2).

**ALTERNATES:** Morley McCall, Brian Read

**SCI. ADVISOR:** Dr. Joseph F. Ammirati

**LIBRARY:** Room 104 of the Monroe Center.  
Hours: Wednesdays 6 - 9 p.m.  
Thursdays 10 - 2 p.m.

**EDITOR:** Agnes Sieger, 15555 14th N.E., Seattle,  
WA 98155

## Calendar

- Jan. 13 Orientation class, 6:30 p.m., Monroe  
Center auditorium  
Membership meeting, 7:30 p.m., Monroe  
Center auditorium
- Jan. 20 Board meeting, 7:30 p.m., Library
- Jan. 24 Spore Prints deadline
- Mar. 14 Survivors' banquet

**Candidates for PSMS Offices:** Be sure to turn in a 60  
word biography to Charlotte Turner-Zila at least a  
week before the Spore Prints deadline on January 24.

**Check your Spore Prints mailing label:** Unless Aino  
Kunz is notified otherwise, the address and telephone  
number printed on this month's label are those that  
will appear in the PSMS roster for 1986. Please  
supply missing telephone numbers, unless you do not  
want them printed in the roster.

## Membership Meeting

Monday, January 13, 1986, at 7:30 p.m. in the Monroe  
Center auditorium, 1810 N.W. 65th Street, Seattle

Stephen A. Rehner, a PSMS member, will talk about  
snowbank fungi of Oregon and northern California.  
Steve holds B. A. degrees in horticulture from Cor-  
nell University and mycology from the University of  
Washington. He holds a M.A. in mycology from the  
University of Washington and is continuing his  
studies toward a Ph.D. in mycology under Dr. Ammirati.

**Beginner's orientation class:** Hildegard Hendrickson  
will be discussing "What do you do with the wild  
mushrooms you have found -- cleaning, cooking, pre-  
serving them."

### 1986 DUES ARE DUE

**Aino Kunz**

If you have not already done so, please send your  
1986 dues (\$12.00 for a family membership, \$8.50 for  
a single membership, and \$6.00 for a student member-  
ship) to Aino Kunz, 12552 19th Ave. N.E., Seattle, WA  
98125, and you will remain a member in good standing.  
(Note: Members who have joined since last summer are  
paid through December 1986.)

The PSMS fiscal year coincides with the calendar  
year; if you have not sent in your check by the end  
of January, the issue of Spore Prints that you are  
reading now will be the last you will receive. Pay  
up and don't be sorry!

### 22nd ANNUAL SURVIVORS' BANQUET

**Brian Read**

The Survivors' Banquet will be at Quinn's at Shil-  
shole Bay again this year. Last year's was a great  
success, and with your help and support this year's  
will be equally enjoyed by all. The date to remember  
is Friday, March 14th, 1986.

Tickets will be available at the January and February  
membership meetings. The price is \$16.00 each. You  
can also get your tickets by mail by sending a check  
and self-addressed, stamped envelope to

Brian Read  
12827 1st Ave. N.E.  
Seattle, WA 98125

The main course at this gala event will be prime rib  
with wild mushrooms. In addition, a vegetarian  
entree will be available, also with wild mushrooms.  
If you opt for the vegetarian entree, please let me  
know so we will have an accurate count to plan the  
meal.

We need donations of frozen or dried wild mushrooms  
to include in the tasty dishes that Quinn's master  
chef will prepare for us.

I also need volunteers for all the committees that  
are required to make the banquet a success. See me  
at the January membership meeting to sign up.

Watch for more news of the banquet in the next issue.

## PRESIDENT'S MESSAGE

Margaret Dilly

A Happy New Year to everyone! With the holiday season behind us, we can look forward to the year ahead with renewed enthusiasm and resolve. I can only hope that one of your New Year's resolutions is to become more involved in and better acquainted with the functions of this society. Old and new members alike are urged to call a committee head NOW and offer your assistance.

A good example of volunteers working together was our wonderful December meeting and social. Slides presented included a glimpse of the whirling Dervishes of Turkey as seen by Gilbert Austin, the beauty and wonders of Burma as photographed by Charlotte Turner-Zila, and a whirlwind tour of Europe with Coleman Leuthy. Then it was back to the good old USA for mushrooms of the South, taken by Ben Woo when he attended the North American Mycological Association foray in West Virginia. Brian Luther took us to Kade's Cove in the Smokey Mountains, while Joy Spurr brought us closer to home on the Rogue River. In addition, we enjoyed a good display of prints. Margo Harrison made us all envious as she showed the vast amounts of past mushrooms collected by her and her companions. Virginia Kessner's huge stone mushroom was interesting, as was the series of prints of the shiitake growing operation being undertaken by Ming Chow Wang, which was explained to us by Rex Takasugi.

Refreshments were abundant and delightful. Martha Benny and her crew of gracious hostesses served cookies at attractively set tables, sparing us the tedium of standing in long lines. Clean-up, with Ron Skoor in charge and ably assisted by many sets of willing hands, went smoothly and swiftly.

Mention was made in the December Spore Prints about an answering machine and a phone to be installed in our Library. Dennis Bowman is researching this, so it should happen soon. The Board decided that this action should be taken in an attempt to make our club easier for the general public to locate. Side benefits will be a means of dispensing information about field trip changes or cancellations, as well as about classes and programs.

Another decision of the Board was to lease a larger storage room in the Monroe Center. Over the years, our club has accumulated many items necessary to its functions. These things have been housed in attics, basements, and even under beds by various members. One of these people we owe a vote of thanks to is Hildah Nolan, widow of Ralph Nolan, PSMS president in 1968. For some time, Hildah has been kind enough to allow us the use of her basement to store 36 large burlap panels. Over the past few years, Hildah has had a great many health problems which prevent her from getting out, but she welcomes a good visit from her old mushrooming friends, either by phone or in person. She no longer has her handsome Samoyed dogs which she took such pride in, but instead has a charming little dog which never leaves her side. Thank you again, Hildah, and we wish you better health in the new year.

Other recent procurements are a remote control for the slide projector, a flashlight pointer, and a lectern light. The new 10 cup coffee maker is in the Library for use by small groups.

We have a very faithful, innovative, hard-working Board that you should all be proud of. To enable you

to keep up with their goings on, the minutes of the Board meetings will be posted at the regular meetings and always available in the Library. Anyone interested in attending Board meetings is certainly welcome. The time and date are always listed in Spore Prints.

One last issue before I sign off: the progress of the fight against the over harvest of mushrooms. Both the House of Representatives and the Department of Natural Resources seem interested and willing to listen to our plight. A DNR task force on the subject met in November, and another meeting is scheduled for January as a result of our last hearing before the House. There is great interest from all parties involved, and hopefully we can come to a equitable solution before our next mushroom season, which is not too far off. So keep those letters and calls coming to persons in positions of influence. This involves all of us who enjoy mushrooming as a hobby.

## BOARD NEWS

Judi Boa

The nominating committee announced at the December board meeting that they had a marvelous response from the membership to run for board positions.

President Dilly mentioned the great organization of the Christmas party and also the dedication of Bill Zila and Bob Hamilton. (Bob took the bus clear across town to get last month's Spore Prints envelopes stuffed and mailed despite the snowy conditions.)

## FIGHTING THE HONEY MUSHROOM

Judi Boa

The honey mushroom, Armillaria mellea is a fine edible mushroom, but a savage parasite. It attacked a plant in our garden but we are fighting back.

A few years ago, A. mellea started growing from the roots of a neighbor's birch tree. They removed ivy from the tree. It became healthier and the mushrooms stopped growing for a few years. Soon, honey mushrooms were growing from the roots of our nearby lilac. We followed the advice of Washington Tree Service. We dug up the lilac, removed all of the dirt and trimmed the roots. Next, we sprayed the roots with a solution of one part Clorox to nine parts of water. We applied a rooting hormone and planted the lilac in a new location. After three years, it is healthy and no new mushrooms have appeared.

## WELCOME TO THE FOLLOWING NEW MEMBERS

Batelho, Sheila	784-3928
Dimock, Roscoe	329-3607
Dixon, J. William	392-7035
Dorsett, Orville & Marlene	935-8382
Ellertsen, Richard	363-7175
Herndon, James	633-1223
Millican, Jean	783-0717
Pettis, Ruth	633-1837
Strait, Karl	329-3607
Swensson, Anne	284-4683

## THAT WONDERFUL SCENT

Alan Parker

[Wisconsin Mycological Society Newsletter, 9/85]

Truffles, those unusual underground Ascomycetes, are confronted with a special problem concerning spore dispersal. Most higher fungi such as gill mushrooms, boletes, shelf fungi, puffballs and the like produce their fruiting structures above ground, where it is simple for wind currents to carry the spores to new habitats. What about the truffle, whose spores are within a fruiting structure buried several inches in the soil? To overcome the dispersal problem, truffles have evolved strong scents which make it possible for rodents and other animals to locate and then excavate them. Now above ground, pieces of partially eaten truffle containing thousands of spores may be scattered about by the truffle's consumer, or the spores may pass unharmed through its digestive tract and be dispersed in the dung.

New insight into the chemical nature of the truffle scent was reported on in the 5 March 1982 issue of Science magazine. It has been known for centuries in Europe that pigs (sows) make excellent truffle hunters; they have detected these aromatic delicacies buried up to three feet in the ground by scent alone. Sows root for truffles with such vigor that many truffle hunters have turned to dogs, which are more easily controlled. Why do sows express such intensity when locating a truffle?

Three German investigators think they have solved the mystery with the discovery that truffles contain a pig sex pheromone (a type of steroid) that has a pronounced musk-like scent. The steroid is synthesized in the testes of boars and transferred to the salivary gland, from which it is secreted during pre-mating behavior. Interestingly, the concentration of the steroid in the highly prized black Perigord truffles and white truffles is about twice that in the blood plasma of boars. The biological role of this boar sex pheromone in attracting sows may explain their intense interest in locating truffles. It might also explain why humans like the fungus, which is said to taste like a cross between musk, nuts, and ozone. The same steroid is synthesized by human males in the testes and secreted by auxiliary sweat glands.

Anyone fortunate enough to feast on a dish flavored with Perigord truffles will probably wish to forget the scientific aspect of that marvelous experience.

## PINK BOTTOMS AND GREENBACKS

The Mycological Association of Washington [D.C.] reports that Ray LaSala was hunting for Agaricus campestris. Instead, he found a \$50 bill. When asked where this find occurred, Ray grew vague and explained that he would rather not reveal the spot until he knows whether it will fruit again next year.

## CATASTROPHE

Dick Sieger

Portland cats are succumbing to a new, sometimes fatal temptation: Amanita pantherina. Lorelei Norvell, who chairs The Oregon Mycological Society's poison committee, reports that cats are drawn to dried pantherina much as they are to catnip. The result of eating it is unfortunate for the cats, just as it would be for you and me.

## BOOK SALES

Judi Boa

Publication of North American Species of Clitocybe, Part II has been delayed because of the untimely death of Mr. Cramer. We expect to have it for you soon.

Rolf Singer's fourth edition of The Agaricales in Modern Taxonomy will be available shortly. The 1200 page volume will sell for about \$125.00 and may be ordered from us.

## SHIITAKE ON THE HALF SHELL

Ron Trial

16 shiitake caps (2 oz.)	2 shallots, crushed
2 Tbsp. butter, melted	4 strips bacon
1/4 tsp. ground pepper	1/4 tsp. salt

Soak shiitake for at least two hours in cold water. Reserve the water. Cut off stems (these may be blended with the water for a potent soup). Dry caps with a paper towel, leaving damp but not soggy. Place gills up on a foil-covered sheet. Pour melted butter over all. Crush shallots in a garlic press. Garnish and season the caps with the shallots, salt and pepper to taste. Place a strip of bacon just large enough to cover the cap on each mushroom. Broil until bacon is cooked and serve.

This recipe appeared in Boston Mycological Club Mushroom Recipes 1984-1985, 855 Commonwealth Ave., Newton, MA 02159, \$2.95. It pleased your editor's entire family, including two who ordinarily abhor mushrooms. Dried shiitake were recently selling for \$10.00 a pound.

## PSMS BULLETIN, JANUARY 1965

Ben Woo, Editor

Finishing our first year as a Society, we can look back on some pretty respectable gains. Starting from scratch, we have become organized, built membership to over 170, held meetings, gone on field trips, issued certificates, got out bulletins (some of them on time) and put on a pretty fair mushroom exhibit. All of us have made new friends, learned new things, and a few of us have been poisoned in the process. For these things, we are grateful for the staunch support of Dr. Ray and the Pacific Science Center, for the good humor and generous light shed by Dr. Stuntz, for Miss McKenny's gracious assistance, and for the enthusiasm and hard work of you the members. You are all therefore awarded laurels, on which some of you may rest while others remember that composted laurel leaves are an excellent medium for growing Agaricus agustus and Lepiota rhacodes.

... AND A HAPPY NEW YEAR!

