

**Speaker for
January 18
MSSF Meeting**



Dr. Tom Volk

**'shrooms in da 'hood:
the importance of fungi
in urban and suburban
environments**

Dr. Tom Volk returns to the MSSF for a presentation at our next meeting on Tuesday, January 18th. He will discuss the many macroscopic and microscopic fungi that are important in suburban and urban environments. Some of these can be categorized as beneficial fungi, while others may be harmful or ugly. You'll be very surprised at the many ways in which fungi can (and do) affect your everyday life.

Tom is a Professor of Biology at the University of Wisconsin-La Crosse, located on the Mississippi

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Mycena News

The Mycological Society of San Francisco January, 2005, vol 56:01

MycoDigest: Immortal Fungi

Anne Pringle

Is aging inevitable? According to theory published by W. D. Hamilton in 1966, senescence is caused by mutations with age specific effects. A mutation acting at an early age, for example one that disrupts an organism's ability to bear young, is visible to natural selection. In evolutionary theory success is equivalent to number of offspring. An individual that cannot bear young is unsuccessful. But a mutation acting only at late age, for example one that increases susceptibility to disease at some old age, is invisible to natural selection. By old age reproduction is finished; an individual with this mutation is not unsuccessful! And so mutations acting only at late ages accumulate; the cumulative influence of these mutations is senescence. Other hypotheses have been developed. In a now classic study published by G. C. Williams in the journal *Evolution*, Williams argued that senescence is caused by mutations with beneficial effects at early ages and detrimental effects at late ages, for example, a mutation that boosts reproduction at age 20 but then causes cancer at age 60. Both ideas involve natural selection. As no organism escapes evolution, aging is inevitable.

But fungi are unique. Hamilton assumes the force of natural selection to decrease with age, but for those organisms whose reproduction increases with age, the force of natural selection may actually increase with age. Contrast the human species, in which reproduction ceases (or is dramatically reduced) after age 50, to any fungus that creates more mushrooms as it grows older and larger. Natural selection is of limited influence on an old human, but of growing influence on a fungal individual that creates more (not fewer) spores as time passes. Moreover, any cell of a fungal individual can grow a new individual. Biologists often distinguish between reproductive tissue, or germ, and body tissue, or soma. In Williams' view senescence is an evolved feature of organisms with a germ separate from the soma; organisms in which germ and soma are equivalent may escape senescence and death. In the fungus there is no distinction between reproductive and body tissue, there is no delineated germ. Again, contrast the human species, which can only create more humans from specific cells, to any asexual fungus. Asexual fungi typically create novel individuals by using any part of the body to form distinctive propagules that disperse and establish as physiologically independent units.

A recent article by J. W. Vaupel argues that aging is more complicated than originally envisaged by Hamilton or Williams, even for animals or plants. According to Vaupel organisms as varied as humans, nematode worms and plantain (the plant *Plantago lanceolata*) are to some degree negatively senescent. Species with negative senescence experience a decline in mortality with age. In other words, a human of age 105 may be more likely to die than a human of age 115. The paradox is understood with a model borrowed from engineering. Poorly built cars will fail more quickly than

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MycoDigest is a section of the Mycena News dedicated to the scientific review of recent Mycological Information.

MSSF Scholarship

The Mycological Society of San Francisco offers scholarships to full time graduate students majoring in mycology attending colleges and universities in northern California. These scholarships vary in amount from \$500 to \$1,500 and are given in the name of Esther Colton Whited and Dr. Harry Thiers. All research proposals are welcomed, but special consideration will be given to taxonomic studies of the higher fungi of the Pacific States.

Requirements include two letters of recommendation, one from a professional mycologist, a brief statement describing the research project, and agreement to present the results at a general meeting of the MSSF. Send inquiries/materials to Robert Mackler, 157 Mesa Ct., Hercules CA, 94547. Deadline for applications is December 10, 2004.

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MSSF Discussion Group on Yahoo Groups

The MSSF email discussion group facilitated through Yahoo Groups is a great way to keep in contact with other members and is one of the primary ways in which members keep up on news about the Society. The list features often-intriguing discussion of fungal-related topics, tips about current fungal activity, and up-to-the-minute news about MSSF functions.

The list is available in both individual-message and digest formats. Additionally, you can also subscribe to the group in "Special Notices" mode. That means that if you wish to receive only official announcements from the society and not email traffic from other members, you can subscribe using this method. (Subscribers to the list in regular and digest formats also, of course, receive official announcements in addition to posts from other members.)

To sign up, go to:

<http://groups.yahoo.com/group/mssf/>

Follow the link that says "Join This Group". (You will need to sign up for a free Yahoo Groups membership if you do not have one already.)

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River in western Wisconsin. He teaches courses on Mycology, Plant-Microbe Interactions, Advanced Mycology, Food & Industrial Mycology, Plant Biology, Weston Award for excellence in teaching mycology.

Tom Volk's website (TomVolkFungi.net), has many photos of fungi from all taxonomic groups, a popular "Fungus of the Month" feature, many holiday related fungi, and an extensive introduction to the Kingdom Fungi.

Tom received his Ph.D. in Botany in 1988 from the University of Wisconsin-Madison, and then worked at the Center for Forest Mycology research at the Forest Products Lab in Madison before moving to La Crosse in 1996. Besides dabbling in mushroom cultivation, Tom has worked on the genus *Morchella* and on the forest pathogens *Armillaria* and *Laetiporus*, as well as the mycorrhizal genus *Hydnellum* and the human pathogens *Blastomyces*, *Candida*, and *Penicillium marneffeii*. He also conducts various fungal biodiversity studies in Wisconsin, Minnesota, Alaska and Israel and researches various biochemical, ecological, and industrial aspects of fungal growth. He is grateful to escape the biting cold and snow of Wisconsin winter in exchange for a visit to California during the height of our mushroom season.

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2003 Scholarship Recipient Update

Peter Werner

In 2003, I was honored to receive an Esther Colton Whited/Harry Thiers Scholarship Award from MSSF. I want to sincerely thank the Society and its members once again for your support and to update you on the status of my project.

I decided to focus my efforts onto an area of interest to me, one that would contribute to a greater understanding of California fungi, and would tackle a larger taxonomic issue. I've long been interested in *Psilocybe*, and as luck would have it, this was one of the few remaining "charismatic" mushroom groups that has not been extensively studied in California.

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The Foragers' Report

January 2005

Patrick Hamilton

My brain has trained me to not let it work in certain ways and one of those is how to come up with a clever opening sentence for the monthly column and not have it be, well, not inventive. And this month's deadline was a full week earlier than anticipated (we realized this three days ago) so we'll have a quick go at it and pretend that these words have been rough drafted, shrewdly honed, corrected, added to, redacted a bit and final drafted—all those things that good writing should have done to it before being unleashed to an awaiting readership.

That said, what is happening in our mushroom world besides all those matsutake? Good Lord, everywhere in our coastal forests matsies were being stepped on like so many paving stones, perhaps placed by elves. Veritable white pathways were seen under tan oaks. Some folks were complaining about them. "Darn nuisances." "Stupid, smelly things." And even this (which your reporter felt was way beyond the pale), "Where have all the *Russula brevipes* gone to?"

Want the matsutake appetizer recipe from the Martini House, in St. Helena? Shred some matsutakes, add to a pan with 2 parts sake, 1 part mirin, 1/4 part white soy sauce, hint of rice wine vinegar, a bit of Meyer lemon juice and some minced ginger. Bring to a boil, simmer with a lid on and place into a hot oven for 5-8 minutes. Remove, place in a small soup cup, S & P, and mount with butter. ("Mounter au Beurre" is one of those fancy French culinary terms that simply means to finish a dish with some raw butter by adding it and stirring until melted.)

It has been quite a season for coccoli too. Wish they tasted better. . . . About the best thing to do with these, I think, is to cut only the stems (give the caps to an Italian) into 1/4" wheels and then sauté in very good olive oil until caramelized and nutty brown, add some minced garlic, a smidgen of Worcestershire sauce, continue cooking over lower heat for a couple of minutes, plate them and squeeze a little lemon juice over, add some minced parsley mixed with a bit of finely chopped scallions, or chives, S & P, and pretend it is something better, like *Agaricus bisporus*.

Speaking of *Agaricus*—remember that amazing year, maybe 1993, when great edible species were popping up, and down, the coast? Out near Tennessee Valley, in Marin, up at that airplane guidance radar thing on one of the mountain tops, I once beheld a field full of Frisbee sized giant horse mushrooms. They were down along the trail to the beach too and it seemed that almost every running path had some. That year a jogger ran

back to his house in Tam Valley holding several pounds of those, looking like a real weirdo, I'm sure.

Other edible species (including *bisporus*) were then fruiting powerfully under cypress windrows. *Liliceps* was especially common that year but where have they all gone to? It has been many years since we have witnessed such delectable *Agaricus* fungal frolic. But maybe this new year will bring us great fruitings of a genus considered the best for the table by many seasoned mushroom cooks.

Quick recipe for *Agaricus* croquette appetizers: Dice and toss with a little lemon juice and then sauté the pieces in butter. Add some chopped parsley and minced shallots, some herb like thyme or oregano, bay, savory, etc., a bit of chopped garlic maybe too, S & P. Bind together with some Béchamel or other thick cream sauce and set aside to cool. Divide this into portions and roll into tube shapes and then dip into a batter (can be as simple as the old three part process 1. flour, 2. egg/milk mixture, 3. crumbs), fry in hot oil and serve with a sauce of your choice. Yummy. You can get fancier and add chopped spinach or chard, onions, etc., to make a pretty nice vegetarian entree.

It hasn't been a great season so far for *R. xerampelina* nor *R. cyanoxantha* either. These each make for some good, if crunchy, eating. A tasty sauce to add to already sautéed slices can be made like this: Take 1 part dry white wine, 1 part vermouth and 1/2 part white wine vinegar and some finely chopped shallots and cook until the liquid has been reduced by 3/4. Add this to a very thick cream sauce (or add butter to it like for a beurre blanc) and put this sauce and the mushroom slices into a pan, stir to combine and cook over medium for a few minutes, then place the pan under a broiler until the cream sauce starts to brown a bit. Remove, plate, garnish with chopped parsley or chives and serve with toast rounds. I'm thinking a very crisp Sauvignon blanc, like Mason from Napa.

Chanterelle season should be going strong by the time you read this. In West Marin one place you can look for them is near the bottom of the Dipsea trail, above Highway 1 and south of Stinson Beach, in and amongst some of the shrub oaks (5'-15' oaks with no dominant trunk, instead with many sprawling branches, some forming mats on the ground). The common name of one of these prickly-leaved evergreens is actually "scrub oak" which sort of confuses those of us apt for such befuddlements. Its taxonomic name might be *Quercus berberidifolia*, or not. Another possible i.d. for this tree could be *Q. agrifolia* var. *frutescens*—the shrub form of the coast live oak. Anyhow, chanterelles like hiding under these as do candy caps and, later, further away from the trees' centers, *Amanita velosa*.

In Oregon the chanterelle season is about over but hedgehogs are starting and so should ours soon. Yellow feet

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MycoDigest**Continued from page 1**

well built cars; when poorly built cars have been eliminated from the population the remaining well built cars will last more or less indefinitely. In any group of individual humans, plants, or cars, the “oldest-old” are those exceptionally built individuals that are for whatever reason optimally functional. Perhaps fungi also experience negative senescence.

What is known about death in fungi? According to the German mycologist H. D. Osiewacz, “the vast majority of mycelial fungi appear to be immortal” and according to A. J. F. Griffiths “organismal death... does not seem to be part of the reproductive program of these species”. Both mycologists are discussing filamentous fungi (fungi that propagate via a mycelium); death is a real and well understood phenomenon in yeast fungi and particularly in the genetic model *Saccharomyces cerevisiae*. Exceptional mycelial fungi include the dung fungus *Podospora anserina* and various *Neurospora* species. These fungi do experience death and senescence is caused by mobile genetic elements which target and disrupt mitochondrial function. Otherwise a consensus within the mycological community is that fungi are immortal, and perhaps our most famous example of an immortal fungus is the humongous fungus *Armillaria bulbosa*. A genetic individual in Michigan is estimated to be at least 1,500 years old. A short lived lichen, for example individuals of *Xanthoria elegans*, may be several hundred years old. Long lived lichens, including species of the genus *Rhizocarpon*, may be a thousand years old. But there has been almost no data collected on the births and deaths of fungal individuals in a natural population. In fact we know very little about the trajectories of mortality in any fungal species. And remember the story of Eos, goddess of the dawn. Eos fell in love with the young Prince Tithonus and asked Zeus to grant Tithonus eternal life. But she forgot to ask for eternal youth, and as time passed Tithonus aged and grew weaker and smaller. Tithonus’ voice dwindled and eventually Eos hid him in a basket; Tithonus turned into a cricket and chirped away forever. Eternal life is not the same as eternal youth. A fungal individual may be immortal. But the question remains: does that immortal individual age?

Key references on aging in mycelial fungi:

Griffiths, A. J. F. 1992. *Fungal senescence*. Annual Review of Genetics 26:351-372.

Osiewacz, H. D. 2002. *Genes, mitochondria and aging in filamentous fungi*. Ageing Research Reviews 1:425-442.

A key reference on emerging ideas of negative senescence:
Vaupel, J. W. et al. 1998. *Biodemographic trajectories of longevity*. Science 280:855-860.



Fungus Fair Thank You

Ken Litchfield and Dan Long

The Fair was a great success this year thanks to all the great work all the volunteers did. Many of you worked the whole fair from Friday setup to Sunday takedown and much of the organizing and prep.

With the help of Yu-Shen and Hillary Ng, Elizabeth Whipple (the new public relations person with the Oakland Museum) brought in many great print articles and radio interviews featuring several of our members. That got the word out to the public about the fair, along with all the volunteers who distributed fair posters. We had 1430 on Saturday and 1640 on Sunday for a total of 3070 total paid admission for the weekend. Without the publicity we wouldn't have so many folks to enjoy the show we put on for them.

Strategic thanks go to Gary Wolf for stepping up and offering to handle volunteer coordination without understanding what he got himself into. But he handled it fine and without him we wouldn't have all the volunteers doing all the duties that need to get done to put on the fair.

Huge thanks go to Norm Andresen for coordinating forays and Bill Freedman, Bob Mackler, Fred Stevens, Mike Wood, Peter Werner, Tina Keller, and David Rust for leading their usual forays and all the folks that went on their forays to collect mushrooms. Plus all the folks who brought in mushrooms from their own personal forays. We had a wonderful collections on display at the fair. Without all those collections and more brought in for refresh we wouldn't have a *mushroom* fair. And special thanks to James Miller our duff tzar and Bill Freedman and Dan Long for bringing in bags of oak leaves and pine needles

Wonderful thanks go to Mike Wood and his huge crew of organizers, identifiers, and distributors who worked



the ID process to get all the mushroom specimens organized, identified, catalogued, and distributed. They then decorated and tagged all the specimen tables, and staffed those tables all weekend, and worked the continuing mushroom identification table for the public. And many of these folks acted as "roving" volunteers in other areas during set up and throughout the fair; Dennis Desjardin, Fred Stevens, Norm Andresen, Bob Mackler, J. R. Blair, John Lennie (especially for all his work preparing the species list), Ilse Vellinga, Anna Moore, Denise Gregory, Peter Werner, Jane Wardzinska, Debbie Viess, Rebecca Johnson, Bill and Pat Tapley, Nicole Hynson, James Edmonds, Earl Hazelton, Ron Pastorino, Barbara and Bob Sommer, Luis Garcia-Bakarich, Beryl Durnell, Maria Packman, Andrew Maxon, Christa Aboitiz, Paul da Silva, Yuko Hirama, Paul Ferguson, Michael Marriner, Ray Balberan, Nancy Balberan, Andrew Trouette, Leah Mowery, Val Wong, Snejana Mahan, Julia Chan, Russel Smith, Rachel Zylka, Robert Wells, Larissa Buyachek, Joey Arieas, Soumeya, Bendimerad, Christina Tsai, Anna Khuu, Laurel Wilton, Travis Jones, Caroline Budge, Brooke Atkinson, Kathy Cho, Mike Jenks, Michell Ramos Valerie Swanson, Sofia Midon, Nicole Hynson, David Thorp, Colleen Noonan, Philip Harben, Caroline Harben, Stephen Naughton, Chi Chen Ho, Jenelle Black, Sabrina Fiora, Heidrun Schmidt, Adan Kirstner, Elizabeth Lindsey, Amy Thornton, Emily Cartwright, Philip Koehler, Ka'rin Huelsman, Katie Capielo, Chris Collins, Lowell Harried, Andrew Castro, Celan Beausoleil, and Kristen Jensen, all worked the setup and various parts of the fair during the weekend. Without this integral process we wouldn't have the mushrooms and all their information to talk about.

Tremendous thanks go to the Culinary group and all the great work they did in feeding the volunteers Friday night and all weekend and handling the soup sales, and helping with the cooking demos. Thanks go to David Bartolotta for handling the Friday night dinner with help from Al and Sherry Carvajal, Enrique Sanchez, and Dulcie Heiman. And thanks to Al and Sherry for handling the weekend volunteer food with help from Bill and Carol Hellums. Without the excellent food and relaxing break room we wouldn't be able to make our volunteers' time and efforts nearly so rewarding. It is one way we can always show our tangible thanks to all of you.

Enormous thanks go to David Eikorn and his team for handling the soup sales for the society. From last years substantial beginnings he has expanded operations this year to raise lots of funds for society activities. Thanks go to Fred Kron, Tom Sasaki, George Collier, Carol Reed, Phil Brown, Mark Lockaby, David Campbell, Sue Wingerson, Andre Ferreira, Arlene Marie Dean, and John C. Lee for preparing the soup and serving the soup and bread to the public.

Also many thanks go to Mark Thompson for handling the restaurant chef demos and Mark Lockaby, Miuki Irie, Roman Kenzior and Anna Tow for prepping for the chefs. Extra special thanks go to George Collier for representing the Culinary Group by filling in due to hand surgery for the scheduled chef. With help from Mark Thompsen he prepared salmon and black chanterelles without a hitch on Saturday afternoon. Then with a last minute chef cancellation on Sunday



Pat George stepped in and sauteed up some wild matsutakes and chanterelles with help from Mark Thompsen. Great performance by George, Pat and Mark for keeping the show rolling.

Stupendous thanks go to all the folks that handled the book, T shirt, and mushroom grocery sales. Just about all of our sales items sold out well before closing on Sunday. Thanks go to Mark Thompson on books with Halina Marcinkowski, Peggy Manuel, Sam Bruns, and Xueli Wan, Mark Lockaby on T shirts with Abby Cleveland and Dave Manuel. Robin Maclean obtained a wide array of unusual items for the mushroom grocery with sales by Lisa Gorman and Pat George.

Lucrative thanks go to Shawn Johnson for handling the treasury and all the vendors for the fair helping to keep things profitable and efficient. And thanks to Toby Garrone, who also provided mushroom growing kits for the kid's art room, Todd Spangler, Don Simone, Chris Ribet, Taylor Lockwood, Mo-Mei Chen and the Lichen Society for being vendors and providing excellent mushroom related items for sale.

Crucial thanks go to Tom Chester with George and Jane Collier at the Membership table signing up multitudes of members at the fair and to Larry Stickney at the front Info table with help from Eric Bellis, Gail Kalloch, and Morgan Dean.

Great thanks to David Rust for organizing the speakers. Tom Bruns, Dennis Desjardin, Earth and Fire, Kathleen Harrison, Gary Lincoff, Taylor Lockwood, Bob Mackler, Mo-Mei Chen, and Debbie Viess put on great shows for our audiences of mushroom fanatics.

And special thanks to the specialty tables and all the folks who made them such popular rivals to all the other wonderful attractions at the fair. At Beginning ID Tom Chester

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Thank You

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and Paul Koski worked with Len Coleman, Enrique Sanchez, Lorrie Gallagher, Vita and Pam Hemphill, and Philip Gerrie to make a crowded introduction to the world of mushrooms. For Toxicology and Ecology, thanks to Bill Freedman with George Caughey, MD, Leon Ilnicki, Jane Wardzinska, and Louise Freedman, (who also assisted with the kid's art and other areas). Thanks to Dorothy Beebee for the Mushroom Dyes table and Sonoma Mycological Society for their table. Thanks go to Fire and Earth at the Psychoactive table and Kat Harrison at the Ethnomycology table for their reliable and authoritative presentations on a topic popular with many mycofans. Thanks for the delectable Edibles table go to Dan Nicholson with Jeanne Campbell and Jon Glover. Thanks to Stacey Barros, Robert Esposito, and Mo-Mei Chen for their great spread of Medicinal Mushrooms. And for Cultivation thanks go to Rik Vandiver, Chris Melville and his wife, Peter Setzchen, Ken Kwetniak, Debbie Collins, Dennis Nolan, and Ginny Garret. Thanks also to Debbie and Ginny for handling the creation of the woodland display. Lastly, thanks to Chris Thayer for his mushroom collectibles display.

And thanks to Tom Sargis for hanging his mushroom photos around the specialty tables and to Jack Laws for illustrating mushrooms at the fair.

And thanks to Steve Bowen who sent over a hundred of his students and their families from San Jose to the fair. Great educational work that we expect to expand upon for next year.

Yes, there is bound to be someone or several that we've left out so please accept our apologies ahead of time. Once again, thank you all for the wonderful work you did at this year's fair and here's pledging an even better fair for next year.

Happy New Year and Marvelous Mushrooming to you.

PHALLOIDES, ANYONE?

Bill Freedman
Chairman, MSSF Toxicology Committee

Stimulated by the exuberant explosion of deadly *Amanita phalloides*, ("Death Caps"), a number of our members have inquired on our Yahoo web site about why people gather and eat this fungus. As part of the MSSF Toxicology Committee function, we have been trying to record these events along with as much information as we are allowed in each case. Since 1998, it has grown more and more difficult to collect data. One doctor on our committee is on the staff at the University of California, San Francisco Hospital and has been unable to wrench any information from them about cases admitted to their liver ward. Perhaps it is the fear of being sued that keeps them from contributing to the enhancement of our knowledge about mushroom poisoning. At any rate, recent information is now very sketchy, but the same principles seem to appear in recent cases as they did in the middle 1990's as follows:

1. MISIDENTIFICATION:

a. Migrants or visitors from countries where traditional wild mushroom collecting is practiced come to the USA and erroneously identify our poisonous varieties as those in their parent countries. From Asia we have seen paintings and photos of edible *Amanitas* very similar to phalloides. My wife encountered a Hmong vendor at the SF Farmer's Market hawking *Volvariella speciosa*, an edible mushroom very much like phalloides, but also very much unlike it (pink spores). She held one up and pointing to the stem, said "Look. No veil. No veil". This might mean that she was aware that the poisonous ones possess veils. (But not always)

b. Selecting a mushroom using only one characteristic: Traditional Italian collectors have sometimes gathered phalloides rather than coccoli (*Am. lanei*, was calyprata) on the basis of the cap having a white patch on top. Phil Carpenter from Santa Cruz tells the story of an outing where he was cleaning the lanei for supper and noted one stem was solid rather than hollow, as *Am. lanei* should be. When he looked at the cap, it was similar to other lanei specimens but not the same. Had he been drunk and ignored his observation, the group might have suffered the consequences. Always examine each and every mushroom you collect when you clean it. And check out all the differential characteristics the proper fungus should present.

2. HUNGER: Farm laborers, especially from Central America and Mexico, have been reported to collect fungi at random to supplement their meager diets. These people have been at special risk since they do not have or know how to obtain medical assistance. They frequently are brought to medical facilities too late to help

3. TEEN AGE GULLIBILITY: Several sets of four young men from Davenport have been hospitalized in San Francisco after having eaten raw phalloides on the advice of some older person who promised them a heavenly trip as a

result. They nearly did get that trip. Fortunately, they were returned home to recover, and the trip only reached San Francisco.

4. POOR JUDGMENT: A number of collectors have died after collecting and preparing phalloides when intoxicated. Very simply, they were too drunk to use caution when preparing their harvest. In another case, the victim was a heavy drug abuser.

5. NOVELTY: Experienced collectors have ingested phalloides because they had never seen them in their area before. This has been and will be a continuing risk in the future as *Am. phalloides* extends its growth boundaries. Ann Pringle, a post-doc from UC Berkeley has just reported that only one DNA pattern has been found for all specimens sent from Europe, the USA and China. Plants such as specimen trees transferred from Europe to other continents have brought the mycelia of *Am. phalloides* with them as mycorrhizal symbionts. On the East coast, they have spread from New Jersey to North Carolina, Western Ohio, and recently, New Hampshire. On the west coast, I believe, from the U.C. Berkeley campus (1935) to Los Angeles, Green Valley, (the western foothills of the Sierra Nevada mountains), and to Vancouver and Victoria Island in Canada.

It may be safely predicted that in time this organism will migrate across the entire USA. As it does, mushroom collectors will meet it for the first time and may be enticed to take it to the table. In 1996 an experienced lady in Marin County went into her plum orchard and found many plump, solid clean-looking fungi she had never seen before. She knew that phalloides were commonly associated with oak trees. She ate a pound of them! Delicious, but by the time she arrived at the U.C.S.F. hospital, she was comatose, had failing kidney function, very high liver enzyme levels and required an immediate liver transplant. Her heart began to beat erratically, requiring the implantation of defibrillators. Assisted respiratory ventilation was supplied for failing lungs and she was placed on renal dialysis. A week later she returned home. Give an award to the intensive liver surgery team. I saw her last year and she looked just fine. This sort of event is possible wherever and whenever phalloides migrates to a new location.

6. FIELD GUIDES: It is true that phalloides can have no pigment at all. Many amanitas have an albino phase. You are at risk eating any "all white" mushroom. They are our deadliest forms, especially out of our area. Rain and weathering can turn caps from green to grey, very yellow or brown. Field guides vary. We have had a local court action based on an experienced couple who had reassured themselves these were safe after referring to a brown colored cap in a non-Arora book. We show a popular educational poster describing all of mushroom toxicity on which the first photo is that of "*Am. phalloides*". It also states that the first signs of poisoning usually show up in 3 hours! Both are incorrect. (It is usually 6-10 hours). The fungus shown has a long, thin stem and a flat brown cap. The author of the poster lived in Idaho. There are no phalloides there. If ever you publish anything be sure to get some experienced person to edit it. Don't trust field guide photos.

7. ANIMALS: Young cats and dogs love to experiment with very smelly fungi, sometimes very old and rotten. Lepiotas this year have killed several dogs in Washington. *Hebeloma crustuliniforma*, (Poison Pie), killed a dog here a few years ago. Owners keep busy removing them from lawns and play areas.

8. MEDIA: Unless there is a death or a well-known person is involved, the media has been unconcerned when we have alerted them to the presence of a massive outcropping of this mushroom prior to any poisonings. We have offered the NAMA warning poster to all the media we have contacted, as well as to private, local, county and state parks. It is a relief that the Easy Bay Contra-Costa Open Space District has finally agreed to protect its visitors. This year they reproduced 50 of them for display.

9. INTERVIEWS: All the exposed individuals we have been able to interview claimed that they were able to identify phalloides. Only 1% admitted that they had seen media reports about poisoning that year.

There may be other general causes for such experiences with phalloides. The examples listed above represent most of those brought to our attention in the Bay Area. If any reader knows of substantiated cases of other causes for ingestion, please share them with the Toxicology Committee, care of Bill Freedman at 650-344-7774, 40 Terrier Place, Hillsborough CA, or <loufreed@aol.com>.

2003 Scholarship Update Continued from page 2

I am monographing the California species of *Psilocybe* and related genera, and I also will be carrying out a phylogenetic analysis of molecular sequences obtained from these species. I'm looking at both the bluing and non-bluing species of *Psilocybe*, which recent molecular studies indicate are probably separate genera. I'm also looking at several genera closely allied to these groups. The alpine genera *Kuehneromyces* and *Phaeogalera* show a close affinity to the non-bluing *Psilocybe*. *Melanotus* clearly is a non-bluing *Psilocybe*, differing from other *Psilocybe* only in its lateral growth habit. The secotioid species *Weraroa cucullata* and *Galeropsis polytrichoides* are of uncertain affiliation, but have features which suggest affinity to *Psilocybe* and/or *Phaeogalera*. Recent molecular analysis has also suggested that the burn-loving genus *Pachylepyrium* may be a sister group to the bluing *Psilocybe*.

I look forward to presenting my findings to the MSSF, SOMA, and FFSC once I have completed my research. I also plan on publishing a fully illustrated monograph of *Psilocybe* and allies as part of the Agaricales of California series from Mad River Press. I'm interested in *Stropharia* and allies as well, and plan to contribute to the upcoming *Stropharia* monograph in this series.

If you would like more information about my research, please contact me at gwerner@sfsu.edu.

Cultivation Corner

Ken Litchfield



So it's that time of the year when you should be out in the oaks looking for Chanterelles, *Cantharellus cibarius* (soon to be *californicus*), and Candy Caps, *Lactarius rubidus*, often growing in association with each other. Sometimes you will notice one and can use the opportunity to seek out the other in the same area of likely habitat. Though not mycorrhizal like the other two, you will often find Blewits, or *Clitocybe (Lepista) nuda*, growing in the same oak leaf mulch with them as a saprobic feeder on the dead leaves. When young it is quite purple or bluish violet, hence the archaic name of "blue hat." It is best collected and eaten as young, tender, and blue hatted but will age to tan or brown.

There are many opinions about the delectability of Blewits among the edible mushrooms that you may hear in the society. Some say that various patches are just as various in their flavor, and reputedly tasting eucalypty under Eucalyptus trees. I've never tasted this in any mushroom on Eucalyptus, and it wouldn't make much sense since fungi are known to break down oils by mycoremediation and be perfectly edible fruiting hence. Regardless, keep in mind that this is one of the beautiful treasures of the forest that is free for the collecting and eating and easy to grow in your garden or another spot in the forest where it isn't yet found. One of its interesting features is that it has a soft fine mycelial mass with a pastel violet color so it is one of the few mushrooms that can be somewhat easy to identify by the appearance of the mycelium without fruiting. Another interesting characteristic is that if you cut off the cap of a growing Blewit, the younger the better, it can often regrow another rather malignant looking, but just as tasty, head that you can come back and harvest later.

Another is that, like the garden giant, *Stropharia rugoso-annulata*, it can be pulled up by its "roots," the stipe cut in the middle, and the top put in the "clean and eat" bag. The bases can be put into another bag with other bases and some hyphaed oak leaves from around the bases. These bases can be treated like plant bulbs or easily rooted cuttings. Add them to fresh, moistened oak leaves or wood chips in your garden or local park, or elsewhere in your forest oak patches to encourage the propagation of this mushroom. If you have found a particularly tasty or colorful patch, then use that to make your propagations from. They make beautiful "flower" mushrooms and you can eat them.

Blewits will keep their rich color when cooked and can be sauteed in butter or olive oil to freeze for later use because you often find too many to use at one meal. Want to try specific recipes for Blewits such as Jellied Blewit Soup, Blewits and

Peas, Chicken with Blewits and Apple Cider, Fillet of Sole with Blewit Duxelles, and even a vegetarian Blewits with Tofu (um)? Go to Louise Freedman's "Wild About Mushrooms – The Cookbook of the Mycological Society of San Francisco" on the www.mycoweb.com home page. Louise has many other recipes for other mushrooms that you may want to try or you can substitute your Blewits in those recipes.

Forager's Report

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are late this year up north but, again, "by the time you read this," we might have some here.

A final culinary note from Charles McIlvaine: "On a tramp through the fields and forests, carry with you a small jar of butter, creamed with salt and pepper. On finding any edible mushroom. . . , collect a few dry sticks and fire them. Split a green stick (alder or willow) at one end. Put the mushroom in the cleft, hold it over the fire until tender, season with the butter. Eat from the stick."

That's all for now, folks.

Calendar

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Tuesday, January 18: Photo slide program on NAMA's "Introduction to Mushrooms" to be shown at 6:45 pm before the General Meeting in the Randall Museum auditorium. Primarily for beginners but all are welcome. Slides on most common edible and poisonous mushrooms as well as best cultivated mushrooms will be shown.

Saturday, January 22: Lands End Walk, Lincoln Park, San Francisco. Meet at 10:00 am by the water fountain in the parking lot in front of the Palace of the Legion of Honor. We will circle the whole Park, so the walk is moderately strenuous. Bring basket, wax paper and bags, a knife, and snacks. Leader Peter Werner (415-289-0168, pgwerner@sfsu.edu).

Sunday, Jan 23: Oakland Mushroom Walk. Joaquin Miller Park, Sequoia Arena, off Skyline Blvd., 10:00 am, limited to 20. Contact leaders Debbie Viess and David Rust at 510.430.9353 to reserve your space

Saturday January, 29 Salt Point Foray. Meet at the Woodside parking lot at 10:00am there will be a \$4.00 parking fee. We will go looking for Yellow Foot Chanterelles, Black Trumpets, Hedgehogs, and others. Some of us will be spending the night at the park. Those who stay over will be sharing a potluck meal in the evening. Contact: Mark Lockaby at: 510-559-4606 or Marklockaby@sbcglobal.net

Friday-Sunday, Feb.4-6, 2005. All California Club Foray, at Albion Field Station in Mendocino Co. Registration is closed.

This will be your last issue of the Mycena News if you have not renewed your membership for 2005 or beyond:

Unless you renew your membership for 2005, you will no longer receive the *Mycena News* or have access to the "members only" section of the MSSF website. You will miss out on forays and other fun events. So, please renew today if you have not already done so.

E-members: Remember, you must renew your membership for 2005 AND have your current email address in the MSSF membership database if you are to receive notice of the password change.

Members who are uncertain if they have renewed, or if their correct email address is in the database, should email the membership chair, Polly Shaw, at sfwaterbug@yahoo.com or call 415-665-3293, for information.

You can renew by using the PayPal option on the MSSF website, or by filling out the form on this page and mailing it, accompanied by credit card information or by a check made out to "MSSF Membership," to MSSF Membership, c/o The Randall Museum, 199 Museum Way, San Francisco, CA 94114.

Multiple year membership rates approved by MSSF Council for renewals beginning Jan. 1, 2005:

	1-yr	2-yr	3-yr	5-yr	20 x 1-yr Lifetime
Regular	\$25	\$50	\$71.25	112.50	500.00
Senior	\$20	\$40	\$57.00	90.00	400.00
Student	\$20	\$40	\$57.00	90.00	n/a
Electronic	\$15	\$30	\$42.75	67.50	300.00

Membership rates are:

Regular members receive the yearly *Roster* of members and the *Mycena News* by mail.

Senior members must be over 65 and enjoy all the privileges of regular membership.

Student membership is for full-time students who receive both the membership *Roster* and the *Mycena News* by mail.

Electronic members must download the yearly *Roster* of members and the *Mycena News* for themselves from the MSSF website.

To those who have already renewed for 2005: Thank you!

Happy New Year and Successful Foraging!

MYCOLOGICAL SOCIETY OF SAN FRANCISCO - Membership and Membership Renewal Application

New Members please fill out as much information as you can. Members who are renewing need to fill out only the blanks for which information has changed within the last year. Please check the current Roster to see if any of your address, phone, and email need updating!

Name 1: _____
 Name 2: _____
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New Membership? _____ Renewal? _____

Membership type: _____ Adult/Family (\$25) _____ Senior/Students (\$20) _____ Electronic (\$15)

If sending a check, please make it out to "MSSF membership" and mail it, with this form to: MSSF Membership, c/o The Randall Junior Museum, 199 Museum Way, San Francisco, CA 94114

If paying by Credit Card, please provide the following information:

Circle Type of Credit Card: MasterCard, Visa, Discover, or American Express
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MSSF Calendar, January, 2005

Friday-Sunday, December 31-January 2: The Wild About Mushrooms Company "Risqué Foray". Frogwood Retreat Center near Booneville in Mendocino County. Mushroom hunting, dining, New Year's revelry. Food and lodging provided. Contact Charmoon Richardson (707-887-1888 or charmoon@sonic.net) for details and/or reservations.

Saturday, January 8, Tomales Bay State Park Foray. Meet at 10:00 am at Shell Beach parking lot in Tomales Bay State Park. To get there, exit onto Camino del Mar north of Inverness and follow the road to the end. Contact: Peter Werner at 415-289-0168 or pgwerner@sfsu.edu

Monday, January 10, 2005: Culinary Group's Monthly Dinner: 7:00 PM. Meeting and dinner at the Library of the Hall of Flowers in Golden Gate Park in San Francisco. For reservations or information, please contact Phil Brown at (510) 526-4325 or at towltek2000@msn.com Future culinary group dinners (all Mondays): February 7, March 7, April 4, May 2, June 6, 2005.

Saturday, January 15: Muir Woods Foray. MSSF member Robert Mackler will offer a beginners' class and foray. The session will begin at 10am with a slide show/lecture "Mushrooms 101" and then walk the trails of Muir Woods until 2pm. This program is for adults only. Reservations must be made by contacting Muir Woods at 415-388-2596. The program is free but there is an admission fee to the park.

Saturday, January 15-Monday, January 17, 2005: SOMA Camp. Featured speaker Dr. Tom Volk, with special guests Gary Lincoff, Paul Stamets and Jim Trappe. For more information visit www.somamushrooms.org or call 707-887-1888.

Tuesday, January 18: MSSF General Meeting. Randall Museum, doors open at 7:00 pm. Tom Volk will speak about the importance of fungus in urban and suburban environments.

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Note: Deadline for the February 2005 issue of Mycena News is January 20.

Please send your articles, calendar items and other information to:

mycenanews@mssf.org