

Speaker for October
MSSF Meeting
Mushroom
Adaptations

We all know that mushrooms come in a diverse variety of forms, from gilled fungi, to puffballs, stinkhorns, truffles, cup fungi, and a plethora of others. Why is there so much diversity in form in mushrooms? How have mushrooms adapted to different environmental pressures? What sorts of morphological and physiological features have mushroom species acquired that aid them in reproduction, dispersal, nutrient acquisition, predator avoidance? Dr. Dennis Desjardin, MSSF Scientific Advisor, will explore this topic at the October 16 meeting.

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Table of Contents

October Speaker	1
<i>Tricholoma Flavovirens</i> Poisoning	1
The Cultivation Corner	2
MSSF Budget	3
The Forager's Report	4
Vertical Porcini Tasting	5
Chiang Mai Report	6
Cultivation Corner	6
Mushroom Hunting With Library ...	7
Calendar	8

Mycena News

Mycological Society of San Francisco

October, 2001, vol 52:10

12 French Mushroom Eaters Unhorsed by *Tricholoma Flavovirens*

By Bill Freedman

"Man On Horseback" is one of the wild mushrooms enjoyed, as a rule, by many mushroom enthusiasts in the USA. Members of the MSSF should be interested, therefore, in a review of the report included in the Sept. 13, 2001 issue of the New England Journal of Medicine in which 12 diners suffered acute muscle degeneration and three died.

Since 1992, twelve cases of rhabdomyolysis, (literally--"the dissolving of skeletal muscle cells"), were reported in France. Each case was associated with the ingestion of large quantities of *Tricholoma flavovirens* (older name: *Tr. equestre*, known to many by the common name, "Man on Horseback") in several consecutive meals. The fungi were positively identified in each case and no other cause could be implicated. The mushrooms were harvested from beneath pine trees in a sandy habitat in southwestern France. Regis Bedfry, M.D. from the Poison Center and the Department of Infectious Disease at the University Hospital Pellegrin, in Bourdeaux, and 13 other investigators set out to study how these injuries had come about.

The patients were all hospitalized with severe muscle degeneration about one week after eating at least three consecutive meals of these fungi. Fatigue, muscular pain and weakness came on 24 to 72 hours after eating the last meal. In the following three or four days, these symptoms increased, with the appearance of leg stiffness and dark brown urine. 8 patients reported nausea, facial redness and severe sweating. 5 patients had trouble breathing. Physical exams were otherwise not noteworthy. There was no immediate evidence of liver or kidney failure. Drug use was denied. Thigh and diaphragm (explaining the trouble in breathing) muscles particularly showed electromyographic evidence of muscle injury. Microscopic exams showed acute muscle fiber injury, even in the heart muscle as well as late kidney damage. Livers were spared.

Muscular weakness persisted for weeks in those who survived. Those who died had severe shortness of breath, fever, very high levels of creatine kinase, kidney failure and heart abnormalities.

Unable to experiment on humans, Bedry elected to test equivalent amounts of *tricholoma* extracts on mice. Powdered and liquid extracts were given to the animals by gavage, introduced by tube directly into the stomach. 2 sets of experiments were performed: one with three increasing doses of powdered *Tricholoma* mushroom in suspension, and one comparing the effects of *Tricholoma* with *Pleurotus ostreatus* (commercial oyster mushrooms). Control studies were conducted using plain water and two of the chemicals used in the extraction process. *Tricholoma* was given as a cold aqueous extract, as boiled aqueous extract, a chloroform-methanol extract and a chloroform-methanol lipid-free extract. Similar tests were made using *ostreatus*.

In the first experiment, 24 or 48 hours after giving the test material, the animals were sacrificed and studied. Enzymes known to be elevated in human cases were measured, and tissue specimens sampled. In the second experiment, comparing *Tricholoma* with *Pleurotus*, 5 groups of 5 mice were used. The material was given for three days and the study was concluded after 96 hours.

The major chemical hallmark in humans is a rise in serum creatine kinase. In the first mouse experiment, three increasing doses of extract produced significant increasing elevations of this enzyme. In the second experiment, *Tricholoma* extracts in all the solutions

Continued on page 6

Culinary Corner

By *Al Carvajal*

The first culinary meeting was at the Slavonic Cultural Center (SMBS) on Tuesday September 4th. I was really impressed with the facilities. The place has a beautiful, professional kitchen: the two Wolf ranges, four large gas ovens, gas grill and gas griddle are complemented by three sinks, a professional dish washing station, and miles of counter space. Add to that the two large walk-in freezers, microwave oven, large coffee makers, icemaker and you have Heaven for an amateur cook. There are only six parking spaces that will be reserved for those cooking the main dinner. Parking around the neighborhood is not difficult. There is ample parking around Balboa High School, just a short block away.

The attendance to the potluck dinner was sparse but we managed to put together a venerable feast for the palate. We set the tables in the ballroom, a place that could easily accommodate a couple of hundred people but it was odd having just 20 or so people eating in the middle of such a huge space. You could actually get out of your seat without bumping the person behind! The place also has a bar that is bigger than the library at the Hall of Flowers that we used last year. The potluck's theme was an "Ode to the Common Mushroom". The *Agaricus Bisporus* is a delightful mushroom that doesn't receive the praise it deserves. We take it for granted because it is always available. But it has a firm texture, an exquisite aroma and a very characteristic flavor and it is definitely in the list of "good and choice" varieties. Extremely versatile, it can be used in a multitude of recipes as was demonstrated amply in the potluck menu. It is the mushroom I refer to in the following paragraphs.

We started the evening with some baked mushrooms stuffed with cheese and tomatoes by David Bell, pickled mushrooms by someone whose name escapes me, and shiitaki (*Lentinus edodes*) sushi by Tom Sasaki. We continued with David Campbell's magnificent green, yellow and red Heirloom tomatoes, yellow wax beans and sweet onion salad topped with porcini (*Boletus edulis*) chips and toasted black chanterelles (*Craterellus cornucopioides*) and sprinkled with virgin olive oil. It was divine.

After that, we really started eating! Our choices included: a delightful lamb moussaka with mushrooms (Julie Swazo); baked carrots, baked chicken & black beans (Fred Kron); sausage lasagna with shiitaki (*Lentinus edodes*) and Thai basil (David Bell); salmon wrapped in aluminum and oven baked (Dave Suurballe); gnocchi with basil pesto and parmesan cheese (Lucia Paulazzo); a mushroom casserole with eggplant and bell peppers (Honorio Sarmiento); rice with mushrooms (Shari Fazio); mashed potatoes with mushrooms (Ken Litchfield). Monique Carment brought a curried vegetarian couscous with mushrooms, pine nuts and golden raisins (prepared according to Louise's recipe on Page 38 of Wild about Mushrooms) that was a delight. The diving team of Carol Reed and Curt Haney showed up with an incredible "Abalone Garden Casserole" made with ground abalone, button mushrooms, zucchini, cheese, garlic, onion and spices. Carol and Curt actually dove for the abalone during the prior weekend and I believe that Carol grew the zucchinis. To top all that, we finished with Sherry Carvajal's sinful (and artery clogging) candy cap (*Lactarius fragilis*) cheesecake served with a light blueberry sauce that in my biased opinion is the best cheesecake ever. We ate like royalty and we felt like it too!

Our next meeting will be on the 2nd of October. We will celebrate Columbus Day and all edible things Italian. Lucia Paulazzo, Dave Suurballe and myself intend to make the best cioppino you've ever tasted. Come and join us.

Lepiota Workshop

Can you tell the shaggy parasol, *Macrolepiota rachodes*, from its toxic look-alike *Chlorophyllum molybdites*, which was fruiting in Berkeley this summer? There are more *Lepiota* species than you may have realized - more than 20 of them were found in one small area before the Fungus Fair last year! Some species (though not *Chlorophyllum molybdites*) contain deadly amatoxins - do you know how to recognize them? If these beautiful pink and brown, more or less scaly, mushrooms intrigue you, then come to the *Lepiota* workshop! We can't tell you - quickly, at any rate - how to recognize all the ones you may encounter, but in one evening you will get an overview of the genera in this group, a slide show of beautiful species from the Bay Area and beyond, an account of which are the important characters for identification, and information on how to recognize the toxic species.

Else C. Vellinga has specialized in this group of mushrooms and has published extensively on them.

Thursday, November 15, 7.30-9.30 pm
Randall Museum, San Francisco
Instructor Else C. Vellinga

Registration is not necessary; just mark your calendar now and turn up on 15 November for this free MSSF event!

Microscopic Features of the Gilled Fungi

Date: Nov. 18, 2001

Time: 9:30 am - 3 pm

Location: Petaluma, CA

Cost: \$40

EVERY visible feature has a microscopic reason! This workshop will focus on the microscopic characters used to describe the gilled fungi. Learn about the use and care of a research microscope and what features to look for when buying your own. Learn how to make slides and identify the microcharacters used in fungal taxonomy.

All materials will be provided, including handouts, lab consumables, a booklet of terminology, hints, drawings and a listing of mushroom genera. Also a microscope! Observe first hand what amyloid spores look like.

Learning will be assisted by a video camera connecting a microscope to a large-screen TV to display the microscopic characters to the whole class.

To register or ask questions contact:

Darvin DeShazer
406 Pleasant Hill Rd.
Sebastopol, CA 95472
(707) 829-0596
muscaria@pacbell.net

FUNGUS FAIR ANNOUNCEMENT

Planning for the Fungus Fair is moving along. As most of you know, the fair this year will be at the Oakland Museum on December 8 and 9. This is a great opportunity for the society to reach a bigger audience with information about fungi. In addition, the opportunity brings with it a responsibility to stage the best fair we've ever had. That means we need help from as many members as possible, not only volunteering during the fair, but also helping in the weeks ahead with planning and organizing the exhibits.

If you can help at all, please stop right now and send an e-mail to fungusfair@mssf.org. We'll get back to you right away to discuss how you might help. If you prefer to use a telephone instead of e-mail, please call one of the following:

Lorrie Gallagher, Volunteer coordinator (415) 4671868

Tom Chester, Co-chair (415) 665-7520

Paul Koski, Co-chair (415) 564-6518

If you volunteer to help with the planning and work before the fair, we promise that you will not get sucked into a lot of long meetings. We're planning on having just one meeting a month, at the Oakland Museum in the room where we'll have the exhibits.

Society Officers

President: David Rust.....(510) 430-9353
 Vice Pres: Mark Lockaby(510) 412-9964
 Secretary: Jeanne Campbell.....(415) 457-7662
 Treasurer: Sherry Carvajal.....(415) 695-0466

Select Committees

Forays: Tom Sasaki(415) 776-0791
 Book Sales: Norm Andresen(510) 278-8998
 Membership: David Bartolotta.....(415) 621-3166

Membership and Subscription Information

To Join the MSSF and receive this newsletter, send a \$25 check, payable to MSSF (\$20 for seniors 65 and over and full time students), to MSSF Membership, 2750 Market St., Suite 103, San Francisco, CA 94114-1987, Attn: David Bartolotta. Please include contact information: home and/or work phone numbers and email address. New and renewal memberships will be current through December of 2002. To change your mailing address, please notify David. MSSF members may also join or renew membership in the North American Mycological Association at a reduced rate by including with their MSSF check a separate check for \$32 payable to NAMA. Send it to David at the same address. For further information, email David at david@bartolotta.com or call at (415) 621-3166.

Directions to the Randall Museum

From the East: West on Market St.; at Castro, veer to the right up 17th to Roosevelt Way; turn right and follow Roosevelt (keep bearing right) about 5 blocks to Museum Way and the Randall (signs are posted along the way).

From the North: South on Divisadero to 14th; right on 14th to Roosevelt (1st possible left) and follow Roosevelt about three blocks to Museum Way.

From the West: Portola, continuing down as it becomes Market; look for sign pointing to Randall on left (Clayton St.) and follow signs to Randall.

MSSF Budget

INCOME

Events	2,000
Forays	2,000
Membership Dues	14,000
Sales	3,000
Subtotal	21,000

OPERATING EXPENSES

Committees	(1,475)
General Expenses	(15,925)
General Meetings	(2,600)
Officers	(500)
Scholarships	(500)
Subtotal	(21,000)

TOTALS 0

SOMA Camp Coming Up!

Just a reminder that the 5th annual SOMA Camp, sponsored by the Sonoma County Mycological Association, is scheduled to occur on next Martin Luther King weekend, January 19 - 21, 2002. The Camp, which is a benefit for SOMA, is full of mushroom forays, classes, workshops, slide shows, speakers, specimen tables, and of course, great wild

mushroom cuisine and camaraderie. At this time, both site and price are still to be determined (cost probably around \$150), but if you wish to reserve a space, you may contact Linda Morris, the Camp Registrar, at 707-773-1011. We should have definite information by the time of next month's newsletter. Thank you for your patience.

The Forager's Report

By Patrick Hamilton

I have not heard much (close to zilch) from our local field reporters this past month so, looking for something to write and maybe inform about, I took a look in the "Mycena News" and "SOMA News" that I have saved from past years. Not much was going on in September to October then too; but we all suspected that.

This month's lack of bounty is often just like July's or August's hereabouts (the greater Bay Area), except for right around the bay itself, with its fog-drip producing sometimes wonderful fruitings throughout the summer.

Thereabouts stuff has been going on. Joe Dougherty last year told us about eating fresh *B. edulis* in Vienna in September and this year he was finding some in Scotland. He also found and cooked those amazingly flavorful little apricot-scented chanterelles (*C. cibarius*) in the land of Scotch and peat-colored water. The meal of mushrooms was accompanied by grouse (still with shotgun pellets, purchased at a store!) and venison.

Connie Green came back from a trip checking stuff out way down south to Tlaxcala state with tales of hongos Mexicanos. Bill and Carol Hellums and Kathy Faircloth were there too, all foraging forth with locals in the mountains forested with *Pinus montezumae* (Mexican pines).

Connie reports of finding *B. pinophilus*, *Laccaria bicolor*--a delicious treat, morels of unknown species, *A. muscaria*, *A. franchetti*--eaten and loved there by the locals!, *A. rubescens*--also enjoyed in dishes, *Russula brevipes*--eaten there with gusto, *R. xerampelina*--not eaten there!, *Gomphus floccosus*--they eat this without upset, *Clitocybe gibba*--enjoyed there too; and, according to Connie, their species appear to be the same as ours.

Charmoon Richardson told me of seeing many things, some mushroomy, through the dust at Burning Man in the Black Rock desert. There, more than a few folks like to decorate their vehicles (golf carts, trucks, jalopies) with fungal sculptures of unidentifiable species. Then again, lots of the people attending seemed to be of likewise, unknown, unidentifiable, species.

Events like that remind me of my hippie days, e.g. that epochal concert I attended in 1970 on the Isle of Wight where there were lots of mushrooms.

A friend called on September 9 to report from the 6000' foot elevation of our own central Sierra. She found four gorgeous 6"-7" across white-bottomed King Boletes while hiking around a lake.

What lake? You will have to get that info from her. Or from me. Just send a check or money order for \$50.00. . . .

I suspect that some of you do not take advantage of the magnificent High Sierra at this time of year. After Labor Day weekend there must be some rule up there that disallows most folks from using the early fall for camping, hiking, fishing--and mushroom hunting. Since we discovered for ourselves where those great tasting porcini may, and do, come up we have gone each year and found virtually empty campgrounds (especially during the week), trails with no fresh human tracks, usually clear skies with warm days and nice and nippy nights. Thunderstorms add to the fun and without them there would, of course, not be any mushrooms.

Several articles about these mid September through early November hunts have been written (see "Mushroom the Journal of Wild Mushrooming") and things of unusual nature therein are documented. (Babushka-wearing women picking their favorites--*S. brevipes* and *S. granulatus*--and me helpfully pointing out where ("Look, over there. . .") the *Suillus* were while standing secure in front of 2 pound boletes).

I had been going to the 5000' elevation habitats for many spring forays but it was not until a friend, years later, spotted some *B. edulis* buttons growing under Lodgepoles (*P. contorta* var. *latifolia* Engelmann) higher up the mountains while on a late summer trip that I found out about fall boletes there. These pines are closely related to our Beach, a.k.a. Sand, Shore and North Coast Scrub pines under which boletes also grow, perhaps more familiarly, along the north coast.

Where the Ponderosas appear to stop, then the cedars too, the Lodgepoles are seen, often tight in groves. They love the meadows and hanging valleys of these high mountains and in these places one should look.

If rain has come enough so will the absolutely delicious mushrooms. They stick right up out of the duff and are easily seen, unlike many of our coastal boletes. They are not sandy and gritty like *B. pinophilus*. In a good year, on a great day, 75 pounds is not unrealizable.

Your Foragers' Report guy says to check it out. Go have a look-see, find a spot where the conditions so described exist. Try between Yosemite Park via Tioga Pass and Highway 80. That may seem to be a large area--and it is--but that is where they will be. Maybe lots of them.

I suspect by next month we will have had some rain nearby and hopefully more good things to report.

That's all for now, folks!

Calendar

Continued from page 8

December 1, Memorial Park on the Peninsula: Saturday, 10 a.m. Meet Fred Stevens to preview what may be available for the Fungus Fair to be held one week later. Also a good way for people attending the *Agaricus* workshop a few days earlier to see fresh material of the genus. Contact Fred at fstev@dnai.com, 650-994-1374

Tuesday, December 4, MSSF Annual Holiday Dinner: At the Snow Building at the Oakland Zoo, located at 9777 Golf Links Road, Oakland. For information and reservations, please contact Sherry Carvajal at (415) 695-0466.

Fri., December 7: Forays to be scheduled throughout the Bay Area and beyond to collect specimens for the annual Fungus Fair. Details to be announced in next newsletter.

Saturday-Sunday, December 8-9, Fungus Fair 2001: at Oakland Museum

December 10, Deadline for application for MSSF scholarship: Send inquiries and materials to Robert Mackler, 157 Mesa Court, Hercules, CA 94547

Tuesday, January 8, Culinary Group's Monthly Dinner: Soups, salads and homemade breads potluck. At the Slavonic Cultural Center, located at 60 Onondaga Avenue in San Francisco. Reservations are not required. Just bring a dish. For information, please contact Zoe Caldwell at (510) 569-1554.

Martin Luther King weekend, January 19-21, 2002, 5th Annual SOMA Camp: sponsored by the Sonoma County Mycological Association, and featuring mushroom forays, classes, workshops, slide shows, speakers, specimen tables, wild mushroom cuisine and camaraderie. Currently, both site and price are undetermined (cost probably around \$150); for reservations, contact Linda Morris, 707-773-1011

Friday night to Sunday morning, January 25-27, 2002, Beginner's Mushroom Foray: in shared accommodations at Sea Ranch, Sonoma County Coast. Cost is \$175. Email botanist Terry Sullivan for details (tersull@aol.com). As houses have to be rented, early inquiry is encouraged.

The First-Ever (?) Vertical Porcini Tasting

By Charmoon Richardson

Over the years, the question has occasionally arisen as to whether or not the flavor of king boletes (*Boletus edulis*, porcini, cep, etc.) improve with age. Some people say that Italians age their porcini, drawing on supplies of past years while they refill the larders with the current year's harvest. And some say that the mushrooms will change with age, but not if they're stored in glass. Other sources say there is no change. But most of all, nobody seems to know for sure. So it has been in my mind for some time now to do a controlled comparative tasting, and the opportunity recently came at a party that I helped host.

Those of you who are experienced wine drinkers probably know the term "vertical tasting". A vertical tasting is where you taste and compare the same wine, usually from the same winery, for a number of years in a row. For example, zinfandel from Sebastiani Vineyards, from the years 1995 - 2000. Each participant would have 6 glasses to taste from, each glass containing wine from one of those six years. So I thought to apply the same principal to porcini, and have a "vertical bolete tasting". Of course, eating dried mushrooms is not particularly appealing, so the obvious choice was to make a broth or stock, and taste the resulting liquid, which is where 90% of the flavor is anyway.

My procedure was simple. I searched through my mushroom collections (the most labor-intensive part), and located jars of dried Sonoma/Mendocino coast king boletes dating back to 1995. At the party site, I got six saucepans, and placed in each pan one quart of water, one ounce of dried boletes from one of the six years, (cap & stalk flesh only - the tube layers were removed & dried separately), and 1/2 teaspoon of tamari (similar to soy sauce). I of course kept careful track of which year's bolete was in which pan. All pans were then simmered, covered, for 45 minutes (had a six burner stove, fortunately). After they cooled, the bolete flesh was strained out. The strained, cooled broths were then placed in six bowls, each labeled with the corresponding year, in chronological order. Partygoers were then invited to taste the results. A stack of tiny paper cups was provided, and a soup spoon was placed in each bowl. The tasters simply took a cup at the beginning of the line, and put a spoonful of broth into their cup for tasting. Each person used one cup and tasted one bowl after another, rather than each taster having 6 separate cups.

It was immediately apparent, even without tasting, that some changes had occurred. The broths made from the older boletes (1995 & 96) were distinctly darker in color, and they became progressively lighter as they got more recent. The flavors varied as well, with the older ones being quite noticeably stronger and more intense. They were a bit more acrid than the younger ones, which tended to be sweeter and lighter.

Some of the tasters at the party preferred the younger broths, and others preferred the older. The preference rate was roughly split 50-50. Each broth did vary from one to another. I could see where

cooking something with a big flavor, like a spaghetti sauce, using the older style would make a deeper impact. If going for a lighter culinary approach, the younger ones might be preferable. A couple of tasters commented that they liked the broth from 1998 the most.

We also made up five other bolete broths. Three of them were from late spring *B. pinophilus*. They were collected from three different areas of the Sierra. The other two were red-capped butter boletes (*B. regius*), one from the Sierra, the other from the Sonoma coast. Each of the 3 *pinophilus* had a noticeably different flavor (they were not all from the same year), and the butter boletes varied as well. In comparing the red-caps and the kings, the red caps were less sweet and nutty than the kings, and did not have as yummy a flavor.

If you try this sometime, plan to make a porcini risotto afterwards! You will have enough broth and re-hydrated porcini to serve a big party.

Note - If I do this again, I will cut the amounts in half. About 20 people sampled the broths at the party, and there was considerably more than half left over in each bowl.

David Arora's Mendocino Mushroom Forays

Thanksgiving Weekend

November 23-25

David Arora, author of *Mushrooms Demystified*, is once again offering his Thanksgiving weekend mushroom foray at Albion on the Mendocino coast. The foray begins Friday afternoon, November 23, with a mushroom hunt, and runs through noon Sunday. There will be a number of experienced mushroom hunters and talented chefs on hand to contribute their help and expertise to what is always a fun- and fungus-filled weekend. Beginners are welcome. Scheduled activities include mushroom hunts, beginning and intermediate identification workshops on local mushrooms, cooking demonstrations, a potluck fungus feast, and glimpses of Arora's experiences in distant lands. Unscheduled activities include... (well, if we knew what they were then they wouldn't be unscheduled, would they?)

The cost is \$150 per person including lodging (in cabins) and most meals. To register, or for more information, please contact Debbie Viess at (510) 430-9353. Leave a daytime message or phone between 7-9 pm... she has a teenager! Her e-mail address is: amanitarita@yahoo.com. Correspondence or checks (made out to David Arora) should be sent to:

Debbie Viess
328 Marlow Dr.
Oakland, CA 94605

Include an e-mail address if you have one. Early registration is advised!

For the most current Calendar information, call the
MSSF hotline at 415-759-0495 or check the

MSSF web site at:
www.mssf.org

Chiang Mai Report

By Taylor Lockwood

Once again I came to Chiang Mai to look for mushrooms and once again was not disappointed. This time I was invited by Pongsak Rattanawong (some of you may know him from Berkeley) and it was the visitor (me) who got to show the local (him) where my favorite spots were.

Up behind the city are some hills with a beautiful temple (Doi Suthep) that can be seen from the city below. Up behind that are extensive forests and trails frequented by exotic fungi.

So in we went and found several photo quality mushrooms and, after hiking the hills above the town and then getting stopped by rain, we ate at a Vietnamese garden restaurant while listening to frogs croaking, fountains gurgling, and birds laughing like drunken old men.

The next day we went up to Doi Inthanon, the highest mountain in Thailand, where it was too cold and rainy for our flatlander t-shirts but with umbrellas in hands, we braved the winds to find a good set of mushrooms anyway. Pongsak had to go get ready for his work week teaching at Chiang Mai University but I finished out the day back up on Doi Suthep where I found a spectacular little, scaly, bright orange *Amanita* that I think is *A. mira*.

Many of you may remember a fluffy purple one, put in the center of one of my card montages, that I found in Malaysia three years ago. I found two more that afternoon, and yes, I did collect one. That one is still without a definitive label but it shouldn't be long so . . . Stay tuned!

Tricholoma Flavovirens

Continued from page 1

produced abnormal creatine kinase elevations, while there were no reactions in mice treated with *ostreatus* material. All treated mice had shortness of breath, weakness, and occasional diarrhea. 3 mice died.

Similar muscle damage occurs after eating water hemlock or small birds that feed on hemlock. None of the patients in this series had enjoyed such delicacies. The chemical causing this reaction has not as yet been identified. *Tricholomas* contain a number of known metabolic compounds, but their ability to destroy muscles has not been reported nor is it suspected. For those of you who wonder about the yellow pigment in this fungus, it is 7.7' bi-physcion, which is poorly soluble in water and unlikely to be toxic.

So be careful out there. Be aware. Avoid eating large amounts of this fungus or eating it for several days in a row. I personally no longer eat *Tr. flavovirens* although I enjoy its aesthetic appearance. The two times I have tried small amounts at general meetings of our society, I have had brief diarrhea upon returning home two hours later. We frequently find that American forms of mushrooms similar to those found in Europe or elsewhere are not the identical species, although we have been using the same names to identify them. Perhaps this is another example of an intercontinental look-alike.

Cultivation Corner

By Ken Litchfield, © 2001

Well it's finally happening folks. After hearing about it for so, so many years the outdoor remodeling of the Randall Museum grounds is finally budgeted, drawn, put to bid, bidder approved, and currently scheduled to begin roundabout the first week of November 2001 or thereabouts. Yep, that could mean that maybe you just might possibly have a chance of perhaps encountering some likely destruction or construction somewhere in the vicinity of these parts.

That also means that, for real, we have been moving the MSSF Mushroom Garden in the Randall courtyard to a nice new San Francisco location. We have wonderful soil, water features, a shady woodland grotto area, a sunny section for terraced organic gardening, a long fence for vines and leaning plugged logs, and a gathering area for outdoor classes. We have plenty of room and resources to experiment with things like: the fastest way to convert eucalyptus logs or chips to sulfur shelf and then to soil; the best herbs and edibles for shading, humidifying, and flavoring mushrooms in the sunny ornamental edible section; slow non labor intensive methods for converting terracing logs and stumps to mushrooms and then soil; quick methods for using compost feeders to break down raw compost materials like horse manure, grass clippings, and wood chips; growing corn for huitlacoche; etc. This is all in a community garden setting where we can work and share and teach and learn with other organic gardeners.

I would like to thank our core corps of cultivation folks Enrique Sanchez, Terri Beausejour, Sherry Carvajal, and Norm Andresen for all the work that they have put into getting the foundation of the new MSSF Mushroom Garden up and running during several very productive and fun workdays. We have lots more work to do. We will have regular workdays and potlucks and cultivation classes and other get-togethers and would like to invite interested members to participate. These events will be free to MSSF members. If you are interested in participating please contact me with your name, address, phone and/or email, your interest in workdays or classes, some kind of availability schedule, and what kind of vehicular transport, especially truck types for hauling, you might have and we'll be recruiting you.

Besides that, remember that it isn't too early to be planning for your participation in the Fungus Fair at the new location in the Oakland Museum. We will have an exhibit of Mushrooms in the Garden and a booth where we expect to sell culture starts of mushrooms that you can grow in your own garden. We will need people to help with the preliminary stuff and during the fair. Contact me if you would like to participate with us.

Next month I expect to be announcing another new and exciting development with the Cultivation Committee. In the meantime, if you would like to have any of the hummingbird Salvias or some of the other plants in the courtyard that are left from transplanting before the construction starts be sure to contact me.

Ken Litchfield
415-863-7618
klitchfield@randall.mus.ca.us

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 is 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 membership meeting of the MSSF. Send inquiries/materials to Robert Mackler at 157 Mesa Ct. Hercules CA 94547. Deadline for applications is December 10, 2001.

Mushroom Hunting With The Help of the Library - Part 1

By John Lennie, Librarian

We start our survey of the Society's library with guidebooks, in particular with the guidebooks that are most useful in northern California or profess to cover North America even-handedly. Loosely speaking, a guidebook is what you turn to with that most basic of questions: what is this mushroom? Guidebooks use only macroscopic features for identification, i.e. features you can see with the naked eye, unlike more technical works, which assume you, are working with a microscope. The technical books are not considered in this survey. A representative guidebook emphasizes the common mushrooms you are likely to find and has lots of pictures. Many guidebooks are hardly portable but true field guides are designed to be stuffed in your pocket when you set out to foray in the woods.

The library tries to carry a comprehensive set of guidebooks, covering not just California but other regions in North America and elsewhere. At present about 120 books are so classified.

Anyone writing a guidebook has to face three basic questions: what geographic area am I going to cover, how many species am I going to put in and what should they be? The more species, then the more alternatives the user has to eliminate to make an identification. This is a nuisance when you have a common mushroom but may prevent frustration when you don't. Nonetheless, however many species are described, you always need to consider that yours may not be one of them.

There are two ways to begin identifying your mushroom. You can thumb through a guidebook, looking at pictures, or you can use a key. The first method often gets you to the right part of a book quickly, but you still need to read the description and never rely solely on a picture for identification. (Relying solely on a picture has been life-threatening on occasion.) A key is a more systematic way of identification. It consists of a series of either-or questions with each answer leading to another question. Proceeding through a key you are reading more and more about the properties of your mushroom until only one possibility remains. It is a simple idea but you need to acquire some technical vocabulary to understand some of the questions. Furthermore, you are likely to encounter a question you simply can't answer - perhaps a colour response when you apply a chemical you don't have, or the colour of a cap which has been washed clean by rain - and then you need to look at both answers and see where they lead: you can always make a plausible guess and continue, remembering where to return if later you reach a dead end. A good key will anticipate common problems and put in a corrective question to set you back on the right path.

Finally we get to the books! We are lucky to live in northern California, not only for its scenery, the weather and the cosmopolitan culture of the Bay Area, but because "Mushrooms Demystified" [385, 476, 515] was written by a resident of Santa Cruz. (The numbers in brackets are identification numbers to locate the book in the library.) Although David Arora claims that his book is continental in scope it undeniably has a local bias. It is the essential place to begin to build up your knowledge, with extensive coverage (3500 or so species get at least a cursory mention) and good keys that are self-correcting in the way I described. Furthermore David has a unique skill to make a guidebook fun to read. This book is not to be carried into the field lightly and David has another book, "All that the Rain Promises and More" [539], written in the same quirky style, much shorter, more portable, but without keys and a focus on mushroom people as well as on fungi. Having the picture and the description on the same page in this book is more convenient than gathering the colour pictures in one place as in the first. Since I like David's writing I will mention an article he wrote about the lives of commercial mushroom pickers, even though it isn't a guidebook; "The Way of the Wild Mushroom" [921].

David Biek is unfortunate that his little-known "Mushrooms of Northern California" [26] came out in the shadow of "Mushrooms Demystified". Although smaller, his book also has much to commend it: good coverage, keys and a wealth of detail wholly unleavened with wit (which, unfortunately, is normal.) Although his line drawings may actually be more informative, his book

lacks the glamour of colour pictures. I have to confess that I haven't used it.

The most local book of all is "Mushrooms of San Francisco" [266, 477] by Roger Bland. Roger takes you on a ramble at Lands End, describing the mushrooms you are likely to find. Guided walks there on Sunday mornings have a long tradition in the Society. Early in the year it is not uncommon to find more than 30 species and when you do not have a human leader Roger makes a good companion. The pamphlet "Magic World of Mushrooms" [108, 109, 466] by Ron Russo focuses on the East Bay.

Broadening the scope a little, we find Robert and Dorothy Orr's "Mushrooms and Other Common Fungi of the San Francisco Bay Region" [48, 431, 468] whose long title belies its small size. Use it to get acquainted with 80 or so common fungi but, given the much larger number of species out there, you are likely to find its keys frustrating. The Orrs have also written "Mushrooms of Western North America" [49, 50, 324] to fit in larger pockets. If you think you have identified a mushroom from one of the pictures, it may be useful practice to key it out since the keys are short and simple.

Several books have a national or North American scope - though North American is not likely to be more than a nod in the direction of Canada. "Mushrooms of North America" [44, 45, 386] by Orson Miller describes 422 species, while "Mushroom Hunters Field Guide" [53, 458] by Alexander Smith describes 188. More portable and more recent is the "Audubon Society Field Guide to North American Mushrooms" [43, 519] by Garry Lincoff with 756 species. Garry has a lot of information and an attractive layout. However many people were furious that he invented idiosyncratic English names for all his mushrooms and put them on his photos, without the Latin binomials that everybody else uses. Vera and Kent McKnight's "Peterson's Field Guide to Mushrooms" [423] has similar scope to Miller's book but the format is easier on your pocket. Paintings and drawings can draw attention to detail better than photographs and, although they are frequently found in European books, this is the only American one using them that comes to mind. Vera McKnight is the artist. The text is detailed but there are no keys. Roger Phillips' large-format "Mushrooms of North America" [325, 522] (also known as the LBM book after Little Brown, its publishers) almost qualifies for the coffee-table. His photos, which are among the best and most useful there are, use bare backgrounds with several specimens of each species carefully arranged to show distinctive features, *Lactarius* bleeding, stems and caps sectioned, etc. Roger is English but this is a genuinely American book with about 1200 species.

Reserved for final mention are some earlier books of continental scope from a period when black-and-white illustrations were the norm: Christensen's "Common Fleishy Fungi" [25, 27, 28], Krieger's "Common Mushrooms of the United States" [900], Thomas' "Field Book of Common Mushrooms" [60, 377] and McIlvaine's "One Thousand American Fungi" [316, 317, 459]. The last, of course, is an oft-reprinted classic. Some older books have a pleasing eloquence that is rare today.

Especially in these old books you may encounter a name that looks only half familiar. You need to be aware that name changes do occur with a precise, if sometimes obscure, logic. Behind any name is a mushroom and provided the experts still consider it distinct from other species, the second part of the name rarely changes (except at the end, for reasons of Latin or Greek grammar.) However the first, generic, part of the name is much less stable as family relationships are frequently revised in the light of new knowledge. Be prepared to re-learn names even in the newer books.

Also to be born in mind is that a publisher, to appeal to more buyers, will sometimes disguise the source of his book. I am particularly thinking of European books that are translated into English for the English market and then distributed in the U.S., often with minimal change. In such cases I have attempted to make the background explicit in the catalogue. To take an example, I have added Swedish original via U.K., to Else and H. Hvass' "Mushrooms and Toadstools in Colour." Look carefully when you consider buying a book with such a generic title!

I have barely scratched the surface of what I am considering as guidebooks. The catalogue lists many more and all may be borrowed from the library at the regular meetings. Please contact me at librarian@mssf.org, or at 510-525-1623, if you have any questions. Next month we will get to the guidebooks that are regional or foreign.

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MSSF CALENDAR, OCTOBER 2001

Tuesday, October 2, Culinary Group's Monthly Dinner: Come and join us for Crab Cioppino at the Slavonic Cultural Center, located at 60 Onondaga Avenue in San Francisco. For information and reservations, please contact Zoe Caldwell at (510) 569-1554.

Saturday and Sunday, October 13-14, Yuba Pass Foray: Meet at 9:00 a.m. Saturday at Chapman Creek Campground on Hwy 49 near Bassetts. Best way: take Hwy 80 to Truckee, take Hwy 89 north, turn west on Hwy 49, follow to campground. Bring car camping gear, usually nice weather but be prepared for possible cold nights. Foray Leader: Norm Andresen, (510) 533-6541

Tuesday, October 16, MSSF General Meeting: Randall Museum, doors open at 7, lecture starts at 8 pm. Speaker is Dr. Dennis Desjardin, MSSF Scientific Advisor, on the topic of mushroom adaptations.

Saturday, October 20, Beginner's Mushroom Ecology Hike: 10:30 am to 5:00 pm. View some early winter fungi and learn about their role in nature. (About 6 miles and 1,000 ft. elevation gain in Marin County). Email botanist Terry Sullivan at terrsull@aol.com after October 10 for final details.

Sunday, October 21, Beginners Mushroom Walk at Lands End: San Francisco. 10:00 a.m. Meet at the parking lot just up the hill from the Cliff House on Point Lobos Ave. at the west end of Geary Blvd. Foray Leader: Mark Lockaby, (510) 412-9964 or pozer900ss@aol.com

Tuesday, November 6 Culinary Group's Monthly Dinner: At the Slavonic Cultural Center, located at 60 Onondaga Avenue in San Francisco. For information and reservations, please contact Zoe Caldwell at (510) 569-1554.

Saturday, November 10, Annual Salt Point Foray: 10:00 a.m. Meet at Woodside Campground. This is a "just show up" event. Participants are responsible for own campsite/lodging. Note that Woodside's campsites are on a "first come, first served" basis. Potluck feast on Saturday night of picked edibles. Foray Leaders: David and Jeanne Campbell, (415) 457-7662.

Thursday, November 15, Lepiota Workshop: 7:30-9:30, Randall Museum.

Else C. Vellinga has specialized in and published extensively on this group of mushrooms. Registration is not necessary, free MSSF event.

Friday thru Sunday, November 16-18, Mendocino Woodlands Foray: Our annual weekend foray in Mendocino County includes meals and cabin starting Friday night. Bring sleeping bag or bedding. Cot is provided. Cost is \$90. For details or reservations, contact Tom Sasaki at (415) 776-0791, 1506 Lyon St, SF, CA 94115.

Saturday and Sunday, November 17-18, Workshop on Edible and Medicinal Mushrooms: Cultures and Techniques by Mo-Mei Chen. A two day "hands on" mushroom workshop will introduce participants to the necessary skills, techniques, and equipment required to develop their own mushroom farm. Location is UC Berkeley with a field trip to Santa Cruz County. Fee: \$225 for members of Jepson Herbarium / \$250 non-members, contact: Staci Markos (510) 643-7008 or smarkos@socrates.berkeley.edu

Sunday, November 18, Microscopic Features of the Gilled Fungi: 9:30 am- 3pm. Workshop given by Darwin DeShazer in Petaluma will focus on the microscopic characters used to describe the gilled fungi, \$40. For registration or questions contact him at 406 Pleasant Hill Rd., Sebastopol, CA 95472, (707) 829-0596, muscaria@pacbell.net

Thanksgiving weekend, November 23-25, David Arora's Mendocino Mushroom Foray: Cost is \$150 per person. To register, contact Debbie Viess at (510) 430-9353 or e-mail Debbie at amanitarita@yahoo.com. See page 5 for details.

Saturday, December 1, Beginner's Mushroom Ecology Hike: 10:30 am to 5:00 pm. View some early winter fungi and learn about their role in nature. (About 6 miles and 1,000 ft. elevation gain in Marin County). Email botanist Terry Sullivan at terrsull@aol.com after November 15 for final details.

Continued on page 4