Mycena News

The Mycological Society of San Francisco December, 2010, vol. 61:09

January 18th MSSF Meeting Speaker

Denis R. Benjamin

Human Uses of Mushrooms - An Ethnomycological Journey

Denis Benjamin will illustrate the various and diverse uses mushrooms play in many cultures around the world, throughout history and at the present time. These include food, medicine, dyes, fire starter, aphrodisiac and spiritual.

Denis R. Benjamin grew up in South Africa, emigrating to the Pacific Northwest in 1970. He practiced pediatric pathology at the children's hospitals in Seattle, Washington and Fort Worth, Texas. He became an amateur mycologist soon after his arrival in the USA. He recently returned to the east slopes of the Cascade Mountains in Washington to continue his passion for mushrooms, the outdoors and natural history. He was a consultant to the regional poison control center, a former member of the Board of Trustees of the Puget Sound Mycological Society and a past Chairman of the Toxicology Committee of the North American Mycological Association. He is frequent speaker at mushrooms clubs and societies. His is author of the landmark book on the health effects of mushrooms (Mushrooms: Poisons and Panaceas) and recently published a collection of mushroom foraging essays (Musings of a Mushroom Hunter: A Natural History of Foraging)

MycoDigest: Advance of the Fungi/Decline of the Animals

Peter G. Werner

Biodiversity loss, and in particular the precipitous decline of several groups of animals, has been a subject that has received a great deal of attention over the last several years. Forty percent of all amphibian species worldwide are in serious decline. Many bat species in the northeastern US and perhaps elsewhere may be extinct within 20 years. Beekeeping and crop pollination is devastated in several parts of the US due to the decline of honeybees.

The role of fungi in these epidemics is also making news. It was established several years ago that a fungal pathogen played a key role in amphibian decline, but more recently, the role of fungal pathogens in the decline of bats and honeybees is being established.

Over the last several years, populations of the domesticated European honey bee (*Apis mellifera*) in North America have been devastated by colony collapse disorder (CCD). This disease manifests itself most visibly in the complete abandonment of hives by the entire population of worker bees, leaving behind the hive's entire honeycomb food supply and an abandoned queen. This has not only had a devastating effect on commercial beekeeping in many regions, but agriculture in crops dependent on honeybees for pollination. It also has a ripple effect through the larger biological community, as honeybees in many cases have displaced native bee species, leaving many wild

Little brown bat, New York; close-up of nose with fungus.
From: Ryan von Linden, NYDEC

plants dependent on them for pollination.

So far, the known major pathogens of *A. mellifera*, such as Varroa mites, do not seem to play a major role in CCD. A recent investigation using proteomics, that is, mass screening of proteins found in the hives and on the bees, reveals the characteristic protein signatures of two infectious agent in all of the sampled colonies affected by CCD. One is *Nosema ceranae*, a pathogen in the microsporidia, a poorly-understood fungal group with an extremely reduced unicellular morphology. *N. ceranae* is already a known pathogen endemic infection among Asian honeybees (*Apis cerana*), but not seriously pathogenic. It is also not typically a serious pathogen in *A. mellifera*, hence unlikely to be the sole cause of CCD. However, the other pathogen that has been detected is a virus, IIV-6, and it is hypothesized that the *N. ceranae* and IIV-6 in combination, perhaps alongside other factors, is what is driving CCD. Further investigation is now taking place to test this hypothesis.

Bat species in the northeastern US have been similarly devastated by a mysterious epidemic,

Continued on page 7

MycoDigest is dedicated to the scientific review of mycological information.

President's Post

Mendocino was the word for November. We had a great foray with gourmet meals and excellent programs, classes and forays. A heartfelt thank you to all our volunteers who worked very hard this year to put the event on and to all of you who were able to attend.

Following the Mendocino trip we had an excellent general meeting with gourmet appetizers to start and a great presentation by Dimitar Bojantchev. Dimitar and I joined the Society at the same time in 2005. In the last 5 years while I've been learning slowly about fungus, he has become a full-fledged amatuer mycologist, moving from studying macromorphology into learning and using the advanced identification techniques mycologists employ. These techniques include microchemistry, microscopy, and even DNA sequencing. Dimitar's presentation touched on all these methods with attention to the applications and limitations of each. I cannot tell you how impressive this is to me as someone who started at the same time; as many of you know I still have only a limited grasp of certain genera at the macro level. The presentation has inspired me to move into some new techniques starting with Dimitar's microscopy course early next year.

As we move into December our thoughts turn the Fungus Fair (when they are not on the chanterelles, boletes, and other goodies we have seen popping up). The Fungus Fair will take place December 4th and 5th. This is our biggest annual event and serves as our fundraiser for the scholarship fund.

As always, I encourage each of you to become a more active participant in MSSF by volunteering. We are counting on your help to make this year's Fungus Fair a great one! Shifts are available for Friday setup, working at the fair Saturday or working and tearing down Sunday. If you are not able to commit that much time then I encourage you to please become part of our poster brigade. Here's how this works: sometime in the next week at your convenience you bring a roll of tape and pick up a few Fair posters from our drop locations in the East Bay and San Francisco. Then you visit 5 – 10 shops, businesses, or public meeting places in your neighborhood and hang the posters after getting permission from each merchant. Be sure to take one extra home for yourself, the posters are beautiful this year. If you'd like to participate in the Poster Brigade or volunteer to work at the fair, please contact Stephanie Wright at fungusfair@bytewright.com .

The other way you can help with the fair and get more myco knowledge in the process is to join one of our collecting forays to gather specimens for display at the fair. There are a number of these in the days leading up to the event, see the calendar in this issue or on the website for details and to sign up.

Thanks again to those of you that were able to attend Mendocino and especially to our volunteers who helped with that event. I hope in my next post I'll be thanking record numbers of MSSF members for volunteering to help with the Fungus Fair.

I wish you all a happy and safe holiday season, with my thanks as always for your ongoing support.

~Lou

president@mssf.org

Culinary Corner

Just back from the MSSF Mendocino Foray, I am trying to get back to city life after that beautiful respite in the damp, fecund recesses of the Mendocino Woodlands camp. Our foraying groups found lots of fungi, including chanterelles and a few boletes which were cooked up and enjoyed both in culinary classes and in our memorable dinners. The tireless and adventurous also cooked up other species not often found on the list of revered edibles late Saturday night and found that they do deserve more respect than they get.

Boletus edulis, sought after for the dinner table, was just beginning to put in an appearance in the woods. This year, though, appears to be the year of the chanterelle. My favorite edible, *Amanita calyptoderma* (back to its old name), was not found in abundance, unfortunately, but it may yet show up along the coast and in the East Bay hills soon enough. And there are more delectable species yet to come this fall/winter season. You'll see them at the Fungus Fair so don't miss it.

Being an optimistic sort of person, I believe more *B. edulis* will be coming up for us. And we get them later in the year at higher elevations. Larger specimens are often grilled whole after being bathed in olive oil and garlic with the stem cut at the cap so the mushroom can lie flat on the grill. You have probably eaten grilled portabellas; just wait until you try *B. edulis*! And what to do with the cut stems? Why make duxelles, of course. Duxelles are a kind of mushroom hash, traditionally prepared from mushroom stems, peelings and trimmings, but it may be made from whole mushrooms. Duxelles are good in stuffings, sauces, and soups. Any mushroom can be used; stronger flavored ones like blewits (Clitocybe nuda, also called Lepista nuda - hard to keep up with the newest and best names), for example.

Duxelles

Finely chop 1/2 cup of mushroom stalks that are thoroughly dry (otherwise they won't brown properly; you could put them chopped in a towel and wring out the liquid). Saute a small onion, finely chopped, in butter until lightly browned. Add 2 finely chopped shallots, the chopped mushrooms, salt (could be truffle salt), pepper, a little nutmeg, 1/2 teaspoon lemon juice, one tablespoon of dry sherry or madeira if you're so inclined, and 2 tablespoons of finely chopped parsley. Stir over a lively flame until nearly all the moisture is evaporated. Let cool and store in the fridge or freeze. A good freezing idea I read about is to divide the mixture into silicone muffin pans and freeze. Then you can take them out, wrap them and use them for your pastas, gravies, meatloaf, stuffings, etc.

If you are lucky enough to find matsutake add a slice or two to the rice you cook in the rice cooker for a divine odor and taste.

Finally, the wise words from Madame Jehane Benoit, the famous Canadian cook and author: "I feel a recipe is only a theme, which an intelligent cook can play each time with variation".

See you at our MSSF Culinary Group table at the Fungus Fair.

~Pat

What's Bookin'?

Coming in January: Huge Used Book Sale!

Over the last several years, the MSSF library storage capacity has been exceeded due to numerous donations of books both new and used. Monique Carment, (The current MSSF Librarian), and myself have finished purging the library of excess copies of books, publications and magazines. We will be making room for inclusion in the library of donations of new and used books not previously made available to members. Every new retail book that was reviewed in the "What's Bookin" section of the Mycena News over the last two years will be placed in the library for check out by MSSF members.

In January 2011, at the MSSF general meeting, we will hold a huge used book sale to raise needed funds for the MSSF treasury. Make sure not to miss this special, one time event! There will be numerous, vintage, foreign language and out of print mycology books available for sale at reasonable prices. MSSF members will have first choice of the books from 7 to 7:30pm and non-members from 7:30 to 8pm. Additionally there will be numerous FREE magazines and booklets available to MSSF members in good standing.

Monique has done a great job as the Librarian over the last several years and is stepping down from that position. A great opportunity has opened up for an active member to step forward and fill this invaluable position. Remember our great organization would not exist except for volunteers.

The society is also looking for someone to step forward and take on the responsibility of Merchandising Chair. This position is in charge of retail merchandise that the society sells for a profit. A new cabinet is being built at the Randall Museum to store all of our retail merchandise and have it available for sale at general meetings. New books will also be made available for sale to members on the MSSF website sunder the "Members Only" section.

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Please e-mail photos, comments, corrections, and correspondence to mycenanews@mssf.org.

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Past issues of *Mycena News* can be read online at www.mssf.org.

MSSF Officers 2010-2011

Mendocino Camp 2010

Don Hughes

Another Mendocino camp has come and gone. Ahhh!

For me the camp starts long before we reach Mendocino. The Thursday night before I start hoping that I find a bounty of porcini and other delectable and interesting mushrooms. I make sure my camera batteries are charged and I am packed, ready to take off early Friday morning.

I know I am not the only one that does not want to enter the camp empty handed. While this year was not the most bountiful many of us entered the camp with something to place on the display table.

A friend and I stopped at Salt Point on the way up and within 15 minutes I knew that this was not going to be a year of plenty. Within a minute I knew weather wise it was going to be one of the best years. It was 10:00 in the morning and it was very warm.

After an hour or so at Salt Point and only seeing a few species of mushrooms we decided to drive up to Mendocino. After a few more stops along Highway 1 that resulted in only a few more mushroom spottings I gave in and headed into camp.

When we stopped to sign in and find our cabin we saw that there were several different mushrooms on the display table; not as many as other years but still several different species.

Even when the mushroom foraging ends the fun continues. Once inside the dining hall you see many people who pull this weekend together. You will also see new people, like a friend of mine, who are here for the first time. I believe this if my 5th year going to Mendocino Camp and I always feel I am leaving having more friends than I arrived. As my friend mentioned, there are such a wide, interesting, warm, friendly, group of people at this camp.

The activities start off with people getting settled in and starting to mingle in and around the dining hall. At 6:00, or like me a little earlier, people start sampling appetizers and enjoying a nice glass of wine. Dinner at 7:00 and then a lecture by Steve at 8:30 and the weekend is in full swing.

Amanita lanei. Photo taken by Darvin DeShazer

There is so much happening on Saturday that one has to decide if one wants to head out on a foray or do one of the classes. I being a die-hard forager decided to go out on a long foray where my friend, Kathy, decided to stay in camp and do the paper making and beginning identification glasses. She said she really enjoyed and got a lot out of both classes.

I went on the foray Curt and Steve were leading and while we did not find a bounty of mushrooms we did find some very interesting species. I know everyone in our group had a great time and really enjoyed the knowledge that Curt and Steve shared.

Once back in camp some of us went to the dying glass, others to the cooking class and some to the identification table. I, like many others find it hard to decide what we want to do since there is so much going on at any one time. I actually floated between dying class, cooking class and the identification glass. Later I floated between watching the cultivation and have wine and a few appetizers; it takes a knack to get 20 hours of enjoyment in in 16 hours. I think some people who did the late night kitchen with Ken were able to get 32 hours of fun in a 24 hour day; Ken how do you master that?

I know for most people at the camp the highlight was David Arora's talk Saturday night. For many of us David is the Fun in Fungus. I can't imagine someone sitting in one of his talks not being impressed with his knowledge, stories and life experience.

There are probably some that enjoyed Curt's raffle as much as anything else. I know my friend Kathy was very pleased with her winnings.

I think for me right at the top of my pleasure was the food. Kudos to the caterers!!!! I thought the presentation of the vegetarian dish was over the top. Not that I would trade pork for any rice dish no matter how beautifully you served it.

All this has happened and it is only Saturday night. Normally I would get up early, eat breakfast, pack a lunch and head off to Salt Point for more foraging. This year though I knew I would not be finding the Coccora, Matsutake and Porcini I did last year so I decided to pass up more foraging and take David's felting class instead. At first I felt a little funny being the only man taking the class until I got into it. I really got into it when David mentioned that if you drink wine while you do the felting it doesn't seem to hurt so bad when you poke yourself with a needle. When I poked my finger I actually thought I earned a glass of wine; next thing I knew I poked myself two more times.

Then it was time to leave and I felt just a little sadness it was over. To me it seems so great that all of us Mushroomers were in our element and with little outside contact.

We have all heard of streets of gold, well I think for most people at this camp we dream of a moist green forest with earthen paths. And these paths are lined with Porcini, Chanterelles, Hedgehog, Prince, Morels, Trumpets, Matsutake, Shaggy Mane, Shaggy Parasol and more all fruiting at the same time on the same day, all bug free and willing to jump in our ever growing basket.

My favorite find of the weekend was a Coccora I found at 45 miles per hour. I tend to catch a glimpse of mushrooms out the corner of my eye and as Curt's foray was driving back in the direction of camp Saturday, there under a shrub I spotted what appeared to be gold on an earthen background. Within a tenth of a second I knew it was a Coccora. So I went from 45 miles per hour to zero in another second or two, parked my jeep on the dirt road, jumped out and picked the most beautiful bug free coccora you could imagine. I am from Oakland and I like to think of it as drive by shroomen. Last year I spotted a King at 60 miles per hour and the year before I found a prince at about 55 miles per hour. Just before dinner on Saturday night at the table where I sat, before dinner, we shared the raw coccora. Everyone seemed to enjoy it even those tasting it for the first time.

In Memoriam

Dr. Tom Duffy 1930 – 2010

Goodbye, Dr. Tom Duffy

Long a leading member of the MSSF, Tom was an extraordinary man. Born in San Francisco and a Stanford Medical School grad, Tom was an Endocrinologist whose interest in and knowledge of fungi made him a widely sought after expert consultant in mushroom poisoning cases. He served as President of the MSSF and was part of the team that created the Toxicology Committee. He helped popularize the Meixner's Test for the presence of amatoxins and gave many general meeting talks with slide presentations of mushrooms he had photographed. These are just samples of his many contributions to educating people about fungi.

A lover of fine wine and food, he and Ellen, his wife, were active participants in the Culinary Group. Many a fine evening of food and conversation with Tom and Ellen was enjoyed by MSSF members, as were camping trips, forays and Fungus Fairs. Tom hiked and camped with his family all across California. He probably left behind many a favorite, remote, secret morel or chanterelle spot from from Yosemite to the Mendocino coast.

Dennis E. Desjardin, Professor of Biology/Mycology at San Francisco State University and the scientific advisor for the MSSF sent this about Tom:

"I am beginning to feel old. My first mycological publication was co-authored by Tom Duffy, Paul Vergeer and Herb Saylor (ed. note: Paul and Herb were also members of MSSF, now deceased), published by the Mycological Society of San Francisco in 1981, entitled "California Mushrooms 1970-1980, Fungus Fair and Foray Collections". Working with Tom on this small booklet was a pleasure and a very educational experience. I was the inexperienced graduate student (under the tutelage of Dr. Harry Thiers, who was at the time the scientific advisor of the MSSF) just learning the CA mushrooms with the opportunity to sit at the feet of these illuminaries of the MSSF. Tom was such a gentleman with a wealth of knowledge about mushroom taxonomy and particularly about toxic fungi. We spent many hours together, reviewing the species to be included in the book, their correct names, nomenclature and citations, drinking wine and sharing mushroom stories. I will never forget Tom, his continued support and encouragement, his deep laugh and love of mushrooms. I will miss you Tom."

Coming from such a renowned, world-roaming mycologist like Dennis, this is a real tribute, and richly deserved.

We will all miss Tom.

Pat George

His publications

Saylor, H., Vergeer, P.P., Desjardin, D.E. & Duffy, T. J. (1981). California Mushrooms 1970-1980: Fungus Fair and Foray Collections. Mycological Society of San Francisco: San Francisco, CA. 38 p.

Duffy, T.J. & Vergeer, P.P. (1977). California Toxic Fungi. Mycological Society of San Francisco: San Francisco, CA. 29 p.

Plus the much expanded and improved version of the later, published on MykoWeb:

Toxic Fungi of Western North America (http://www.mykoweb.com/TFWNA/)

New 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 : Additional Name:

Mailing Address: City: State: Zip Code:

Email:

Primary Phone: Other Phone:

E- mail :

New Membership?_____ (Y/N) Renewal?_____ (Y/N) Membership type (See below):

If sending a check, please make it out to "MSSF membership" and mail it, with this form in the provided envelope. If paying by Credit Card, please provide the following information:

Circle Type of Credit Card: Mastercard, Visa, Discovery, or American Express.

Credit Card Number _____ Expiration Date___/___

Signature_____

Membership Rate Changes

The MSSF council approved a new membership rates in September. The last time we have a change was in 2005.

The increased rates are due to increased printing and and mailing rates for membership materials, and the cost for our subscripton to the new online membership management system. We will still honor the old rates for older membership forms sent in through the end of the year. You can do your part to keep costs down by opting out of the printed newsletter in the members only area of the Web site.

The new rates are: Multiple year membership rates approved by MSSF Council for renewals beginning Jan. 1, 2011

	1-yr	2-yr	3-yr	5-yr	Lifetime
Regular 30	55	85	130	550	
Senior	25	45	75	110	450
Student 25	45	75	110	n/a	
Electronic	20	35	50	90	350

Regular members receive the yearly Roster of members and the Mycena News by mail. You can switch to the electronic newsletter at any time by opting out of the paper newsletter in the members only area of the Web site. You can also update your membership information (address, phone, etc.)

Senior members must be over 65 and enjoy all the privileges of regular membership. Senior members can also opt out of the paper newsletter in the members only area of the Web site.

Student membership is for full-time students who receive both the membership Roster the Mycena News by mail. Student members are encouraged to join as e-members unless they want to recieve the paper versions of the roster and newsletters.

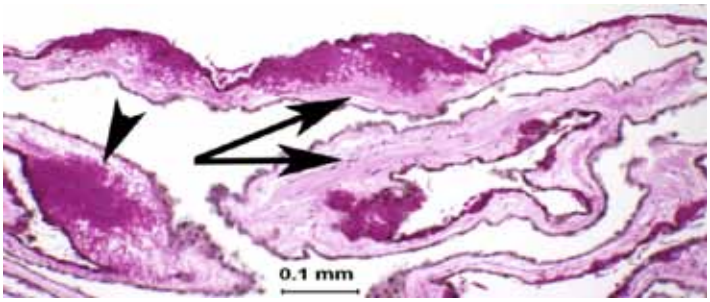
Electronic members must download the yearly Roster of members and the Mycena News for themselves from the MSSF website. You can renew also online at http://mssf.org/membership/renew.html

Members in all categories are eligible to sign up for inclusion in the information sharing Yahoo group. Consult the MSSF website www.mssf.org for information on how to join the group.

MycoDigest continued

causing them to break hibernation in midwinter and then to starve to death, as their energy needs cannot be met by stored fat and the available food at that time of year. Investigation of infected colonies of bats revealed them to be infected en masse by a fungal hair and skin pathogen, know as "white-nose syndrome" (WNS), that penetrates into the living layers of skin and even muscle tissue. The WNS pathogen apparently favors the relatively low body temperatures of bats during hibernation, leading to its easy spread while they are massed together in this state.

In 2008, a group of mycologists that included Andrea Gargas and Tom



Histological section of wing membrane a bat (*Myotis lucifugus*) showing extensive fungal infection by *G. destructans*. Fungal hyphae replace muscle bundles (arrows); invasion through the skin (arrowhead). From: Cryan et al, 2010

Volk identified the fungus as *Geomyces destructans*, an asexual ("imperfect") ascomycete species new to science. Other species of Geomyces, are known keratinophiles that break down dead skin, hair, and feathers, and several other species are widespread soil fungi.

It has been known for several years that a major cause of the decline of amphibians is a disease called chytridiomycosis, caused by a chytrid, *Batrachochytrium dendrobatidis* (also known as "Bd"). Chytrids are a group of relatively primitive aquatic fungi representing the form that fungi likely took at the time of their divergence from other unicellular eukaryotes. They largely exist as alternating generations of several types of free-swimming zoospores and simple microscopic fruiting bodies, often also having a mycelial phase as well. In the case of Bd, part of the life cycle takes the form of a cystlike sporangium that grows within the skin of the amphibian. A heavy infestation with these cysts can be devastating on an infected amphibian, leading to bleeding ulcers on the skin, and eventual loss of the ability to osmoregulate or even breathe. The Sierra Nevada yellow-legged frog (*Rana sierrae*) and a number of other frog species in the High Sierra (already threatened by the introduction of trout) have been driven down to critical levels by this disease.

These diseases are in addition to a number of plant pathogen epidemics that are ongoing or recently established, such as the spread of fusarium pitch canker in pines (including Monterey and Bishop pine), the loss of California's tanoak and coast live oak trees to the oomycete disease sudden oak death, and more recently, the threat to ancient Rocky Mountain and Great Basin bristlecone pine forests from white pine rust.

What is driving the emergence of these devastating diseases that threaten so many species? Several factors encourage their spread. The largest factor is the sheer mobility of organisms deliberately or accidentally carried from one part of the world to another, and into host populations that lack evolved resistance. Pathogens are quite often invasive species in much the same way that more visible plant and animal invaders are. There is evidence now that Bd originated as a stable endemic organism in Southern Africa and was spread by the widespread breeding of the African clawed frog (*Xenopus laevis*) in new areas as a research animal and exotic pet. Similarly, a stable endemic infestation of WNS has been found in some European bat populations.

Another factor is global climate change, which opens up new regions to habitability by these invaders. There is strong evidence that this is what is taking place with Bd; in many parts of the world, water temperatures are rising to a optimal level for its growth and infectivity. Another key factor is that pathogens typically have a much greater capacity to migrate into new, more hospitable regions and away from less favorable ones than their animal and plant hosts.

The role of environmental stresses from climate change, pollution, and other factors cannot be underestimated, and it is thought that in several of these epidemics, notably in amphibian decline and in CCD in bees, that the fungal and viral pathogens are merely the coup de grâce after a series of environmental blows. In the case of amphibians, there is evidence that pesticide exposure and increased UV-B levels associated with ozone depletion compromises their immune system and makes them more vulnerable to a range of pathogens. Carlos Davidson, an SFSU conservation biologists, has carried out a study correlating lower population counts of several Sierra Nevada frog and toad species in years in which increased levels of cholinesterase-inhibiting pesticides were released upwind in the San Joaquin Valley. There have also been several cases of amphibian population die-offs where chytridiomycosis has not been seen.

In the case of bees, colony malnutrition, brought about by feeding from poor food sources between pollination releases, is present in the majority of hives affected by CCD. There is also a concern that bees are being negatively affected by increased use of long-lasting neonicotinoid pesticides in areas that they pollinate.

The loss of species and larger effects on habitat are an ongoing environmental tragedy, but not one that is utterly without hope. WNS in bats, for example, may be treatable by existing antifungal drugs. In amphibians, a group of scientists led by Reid Harris of James Madison University in Virginia has discovered a symbiotic bacterial species, *Janthinobacterium lividum* ("Jliv"), on the skin of resistant populations of amphibians. This bacterium produces a compound called violacein, an antifungal compound endemic to some amphibian species, but greatly enhanced when Jliv is present. One of the scientists in the group that discovered Jliv and who is now at SFSU, Vance Vredenburg, has been treating frogs from a High Sierra population of R. sierrae in a Jliv solution. So far, the treated group show a much higher survival rate than the control group.

Research is also being carried out on the population structure and dynamics of pathogens like sudden oak death and Bd. A better understanding of

Histological section of skin of frog (*Litoria caerulea*) severely infected with chytridiomycosis, from Queensland, Australia. S = sporangium. D = zoospore discharge tubes. (Bar = 30 µm.) From: Berger, et al, 1998

how they enter and spread through populations, and what makes them such effective pathogens, is critical in both controlling existing diseases and spotting potential new disease organisms before they're spread to begin with.

Further reading

Bodin, Madeline. (2010). Bats on the brink: white-nose syndrome hits home. Northern Woodlands 64, Spring 2010. Available from: http://www.northernwoodlands.org/articles/article/bats-on-the-brink

Johnson, Kirk. (2010). Scientists and soldiers solve a bee mystery. New York Times, October 6, 2010. Available from: http://www.nytimes.com/2010/10/07/science/07bees.html

Rex, Erica. (2010). Toiling to save a threatened frog. New York Times, October 4, 2010. Available from: http://www.nytimes.com/2010/10/05/science/05frog.html

For further sources, please see my blog here: http://tinyurl.com/morepathogens

Peter Werner is a long-time member of MSSF and a frequent contributor to MycoDigest. He has studied mycology at University of Washington and SFSU, and most recently completed a professional certification program in microscopy at Merritt College.

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MSSF Calendar December 2010

December 3rd: San Mateo foray for MSSF Fungus Fair

December 4th and 5th: MSSF Fungus Fair

December 10-12: Napa Truffle Festival

December 11:
- **Meso-american mushroom foray**
- **Poisonous Mushrooms for Dog Owners**
- **MSSF Holiday Dinner**

For more information on the Holiday Dinner entree choices and prices email Stephanie at fungusfair@bytewright.com

December 18: SOMA Salt Point foray

January 3rd: January Culinary Dinner

Contact Stephanie at fungusfair@bytewright.com for more information

January 9th:
- **Mills Canyon Introductory Foray with Jr. Brown**
- **Beginners' Fungus exploration at Phleger Estate**

January 15-17: SOMA Camp 2011
Check the http://tinyurl.com/2crok4 for further details.

Check the MSSF online calendar at http://www.mssf.org/calendar/index.php for details and for any schedule changes.

Call for Volunteers

We have two remaining volunteer positions to fill:

Book Sales Chairperson - Be the first to read and review all the books the MSSF sells. To assist in the transition the former chair (Curt Haney, now our VP) will help the new chairperson during the transition. If you are interested please talk to Curt at the next meeting or call (415) 640-6233.

Librarian - Monique Carment will also be moving on soon. Please contact her at moniquecarment@yahoo.com if you are interested in taking over this important position, or talk to her during Library hours at the October General Meeting (7-8 pm in the basement of The Randal Museum). Don't be shy, we'll help get you started. Remember, our great organization would not survive without volunteers!

The submission deadline for the January, 2011 issue of Mycena News is Sunday, December 19th. Please send your articles, calendar items, and other information to: mycenanews@mssf.org