

Speaker for
April 18
MSSF Meeting



Michael W. Beug, Ph.D.

Michael Beug, Chair NAMA Toxicology committee and Professor Emeritus, The Evergreen State College will present a review of the over 2,000 mushroom poisoning reports collected by NAMA over the past 30+ years provides a good insight into which mushrooms cause the most poisonings in North America and yields interesting data on just how deadly a few mushroom species can be.

In this talk, he will show images of the main mushrooms that have

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Myцена News

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MycoDigest: Species Interactions and Fungal Community Structure: Is Competition Important?

Peter Kennedy

Many mushrooms present in Californian forests are produced by a group of fungi known as ectomycorrhizal fungi. These fungi are important symbionts of trees and exchange nutrients and water for carbon produced by plant photosynthesis. One question that has long interested mycologists has been what determines the presence or absence of a fungus in a certain location. Environmental factors such as soil moisture, nutrient status, and organic matter content are all known to affect the distributions of most fungi. Another important factor for ectomycorrhizal fungi in particular is host specificity. For example, many mycologists have observed species such as chanterelles (*Cantharellus* species) can be found under conifers as well as oaks, but others such as false truffles (*Rhizopogon* species) are only found under conifers. Aside from host specificity, however, little is currently known about other types of species interactions that affect whether certain fungi are present in a community.

One factor that has a large effect on plant and animal distributions is competition, but this factor has received very little study in ectomycorrhizal fungi until recently. The main reason why competition has not been better studied is that examining interactions among ectomycorrhizal fungi is difficult. Because these fungi require carbon from the plant, most cannot be grown without their host (some species can be grown on alternative carbon sources, but only a small minority). This situation eliminates the possibility of growing most species in laboratory settings such as Petri dish cultures, where many competition studies have been conducted on other groups of fungi such as wood rotters. Fortunately, molecular tools such as DNA sequencing have allowed mycologists to directly examine ectomycorrhizal communities in field soil. By taking small quantities of DNA from the soil, mycologists can now determine which species are present in a given location.

A recent study by Roger Koide and his colleagues took advantage of these molecular techniques to look for evidence of species interactions within an ectomycorrhizal fungal community in a Pennsylvania pine forest. They reasoned that if species interactions were occurring the distribution of species should not be random in the soil. For example, if certain species were strong competitors they would be less likely to be encountered in the same soil area. In contrast, if the presence of one species made the environment more hospitable for a second species, then those two species should be encountered in the same area of soil more often than by random chance alone. They also hypothesized that the addition of either nitrogen or tannins (the latter being thought to affect soil chemistry such as pH) might influence the outcome of species interactions. To assess fungal community composition, they took a number

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MycoDigest is a section of the Myцена News dedicated to the scientific review of recent mycological information.

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March Speaker

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caused poisonings and will discuss the mistakes that various people have made that led them to eat a poisonous mushroom, the severity of the poisonings, the symptoms and the prognosis for recovery. Dr. Beug will focus on human poisonings but will also discuss animal poisonings, especially dogs who seem to have a great propensity for consumption of toxic mushrooms.



The password to the members only area of the MSSF website (www.mssf.org), which includes the latest issue of the *Mycena News*, has changed. The new login and password are:

login: mssf
password: Morchella

Please note that the login and password are case sensitive.

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Annual San Jose Family Camp Morel Foray

Norm Andresen, MSSF Foray Leader has announced that the annual morel foray at San Jose Family Camp in the Sierra Mountains is scheduled for the first weekend in May, i.e., May 5-7, Friday evening through Sunday noon.

For those who have not attended this foray previously, the San Jose Family Camp is a summer family camp for San Jose residents but before the summer season, it is rented out to other organizations such as MSSF. It is located off of Highway 120 about 10 miles from the entrance to the Yosemite National Park. Meals are prepared by camp staff and served in a dining hall. At the back of the dining hall, a social area and a fireplace are located. The Tuolumne River, located next to the dining hall, adds to the scenic pleasure. Lodgings are in tent cabins on wooden platforms and are equipped with electric lights and army-like cots. People must supply their own bedding or sleeping bags. Located nearby are several bathhouses with hot showers. The MSSF has used this convenient location for morel forays for about ten years.

The location and the season provides for a wonderful weekend not only for hunting mushrooms but viewing the wonderful sights of the Sierra mountain, the beautiful white dogwood flowers in bloom, the red snow plants just breaking out and other signs of Spring in the mountains. Trout fishing is permitted with a fishing license as the season usually opens by the beginning of May. Those attending can even visit Yosemite Valley and see the waterfalls in its full glory but remember hunting mushrooms is prohibited in the Park.

On Saturday, our leaders will take groups on different forays. Foragers are not only expected to find the elusive morel but may become familiar with other Spring mushrooms such as spring boletes, false morels, corals, among others. That evening we will plan to have some entertainment. If anyone has talent they would like to share, fungal or otherwise such as playing a musical instrument, we would love to hear from you. Please contact the foray coordinator listed below. The weekend is not only to be educational but also a fun one.

The registration for the weekend, including meals from Friday dinner to Sunday lunch, lodging, group forays and Saturday program, costs \$ 110 for a member, \$65 for a child and \$130 for a nonmember. To register, please make your check out to MSSF and send to Tom Sasaki, 1506 Lyon Street, San Francisco, CA, 94115. If you have questions, you may contact him at 415-776-0791 or email sasakitom@sbcglobal.net. Please register early as registration will close on Friday, April 28. Allow time for information on the foray, program, directions to the Family Camp and to your lodging to be sent to you via snail mail.

The Foragers' Report

April 2006

Patrick Hamilton

Wow—two days in a row without rain. There is a God.

I don't care any more that the snow pack is way above normal nor that the reservoirs are so full that we can go two years without any rain and still be okay. I am tired of seeing the rivers so fat (and muddy—check out the alluvial fan of silt from the Russian at Jenner—whoa!). There is standing water in the dirt in my front yard (a big, grassy, field). And it has nowhere to go. Nowhere.

The under ground water table is above table. The places we call home are sitting over a huge, new, aquifer that used to be rock and soil and stuff like that. We could float any day now, rock and roll style—but where to? (Imagine bumper-homes tossing in a messy soil stew, slowly caroming off each other, going nowhere but into yet another encounter with another bumper-home. Forever.) See an ark builder nearby?

It wasn't that many years ago that a buddy and I were already in the mountains, on this date (March 19), checking out spring fungi. Let's now Google "snow pack" at that location and see how much is in that exact area today. Ooh—12 inches.

Even if going there would be brainless the mind can still dream and wander of what's to come. Natural morels abound and nestled right next to them are *Agaricus albolutescens*—now that's a mushroomer's mushroom.

Famed Sierra forayer, Larry Stickney, taught me about that delectable years ago. It does fruit right where and when naturals do (an "indicator mushroom?") and makes for a fine salad to serve with fire-roasted morels: For feeding two people take two amber-staining *Agaricus* and slice them thin, set aside in a bowl. Make a mild vinaigrette with a not-too-strong tasting California extra virgin oil, white wine vinegar, minced shallots, sea salt and fresh ground pepper. Chop some flat parsley and zest a small Meyer lemon. Put it all together and what do you got? Good tasting stuff.

You all know how to do MSSF President David Campbell's fire-roasted morels so I needn't include that recipe here. (If you don't know how to, simply e-mail him. Or read past issues of this rag.)

Mushrooms have not stopped fruiting here. We have golden chanterelles in Big Sur and on the western slope of the Santa Cruz Mountains, and blacks growing in Jackson State Forest.

On a most recent SOMA foray at SPSP there were these fungi found (amongst others): Blacks still coming (yeah!), some

tired and sore yellow feet, a gilled bolete (always a treat to hold—rub the cap), some *Suillus*, dyer's *Dermocybe* (found by Dorothy Beebe, of course), a couple of spectacular full-grown *H. repandum* seen sticking out of bright green moss on a steep ravine-side in the drop dead gorgeous fast-flowing Tom Cat Creek, the usual *Russula* suspects, scaly chanterelles, and a lot of others that this brain can not retain.

There was a seaweed conference held recently in Philo, in the Anderson Valley. Brought together for the first time were entrepreneurial New-Age harvesters and traditional, ancient, Pomo gatherers. Very cool being served hot-oil cooked seaweed by a Pomo cook.

What to do with seaweed? Hmm, I have harvested it several times and came up with this recipe:

Asparagus, Morels, Sweet, Crisp Garlic, and Wakame Salad

Serving Size: 4 Preparation Time :0:30

Ingredients:

2 lbs asparagus, thin, trimmed, washed
 5 tbsp extra virgin olive oil
 8 cloves garlic, cut 1/16" slices
 1/2 cup morels, dried, soaked
 1 tbsp dry sherry
 4 strips wakame (*Alaria marginata*) seaweed
 2 tbsp sherry vinegar
 1 Meyer lemon, juiced
 Sea salt and fresh black pepper

1. Sauté the asparagus in 1 tbsp of the oil until almost tender and then immediately plunge it into ice water to refresh. You can also poach the asparagus in a mild vinegar/water mixture for a more acidic taste to the salad. The asparagus may be cut into smaller pieces if desired. Drain and set aside.

2. In two tbsp of hot oil, and in the same pan, fry the garlic for just 20 seconds or until crisp and golden brown (do not burn!). Remove and set aside.

3. Soak the wakame in tepid water for 1 minute or so—until softened. Remove, drain, and chop into large pieces. Set aside.

4. Sauté the soaked—and squeezed out—morels in 1 tbsp of the oil until done. Add the soaking liquid and sherry reduce *au sec*. Chop into large pieces and set aside.

5. Toss all the ingredients in a bowl and squeeze the lemon juice into it. Add S & P. Add some of the vinegar and taste. Adjust.

Serve at room temperature or chilled. May add red pepper flakes.

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Foragers' Report

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As a special bonus because you all have updated your memberships and are current contributing members to our society I am including, for one time only, an additional and free recipe.

Your reporter, in his quest to bring mushroom news of interest to the many, recently was wheeling over the gnarly mountain range that separates the southern Sea of Cortez from the Pacific about 45 miles north of Cabo San Lucas. The very rustic road comes out (on the western side) just south of the famous bar and restaurant and art gallery named "Art and Beer." (A little odd —and so is the bathroom.) Anyhow, they serve this famous, very big, Bloody Mary that was sampled several times by the curious and apparently parched travelers and now the recipe has been adapted a bit but still retains that oh-so-local flavor. Herein is presented whatever you want to call it:

For the Bloody Mary bring this together (but don't leave them alone too long): Smirnoff 100 proof vodka; good tomato juice, blood clams (you need to hang maybe five of them, opened, by their shells, off the rim of a very much oversized pitcher/goblet container), fresh Mexican lemon juice, caviar (flying fish roe), Worcestershire sauce, scallops (maybe 10 floating about), three ribs of celery, a glob of Dijon, horseradish, and some (here is the genius of the now-Northern California drink) sautéed and chopped black chanterelles.

That's all for now folks!

New Phone Number for MSSF

The new phone number for the MSSF is 866-807-7148. For general information or to leave a message for a society officer, use this number. For up to date information about meetings, forays, etc., visit our website at www.mssf.org.

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Fungus Fair 2006

Poster Art: Call for Entries

Though it may seem a bit early to start thinking about next December's Fungus Fair, the promotional poster for the fair needs to be in the works well in advance. This year we will begin now with a call for artwork for the poster. This will allow time for selection and tweaking of the artwork well before fair preparations start cranking up in September.

If you have or would like to create any drawings, paintings, photographs, spore prints, or any other two-dimensional artwork depicting mushrooms that you think would be attractive candidates to promote the fair, please consider submitting them. Any of the entries may also be considered for the T-shirt, so the artwork should be made to use for both purposes.

Please submit your artwork to J. R. Blair or David Campbell by May 1st. You should be an MSSF member; if you are not, you can join for \$15 for an annual electronic membership, or \$25 for a printed newsletter.

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.)

Mycodigest

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of small soil cores (0.25 ml pr core) at monthly intervals for one year, brought them back to the lab and identified all species within each core using molecular techniques.

They found that the community seemed to show strong evidence of species interactions. In general, it appeared that species tended to avoid each other more often than by random chance, suggesting that competition was an important factor structuring the spatial distributions of many of the fungi in their community. This was particularly the case for the two dominant species *Cenococcum geophilum* and *Clavulina cinnerea*, which showed a negative association when examining both the soil hyphae and root tips occupied by the two species. There was also evidence of positive associations between a small number of species pairs, but this appeared to be a less common phenomenon than competitive interactions between species. The addition of both nutrients and tannins did not measurably affect the nature of species interactions, but there were a higher number of species in the nitrogen addition than control plots. This was interesting because it suggested that competitive interactions may be driven by soil nutrient status, with some species unable to persist in areas where other species had already extracted the majority of the nutrients.

This study is one of the first to demonstrate that species interactions such as competition may have an important influence on the distribution of ectomycorrhizal fungi. While it provides evidence of competition, more studies are needed to assess the frequency, intensity, and mechanisms of competitive interactions among ectomycorrhizal fungi. Understanding the role of competition also has practical implications for agroforestry because when seedlings inoculated with one ectomycorrhizal species are out-planted into natural settings, native ectomycorrhizal species typically quickly replace the inoculated species on seedling roots. By understanding how this competitive replacement takes place, mycologists may one day be able to cultivate high-value edible ectomycorrhizal fungi such as truffles, chanterelles, matsutake, and *Boletus spp.*, by mimicking the conditions that favor the presence of only their desired fungi.

Literature cited:

R.T. Koide, B. Xu, J. Sharda, Y. Lekberg, and N. Ostiguy. 2005. Evidence of species interactions within an ectomycorrhizal fungal community. *New Phytologist* 165:305-316.

Upcoming Morel Season Forays

Saturday-Sunday, April 29-30, Mokolume Car Camping. Meet Saturday morning, 9:00 am at Mokolume campground near highway 88. We will hunt the "Power Fire" where good elevation range and logging will provide some fun Pot luck and camp over on Saturday night. Email Norm at n.andresen@comcast.net for info.

Friday-Sunday, May 5-7, Annual San Jose Family Camp Morel Foray. See the writeup on this foray on page 2.

Saturday-Sunday May 13-14. Open Foray. We will decide the week before the event where it will be held, to insure good collecting. To get on the e-mail list, contact Norm at n.andresen@comcast.net for info.



Marin Meet and Greet

Saturday, April 8, 2006, Marin County "Meet and Greet". 1:00 p.m., Rancho Nicasio, Nicasio Town Square

For those based in Marin County and those interested in attending or coordinating events in Marin County, here is a chance to meet with others and discuss what Marin events would be of interest and how we can get organized to organize them. Let's meet at Rancho Nicasio, at Nicasio Town Square, on Saturday, April 8th, at 1:00 p.m. Rancho Nicasio has a full bar and nice menu for those interested in lunch and/or libations. If you wish to R.S.V.P. to reserve a lunch table, that is fine, but if you are feeling spontaneous and just wish to show up, this is also no problem -there is plenty of room there.

For more information or to R.S.V.P. call Terri at 415-686-9353.

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MSSF Calendar, April 2006

Monday, April 3. Culinary Group monthly dinner. 7 p.m., Hall of Flowers, Golden Gate Park, 9th and Lincoln, SF. **Reservations required.** To make a reservation contact Pat George at (510) 204-9130 or plgeorge33@yahoo.com by Friday, March 31st. Cooks are notified on Saturday morning so they know how much stuff to buy. If you make a reservation but need to cancel, please call by early Saturday morning. Remember to bring your own tableware and beverage. For a description of the Culinary Group, please see the article in the October, 2005, issue of the *Mycena News*, available on the MSSF website. The group does not have meetings during June, July or August. Our last dinner before the summer will be May 1st.

Tuesday, April 18, Mushroom Program for Beginners. Slide photos will be shown in the auditorium of the Randall Museum starting at 6:45 p.m., preceding the General Meeting and will run about 45 minutes. To get you ready for the upcoming morel season and what is out there with morels, we will feature a program of slide photos on "Morels, Truffles, and Other Spring Fungi".

Friday-Sunday, May 5-7, Annual San Jose Family Camp Morel Foray. See the writeup on this foray on page 2. Register early as this announcement is being made late. Registration will close April 28. Registration fee includes all meals, lodging, programs and the foray groups and is \$110 for a member, \$65 for a child and \$130 for a nonmember.

Note: Deadline for the May 2006 issue of *Mycena News* is April 23.
Please send your articles, calendar items and other information to: mycenanews@mssf.org