



November 19
General Meeting Speaker



Roo Vandegrift

“Diversity and Dispersal
of Tropical Forest *Xylariaceae*”

Roo Vandegrift is a PhD candidate from the University of Oregon in the lab of Dr. Bitty Roy. He studies plant fungal interactions and has a particular interest in symbioses. This has led to a diverse group of projects that have covered everything from mycorrhizae and climate change, invasive grasses and Epichloë endophytes, to tropical tree endophytes in the *Xylariaceae*.

Roo grew up as an Air Force brat. He completed his undergraduate degree at Virginia Tech studying under Dr. Robert H. Jones, then worked in biotech for several years. After that, he decided to go back to ecology. He worked as a technician for Dr. Brenda Casper at University of Pennsylvania for a year and then started graduate school at U.O.

In addition to fungal ecology, Roo has a great interest in biological, and in particular, mycological illustration. He draws whenever he can pry himself away from his dissertation and sometimes even when he can't.”

MycoDigest: Sudden Oak Death

Melina Kozanitas



Landscape showing crown mortality of Coast Live Oak in China Camp State Park

In the last decade Sudden Oak Death has, sadly, become a phrase familiar to many of us who reside in California. The devastating effects of the disease are noticeable to even the untrained eye. Beginning in the mid-1990's, residents of Marin, California reported unusually rapid dieback of Tanoaks (*Notholithocarpus densiflorus*) and soon after, Coast Live Oaks (*Quercus agrifolia*) in the area. Since that time, the disease has spread to 14 counties in coastal California; from Monterey County in the south to Humboldt County in the north and has killed hundreds of thousands of trees.

Sudden Oak Death is caused by the introduced Oomycete pathogen *Phytophthora ramorum*, a member of the Kingdom Stramenopila (formerly Chromista). Currently its geographical origins remain unknown. Other members of the Kingdom Stramenopila include brown algae, and diatoms. In contrast to fungi, members of this kingdom are more closely related to plants than animals. While the Oomycota do not fall within the Kingdom Fungi, mycologists traditionally study these organisms due to shared morphological and biological traits. Like fungi,

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PRESIDENT'S POST

Greetings MSSF Members!

As I write this post, I am in Seattle, Washington at the Puget Sound Mycological Society Fungus Fair. They put on a great show here in Seattle, with a huge group of volunteers. They also display a very large and diverse selection of different mushroom species at the fair. There are several things they do here at their fair that make it a success every year.

I plan to present some of these ideas to our own fair organizing committee upon my return. I visit many different mushroom festivals each year in several different states and I am always impressed by the enthusiasm of the volunteers in each of the mycological societies that organize them. I am looking forward to our MSSF fungus fair that will be held in a new location in San Francisco this coming December.

At the October general meeting, the scientific advisor to the MSSF, Dr. Dennis DeJardin, gave an informative and educating presentation to the MSSF membership and their guests. The next general meeting is scheduled for November 19 at the Randall Museum. A social hour with appetizers and mushroom identification begins at 7 p.m. with the official meeting starting at 8 p.m.

The planning and coordination of the MSSF Fungus Fair, scheduled for 8 December at the San Francisco County Fair building in Golden Gate Park, is progressing on schedule. Fair organizers, JR Blair and Stephanie Wright have established a sign-up page on the MSSF website for members to volunteer to assist at the fair this year. This is your chance to get involved and make a substantial contribution to the fair and the Society. Go to the MSSF website and sign up; www.mssf.org. (go to: fungus fair/info).

I hope to see many of you in the forest soon, getting more involved with the society as a volunteer, or at a future MSSF event!

Curt Haney
President@mssf.org

CULINARY CORNER

I just read an article in the Chron via the New York Times, "Mushroom's magic vanishes with glut". Sad for the commercial pickers but good for us mushrooming hobbyists. The mushroom featured is matsutake, *Tricholoma magnivelare*. Highly prized by Japanese, especially, this mushroom has brought obscenely high prices in the past making commercial foraging a good income but this year is so prevalent that pickers are getting only about \$5.00 a pound where they once could get \$600.00 a pound when at their peak. Now, other countries are providing matsutake, the Japanese and other world economies have worsened and the Oregon featured market has greatly declined, a glut or not.

The Pacific Northwest has had a lot of rain; that probably explains the glut of mushrooms, but heavy rainfall doesn't always produce great fruitings. Hopefully, we will see matsutake this mushroom season further north in California at our MSSF Mendocino foray, at Salt Point and maybe even in the East Bay hills. They will probably appear at lower than usual prices at local greengrocers if you can't find any yourself.



Matsutake; *Tricholoma magnivelare*. Photo: Michael Wood

The mushroom, once described by David Arora as having a "unique, spicy odor—a provocative compromise between "red hots" and dirty socks", is delicious but deserves to be prepared in ways that are different than how we usually prepare wild mushrooms. Don't sauté them in butter or olive oil. Their flavor is better appreciated in simple recipes featuring their unique flavor. No, they don't really taste like "red hots" or dirty socks; they lend a lovely spicy aroma and a subtle but rich and pleasing taste. Use them to perfume your pot of rice, adding a few slices at the beginning and letting them cook with the rice. Put them in your favorite

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Mycodigest continued

Oomycetes are able to produce both sexual and asexual spores when advantageous, and can be either saprobic or obligate parasites of plants. However the two differ in regard to their nuclear condition, and structure. Oomycetes are diploid (2n) for the majority of their life cycle, or having two sets of genetic information, as opposed to true fungi which are dominantly haploid (n) or dikaryotic (n+n). Additionally, fungal cell walls are made primarily of chitin, whereas Oomycete cell walls are composed mostly of cellulose and glucans. Another major distinction is that Oomycetes have swimming zoospores with two types of flagella, whereas most fungi have no flagella. Needless to say, these organisms require the presence of water to carry out their life cycle, and can enter long periods of dormancy when none is available.

The genus *Phytophthora* loosely translates to “plant killer” and the closest relatives of *P. ramorum* are responsible for a myriad of well-known forest diseases. The most famous of these is the potato blight caused by *P. infestans* that led to the deaths of nearly one million Irish during the great famine in the mid-1800’s. In Australia *P. cinnamomi* is responsible for extensive dieback in the native Jarrah forests and has also been introduced to California where it kills a variety of hardwoods, including an endangered species of Manzanita. *P. alni* is responsible for high levels of Alder mortality in both Europe and more recently in Alaska. In northern California, forest stands dominated by the majestic Port Ordford Cedar (*Chamaecyparis lawsoniana*) have



Photo: Ken Peek

Necrotic tissue of Bay Laurel foliage after infection with *P. ramorum*

are over 100 species of hosts in our coastal woodlands and the list continues to grow.

Scientists classify these species into two major host groups based on the type of symptoms caused by the disease; foliar hosts and canker hosts.

On hosts where the infection is limited to the foliage, tissue necrosis will occur, but the host will not be killed by the pathogen. The majority of species on the host list fall into this category. The most well known foliar host is the California Bay Laurel (*Umbellularia californica*). Bay Laurels are abundant in our coastal forests and when the pathogen colonizes this host it is able to sporulate prolifically, making this species the dominant vector of the disease. The dense foliage can then serve as a reservoir of inoculum as the pathogen is able to lay dormant on its leaves through the dry summer and early fall, and become active again in more favorable climatic conditions, mainly the warm, rainy months of spring and early summer. When one considers the copious amount of Bay Laurel in the forest, one will quickly surmise that eradication of the disease is now nearly impossible.

Conversely, canker hosts are a dead end for the pathogen, when the pathogen reaches a canker host it is unable to sporulate and its life cycle will end, unfortunately this can mean the end of the host trees life as well. As opposed to the foliar hosts, the leaves of

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

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MycoDigest continued

a canker host are not infected by *P. ramorum*. When the pathogen lands on the trunk of a canker host, it will enter through the bark and begin to eat away at the cambial tissue. From the outside, a dark red, sap-like ooze will emerge from the bark, referred to as a “bleeding canker”. As the pathogen slowly infects the cambial layer, the tree is essentially girdled as its water transport is cut off. The result is the sudden browning of the canopy, hence the name Sudden Oak Death. When in reality, by the time a tree’s canopy has been affected so dramatically, the tree has been diseased for years. At that point the tree has rotted away on the inside and is structurally unsound. The most common canker hosts affected by *P. ramorum* include the Coast Live Oak (*Quercus agrifolia*), the Black Oak (*Quercus kellogii*) and the Canyon Live Oak, (*Quercus chrysolepis*), as well as the Tanoak, which is not a true oak (*Notholithocarpus densiflorus*). True oaks fall into two main categories, red oaks and white oaks. This classification is based



Bark removal reveals the cankered cambial tissue of an infected Coast Live Oak

on the color of their hardwood. Most red oaks are evergreen while white oaks are deciduous. Of course there is always an exception, just like when identifying fungi, right? The only red oak mentioned here that is deciduous and affected by Sudden Oak Death is *Q. kellogii* the Black Oak. Fortunately, Sudden Oak Death does not affect white oaks, so the majestic Oregon White Oaks (*Quercus garryana*) and Valley Oaks (*Quercus lobata*) will survive this epidemic. Wondering which type of oak you have on your property? White oaks generally have lighter bark and the ends of their leaves are smooth and lobed. Red oaks will have much darker bark, and will have pointed ends at the tips of their lobes.

The hardest hit of these three true oak species is the Coast Live Oak, predominantly because of its proximity to Bay Laurels in our mixed evergreen forests. However the range of the Coast Live Oak extends beyond that of the Bay Laurel as they are often found in grasslands, or in pure oak stands where they will manage to escape the disease and potentially evolve natural resistance. The biggest concern, ecologically speaking, lies with the Tanoak. Unfortunately this species takes on the role of both host types; it is not only a canker host, but a foliar

host as well. When the canopy of a Tanoak becomes infected it is capable of infecting its own trunk, and the rate of mortality is greatly increased. Currently Tanoak is a key secondary species in our Redwood forests, and as it rapidly declines, the forest composition is visibly changing. Since I began my work on sudden Oak Death in 2003, I have seen landscapes transform dramatically in only a decade. Canopies that were once densely covered with foliage are now open wide, and the understory species composition is changing in response. Areas where I once wandered with ease are now an obstacle course of fallen trees. Once majestic oaks are now felled, taking down neighboring trees in their path and I can’t help but wonder where I will hunt for those delicious black chanterelles when the Tanoaks are no more.

Additional Resources:

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Davidson JM, Warres S, Garbelotto M et al. (2003) Sudden oak death and associated diseases caused by *Phytophthora ramorum*. Online Plant Health Progress (PHP-2003-0707-01-DG).

Garbelotto, M., and K. J. Hayden. “Sudden Oak Death: Interactions of the Exotic Oomycete *Phytophthora Ramorum* with Naive North American Hosts.” *Eukaryotic Cell* 11, no. 11 (September 21, 2012): 1313–1323. doi:10.1128/EC.00195-12.

Garbelotto M, Rizzo DM (2005) A California-based chronological review (1995–2004) of research on *Phytophthora ramorum*, the causal agent of sudden oak death. *Phytopathologia Mediterranea*, 33, 1–17.

Grünwald, N.J., Garbelotto, M., Goss, E., Heungens, K., and Prospero, S. 2012. 788 Emergence of the sudden oak death pathogen *Phytophthora ramorum*. *Trends Microbiol.* 20:131-138.

Grünwald, Niklaus J., Erica M. Goss, and Caroline M. Press. “*Phytophthora Ramorum* : a Pathogen with a Remarkably Wide Host Range Causing Sudden Oak Death on Oaks and Ramorum Blight on Woody Ornamentals.” *Molecular Plant Pathology* 9, no. 6 (November 2008): 729–740. doi:10.1111/j.1364-3703.2008.00500.x.

Rizzo DM, Garbelotto M (2003) Sudden oak death: endangering California and Oregon forest ecosystems. *Frontiers in Ecology and the Environment*, 1, 197–204.

Rizzo DM, Garbelotto M, Davidson JM et al. (2002) *Phytophthora ramorum* as the cause of extensive mortality of *Quercus* spp. And *Lithocarpus densiflora* in California. *Plant Disease*, 86, 205–214.



Melina Kozanitas is a PhD candidate in the Garbelotto Lab Group at UC Berkeley, in the department of Environmental Science Policy and Management. She began working with Sudden Oak Death as an undergraduate at Sonoma State University and continues her work on the Ecology, Epidemiology and Population Genetics of *Phytophthora ramorum* as a graduate student.

In her free time she enjoys bike riding, camping, and mushroom hunting.

QUICK START FORAY - NOVEMBER 9TH

The Quick Start foray for November will be held at McLaren Park in San Francisco on Saturday November 9th. Quick Start forays are intended to familiarize fungal foragers with field characteristics useful for identifying mushrooms and other fungi. We will meet at 9:30 a.m. for an orientation to go over local collecting policies, practices and etiquette. We also point out locations where fungi are likely to be found.

After the orientation, if the group is large, we will break into smaller groups and hunt for fresh fungi for one to two hours. On returning, we plan to display our collected fungi and discuss key identifying characteristics.

New and prospective MSSF members, as well as guests and non-members, are welcome. It's our goal that this foray provide information about local fungi and stir one's interest to learn more.

Email Paul Koski at: pkoski04@yahoo.com or Enrique Sanchez at ingew@yahoo.com for details about these forays and to be put on the foray list.

DAVID ARORA'S ANNUAL THANKSGIVING WEEKEND MUSHROOM WORKSHOP

FRIDAY, NOV. 29 THRU SUNDAY, DEC. 1.

Join mushroom book author David Arora and special guests for lectures, mushroom hunts, cooking demos and fungal fun outside Gualala on the Mendocino coast. This year's event will be held in a rustic log house with fireplaces and is limited to 20 people. All levels of experience welcome. To register, or for more information, go to the events page of davidarora.com, or send an e-mail to:

maxfun@cruzio.com

sukiyaki recipe. Or add them to udon soup.

I love easy recipes. Here's one for:

Chicken and Matsutake in Parchment

1 bunch of green onions, trimmed

¼ cup sake

1 tablespoon of soy sauce

2 boneless, skinless chicken breasts, about 8 oz. ea.
(It may be the world's most boring meat but it really gets gussied-up with matsutake!)

2 ounces matsutake, thinly sliced

Preheat the oven to 425 degrees. Cut two pieces of parchment paper about 18 inches long. Fold each in half lengthwise and trim the paper into an oversized heart shape.

Cut the green onions in 3 inch lengths and cut the pieces lengthwise into julienne. Put them in a little bowl and drizzle them with the sake and soy sauce. Toss and let sit for 5 to 10 minutes.

Lift the onions from the bowl letting the liquid drip back into it. Put the onions on one of half of the parchment heart, just in from the folded edge then set a chicken breast over the onions. Drizzle half the liquid over the chicken breast and lay the matsutake slices on top. Repeat with the other parchment heart and onions and chicken, liquid and mushroom slices.

For each packet, fold the other half of the parchment heart over the chicken breast. Starting at the top of the heart at the folded edge, begin making short folds that overlap a bit, working all around the cut open edges to fully seal them. If your edge doesn't seem well sealed and you have enough paper, you can go back around and do the same again.

Set the packets on a baking sheet and bake for 18 minutes. Carefully transfer the packets to individual plates and snip open the top. Be careful to avoid the first blast of steam but step back and inhale the divine aroma.

Chanterelles are a favorite November treasure in the woods also, a lot less elusive than matsutake. We'll find them, I'm quite sure, at our MSSF Mendocino foray. I had a most delicious, unforgettable chanterelle and

Culinary Corner continued

papardelle with pecorino cheese creation at a restaurant in Soho when I visited a friend in Manhattan recently. I'll try to replicate it for the column next month. In the meantime, try sautéing your chanterelles in unsalted butter, salt and black pepper and adding shallots, thyme and crushed red pepper after the mushrooms have gotten golden in color. Cook for about 5 minutes, stirring. Add a bit of sherry vinegar and deglaze the pan. Add chicken stock and simmer until a bit thickened.

Cook fazzoletti (handkerchief pasta) until al dente, drain and add to the mushroom sauce, add some butter and sauté gently for a couple of minutes. Plate it and sprinkle with chives and toasted hazelnuts.

Here's my favorite quote about cooking. It's from Madame Jehane Benoit, Canadian cook and author: "I feel a recipe is only a theme which an intelligent cook can play each time with a variation."

By the way, you can get help figuring out how much you need of ingredients when you cook for a big group. Just go to allrecipes.com, check a recipe that is somewhat like your own and change the servings number to yours. The site will calculate how much you need and you can tweak it to your own recipe.

The MSSF Culinary Group's October dinner was another winner. Following our usual selection of unique and mushroom centered dinner guests brought, we were presented with **George Collier's** "Invention", a Spanish style gorgeous mélange of lots of seafood cooked in a stew with lots of mushrooms served over **Al Cavajal's** very special golden saffron rice. For the vegetarians, **Paul Lufkin** made wild mushroom tarts. Not being a vegetarian, I missed out on that pleasure. Sure looked good. **Polly Shaw** gifted us with a wonderfully refreshing salad of greens, fresh slices of mandarin orange, sliced fennel and other goodies bathed in a vinaigrette dressing. **Mary Ann Swazo** provided an excellent assortment of artisan bread. **Peggy and Dave Manuel** made us a perfect dessert; a spicy bundt cake with seasonal fruit. Of course, we had coffee thanks to **Carole Reed**. **Jon and Sheila Harman** set up for us and **Laura Parker** directed clean up. Big thanks to our Captain for the night, Culinary Group co-leader, **Lisa Bacon**.

November's dinner will feature "Dinner in a Pumpkin" with other seasonal treats such as persimmon pudding. Check the calendar and please note that the venue will be different as renovations will be going on at the SF County Fair Building, our usual venue.

See you at the MSSF Mendocino Foray or other woody spots, or at dinner. --Pat

2013 44th ANNUAL MSSF FUNGUS FAIR

S.F. County Fair Building next to the
Botanical Gardens in Golden Gate Park

Sunday, December 8th
Open to the public 10 a.m-5 p.m.

WE NEED MEMBER HELP During November and December

*Help with advertising & event promotion
flyer & poster distribution, and more...*

Mushroom collection forays:

Friday & Saturday, Dec. 6 & 7, 9 a.m. to 3 p.m.
For more information, check the calendar
on the MSSF website: www.mssf.org

Set up: (small tasks for all levels of experience)
Saturday, December 7, 3 p.m to 11:59 p.m.

Soup Making for the Fair:

Saturday, December 7, 3 p.m to 10 p.m.

Volunteers during the Fair:

Sunday, December 8, 8 a.m. to 6:30 p.m.

Volunteers for take-down and clean-up:

Sunday, December 8, 5 p.m. to 6:30 p.m.

Dinner will be provided Saturday evening; lunch
will be provided Sunday.

Shift obligation is a minimum of three hours for
free admission to the fair.

More details will be posted in coming weeks.

If you have questions, email Stephanie Wright at:

FungusFair@ByteWright.com

or talk with her during the social hour
preceding the General Meetings.



Mycological Society of San Francisco Past President's Reunion-Dinner-Meeting



MSSF PAST PRESIDENTS: (from left to right) Wade Leschyn, Mike Boom, David Campbell, Norm Andresen, Mark Lockaby, Lorraine Berry and Curt Haney

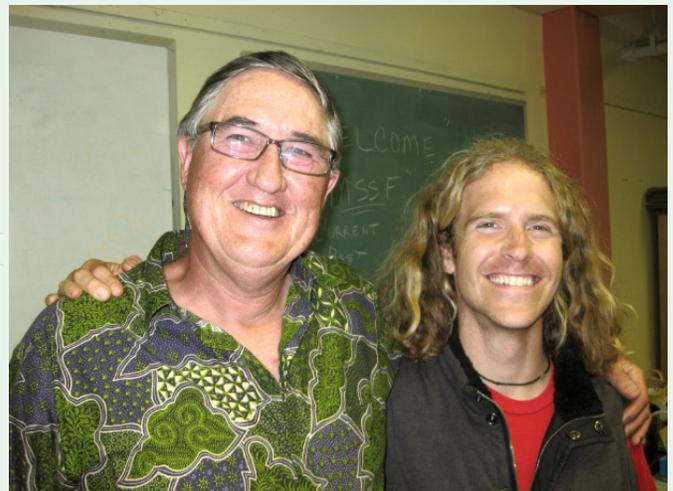
On September 8, 2013 between 5:30 - 8:30 p.m., the first ever, MSSF Past Presidents Reunion-Dinner-Meeting was conducted at the Randall Museum. Carol Reed cooked up a great Porcini pasta dinner with meat balls along with a nice mixed green salad with Candy Cap cheese cake for desert. The past presidents each brought a nice appetizer to share.

It was a very productive event for the society. Many of those who attended were able to share their past experiences as President of the society and discuss past and future goals of where we have been and where we are headed as a 501c.3 non-profit organization. Numerous ideas were discussed as to what has and has not worked for the society in the past, and recommendations were made for possible future goals of the society.

Past presidents attending were: **JR Blair, Norm Andresen, Wade Leschyn, Mike Boom, Mark Lockaby, Lorraine Berry, Dave Campbell.** They were joined by current president, **Curt Haney** and current vice president and recording secretary, **David Gardella.**

I have posted the minutes from the meeting in the file archives section of the members-only area section of the MSSF website: www.mssf.org Valuable information is contained in the minutes to assist current members, and future Presidents, Officers, and Council Members of the society.

-Curt Haney, President MSSF



Current MSSF President Curt Haney, (left) with Vice President David Gardella

Mycological Society of San Francisco
c/o The Randall Museum
199 Museum Way
San Francisco, CA 94114

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"A World of Wonder at Your Feet"

November 2013, vol. 65:03

MSSF Calendar November 2013

Monday, November 4, 7 p.m. - Culinary Group Dinner
Richmond Recreation Center, 251 18th Avenue San Francisco
"Dinner in a Pumpkin". Contact: lisa.bacon@comcast.net

Saturday, November 9, 9:30 a.m. - Quick Start Foray
McLaren Park, S.F. Info: Paul Koski at pkoski04@yahoo.com

Tuesday, November 12, 7 p.m. - MSSF Council Meeting

Tuesday, November 19, 7 p.m. - MSSF General Meeting
Randall Museum, 199 Museum Way, San Francisco.
7 p.m. - Mushroom identification and refreshments.
8 p.m. - Speaker: Roo Vandegrift

Fri.-Sun., Nov. 15-17, - Mendocino Woodlands Foray/Camp
Annual MSSF Mendocino Fall Foray (sold out)

Fri.- Sat., Dec. 6- 7, 9 a.m. - 3 p.m.- Fungus Fair Forays
Gathering mushrooms for the fair. Details to be announced.

Saturday, December 7, 9 a.m. - 12 p.m- Fungus Fair Set Up
S.F. County Fair Building. Contact Stephanie Wright: 510-654-6279

Sunday, December 8, - 44th Annual MSSF Fungus Fair
S.F. County Fair Building. Open to the public 10 a.m-5 p.m.

Mon., Dec. 16, 7 - 10 p.m. - MSSF Annual Holiday Dinner (potluck)
Hall of Flowers - Golden Gate Park, 9th Ave. & Lincoln, S.F. Contact Curt Haney: 415-333-8830

MSSF Volunteers Needed

Join the Council leadership, learn the inner workings of the MSSF and help make decisions that shape the future of the society. Do your part by contributing your time to a 100% volunteer organization!

Mycena News Editor: Let creativity be your guide. Bring out your inner artist. Knowledge of Adobe InDesign CS5.5 helpful. Current editor happy to coach. Email to: mycenanews@mssf.org

Librarian Co-Chair: Volunteer to assist the head librarian catalog and check library books in and out of the "Bill & Louise MSSF Library" during monthly general meetings at the Randall Museum.

To learn more about volunteering for these or other council and committee positions, go to: www.mssf.org members-only area, file archives, council member position descriptions. Or email: President@mssf.org

Remember, our great, ALL-VOLUNTEER organization would not survive without volunteers!

Check the MSSF online calendar at:
<http://www.mssf.org/calendar/index.php>
for full details, latest updates
and schedule changes.

The submission deadline for the December 2013 issue of Mycena News is November 15th. Send all articles, calendar items and other information to: mycenanews@mssf.org.