



The submission deadline for the April 2017 issue is Wednesday March 15

## The Mycological Society of San Francisco • Mar. 2017, vol. 68:07

**MARCH 21**

### General Meeting Speaker: **Peter McCoy** “Mycosystem Functioning”

As mycologists and ecologists uncover more and more influences that fungi hold on the environment, it is becoming increasingly clear that the fifth kingdom might need to be placed as number one! Fungi are everywhere, filling every plant, swapping DNA with other organisms, and ensuring the overall health of all ecological webs. In this presentation, Peter will cover some of the more obscure corners of the fungal realm from Antarctica to the bottom of the ocean and expose what we've all been missing. The result just may change the way you think about fungi and the world at large.

#### Speaker's Biography:

Peter McCoy is the co-founder of Radical Mycology, a grassroots organization and movement that teaches the means to easily work with mushrooms and other fungi for personal, societal, and ecological resilience. For the last ten years, Radical Mycology has provided free resources and held internationally attended conferences to share the science of mycology and the art of mushroom cultivation in a manner that is open-source, practical, and relevant for the modern world. Peter is also the lead cultivation expert for the Amazon Mycorenewal Project and Open Source Ecology, as well as the mycology advisor to Permaculture Magazine North America and a regular guest on the Permaculture Voices Podcast.

In 2016, Peter released *Radical Mycology*, a 650-page book on accessible mycology, mushroom cultivation, mycoremediation, and more. The book has since been hailed as one of the most accessible texts on the science and art of mycology, offering unique, thorough, and cutting-edge insights into the rapidly evolving field along with practical applications to complement these revelations. Peter's work and *Radical Mycology* have been featured in various news outlets (e.g. *Grist*, *Vice*, and *Salon.com*) and he has presented at mycological societies across the country. Peter lives in Portland, Oregon and he regularly teaches mycology-related courses around the world.



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### PRESIDENT'S POST

by *Brennan Wenck-Reilly*

Hello Mycophiles!

Happy March. Could there ever be too much rain? I think we have seen it this past winter. I hope you all are staying wet as you get out there and forage.

I went up to Yosemite for President's Weekend and the waterfalls were quite spectacular. Amazingly we also came across quite a few mushrooms on our hikes through the woods, even up around snowline. I would have thought February would see a dearth of fruiting bodies in the Sierras, but I was certainly proven wrong. I kept my eyes out for the elusive morel, however none were to be found. Look for Curt Haney's announcement in this issue about the Spring Forays to find out more about heading to the Sierras to find morels in May. He is also putting together a trip to the Trinitities, up near Shasta, to look for morels in late May/early June. If you've never been to the Trinity Alps perhaps it's time you packed a sleeping bag and a tent to find out what they're all about.

There have been a few new additions to the council roster of the MSSF. First off, Curt Haney, a former President of the society has been named Co-Foray Chair. He has been a tremendous help in organizing many of the Mendocino Woodland Forays for the past several years, and he has been a tremendous help in organizing some of the Spring forays

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over the past couple of years. He will Co-Chair along with Norm Andreson.

The Scientific Advisor position has also been turned into a committee. We decided that having a stronger scientific advisory committee would bolster the image of the society, as well as show appreciation to the continued contributions of many of the esteemed professional mycologists of the bay area who continually give their time and efforts to our society in a great number of aspects. So far Brian Perry and Else Vellinga have been added to the list of mycologists, along with Dennis Desjardin, and we are hoping that list will grow as we hear back from more local scientists who continually give to our society.

If you would like to become a more active member of the MSSF, Spring is certainly your chance. Elections for next year's Council will be happening in May. A committee consisting of Colleen Sudekum, Alan D'Souza, Madhu Kottalam, and Ken Litchfield are looking for eager MSSF members who would like to run for council positions. This Spring the Officer Positions that will be voted on are the positions of President, Vice President, Treasurer, and Secretary. There are also two Councilor positions that need to be filled. Becoming a Councilor is an excellent way to get more involved with the society and to have your voice heard. Contact one of the committee members if you are interested in running for the position.

I hope you all enjoy your March, and I hope to see you all at the General Meeting on March 21st. Bring a friend!

Brennan - [president@mssf.org](mailto:president@mssf.org)

## MUSHROOM SIGHTINGS IN FEBRUARY 2017



*Tremela aurancia* on *Stereum hirsutum*  
Oakland, CA



*Clavulina rugosa*  
Oakland, CA



*Ramariopsis kunzei* group  
Oakland, CA



*Amanita velosa*  
Oakland, CA



Send photos of your findings to [mycenanews@mssf.org](mailto:mycenanews@mssf.org) to be published in the next newsletter.

## CULINARY CORNER TRIES TO KEEP DRY

*By Patricia George*

It's about mid-February as I write this column. That recently missing blue sky seems to have reappeared for at least a few days. Our unusual weather has certainly impacted fungal behavior. Chanterelles have returned in abundance, for example, but too often way soggy and muddy. I gathered some myself not too long ago and processing them for cooking was arduous enough to make me wish I'd gathered fewer. As usual with soggy chanterelles, I rolled them up in a towel after cleaning them thoroughly and pressed upon them to extract some of the liquid. Then I dry sautéed them in a single layer over medium to low heat to drive off more liquid until they began to stick to the pan a bit, then I cooked them. As usual, I drained off the liquid as it exuded from the mushrooms. Do not throw that stuff away! I use it as a base for soup and intend to use it when making risotto instead of broth or in combination with the broth if I don't have enough. Delicious. I'll venture out to look for more again soon. Chanterelles are quite hearty, and they often fruit in March. I just hope I can find some that are not "mud puppies" as they are so affectionately known, soggy and very muddy. It does take work to get them ready to be cooked.

March is a kind of shoulder season in the world of mycophagy (you know, the eating of fungi). The variety of mushroom species is diminishing and many of us are beginning to have dreams about the upcoming morel season. However, don't count out March. Some great edibles may continue to show up for us. There could be further fruiting of black trumpets under mixed hardwoods-conifers and, like chanterelles, often in with poison oak, yellow foot along the coast, hedgehogs in mixed hardwood-conifer forests and shaggy manes in soil in disturbed ground, often along the roads and trails. With our odd weather-drought years to very, very wet ones-predicting what will be where and when is pretty much a crap shoot.

February's Culinary Group Dinner was on a very wet night but brought together our usual group of stalwarts who enjoy great food and friends. New people interested in cooking and dining joined us as they do at every meeting. February's dinner was "A Very Fungal Vegetarian Dinner".

Our menu: A big variety of appetizers, including some with meat; Pumpkin Curry Soup with Shiitake; Winter Greens with Mushrooms, Blood Oranges, and Scallions; and Eggplant Parmesan. To top it off we had an amazing Candy Cap Cheesecake with candy caps in the crust, the cheesecake itself AND in the sauce. What an extravagant dessert. You won't find this at other venues. Our group's volunteer cooks are really dedicated to making the best food ever.

Several people asked to have the recipe for the soup. Curt Haney and Carole Reed (who also made the cheesecake) kindly provided us with the recipe. Here it is:

### **PUMPKIN CURRY SOUP WITH SHIITAKE MUSHROOMS**

- 2 T. butter
- ½ finely diced onion
- 6 to 8 oz. sliced shiitake or other mushrooms
- 1½ T. flour
- 1 T. curry powder
- 3 cups chicken stock or broth
- 2 cups pumpkin puree or 15 oz. can
- 1 T. honey or 2 tsp. brown sugar
- Pinch nutmeg
- 2 tsp. salt
- ½ tsp. pepper
- ¾ cup milk or half and half or 1 can 5oz. evaporated milk
- 1 T. sherry or 2 tsp. lemon juice
- Sour cream for garnish

Melt butter in a large pot and add onion, sauté 1 min. Add mushrooms and sauté till they sweat, about 2 min. Meanwhile, toast curry powder in a dry sauté pan until fragrant. Stir flour and curry powder into onion mixture. Gradually whisk in stock. Stir in pumpkin, honey and nutmeg. Season to taste with salt and pepper. Reduce heat and simmer 10 minutes, stirring occasionally. Add milk and heat through. Do not let it boil. Just before serving stir in sherry or lemon juice. Garnish with sour cream.

Carol writes that she does many variations, sometimes adding rice to the hot soup, or shrimp, cauliflower or zucchini. She prefers fresh pumpkin to canned.

The next Culinary Group meeting is March 6th. Details can be found on the MSSF [website](#). I hope to see you there. Pat

## GUMMY CAT'S TONGUES (*PSEUDOHYDNUM GELATINOSUM*)

by Alan D'Souza

- 1 cup fresh cat's tongues
- 1 cup lemon juice
- 2 cups honey
- 1 cup sugar (optional)
- 2 cups water
- 1 cup fresh lemon verbena leaves
- 1/4 cup fresh thyme (other spice/herb options could include rosemary, cinnamon, cloves)
- 1 cup elderberry juice

Rinse and trim cat's tongues under running water to remove any debris.

In small pot, bring water, lemon verbena, and thyme to a boil then simmer for 10-15 minutes.

Finely strain liquid and reduce to about one cup on low heat.

Stir in and dissolve honey. Add lemon juice and tongues then bring to a low simmer for 30 minutes, adding more honey (or optional sugar) to thicken syrup. If liquid gets too low, add more water. Syrup should taste strongly of flavors desired, so adjust ingredients accordingly.

Take pot off heat and allow to cool to room temperature.

Separate tongues from mixture and refrigerate in mason jar with elderberry juice overnight or 6-8 hours .

Remove tongues, place on paper towels and pat dry, then transfer to wax paper sheets. Store refrigerated in sealed container.

Keeps for 2-4 weeks.



Photo by Mike Wood



Photo by Mike Wood



Photo by Alan D'Souza

## ACADEMIC QUADRANT -

# BOLETUS EDULIS: THE FACTS OF PICKING MUSHROOMS AND CUTTING TREES

by Jackie Shay

A recent study on the effects of forest management practices was assessed for *Boletus edulis* (Bull.) among *Pinus sylvestris* (L.) forests in Pinar Grande, Soria, Spain. Wild edible fungi, especially *B. edulis*, is an important economic resource for local harvesters, mycological tourists, and restoration projects. An estimated 32 million euros are generated per year on these mycological endeavors (Latorre 2014), exceeding the revenue from timber production (Palahí et al. 2009). Using genetic analysis on soil mycelium, Javier Parladé and his colleagues tested how clear-cutting, partial-cutting, and sporocarp (mushroom) picking affected the persistence of the global favorite wild edible *Boletus edulis* (King Bolete).

Pinar Grande is a well known “mycotopia” for fungal field work, and is located in the northeast zone of the Iberian Peninsula (Figure 1). It extends for an estimated 31,000 acres and dominated by *Pinus sylvestris* (Scots Pine). This area is under forest management practices that is periodically clearcut in a mosaic pattern with a rotation of 100 years. As an established study site, the team created 18 plots of 175m<sup>2</sup> to sample fruiting bodies. Data has been collected on the mushroom biomass during the fruiting period (September–November) every year since 1995. *B. edulis* represents 26.6% of the biomass data (Martínez-Peña 2009), providing useful insight into how the biomass of fruiting bodies changes over time, which allows scientists to correlate this data to build conclusions and predict growth in the future.



Figure 1

This study focused on the effect of tree cutting and mushroom picking on soil mycelium. Three experimental 150m<sup>2</sup> area plots were created to measure effects of clear- and partial-cutting. The team clearcut plots that included trees aged 101–133 years old and partial cut plots with trees 94–138 years old in December 2012 and observed whether tree cutting altered the soil mycelium dynamics. Soil samples were taken one month before clear cutting in November 2012 until September 2015. To measure the effect of mushroom picking, the team created 12 (5x5m) fenced subplots and collected weekly during fruiting season from 2011–2015. For controls, some plots were left untouched in both experiments.

After the study was complete the results showed that clear-cutting and partial-cutting resulted in sharp decrease of *B. edulis* mycelium biomass as compared to undisturbed plots (Figure 2). No recovery of mycelium was observed three years after cutting, demonstrating the dramatic impact that clear- and partial-cutting has on mycelium presence in soil. The results between clear- and partial-cutting was not significantly different, meaning that any disturbance in the tree dynamics had intense consequences on the fungal populations. Mushrooms are a valuable resource, and as clear-cutting practices continue, these plots will continue to produce less fruiting bodies, and inevitably provide less income for the country.

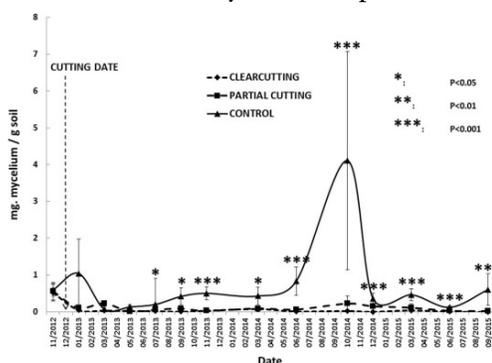


Figure 2

This study demonstrated clearly that clear- and partial-cutting has major impacts on soil mycelium, however, the study also showed that harvesting has little to no impact on the soil mycelium. Intensive collections over four seasons (September–November) of collecting did not significantly affect soil mycelium biomass as compared to non-collected plots, according to the results of this study. This is great news for local harvesters and *B. edulis* enthusiasts alike.

This study showed that using both soil and fruiting body mycelium is extremely useful in providing correlations between soil mycelium biomass, sporocarp production, and climatic parameters. These mycelium surveys are useful indicators of fungal response to management practices and may provide complementary information of known sporocarp production, making forest management an integrative system that incorporates both above and below ground interactions. Most studies focus on sporocarp production, which can be irregular, and more attention should be put on soil mycelium surveys to produce a clear community composition of forest and agricultural ecosystems, especially

in designing and implementing healthy forest management practices. Gordon and Van Norman (2014) studied the long-term persistence of *Phaeocollybia* in a clearcut area and surprisingly detected the fungus deep in the soil 12 years after the clearcut had occurred. They concluded that some fungi have methods to persist once established, and can continue living without producing sporocarps for many years. This drives home the ideas that understanding both soil mycelium and sporocarp production is necessary for conservation and sustainable practices in the future.

Increasing harvest pressures on wild edible mushrooms, with ever decreasing diversity of ectomycorrhizal fungi, calls for advanced study of persistence and robustness, or the ability to withstand change and adverse conditions. Previous studies carried out in Switzerland (Egli et al. 2006) showed that heavy sporocarp collections did not reduce the fruit body yield over time, however, foot traffic and trampling did, yet the soil mycelium was unharmed. This 29-year study showed that harvesting reduces neither future yields of fruit bodies nor the species richness of wild forest fungi. This same study showed up to 70% of surface mycelium was destroyed from walking, but not detrimental to the fungus underground. On a good note, some more recent studies concluded that 30 years after clear-cutting *B. edulis* managed to make a comeback, producing 6.5 kg/acre (De la Varga et al., 2013). These studies remind us that people have the power to make sure our resources are not necessarily depleted through uniformed practices and misguided behavior. These conclusions imply that foraging for our favorite mushrooms causes no harm to the fungus, and serves as a warning to tread lightly, collect in small groups, and to be aware of our impact on our surroundings. Happy hunting and be kind to the life beneath your feet this season!



Figure 3

### References

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- Parladé, J., Martínez-Peña, F., Pera, J. (2017) *Effects of forest management and climatic variables on mycelium dynamics and sporocarp production of the ectomycorrhizal fungus Boletus edulis.* Forest Ecology and Management 390:73–79

Figure 1: Pinar Grande ~ Photo from Micosylva Forest Network

Figure 2: Dynamics of *B. edulis* mycelium biomass after cutting treatments (clearcutting and partial cutting) as compared to control, undisturbed plots. Asterisks indicate significant differences between treatments within each sampling date. Bars represent the standard errors of means.~ Figure from Parladé et al. 2017.

Figure 3: *Boletus edulis* ~ Photo from Mykoweb.com by Michael Wood

## CALL FOR FUNGUS FAIR 2017 POSTER ART - DEADLINE APRIL 30TH, 2017

By Mahdu Kottalam

Although the 2017 Fungus Fair isn't until December, we are looking for artists interested in doing this year's fair artwork. Your artwork would be featured on this year's t-shirts and posters. Whether you're a professional science illustrator or you simply enjoy drawing mushrooms, please consider submitting examples of your work or a portfolio link. Perks include having your own guaranteed spot as a vendor at the 2017 Fungus Fair, 2 tickets to the Mendocino Woodlands Foray, and an Artist Profile in the Mycena News. You may submit past work for the selection process, but official FF2017 art must be new and original artwork created specifically for this year's fair. Please send your submissions to [fungusfair@mssf.org](mailto:fungusfair@mssf.org) by April 30th, 2017.

## CULTIVATION QUARTERS

by Ken Litchfield

The Mycological Society of San Francisco's Cultivation Committee will be having our 26th Far West Fungi Farm Field Trip Potluck BBQ on Sunday, March 19th noon to 3ish at the Far West Fungi Farm in Moss Landing. All the details about this event, including directions, can be found in the MSSF Mycena News October issue page 6 at this link: <https://www.mssf.org/mycena-news/issues.html>

As usual the price of admission is a potluck dish. Witness a dozen kinds of mushrooms being grown at the farm. Bring your cameras. You can purchase fresh organically raised mushrooms at the farm. Carpool and bring back as many partially harvested blocks of mushroom mycelium to fruit in your garden as you can carry.

Bay Area Applied Mycology is having lab seminars at their mycology lab with Counter Culture Labs in the Hacker Hall of the Omni Building at 4799 Shattuck in the Oakland Temescal. These seminars and their regular meetings and events you can find out about by checking their various social media:

<http://bayareaappliedmycology.com/>

<https://www.facebook.com/bayareaappliedmycologygroup/>

Be on the lookout for announcements here soon about a new mushroom cultivation development soon to be happening.

Looking forward to seeing everyone at the FWFFFTPLBBQ Sunday March 19th.

## MSSF SPRING FORAYS

by Curt Haney

Past **MSSF** President and Mendocino Woodlands Camp Director **Curt Haney** is planning on organizing two spring forays this year.

The first foray will be held in the Stanislaus National Forest with camping at; "The Pines Campground" (fees apply) near Yosemite National Park. This foray will be held on either the last weekend of April, (28-30) or the first weekend in May, (5-7). The date of the foray will be decided in Early April. It all just depends on when the snow melts and when the ground temperature raises enough to encourage mushroom fruiting.

The second foray will be held in the Shasta-Trinity National Forest, on the back side of Mt. Shasta near the town of McCloud, with free camping at Trout Creek Campground. This foray will be held on either the weekend before Memorial Day, (19-21 May) or the weekend after Memorial Day, (2-4 June). Again, it all just depends on the weather and conditions favorable to mushroom fruiting.



Additional information on these forays will be announced in the April edition of the Mycena News, on the MSSF website calendar, event registration section, and via e-mail announcements to all MSSF members. These forays will be open only to MSSF members in good standing, (dues paid up to date) and registered for the event through the event registration process on the MSSF website. Guests of members will not be allowed to register or attend these forays due to their popularity, and limited camping availability. Instead, encourage your friends to join the MSSF and reap the benefits of membership for only \$20 a year.



Look for final foray announcements from Curt again in Early April.

## MSSF Calendar March 2017

**Monday, March 6, 7:00 p.m. - 10:00 pm**

[MSSF Culinary Dinner](#)

**Theme: A Country French Dinner**

Hall of Flowers, County Fair Building  
Golden Gate Pk., 9th & Lincoln, S.F.

**Tuesday, March 21, 7:00pm - 10:00 pm**

[MSSF General Meeting](#)

**Speaker: Peter McCoy**

Hall of Flowers, County Fair Building  
Golden Gate Pk., 9th & Lincoln, S.F.

## MSSF VOLUNTEER OPPORTUNITIES

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 this 100% volunteer organization!

To learn more about all council and committee positions, go to: [www.mssf.org](http://www.mssf.org) members-only area, file archives, council member position descriptions. Or email [president@mssf.org](mailto:president@mssf.org).

**Photo Credit:** on page 1, *Cantharellus formosus* (Salt Point SP, CA) by **Pascal Pelous**

## ANNOUNCEMENTS / EVENTS

### Herbal Mead Making

7pm-10:30ish Every Wednesday Night  
at Omni Commons Lab  
[4799 Shattuck Ave, Oakland](#)

Contact Ken Kitchfield  
([litchfield.ken@gmail.com](mailto:litchfield.ken@gmail.com)) for more info

The **Mycological Society of San Francisco** is accepting nominations for the officer positions of President, Vice President, Secretary, Treasurer, and two at large councilor positions.

If you would like to offer your nomination of a person willing to serve please contact any of the following members of the nominating committee:

Colleen Sudekum - <[sudekum@sbcglobal.net](mailto:sudekum@sbcglobal.net)>  
Alan D'Souza - <[subatomicelphant@yahoo.com](mailto:subatomicelphant@yahoo.com)>  
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Ken Litchfield - <[litchfield.ken@gmail.com](mailto:litchfield.ken@gmail.com)>

Nominations will be announced in April for elections at the May 16th general meeting.



## Mycena News

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*Mycena News* is the members' newsletter of the Mycological Society of San Francisco, published monthly from September to May.

Please e-mail photos, comments, corrections, and correspondence to [mycenanews@mssf.org](mailto:mycenanews@mssf.org)

To subscribe, renew, or make address changes, please contact

**Stephanie Wright:**  
[membership@mssf.org](mailto:membership@mssf.org)

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Mycological Society of San Francisco  
The Randall Museum - 199 Museum Way, SF, CA 94114

Submit to *Mycena News*! The submission deadline for the April 2017 issue is March 15th. Send all articles, calendar items and other information to: [mycenanews@mssf.org](mailto:mycenanews@mssf.org)

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