

# Mycena News



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September 15

General Meeting Speaker

@ Hall of Flowers not Randall Museum



**Jackie Shay**

*"A Mushroom Expedition to Madagascar"*

For one month Jackie Shay and Danny Newman surveyed the large island of Madagascar in search of *Marasmius* and other fungi of interest. This talk will take you to the rain forests and back as we document the variety of fungi we found. Get a sense of the different habitats and learn about the culture, food, and Malagasy mycophilia.

Jackie is a student of Dr. Dennis Desjardin at San Francisco State University, where she is in the final stages of completing her Master's thesis on the genus *Marasmius* in Madagascar. She is fascinated by fungi and the various roles they play in the dynamics of the ecosystem, and is currently applying to Ph.D. programs in order to study these relationships further. In her other life, Jackie is an adventurer, a life-long learner, a passionate educator, and an amateur cheese enthusiast.

Dear *Mycena News* Readers,

Pascal, Ken, Liz and I are teaming up together this season as your *Mycena News* editors. We had a lovely retreat and potluck in Mendocino to exchange and develop ideas. As a result, you will note some changes in this current issue, and more are planned.

To kick off our first issue, we whet your appetite with our feature mushroom: chicken of the woods. Invaluable information on growth, edibility, and preparation is presented by Ken Litchfield, with his trademark wit, knowledge and humor. Aside from introducing a distinctive mushroom each month, we also want to introduce a distinctive mushroom hunter. In this issue, Paul Kozal, a talented photographer from Mendocino, is featured along with his innovative technique to make mushrooms glow on metal. For those mushroom-loving anagrammers, try the Fungal Jumble challenge. And if you've got a smart mushroom hunting tool please send us an account of how useful it is to you for mention in the Gadget Observer column. We always welcome member contributions (see Charles Houston's story in this issue)! Send us pictures, quotes, stories, and recipes. If your piece is selected for publication, one of the editors will personally thank you with a small token of appreciation.

As your new *Mycena News* editors, we look forward to providing you with fresh, lively, informative content that appeals to long-time and first-time mushroom hunters, cultivators, gourmands, and scientists.

- Wendy So, with her fellow editors Liz Sandiford, Ken Litchfield, & Pascal Pelous

## Mushroom of the Month:

**Chicken of the Woods, Sulphur Shelf**

*Laetiporus gilbertsonii*

Ken Litchfield

Though it is now months since the skimpy sprinkles of our last "rainy" season, this is the time to be on the lookout for the golden yellow and brilliant orange blobs of the chicken of the woods or sulfur shelf mushroom. Check around the bases of Eucalyptus stumps or around cracks and hollows on those living tree trunks in the East Bay hills and peninsula parks for the unnaturally brilliant lumps of gold against the dry and dusty habitat. A lucrative yield might be thirty or more pounds of tender golden, fowl flesh from one stump. Prepared properly it is one of the most versatile, edible mushrooms that you can partake of year round, though it usually only fruits in the hottest, late summer months of August, September, and October.



*Laetiporus gilbertsonii* © Fred Stevens

### Egg yolk stage

At the beginning "egg yolk" stages of its growth, the

Continued on page 3

## PRESIDENT'S POST

Hello MSSF,

I hope that you have had a bountiful summer. I know the Sierras produced a fair amount of boletes this year and we even heard a few reports of Bay Area morels and chanterelles from the North. Hopefully the dry summer did not keep you from looking.

I am happy to be addressing you as the new MSSF President, as we have an exciting year before us. With the prospect of the biggest El Nino on record, it will certainly be interesting to see what unfolds for us, especially following four of the driest, hottest years on record. I'm guessing that after his recovery, Curt will be not be heard from again until Spring if we get the rains we are hoping for.

A lot of work took place over the off season. Our library has been moved into a storage facility, although the books are still available for checkout. Simply log into the MSSF website, browse through the library, and email the librarian. Your book will be ready for pick-up at the next Society meeting.

I also want to send our gratitude to several individuals who have generously volunteered their time to make the Society a better place. First, to Sander Sindell, who served on our council the last year. Second, to India Mandelkern, our previous *Mycena News* editor. India helped transition the newsletter into the electronic version we read today, all while finishing her graduate work. We wish her amazing success in all of her future endeavors. *Mycena News* will now be managed by a team: Wendy So, Pascal Pelous, Liz Sandiford and Ken Litchfield.

Last, I want to thank David Gardella for the service provided as the last President for the MSSF. Not only did we continue to transition to a greener society under his guidance, but he also facilitated the tumultuous move from the Randall Museum to our new temporary location at the Hall of Flowers. Once the renovations are finished, we are planning to move back into that space, and we are being told that renovations should take about a year. I know that David had a lot on his plate this past year, and he has done an exceptional job as President. I have rather large shoes to fill, especially when I look down the list of past Presidents for the society. Please feel free to contact me over any regard at [president@mssf.org](mailto:president@mssf.org).

I look forward to seeing all of you at the first speaker meeting on September 15. Our Vice President, Jackie Shay, will be talking about her travels to Madagascar in search of Marasmius. I imagine we will be dazzled with beautiful travel images as well as some speak of mushrooms.

*Brennan Wenck-Reilly*

## MSSF Summer Picnic

*Jackie Shay*

The MSSF summer picnic is a well honored tradition among the fungus community of the bay area. This year the picnic was held on the beautiful Treasure Island, halfway between San Francisco and the East Bay. The skyline views of the city were breathtaking. The sun was shining all day long and with a healthy breeze, the party seemed to never end. The food was outstanding to say the least. There was abalone, couscous salad, sausage links, crab-stuffed mushrooms, and so much more. In total there were about 25 guests, 5 of whom had never been to the summer picnic before. It was a great opportunity for new members to experience a warm welcoming from the regulars. The infamous tabernacle choir charmed the afternoon with their fun and upbeat mushroom tunes. As the bellies became full, the conversations flourished and by the late afternoon everyone had enjoyed themselves thoroughly. It was such a pleasure to help create this event this year, and I am glad it was a lovely success! Thank you to all of you who came! See you next time.



chicken of the woods looks like a blob of golden cauliflower that might be the size of a small head of cauliflower or several large ones. It could be emergent from the shady, north side of eucalyptus stumps along the roadsides of the East Bay hills, or it might fill the inside of the cool hollow of the stump, or sprout directly from the soil over a buried root near a stump or tree. Often a eucalyptus stump looks as if someone buried a spray can of yellow packing foam deep in the center of the trunk and blew it up — every nook and cranny bursting with big bulbous blobs of egg yolk. This egg yolk stage, tender and sliceable like a boiled hen's egg, is the part that is edible and delectable. Rarely do you find this stage in mushroom markets in the bay area, but rather the fully expanded shelves; dry, tough, and faded, with no tender edges left. The pickers and buyers are both clueless as to what they are dealing to each other and the public.

Except for turkeytails, or perhaps a rare oyster or two, chicken of the woods is the only mushroom you'll find associated with Eucalyptus, its usual host, dead or alive. Its likely sole lookalike, this or anytime of year, is *Fuligo septica*, the dog vomit mushroom, a slime mold whose amoeboid tentacles emerge and coalesce overnight from beds of Eucalyptus wood chips and can be quite the gold blob early in the morning, after a foggy night or local irrigation. But it quickly fades to what looks and feels like a big pile of dog vomited oatmeal. After a day or two this becomes crusty and hygroscopic, and detonates into billows of black spores when stepped on or hit with the spray of a garden hose. It may well be nonpoisonous as few probably would attempt to try it so there are few edibility or toxicity anecdotes about it. The gold amoeboid stage doesn't taste bad per se, but is so nubilous and crepuscular that it is unlikely to be easy to collect much to sample.

### **Shelf Stage**

As the cauliflower blobs of the chicken of the woods expand and grow they differentiate into auriferous, velvet antlers that begin to form the individual shelves of the mature fungus. When fully differentiated they may be one to two feet across each, with scores of shelves growing out of one source. Typically, at this stage most of the shelf structure is usually too tough to provide the delectable flesh for a palatable meal. But the brilliant orange trunks and shelves sport the golden picotee edges that still retain the velour texture of the egg yolk blobs. These tender edges can be harvested once or twice from the same regenerating shelf.

### **White Charcoal Stage**

As the fungus matures it gradually fades from pale yellow to light gray or white and becomes dry and woody, and breaks into chunky cubes. It looks and feels very much like a light gray or white charcoal and in the off season its remains can be an indicator of what stump to check around during the fruiting season.

The white charcoal of the dead shelves or sporocarps is loaded with spores and can be stuffed into cracks and hollows of non-fruiting Eucalyptus trees and downed logs that they may take off and grow in the rainy season.

### **Precooking Chicken of the Woods**

Many folks still believe that Eucalyptus can impart some sort of nausea-inducing toxin to the chicken of the woods that grows upon it and warn against eating any chicken of the woods that originates from Eucalyptus. After many years of testing and preparing chicken of the woods scores of times with many different people taste testing it, I don't believe this and reject this contention. I believe this is just hearsay from folks who are only repeating what they have heard and haven't actually prepared or tried it themselves.

There is a nausea inducing puke principle inherent in the flesh of the chicken of the woods mushroom but it doesn't matter whether it is influenced by Eucalyptus or not. Properly preparing chicken of the woods, like properly preparing any potentially edible mushroom, is the key to culinarily enjoying chicken of the woods raised on Eucalyptus or any other tree.

The puke principle in chicken of the woods can be destroyed by the heat of cooking so it is only necessary to be sure to precook it properly. This means simmering quarter inch thick slices for 15 minutes. If the slices are thicker then they would need to be simmered longer. However, quarter inch thick slices with a quarter hour time period is easy to remember and brief enough to enact. The outline of the slices could be small or large depending upon the size of the fungal blob that was being sliced. And each slice could be cut into interesting silhouettes of chicken shapes or mushroom shapes or seasonal holiday themes.

The larger the skillet that the slices are simmered in, the more that can be accommodated. If a first layer of quarter inch slices is tightly arranged side by side one layer deep, another layer of the same can be arranged on top of the first, straddling the first layer so the middles of the top slabs are exposed to the gaps in the lower layer. This allows the heat to penetrate more slabs at the same time. The slabs are submerged in an appropriate simmering sauce like chicken or vegetable broth or wine. After at least 15 minutes of simmering, the chicken of the woods flesh will be precooked enough so the heat will have destroyed the puke principle and the precooked fillets can be cooled and put into ziplock freezer bags for storage in the freezer, with or without the pan juice. There is no puke principle in the juice, as the principle was not extracted to the water but destroyed by the heat.

Later, as many frozen fillets as desired can be taken out of the bag and cooked as you would regular chicken meat - on the BBQ with BBQ sauce, with pineapple for teriyaki chicken, coated with the appropriate batter for fried chicken or chicken fried fillets, etc. They will then be receiving more cooking than the recommended minimum that deactivates the puke principle.

If the wine used is red, then the original golden orange slices take on the red wine color giving them a salmon pink color. If a little seafood like shrimp, crab, or fish is added to the red wine batch then this will be "salmon of the woods", best cooked with a finish of butter and dill or fennel. If skinned, sliced scallops of salsify root are used, the root will impart a scallop seafood flavor to the vegan salmon of the woods.

I know of folks who have cooked quarter inch slices for 5 or 10 minutes instead of this recommended 15 and induced nausea in themselves. The solution to that was to do a little digital uvulation so the offending fillets were upchucked. Then they gave the mushroom longer cooking and ate it OK. And no, they cooked longer more of the uneaten mushroom, not the upchucked stuff.

Regular side dishes cooked by this method should have no negative nausea reactions no matter what tree they originated from. I have intentionally eaten an extra large entree style serving cooked by this method and did manage to detect a barely noticeable twinge of nausea but nothing that gave me any concerns.



## CULINARY CORNER

Patricia George

### SHIITAKE, NOT A NATIVE WEST COAST MUSHROOM BUT A CULINARY TREASURE ALWAYS AVAILABLE

September is a time when the kitchen is a place where fresh, native wild fungi probably aren't to be found in great numbers, especially during a drought period. So, it's the freezer or the pantry with its jars of dried edibles we've found previously that go into our soups, stews and other culinary creations. However, a delicious, ubiquitous non-native can almost always be found in the fresh food section of groceries and at farmers' markets. That, of course, is *Lentinula edodes*, shiitake, that darling of Asian restaurants, commercial growers, backyard mushroom cultivators and cooks in their own kitchens. It possesses excellent flavor and a meaty texture and improves just about any dish. Want to bring variety and depth to vegetarian preparations? Be sure to include shiitake.

Chemically, shiitake, like other mushrooms, gets its richness from amino acids, especially glutamic acid which is a concentrated form of monosodium glutamate. Another taste enhancer that works in tandem with glutamic acid is GMP, guanosine monophosphate, which was first discovered in shiitake and contributes to its rich flavor. Umami! (how trendy of me). Shiitake owe their special aroma to an unusual molecule called lenthionine, a ring of carbon and sulfur atoms which is created by enzymes when the tissue is damaged. Lenthionine production is maximized when the mushroom is dried and then rehydrated in warm water. It is minimized by rapid cooking of the fresh or dried mushroom, which destroys enzymes before they have a chance to act. Drying mushrooms, with the exception of chanterelles, oysters and matsutake, intensifies flavor, according to Harold McGee, in "On Food and Cooking", and shiitakes and boletes are especially flavorful because they have sulfur compounds that generate meaty aromas. He says that even home-dried button mushrooms are far more flavorful than the fresh originals. I've always wondered why people buy those ridiculously expensive little bags of dried chanterelles, matsutakes and oysters. I did try drying them and found them to be useless in cooking. No flavor, poor texture.

Successfully cooking mushrooms is process best done with patience, cooking slowly with dry heat to give all enzymes time to get to work before being inactivated and to cook out some of the water and concentrate the amino acids, sugars and aromas. Because of the chitin in the cell walls that is not soluble in water, mushrooms don't get mushy with long cooking. Mushrooms are most tasty when caramelized (what isn't?), best done by heating the pan, adding oil/butter and when the oil/butter is hot, adding the mushrooms. Don't crowd them and leave them alone until they brown on the bottom, then stir them and finish your dish.

Growing your own shiitake at home is easy to do with kits you can buy from Far West Fungi. The company, located

near Moss Landing, hosts the MSSF and other groups a few times a year with tours and pot luck with barbeque afterwards. It's a great day out and very informative. Dates and a description of the tour will be posted on the MSSF Yahoo group site for members. It's lovely to go out into the garden and gather several fresh mushrooms from your kit.

There are legions of good recipes for shiitakes and other commercially cultivated mushrooms. Try this:



Shiitake

#### SHIITAKE QUESADILLAS

##### Ingredients:

- ¼ lb fresh shiitakes, sliced
- 2 Tbsp unsalted butter
- Fresh thyme, chopped
- Kosher salt
- 4 soft flour tortillas
- 8 oz scamorza, cacciavallo or any good aged smoky soft cheese, grated

##### Method:

Heat a large, non-stick skillet over medium high heat. Add the prepared shiitake to the hot pan and sprinkle with a large pinch of salt. Cook for 4 to 5 minutes to rid the mushrooms of some of their liquid and as it begins to evaporate, add 1 tbsp. of the butter, stir to combine. Continue cooking until mushrooms have decreased in size a bit and the butter/mushroom liquor is combined, about 3 to 4 more minutes. The mushrooms should be neither soupy nor dry. Sprinkle with some of the thyme. Check for seasoning. Remove to a plate and keep warm. Wipe out the pan, return it to the heat and melt the remaining butter. Add a tortilla to the pan and spread a quarter of the grated cheese over half, top the cheese with some of the sautéed mushrooms and fold over undressed part of the tortilla creating a half moon shape. Gently press the tortilla with the back of a spatula. Flip the quesadilla over at least once and cook it until the cheese melts, the tortilla browns a bit and the butter becomes nutty. Remove to a paper-lined tray, sprinkle with more kosher salt and keep warm as you prepare the rest. Serves 2.

## MUSHROOMER OF THE MONTH

Liz Sandiford

Paul Kozal is a fine art photographer of 30+ years experience, based out of Gualala, CA, whose portraits of mushrooms caught the attention of the *Mycena News* committee during a recent trip to Mendocino. Originally from the southwest suburbs of Chicago, where Paul's brother introduced him to the joys of morel hunting, he's been based in California now since 1986. He still regularly hunts for local mushrooms when he can, although now his collecting priorities have expanded to include aesthetic considerations as well as culinary ones.

While much of Paul's work has always been landscape photography, the inspiration he gets from his love of nature translates spectacularly to his luminous, mushroom scanography work. The images he composes are created on an old-school professional slide scanner, which doesn't wash out the color lights like modern scanners can, utilizing additional lighting from a number of angles and temperatures, in a darkened room. Mounting the dye sublimation transparency prints on shiny, anodized aluminum gives the mushrooms a backlit appearance, and reinforces diverse impressions such as that of deep sea creatures, fashion images, through to alien spacecraft and architectural forms.

It can be hard to predict which fungi will work with the scanographic technique, and to find those specimens. Sometimes the ones that would seem to work best don't work at all and the ones that look unexceptional live, really show their best sides on the scanner bed. Paul likes it when he can show both the underside and the top side in the same image. Other occupational hazards have been melting a hole in the side of the scanner with hot lights, but that's nothing a trip to eBay has been unable to fix.

The most popular mushroom prints Paul sells have been of the porcini, *Amanita muscaria* and chanterelles, closely followed by the *Psilocybe*, witch's hat and morel images. Apparently, along with the mycologists, botanists, scientists and foodies you would expect to be drawn to this work, there have been a good number of photo collectors, some of whom claim to have no real love for mushrooms outside of these images. Shocking, I know, but these people exist. You can find a lovely selection of his mushroom images at: <http://www.searanchphotography.com/Wild-Mushrooms/>

We're hoping Paul will be showing and selling his work at the MSSF Fungus Fair in December 2015, and possibly bringing his studio on the road to capture finds from the forays leading up to the fair. He is working on expanding the range of mushroom varieties he has captured for a future book dedicated to his mushroom photographs.

If you pass through Gualala, you can see Paul's work and meet him at his gallery:

Studio 391, 39102 Ocean Drive,  
Cypress Village Gallery District,  
Gualala, CA 95445.

Call 707.884.9065

Email [paul@studio391.net](mailto:paul@studio391.net)

or

Check the website for hours and more information: <http://www.studio391.net/>



## BAAM's Introduction to MSSF

Joseph Soeller

Ladies and gentleman of MSSF, I'd like to introduce Bay Area Applied Mycology (BAAM), a recently formed nonprofit whose mission is to achieve healthy ecosystems through the application and advancement of mycological and other biological processes (woo, what a mouthful!). Most of you already know us as our former incarnation, Bay Area Radical Mycology, which formed in November 2011. We originally formed with the express interest to establish a mobile myco team that uses functional fungal cultures as tools to react to an environmental disaster, such as an oil spill in the bay. Fortunately, we haven't had to act on such a thing.

We were all inspired by the works of Paul Stamets, et al., and his discussion of the utilization of fungi for environmental remediation, such as breaking down oil, filtering bacteria blooms in water, and accelerating the decomposition of trees. Since our creation, we've worked closely with the East Bay Municipal Utility District in best-management-practice efforts to decompose dying non-native Monterey Pines in an East Bay watershed in preparation for a return to an Oak Savannah and cultivate massive swaths of mycelium to capture and filter E. coli as a result of marauding cattle and their pies.

After three years, Bay Area Radical Mycology chose to move up a rung and file as a nonprofit corporation, with the intent to attract more individuals interested in pursuing this type of burgeoning work, and to establish a more formalized organization that can build relationships with businesses and entities around the bay. We also wanted to put our experience and curiosities to work to apply for grants, in order to test and apply our theories on various scales.

One of the greatest boons to our group is the recent development of the BAAM Lab at CounterCultureLabs (CCL), a community space within the Temescal region of Oakland. The lab has been a wonderful resource, a place to store cultures, cultivation tools, and substrates, as well as a meeting place for activities and social events. Within this space, BAAM has begun building a culture library of both native bay area fungi and unique and interesting fungi from other regions of the world. We recently, for instance, acquired a culture of *Pestalotiopsis microspora*, a fungus that has been found to degrade polyurethane, as well as *Panellus stipticus*, a fungus whose mycelium glows in the dark.

The creation of the lab was truly a communal effort. Many individuals donated their labor to renovate the space. Some helped paint, others donated money for supplies, and others purchased and cut wood and installed lighting. Our group is full of angels and I cannot be thankful enough for their support.

The BAAM Lab is non-exclusive and is open to anyone interested in cultivation, whether as a member of BAAM or MSSF. As it stands, frequent use of the lab requires a \$20 monthly subscription to CCL, and some help with materials from time to time. CCL hosts a ton of activities and is a source of heavy cross-pollination of ideas and personalities. MSSF Honorary Member Ken Litchfield leads a weekly MycoFermentoOmniMondo on Wednesdays from 7-10pm, where participants can gather to do and learn about fermentation, cultivation, and beyond.

Just like MSSF, all of BAAM's work has developed thanks to the generous time and efforts of its members. Many of BAAM's members have been long-time members of MSSF and have been extraordinarily supportive in its creation. BAAM looks forward to developing a deeper relationship with MSSF, as it has from its genesis. Each year, MSSF has welcomed BAAM to the Fungus Fair and BAAM has participated in many of MSSF's annual forays for species survey.

BAAM as a nonprofit is truly a baby bird in its fledgling state. We recently received our corporate status and, thanks to the help of several MSSF members, constructed our bylaws. We're developing our membership and widening our board of directors. We hope the creation of this formal organization opens doors to wonderful new projects and discoveries in the realm of mycology. As with anything volunteer based, things develop at the whims of free time and passion. Our website is building, our lab presence is generating more activities, and our relationship with other groups around the bay is growing.

Thank you very much MSSF for your support, and thank you to all the members of BAAM who have helped make this a reality.

If anyone is interested in learning more about the group, membership, and activities, feel free to contact me via my e-mail address below. We are always looking for more individuals interested in the scientific pursuit of environmental solutions.

MSSF Council Member and BAAM President,  
Joseph Soeller - [jsoeller@gmail.com](mailto:jsoeller@gmail.com)

[[bayareaappliedmycology.org](http://bayareaappliedmycology.org) - [counterculturelabs.org](http://counterculturelabs.org)]



## HOSPITALITY COMMITTEE SHOUT-OUTS TO MSSF GUEST CHEFS

The Hospitality Committee gives a shout-out to co-chair Eric Multhaup for May appetizers, consisting of roasted shiitake soup (ingredients - shiitake mushrooms (Mill Valley Market), shallots, fresh herbs, dried herbes de Provence, garlic, cannellini beans, mushroom stock, sherry and lemon) and focaccia with herbed ricotta and sauteed mushrooms (ingredients - Mill Valley Market "herb slabs", ricotta cheese, mixed fresh herbs, garlic, sauteed crimini).

YOU TOO can be a guest chef at one of the meetings this fall by merely emailing Eric at [mullew@comcast.net](mailto:mullew@comcast.net) or co-chair George Willis at [gwillis2@mac.com](mailto:gwillis2@mac.com). If you volunteer, you will receive support, encouragement, and an \$80 food budget.

Sign up NOW!

The Hall of Flowers will have the kitchen available at 6:30pm.



Eric Multhaup

### MSSF moving day from the Randall Museum

*David Gardella*

On June 17th, a few faithful MSSF volunteers helped disassemble and move the MSSF storage cabinets, along with their contents, from the Randall Museum while they commence the beginning stages of their renovation project. A big thanks to MSSF members Curt Haney, Danny Newman, Jackie Shay, Ken Litchfield, and Louis Lennard for taking time out of their day to help with this important task. Although it was not one of the more exciting MSSF volunteer opportunities we've offered, it was still an activity that was greatly needed. Please help me in commending these volunteers for their efforts next time you see them. The MSSF Library is currently in a secured storage facility as Council weighs the options of next phase housing and system opportunities. As the season reconvenes, Council will let the general membership know of the future set up plans for the Library over the next few months. For the interim, if you have any Library questions or would like to check out a specific book in our catalog, please contact MSSF Librarian Danny Newman at [library@mssf.org](mailto:library@mssf.org)

### Joke

What do you call a baby elk? Elk niño.

## The Big Sweet

Charles Houston

So there I was, getting my fix in the Oakland hills in hopes of scoring more Spring Kings after light rains. Find them I did, sparingly, but consistent: for this is summertime where the fungal living ain't easy. But what happened to me over the next month was nothing short of being touched.

There they were, right on one of my winter-time paths, and my eyes bulged with disbelief! So naturally I checked my phone for confirmation and it said it was indeed summer, months from November or December. "What the hell" I said, followed with a reverence for this little one I refer to as The Big Sweet, a.k.a. Candy Cap, a.k.a. *Lactarius rubidus*. Meandering about, I found a few more, and then the fix, as it surely does, became addiction: cast the net far and wide, search and respect, fall into this wonder.

Some were small, some were large, and absolutely zero expletives were given by anyone else, for only tracks of deer, my king-bolete-hunting nemesis, were all I saw. Surely no Graybacks\* have been here, I thought. Growing in their usual nesting spots I took only large ones, telling the little ones I'd be back. And back I came, walking the same routes again, and again, and again over a week, sometimes meandering, but gifted more. Yet the only tracks on forest floor I found, the only expletives given, were by me and said king-bolete-hunting nemesis.

After a couple of weeks a feeling of exuberance encompassed me, knowing I was the only one here, repeatedly, and gifts were offered while I asked permission and gave thanks. I took the once little ones, and left the new little ones, telling them I'd be back. Over a solid month I walked, I scaled, I slipped and I sweated over these routes, just as many of you do...except you were not here, only my king-bolete-hunting nemesis.

I continued to watch the little ones grow to big ones, and I continued to tell the little ones I'd be back. They fruited, they spread, with no rain, and continued to gift me over and over. I frequently came home with respectful gifts, drying them on hardwood with sun kisses. This was no ordinary time, for it was not on private land, and a sense of elation enveloped me for this was a time where only I was here, and they gifted me as I nurtured their pattern with reverence.

All in all, I filled just under three quart jars of dried Big Sweet, just exactly when I needed it. I only had a 1/2 quart jar left to get me through to winter on my shelf, and that is never a good thing, rather a combination of anxiety and torture, coupled with concepts of apocalyptic rationing.

I often state and know, The Big Sweet is by far the most underrated fungal relative of them all. Most amateur hunters and gawd awful foodies will emotionally vomit about The King, the Big Three of Chanterelles, and of course, the only mushroom that matters...The Morel. Yet, they don't know the utter magnificence of The Big Sweet, and thank our lucky stars they don't!

During this month of reverential jubilation, from mid May to mid June, I felt as I was in my own garden, surrounded only by obesely-overfit joggers. No one giving anything but zero expletives about being in tree and poison bush and tick, for they were cardio-mongers preferring to stay fit on open trails. And my fellow hunters? Jaded summer depression must have overtaken you all! And I'm thankful, to say the least, about such psychological conditions! The Big Sweet touched me, blessed me, announced they will not be victim to the turmoil of human desire and concepts of changing climate. For they must grow, and holy hell, grow they did! 😊

Mycologically yours,  
Charles.



\*Graybacks: those with locks of gray hair, backpacks, hiking boots and walking sticks. Usually seen with baskets in hand and driving a truck or Subaru. An intellectually superior mycological hunter: one to be feared, one to be respected.



**Fungal Jumble**  
Wendy So

**Popular Arizona Finds During Monsoon Season**

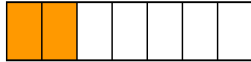
THERALENCLE



UNACARESS



COINRIP



UREFILLACOW



TORSLEB



Clue: What you need to clean a big pile of dirty mushrooms?



*Answers in the October 2015 issue*

**Gadget Observer**  
by Gadget Gal

The Dollar Store is a great place to get cheap gear for the frugal mushroom hunter. If you are like me and tend to lose sticks, knives and brushes in the forest, they can be easily replaced. This month, I discovered the best lobster mushroom cleaner. Not only does it come in the color of the of the lobster mushroom (hunter orange), it also cleans the lobster better than any one tool I have in the kitchen. It's intended use is a vegetable brush and peeler combo, but to me, it was made for the lobster mushroom for field or home cleaning. The brush on the tool is extra hard and long so the dirt-filled crevices of the distorted mushroom can easily be cleaned. Any dirt adhering to the base of the mushroom can be simply shaved off with the peeler. It even has a hole in the handle so you can use a carabiner to hook it to your basket or belt buckle.



**Lobster Mushroom Cleaner**  
*Location: Ruidoso, NM, USA*  
*Observation created: August 4, 2015*

## CULTIVATION QUARTERS

*Ken Litchfield*

Welcome to the new, improved, and expanded Cultivation Quarters of the Mycological Society of San Francisco's *Mycena News*.

MSSF's Cultivation Committee has been going through lots of changes with a number of new developments on the cultivation front, with more to follow in coming months.

First, I'd like to welcome a new mushroom cultivation oriented society into the fraternity of northern California mushroom societies. Please see Joe Soeller's article in this issue of *Mycena News*. Bay Area Applied Mycology has been around for several years as Bay Area Radical Mycology and they have now changed their name and applied for 501c3 status. BAAM now joins the other NorCal mushroom societies Mycological Society of San Francisco (MSSF), Sonoma Mycological Association (SOMA), and Fungus Federation of Santa Cruz (FFSC).

BAAM is particularly focused on mushroom cultivation, especially mycoremediation, but also explores the other avenues of applied mycology like dyes, art, culinary arts, herbalism, fermentation, etc. They have a nice lab space with Counter Culture Labs at Omni Commons, 4799 Shattuck, in the Temescal district of Oakland. Omni is a collective of collectives and Counter Culture Labs is one of the collectives sharing its biohacker space with the SUDO Room electronic hackers. Besides BAAM's mycology lab, CCL is installing BioSafety Level One and BioSafety Level Two lab spaces by CDC guidelines with their \$33K Kickstarter funds. In addition there is a Fermentation Station lab space which I have volunteered to be the FS Keeper. So MSSF Cultivation can collaborate with BAAM, CCL, and SUDO in a centrally located space with extraordinary facilities, equipment, and folks with the knowledge and skills to operate things, and fix them if they go on the fritz. If you would like to explore mushroom cultivation and other aspects of applied mycology more in depth, please visit CCL, BAAM and the Fermentation Station. You can sign up for events on Meetup and for the foreseeable future I'll be available at the Fermentation Station on Wednesdays 7-10ish for an ongoing class in herbal meadmaking, which is a topic of broad interpretation, but does involve applied mycology.

On a similar topic, be sure to put on your calendar the 23rd Far West Fungi Farm Field Trip Pot Luck Barbeque for October 25th. This is the place to learn first hand about mushroom cultivation and applying it to your own home garden. There will be tours of the farm, a huge potluck BBQ with the Garrones grilling their mushrooms fresh from the farm and you grilling slabs of things you bring to the potluck. Following this you may raid the recycle pile for once harvested mushroom blocks to take home and make mushroom gardens in your own backyard at the beginning of the rainy season - if we have one - which is being forecasted as an El Niño - for sure..... Look for the official invite to the membership about a week before the event on the MSSF Yahoo group and also on an email blast to the MSSF membership.

With our new format of the *Mycena News* we are no longer limited to the 8-page print format, snail mailed to members. Now that we have 'gone green' and only send out the newsletter by electronic mail there is essentially an unlimited amount of space with echelons of links to articles and graphics that we can exploit in each monthly issue. I'll be going into much more in depth discussion of mushroom cultivation techniques, wherefores and howtos, the biology of mushroom lifestyles, pictures, etc. In addition I am requesting submissions of written or graphic contributions from the membership of your own first-hand knowledge, observations, and experiences with growing techniques or particular species or perhaps mushroom farms or growing operations you may have visited here or in foreign lands. I am more interested in having first-hand experience than simply recounting the same staid techniques that may be found all over the internet. However, it could also be excerpts from historical descriptions of early mushroom cultivation techniques from a hundred years or more ago and the mentalities that went with them. Priority is for gardening over laboratory techniques but demonstrating new, low overhead - high return methodologies for all aspects of mushroom cultivation is of value.

This month we'll begin our discussions with an introduction to the lifestyle categories of the various useful mushrooms and their practical applications to mushroom cultivation.

But first a note about growing mushrooms, garden style compared with laboratory style. Mycological enthusiasts that want to get into mushroom cultivation regularly encounter an assuming attitude from

Continued on page 11

certain mushroom cultivators that laboratory methods are necessary *de facto*. And, in addition, they encounter commentary that laboratory style mushroom cultivation is actually really simple and inexpensive - and then they proceed to encounter the recommendations for expansive facilities and boocoo expenditures. Rarely do they encounter even a mention of the simple natural and organic emulations for culturing wild mushrooms called "mushroom gardening." Millions of regular everyday people practice gardening as a hobby or business. This compares with a fraction of that number that are regularly practicing lab techniques for growing plants or mushrooms. Yet much of the mushroom cultivation advice purveyed assumes that it is an obvious proposition that mushroom cultivation requires laboratory methods. Much of this attitude originates from the clandestine culture of magic mushroom cultivators that do make up a substantial contingent in mycology and have made substantial contributions to laboratory knowledge of mushroom cultivation that can be applied to regular species of mushrooms.

But let's just step back a moment and look at the bigger picture. Millions of people, called gardeners, grow thousands of different species and cultivars of edible, herbal, aesthetically pleasing, and just plain interesting plants in multitudes of growing formats: in the ground, raised beds, containers, hanging baskets, greenhouses, windowsills, etc. But the number of folks who grow plants in comparatively complex laboratory conditions, primarily known as meristem culture, is comparatively miniscule. Really miniscule. It is easy to contend that the vast majority of gardeners have never even heard of meristem culture and far fewer have ever even tried it. Yet if a regular practitioner of meristem culture of plants were to give advice to a gardener on what equipment, facilities and knowledge they would need to grow plants, that gardener would rightly consider that advice nerdy, nutty, and ridiculous.

There is also a substantial deterrent to laboratory cultivation of mushrooms that isn't often discussed by lab practitioners. Lab conditions rely on sterile monocultures of one desired fungus. That may work if you are only growing certain saprobic mushrooms, those that live on dead stuff. If you want to cultivate mushrooms that require some sort of symbiont for parasitizing or mycorrhizing or an ecosystem of diversity of organisms that may be necessary for many desired fungi to thrive, then sterile lab conditions are likely to be counterproductive. In addition, some of the lab practitioners that may rail against the likes of Monsanto for practicing industrial scale monoculture of crops don't seem to recognize the irony in their own practices.

It is possible for the home gardener to have an inexpensive home laboratory setup by modifying a closet, kitchen, or bathroom and using readily available and recycled household items. And it is useful information to have for some aspects of mushroom cultivation. But laboratory methodologies aren't a necessity for successful mushroom cultivation. For our purposes we'll be discussing mushroom cultivation in terms that the average home gardener can understand.

We'll cover truly simple, inexpensive, low overhead - high return lab practices later, but for now let's look at some aspects of mushroom biology as it relates to mushroom cultivation.

The average person seeking to learn mycology, and especially mushroom cultivation, often finds frustration trying to get a handle on all the different taxonomic classifications and their natural, or not, characters. Rather than 17 or 39 or 117 different categories to try to wrap your brain around, it is much easier to remember only the three categories for the four different basic lifestyles. All mushrooms, for mushroom cultivation simplicity, can be sorted into saprobic, mycorrhizal, or parasitic lifestyles.

Saprobic mushrooms like garden giant, turkey tails, oysters, reishi, and shaggy manes live on a substrate of dead stuff like tree trunks, logs, wood chips, sawdust, straw, mulch, compost, manure, or duff. Mycorrhizal mushrooms share resources, usually with a living tree substrate, like candy caps, chanterelles, and truffles with living oak tree roots, or porcinis and Santa mushrooms on living pine tree roots. Parasitic mushrooms obtain resources from some other species without sharing in return, like Cordyceps mushrooms on live caterpillar substrate or huitlacoche on corn substrate; you grow the sweet corn to grow the mushroom. Combinations of these three lifestyles constitute the fourth lifestyle, which we can call opportunistic - those mushrooms like morels or honeys that have more than one method of getting their nutrition.

Let's look for a moment at the most basic aspect of saprobic mushroom cultivation, the mushrooms that live in nature on raw undecayed organic matter, the interior dead heartwood of tree trunks. These would be the typical "gourmet" and/or medicinal market mushrooms like oysters, shiitake, lion's mane, pioppino, maitake, reishi, that grow in human symbiotic commercial conditions on bags or jars of hardwood sawdust as you might see at Far West Fungi or Gourmet Mushrooms.



The dead heartwood of trees is a special habitat for mushrooms in the wild. In a healthy uninjured mature tree, the dead heartwood represents a sterile “petri dish” of raw organic matter residing in nature. This dead heartwood would normally provide the strong support structure for the trunk and main branches of a large tree. It is the inner cylindrical product of many years of early tree ring growth that has died and is encased in younger outer tree rings that are still living and growing. These outer rings keep the dead inner rings sealed off from outside organisms that might devour and hollow out the dead cylindrical heart of the tree. This seal is both physical and chemical; as long as the living outer shell of tree rings is physically intact and unbroken it continues to generate anti-biological exudates that chemically protect the interior of the tree from decay organisms like fungi.

You can witness the interior living and dead regions of a tree’s anatomy in the basal stump of a freshly cut tree. On the outside is the bark layer. The outermost layers of the bark are dead, expanding and cracking in a distinctive, species specific pattern, and sloughing like epidermal skin as the trunk expands from inner growth of tree ring wood and living inner bark layers. Between the bark and the tree ring wood lies the cambium, where new cell reproduction for the bark and wood takes place, bark to the outside and wood to the inside. Interior to the cambium are the youngest outer layers of living tree rings that ooze the protective exudates in the sap. Interior to the sappy outer layers are the non sappy dead heartwood rings. You can see the sap oozing out of the outermost 2-4 inch thick cylinder of living tree ring wood and no sap oozing from the main dead interior region. It is this interior dead zone that becomes the hollow part of the tree when a mushroom mycelium devours it out, usually by entering from a broken branch or other wound that penetrates through the living wood layer. If the sterile dead interior is not exposed due to a too-shallow wound, then the living tissue can heal over with no hollowing taking place.

If the dead heartwood interior is exposed and the heartwood becomes devoured and hollowed out by a fungus, this still doesn’t harm the living tissues of the tree. The hollowing fungi are saprobic, living on dead stuff, and eat out the dead heartwood, not the living outer wood. This is similar to surgical maggots that are used to eat out necrotic tissues in wounded human tissue without affecting the living cells. The structural integrity of the tree may or may not be compromised upon hollowing out by fungi. It is not necessary to cut down a hollowed out tree. Many of the long lanky branches of the tree can be cut back to reduce the wind stress on those branches that might put more stress on the hollowed trunk. The living and growing tissues will continue to reinforce the outer cylinder to strengthen it.

When plugging freshly cut logs it isn’t necessary to wait for a few months for the antimicrobial oils to volatilize. Just drill through the outside sappy layers into the dead heartwood with deeper holes and insert enough dowels to fill the hole with the last dowel, which becomes the unwaxed plug. No time is wasted melting unnecessary petroleum based paraffin to tediously pour into the holes, most of which runs over the log anyway, wasted rather than sealing the holes. Or you can just drill through the ends of the cut logs directly into the central dead heartwood. Recommendations to drill one inch deep holes into the outer sappy layer of the log don’t make biological sense, and inserting one dowel in such a short hole is more likely to dry out the dowel quickly.

If you imagine for a moment that the mushroom mycelium is an actual metabolic fire, it is burning up the dead heartwood like a real fire, but slower, on a biological burn timescale. Each dowel that you insert into a hole in the heartwood acts like a burning match on the overall log. One little dowel will take a long time to “take” and take off but will eventually ramp up and devour the whole log in a slow motion conflagration. The more holes you drill and the more dowels you insert, the faster the log will burn. This knowledge about the dead heartwood has several applications in mushroom cultivation.

When chipping logs and branches keep in mind that the larger in diameter the trunk or branch log is, the higher the proportion you will have of freshly chipped sterile heartwood rather than barky, leafy, or twiggy material. The freshly chipped heartwood is mushroom gold for growing mulch mushrooms or gourmet mushrooms on bagged chips. Leafy and twiggy material has high concentrations of external surface area that is not sterile but covered in dust, dirt, spores, mold, lichens, and other weedy contaminants.

In old growth forests there are many hollowed out ancient trees that are perfectly healthy and which provide habitat for nesting birds or beehives. There is actually a symbiotic relationship between the birds and bees and the hollowing fungi. As the fungus hollows out the heartwood and the hollow attains a size that allows birds and bees to nest in it, the moisture from the respiration of adult and baby birds and adult and baby bees provides a conducive environment for the further hollowing out of the heartwood, making for more and larger nests.

Next month we’ll look at making compost and manure and saprobic mushrooms that feed on compost or

## MSSF Mendocino Woodlands Foray “Food - Forays - Fun” November 13-15, 2015

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Deep in the Mendocino Woodlands, MSSF members, friends and family gather once again for our annual north coast fungal rite of autumn. This weekend-long spectacular mycological event includes great mushroom themed dinners, guided forays, fun informative presentations, and of course plenty of mushrooms.

Three years ago we returned to our roots of the “3- F’s” (Food-Forays-Fun). This year we will continue to improve upon that theme. We will continue to offer a diverse selection of eight different forays. We also plan to continue the very popular Saturday afternoon appetizer cooking demonstration with a multi-mushroom soup, grilled fresh bread, and a selection of grilled mushrooms. We have arranged to have Deb Dawson, the chef who cooked the fabulous meals for us last year, return to repeat the experience for us. Last but not least, Curt will conduct his legendary raffle again, and it will be the biggest ever!

We will have two speakers at camp this year. Our featured speaker on Saturday evening is author and mushroom expert Gary Lincoff, from New York. He is a writer, instructor, and lecturer on wild mushrooms and how to find them. On Friday evening, Katrina Blair, founder of the Turtle Lake Refuge in Durango, Colorado, will speak for us. Katrina is also an author, and has written books on wild foraging and a cookbook containing recipes for wild foods. Both Gary and Katrina will be participating on forays.

All on-site meals and lodging (Friday night through Sunday lunch) are included in the basic \$225 per person member rate. To become a MSSF member, go to:

<http://www.mssf.org/membership/join.html>

**NOTE:** Due to liability requirements, and to also allow as many MSSF members as possible an opportunity to attend camp, all attendees must be 13 or over in age.

Event details and sign up are on the MSSF website in the members-only section under “Events”. The link to register is:

[http://mms.mssf.org/members/evr/reg\\_event.php?orgcode=MSSF&cevid=12218457](http://mms.mssf.org/members/evr/reg_event.php?orgcode=MSSF&cevid=12218457)

**REGISTRATION FOR CAMP THIS YEAR WILL ONLY BE AVAILABLE ON THE MSSF WEBSTE.**

Online registrations may be paid with a credit card through PayPal, or a check can be mailed after you register. The schedule of events and all required information for camp will be sent to registered participants in early October.

For registration questions, please e-mail Stephanie Wright at: [lioness.chef@gmail.com](mailto:lioness.chef@gmail.com) or call (510)-654-6279 or contact Curt Haney at: [MendoDirector@mssf.org](mailto:MendoDirector@mssf.org) or call (415)-640-6233. The above e-mail addresses can also be used if you need help with the online reservation process.

In the past three years, Mendocino Camp has sold out in less than two weeks after I announced it, so don't wait to sign up for camp, you might miss out! This year; camp sign-up on the website will begin at 9:00am on Sunday 13 September. Foray sign-up choices this year will be on the MSSF website during the registration process. Foray selection choices will be first-come, first-served, during the registration process.

***Important Notes:*** We are at our usual location in Camp #1 this year. Anyone who would like to bring a camper or RV instead of utilizing a cabin is welcome to do so. (Please tell us if you would like to bring a camper or sleep in a vehicle instead of a cabin when you register for camp). Cabins have fireplaces and wood is available, but we suggest you bring a couple of presto logs if you plan to make a fire in your cabin (much less smoke and much easier). You can also bring fire starters which help greatly in getting fires started. Another option is to enjoy the nice big fires we will have available in the dining rooms after dinner and then return to your cabin at bed time. If you would like an alcoholic beverage with your dinners on Friday or Saturday night it will be BYOB. Also please note that it is very important that every camper bring a flashlight to safely get back and forth to the cabins after dark. A complete list of what to bring, and directions to the camp will be sent to registered attendees in October.

Additional information about the Mendocino Woodlands Camp can be found at:  
[www.MendocinoWoodlands.org](http://www.MendocinoWoodlands.org) (FAQS, MAPS & DIRECTIONS).

## MSSF Calendar September 2015

**Monday, September 14, 7:00 p.m. - Culinary Group Dinner**  
Hall of Flowers, County Fair Building  
Golden Gate Pk., 9th & Lincoln, S.F.  
Potluck dinner, please bring a dish, preferably involving mushroom rooms.  
See calendar section at [www.mssf.org](http://www.mssf.org). Email [culinary@mssf.org](mailto:culinary@mssf.org) to volunteer.

**Tuesday, September 15, 7:30 p.m. MSSF General Meeting**  
Hall of Flowers, County Fair Building  
Golden Gate Pk., 9th & Lincoln, S.F.  
7 p.m. - Mushroom identification and refreshments.  
8 p.m. - Speaker: Jackie Shay

**Monday, October 5, 7:00 p.m. - Culinary Group Dinner**  
Hall of Flowers, County Fair Building  
Golden Gate Pk., 9th & Lincoln, S.F.

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

### Councilors for the 2015-2016 term

**Councilors:** (1 year term) Julia Cabral and Joe Soeller  
(2 year term) Liz Sandiford and Tyler Taunton

## 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).

**Wanted:** *Mycena News* layout assistant. Familiarity with Adobe InDesign a plus. Contact [president@mssf.org](mailto:president@mssf.org) for details.

**The Fungus Fair Committee is already planning for the December 6th event.**

**We urgently need help right away from someone with advertising & outreach experience to help publicize our largest annual event.**

**Please contact [FungusFair@MSSF.org](mailto:FungusFair@MSSF.org) if you have that kind of experience and would like to help.**

**We will have lots of volunteer opportunities closer to the fair, stay tuned for information.**

### Lost and Found

**Found:** Water bottle found in Plumas National Forest. REI Brand, Nalgene BPA-free, 1-liter water bottle with conifer design. Please contact Wendy if it's yours: [mycenanews@mssf.org](mailto:mycenanews@mssf.org)

**Lost:** Walking stick lost in Salt Point State Park. Reliable, sturdy, hardwood walking stick fit for a 5' 2" person with small hands. Lost among prolific fruitings of black trumpets last mushroom season off highway 1 in a tanoak grove. Please return to Wendy if found. [mycenanews@mssf.org](mailto:mycenanews@mssf.org)



## Mycena News

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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 Zachary Mayes:  
[Membership@MSSF.org](mailto:Membership@MSSF.org)

Past issues of *Mycena News* can be read online at [www.mssf.org](http://www.mssf.org)

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

Submit to *Mycena News*! The submission deadline for the October 2015 issue is September 15th. Send all articles, calendar items and other information to: [mycenanews@mssf.org](mailto:mycenanews@mssf.org)

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