



May 21
General Meeting Speaker



Christian Schwarz

"Tales from the Cryptogams: Sex, Death and Alternative Lifestyles from the Kingdom Fungi"

—From morphology to reproductive strategies, from nutritional modes to interdigitations with human culture, this will be a multidisciplinary exploration of fungal strangeness.—

Christian Schwarz has been seriously interested in fungi since he was in high school in San Diego. The long, dry summers there didn't suit his lifestyle, so he emigrated to Santa Cruz, the land of milk (caps) and honey (mushrooms). His travels so far have taken him all over the United States, Costa Rica, Mexico, and Europe. He is currently in the midst of authoring *Mushrooms of the Redwood Coast*—a fully illustrated field guide to mushrooms of California, building a web database to document the mycoflora of Santa Cruz County and writing for his blog *Notes of a Mycophile*. Mushrooms arouse his curiosity with their sundry forms; from the grotesque to the bizarre to the sublime. Taxonomically, he's interested in the genus *Agaricus* and the family *Entolomataceae*.

MycoDigest:

Split Gill – *Schizophyllum commune*

Else Vellinga, Ph.D.

Throughout the winter white and hairy split gill fruitbodies (*Schizophyllum commune*) lined my route through Berkeley – these fungi were holding out in open places on stumps and dead branches, despite the record dry weather. During rain showers they opened up and were soft, pliable and more colorful – only to turn back to their hard and white stage when the sun came out again (figs 1 and 2). They deserve a second look, especially their gills, because these are unique among mushrooms! The gills are split on the tips and the edges curl outwards; that is obviously where the common name comes from.

Buller, a mycologist who was a keen observer of everything that has to do with spore production and dispersal, found out that even after two years of drought, a split gill fruitbody would spring back to life and start forming spores again when wetted. Sixteen years, however, was too long a period to get going again. He also showed clearly (see fig. 3) that in drought, the lamellae roll up and cover the underside effectively. In wet weather, when the conditions for spore germination are ideal, they straighten out. Then the hymenium, where the spores are formed, is exposed and offspring can be sent out into the world.

Split gills are the only fungi with this mechanism, and the anatomy of their fruitbodies is different from all other gilled mushrooms. Basically, they are formed by a fusion of several separate, smooth-surfaced, up-side-down cups in which, secondarily, the gills are formed. But these gills are not of the same type of tissue as in your *Amanita*.



Photo: John Lennie

Fig. 1. Upper side of fresh, wet fruitbody



Photo: John Lennie

Fig. 2. Lower side of fresh, wet fruitbody

Fig. 2. Lower side of fresh, wet fruitbody

Continued on page 3

PRESIDENT'S POST

Greetings MSSF Members!

The May general meeting is the official annual meeting of the society. The slate of new officers and councilors that were announced at the April general meeting will be elected by a majority of the members present and voting—providing a quorum is present. A quorum shall consist of seven percent of the total regular members of the society but not less than 40 members. I encourage all MSSF members in good standing to attend and participate as a voting member at this important meeting.

This meeting will be held in the Buckley Room downstairs in the Randall Museum. If the weather is pleasant, we plan to have the social hour on the upstairs patio outside, starting at 7:00pm. At 8:00pm, following the election of officers and a report on the spring morel forays, Christian Schwarz will give his presentation on *Tales from the Cryptogams: Sex, Death and Alternative Lifestyles from the Kingdom Fungi*.

In addition, the librarian will be available to check books in and out of our newly rededicated library: the MSSF Bill and Louise Freedman Mycological Library. I want to welcome our newest librarian, Danny Newman to the MSSF council. Our librarian for the past year, Jessica Ahmadiya will be moving out of the Bay Area soon and I want to thank her for all her hard work in maintaining the extensive MSSF mycological library. At the May general meeting I will be announcing other members who have volunteered to become more active in the society.

Summer has finally arrived, and with it, drier weather and fewer reports of fungal fruitings. However, don't forget about those summer mushrooms, especially the Prince, *Agaricus agustus*, which can be found when there is sufficient moisture from fog drip or irrigation. Additionally, the King Bolete, *Boletus edulis*, can be found starting in July in the same type of locations, especially in San Francisco.

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

SPRING MEANS MORELS & BOLETES BELONG IN THE CULINARY CORNER

Some dazzling if perhaps a bit overblown reports of morel finds are showing up on forums and blogs these days. As spring progresses, morels come up at progressively higher elevations. MSSF morel gurus, Norm and David, have led very successful morel forays for members over the years. Follow those guys on their club forays. You won't be sorry. Curt is a morel hound, too, and seems to always find the biggest fruitings and the mammoth specimens when he goes out. The MSSF morel forays are always great fun whether the fungi are in abundance or not.

As of this writing, boletes have not yet begun fruiting in earnest, but they are spring into summer species so keep an eye out for them. May is a good time in the lower mountain areas and in summer they grow at higher altitudes and are a nice addition to your camping cuisine. I like to take a little bacon up on the trail just in case I find some and sauté them in one of those ridiculous little pans that come in a backpacker's kit. If you're lucky, you see them along the trail on the way out. I packed out several pounds from the Minarets area one year. As if I wasn't tired enough from all the hiking!

The weather is great so dust off the barbeque. Boletes, shiitake and the ill-named portabella (come on, folks, it's just a big old *Agaricus bisporus*) will all be fabulous marinated in olive oil, garlic, salt and pepper and then grilled over hot coals. Grill them about 4 to 6 inches from the heat source and for 4 to 6 minutes per side, brushing with the oil mixture once or twice. Nice, crispy, slightly smoky tasting heaven. Great on grilled, good rustic bread rubbed with olive oil and scraped with a little fresh garlic, if you really love garlic like I do.

Connie Green, in her beautiful book, *The Wild Table*, recommends tossing large, fresh morels in a mixture of melted unsalted butter, garlic, salt and pepper and putting them in a grill pan to cook on the barbeque. Toss the morels occasionally and cook them until they are crisp around the edges, usually about 10 to 15 minutes. Lovely!

Don't want to be outside? Try this recipe from Larry Stickney's food column in the Fall 2003 *Mushroom, the Journal*:

Continued on page 5

Mycodigest continued

In the grand scheme of mushrooms, split gill belongs to the order *Agaricales*; the order to which most gilled mushrooms belong. But they form a special group, together with the beefsteak fungus, *Fistulina* – also composed of little separate fruiting bodies embedded in that delicious, succulent fruiting body.

Schizophyllum is one of the very few species of mushrooms that can be found all over the world—wherever its substrate (dead wood) is available. All specimens, from whatever part of the world they come, can still mate with each other. However, this does not mean that individual spores travel long distances. An experiment in the Caribbean showed that the North American strains did not reach Puerto Rico, whereas the South American spores made it to Florida. And just as in humans, there are genetic differences among specimens from the different continents, resulting in three

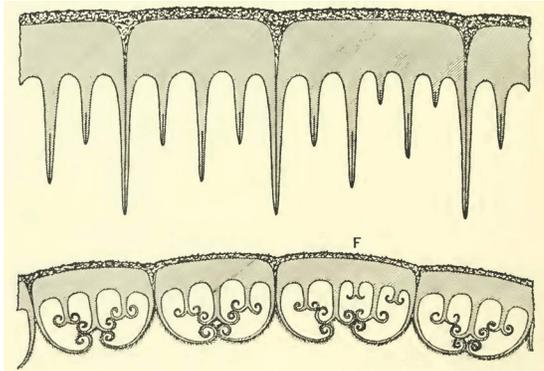


Fig. 3. Cross sections through wet and dry fruitbodies of *Schizophyllum commune* (from Buller, 1909)

major groupings in *Schizophyllum commune*: a North American group, a South American group, and an eastern hemisphere group to which the specimens from Europe, Asia and Africa belong. But, recent movements of people have changed this neat pattern a bit – our Californian split gills can either be originally North American, or belong to the eastern hemisphere group.

The split gill is very common in the Bay area – growing on dead

wood, and causing white rot (it devours lignin and cellulose leaving white, stringy matter behind). But it is not very picky in its substrate. In Ireland and Great Britain it likes bales of hay and straw that are covered in big plastic bags. This spells bad luck for the farmer as the fungus devours the hay, and the little hay that is left is shunned by the cattle.

There are also reports of this species being found in humans and other animals. A report on a big lump, completely made up of split gill hyphae, on the neck of a dog did not make for nice reading (no, the dog did not survive), nor is reading about mushrooms formed in the sinuses of a little girl very appetizing. It is not clear from these reports how the fungus got into the animal or human, and what exactly it lives on. But it is clear that this fungus is an opportunistic pathogen in mammals, especially the vulnerable (very young and very old) and those people whose immune systems are not working well.

On the other hand, *Schizophyllum* is eaten in many tropical regions and even collected in quantities and sold in roadside stalls and markets. Here is one recipe from the Upper-Shaba region in Congo where it is called *sepa*: “The natives boil the mushrooms for a long time in water to which a vegetable salt, rich in potassium, has been added; this has an effect of tenderizing. After one or two hours of cooking, the drained mushrooms are mixed with sifted peanuts, seasoned with a little salt and a final addition of oil. Prepared in this way, the mushrooms are eaten with *bukari* (the principal starchy dish of the region).”

Schizophyllum is also the ideal fungal rat lab – it grows well and easily forms fruitbodies in culture. So, its sex life is well known and has turned out to be very complicated.

Continued on page 4



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

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Mycodigest continued

Hydrophobic proteins—so instrumental in making fruitbodies—were discovered in this fungus for the first time. Its complete genome has been sequenced as well, showing the specific enzymatic machinery needed to degrade wood, all the genes involved in the forming of fruitbodies and those genes which are so important in mating and mate recognition. In short, this is a versatile, fascinating fungus with humble and inconspicuous fruitbodies.

Some literature on this species:

Brady KC, O’Kiely P, Forristal PD, Fuller H. 2005. *Schizophyllum commune* on big-bale grass silage in Ireland. *Mycologist* 19: 30–35.

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Ohm RA et many al. 2010. Genome sequence of the model mushroom *Schizophyllum commune*. *Nature Biotechnology* 28: 957–965.

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Rish JD, Padhye AA, Good CB, 1996. Brain abscess caused by *Schizophyllum commune*: an emerging basidiomycete pathogen. *Journal of clinical microbiology* 34: 1628–1632.

Wessels JGH. 1997. Hydrophobins: proteins that change the nature of the fungal surface. *Advances in microbial physiology* 38: 1–45.



Else Vellinga, Ph.D., is interested in mushroom taxonomy and has been studying mushrooms in California and beyond for years. A frequent contributor to *Mycena News*, she is also fascinated by interactions between fungi and other organisms. In her free time she knits, and knits, and knits!

THE GREENING OF THE MSSF

The MSSF council is striving to make our society the first green, non-profit mycological society in the world. Ok, at least in the United States or California. There are certain goals and areas within the society that we can work on to make this a reality. One year ago the MSSF was printing and mailing nearly 300 *Mycena News* newsletters. We have so far reduced this number to just under 200. Printing the newsletters takes trees out of circulation and can also affect mushrooms in the process. We are encouraging all members to convert to an e-membership and receive the *Mycena News* electronically. Here is what you as an individual can do to help make the MSSF a greener society:

- Convert your membership to an e-member and start receiving the *Mycena News* electronically. This reduces the operating cost to print and mail newsletters, and saves the members money in the future.
- Use the MSSF website and on-line calendar for up-to-date information and future announcements, which helps reduce paper usage.
- Join the MSSF Yahoo Group, and get up-to-date information on local and long distance foraging reports plus current and future fungi related special events without having to wait for a piece of paper to tell you about what already happened.
- Practice and advocate low-impact foraging methods, which leads to sustainable mushrooming.
- Use the MSSF website rideshare program or the MSSF Yahoo Group to organize carpooling to forays and other regularly scheduled and special MSSF events.

Benefits to going green:

- Reduce your paper clutter.
- Access current and past newsletters anytime, from any computer or mobile device.
- Better for you, better for the environment.

Contact the current membership chair, Nathan Heilman, at: Membership@MSSF.org to sign up for paperless newsletters!

GO GREEN NOW!

Culinary Corner continued

Savory Clafouti of Porcini

(Serves 4)

Clafouti is a homey French dessert recipe, usually sweet, featuring a summer fruit. This savory version makes a good side dish or main course.

Ingredients:

3 cups (about 1 pound) bolete buttons cut into 1 to 1½ inch pieces
½ cup chopped shallots; saute in olive oil until transparent. Cool and reserve in bowl.

For the batter:

1½ cups half & half or whole milk
3 eggs
⅔ cup unbleached all-purpose flour
½ cup freshly grated Parmesan cheese plus extra to sprinkle on top
1 tsp grated lemon zest
½ tsp kosher salt

Mix the batter ingredients in a blender and let rest in the fridge for an hour. The batter can be prepared up to a day in advance. Preheat the oven to 350 degrees. Lightly grease a baking dish or pie plate (about 1½ inches deep) with butter or olive oil. In another pan, saute the mushrooms in butter until they are lightly browned, cool and combine with the shallots. Combine the clafouti batter with the mushroom/shallot mixture. Pour into the prepared baking dish and sprinkle with cheese. Place the baking dish in the middle of the oven and bake for 1 hour. The clafouti will puff up in the oven but will sink a bit when taken out. Serve warm.

WE LOVE THE HOSPITALITY COMMITTEE! As well as the lively and informative speakers and the convivial atmosphere at the MSSF General Meetings, we have the good fortune to have volunteers who provide appetizers, wine, juice and soft drinks at our mushroom identification and hospitality hour that precedes the meeting. The Hospitality Committee organizes the refreshments for our meetings and for the annual MSSF Summer Picnic. The current co-chairs are **Eric Multhaup** and **George Willis**, assisted by **Ginny Garrett** and **Lisa Gorman**. The format, developed over the past couple of years, is to have a guest chef from the MSSF general membership prepare mushroom-based appetizers for 60 to 75 attendees who come early to the meetings. The MSSF provides an \$80 food budget for the guest chef and access to the Randall Museum kitchen adjacent to the Buckley meeting room, where we have the hospitality hour. The guest chef sends the name of the appetizers and ingredients to Eric a couple of days before the meeting and selects an assortment of wine and other beverages to complement the appetizers. In March, guest chef **Stephanie Wright** made a great assortment of Asian-influenced appetizers, including Thai soup and shrimp-stuffed mushrooms. These were accompanied by a 2011 German riesling and a 2009 Odisea “Devil’s Share”—a plucky California field blend of syrah, grenache, etc.

During the next few months the committee will be lining up a roster of guest chefs for the fall and winter meetings. If YOU are interested in volunteering as a guest chef, please contact one of the committee members. Information about the MSSF Summer Picnic is forthcoming.

CULINARY GROUP NEWS: Our April dinner was a kind of re-creation of the old days of the annual Mussel Feed, mentioned before in this column. Captain **Tom Sasaki** organized a group of volunteer cooks to create a simple but sumptuous dinner. As well as our usual table of mushroom-themed appetizers, we had mussels in wine sauce prepared by **Tom** with **Monique Carment**, an “everything but the kitchen sink” salad from **Karen Rusiniak**, great bread and butter from Acme brought by **Sue Esty** and a sticky toffee pudding made by **George Willis**. Sorry I missed that one.

For our last dinner before next season we will feature Thai food. **David Eichorn** and **Jeanette Larson** will be captains. The menu includes two kinds of punch, with alcohol from **Falk Cammin**, without, from **Paul Lufkin**; Thai soup from **Alvaro Carvajal**; green papaya salad from **Sheila and Jon Harmon**; chicken satay from **David** and **Jeanette**; mango sticky rice from a friend of theirs and, of course, appetizers and coffee. Set up and take down will be done by yet unnamed angels.

Have a great summer! --Pat

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"A World of Wonder at Your Feet"

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MSSF Calendar May

Monday, May 6, 7 p.m. - Culinary Group Dinner
S. F. County Fair Bldg, Golden Gate Pk, 9th & Lincoln, S.F.
A Thai inspired extravaganza. Bring your tableware and a beverage.
The SFCFB does not provide dishes, etc. The next dinner is
September 9th, which is the annual culinary group potluck.

Tuesday, May 14, 7 p.m. - MSSF Council Meeting

**Tuesday, May 21, 7 p.m. - MSSF Annual Meeting of the
Society and Election of Officers.**

Randall Museum (Buckley Room) 199 Museum Way, S.F.
7 p.m. - Election of officers, mushroom identification and
refreshments.

8 p.m. - Speaker: Christian Schwarz.

Sunday, August 4, - MSSF Summer Picnic

The event is tentatively scheduled for this date and may be held at
Joaquin Miller Park, Redwood Grove. We are awaiting reservation
confirmation from the City of Oakland. Further updates will be
posted in the on-line calendar.

Tuesday, September 10, 7 p.m. - MSSF Council Meeting

Tuesday, September 17, 7 p.m. - MSSF General Meeting
Randall Museum, 199 Museum Way, San Francisco.

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

Announcements

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.

Mycena News Editor: Let creativity be your guide. Bring out your
inner artist. Knowledge of Adobe InDesign CS5.5 and Adobe Ac-
robat X Pro helpful. Current editor happy to coach you via email.
Send email to: mycenanews@mssf.org.

To learn more about all 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!**

HELP SUPPORT THE FUTURE OF THE MSSF—through gift
and estate planning. Since 1950 the MSSF has been an innovative,
cultural, and educational icon in San Francisco, the greater Bay
Area and beyond. Would you like to see this great educational
organization thrive for many years to come? You may have assets to
donate that can help ensure its long term future.

The MSSF has enriched the lives of thousands of Northern
Californians. Your future gift will help it continue to serve this
area for years to come. The MSSF is a 501(C) (3) non-profit
organization; all contributions are tax deductible as allowed by law.
Please remember the Society in your living will or trust.

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