

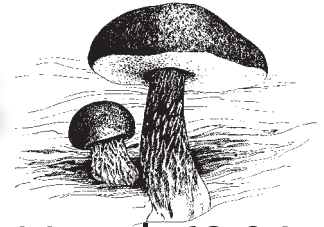
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# Mycena News

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The Mycological Society of San Francisco April, 2011, vol. 62:04

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April 15<sup>th</sup> MSSF  
Meeting Speaker



Stephanie S. Jarvis

*Monograph of the Lycoperdaceae  
and Geastraceae of California*

Stephanie will be presenting her graduate research, an all species inventory and taxonomic discussion of the *Lycoperdaceae* (Puffballs) and *Geastraceae* (Earthstars) found in California. She has been composing a monograph on the subject as part of her graduate research at San Francisco State University under the guidance of Dr. Dennis Desjardin since 2006.

She recently acquired her arborist contractors' license and works with arborist companies as well as the International Society of Arboriculture as a plant pathologist teaching seminars on fungal taxonomy, identification and ecology for better diagnostics of tree disease.

Stephanie spent her undergraduate years at Sonoma State University studying Sudden Oak Death and plans a life long career in the world of Mycology and Arboriculture. She enjoys sailing and photography when she is not out searching for puffballs.

## MycoDigest: How the mushroom got its name

Else C. Vellinga



The mushroom we used to call *Amanita muscaria*, photographed December 2010 in Berkeley, growing with a *Cedrus* tree. @else c vellinga

What do 'spillcam', 'vuvuzela' and 'Connopus' have in common?

All three words were used for the first time in 2010.

- Spillcam is the videostream of the oil spill in the Coast of Mexico last spring.
- A vuvuzela is the plastic hooting instrument in use during the world cup football (soccer) last summer.
- *Connopus* is the name for a new genus of mushrooms, to accommodate *Gymnopus (Collybia) acervatus*.

Now, we have a new genus name for *Gymnopus acervatus* but where do the other mushroom names we are using come from?

The white-dotted red-capped species with a white stalk which is enlarged at the

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MycoDigest is dedicated to the scientific review of mycological information.

## PRESIDENT'S POST

Happy spring! As the rains have continued so have late winter fungal collections including chanterelles, hedgehogs, yellowfeet and more. Spring Amanitas are out and are the subject of much discussion on the mailing lists. Just in are first reports of Sierra morels. That and the fruiting of other spring *Ascomycetes* promise to increase during the month ahead with warming weather and plenty of snow pack at elevation.

I am sorry to admit that I am writing another President's Post without final confirmation of our Yosemite Foray May 6-9. However, I am committed to getting our reservation finalized in the next week or two (perhaps before you read this). Then we will get registration up on the Web site linked from the calendar and I will send an email announcement. At any rate, please "save the date" for this always memorable weekend event.

In the area of of volunteers, I am thrilled to welcome Will Nicholls as our new Library Chair. Will will be working with Monique Carment who has done a great job with this position for a number of years. Please remember we are still in need of a new Membership Chair, contact me directly if you would like more details.

We had great activities in the past month including dual culinary delights: The culinary group had its annual crab dinner early in the month and David Campbell graced our general meeting with a great presentation on Fungal Mycophagy. To get the ball rolling for his talk our hospitality committee offered two flavors of mushroom soup at the pre-meeting ID session.

Speaking of food, how many of you have attended a Culinary group function this year? It is a great opportunity to get to know more members of the Society and the food is always amazing.

I do want to share my frustration at the March dinner however in terms of getting members to participate. Historically the culinary group had its own membership that cost an additional \$15 beyond annual MSSF dues. As the group grew and began to accumulate funds in its separate treasury, the decision was made to no longer require this additional membership, so that MSSF membership is all that is required to sign up for the dinners. There are however two additional requirements that seem to be getting overlooked by some. First, each attendee must bring a pot-luck appetizer of their choice. Second, all participants are required to volunteer to help prepare at least one culinary group dinner during the year.

If you want to attend one meal to check out the group I encourage you to try this – you'll get an amazing meal for about \$16 plus the cost of your potluck appetizer – but if you participate on a regular basis you must volunteer once per year. To remind everyone of these requirements we have amended the sign-up form, asking that you tell us the appetizer you will bring to the dinner you are signing up for and the month you already volunteered or will volunteer for the current season. I apologize for adding this additional step to the sign-up process but culinary volunteers are essential to the sustainability of this group. I think you'll find we have a lot of fun in the kitchen, or I always do.

In closing I hope to see many of you in April for culinary group, general meeting, or out on the trail collecting.

Thanks for reading.

-Lou

president@mssf.org

## CULINARY CORNER

A bit earlier this evening a friend of my daughter's sent me a photo of a big, beautiful *Boletus edulis var. grandedulis* he'd found on March 17th up in the Oakland hills. What an unusual year this has been for fungi. Get a lot of rain and you just never know exactly what will show up, when. We had a rich, creamy fresh chanterelle soup at our last MSSF meeting's hospitality hour made from a member's finds of the day before, and a box of Amanita velosas and a selection of other edibles graced the ID table of recent fungal findings. Beautiful soups made from member gathered and dried porcini were a treat at that meeting, too. The weather was monsoon-ish outside but inside the Randall Museum all was warm and well with hot soup, 3 kinds of truffle cheeses, wine and mushroom-y appetizers. It seems like it's not quite time to go to the freezer or pantry yet for mushrooms to have before morel season is here. Check your spots first. Later that night, at the meeting, our speaker was David Campbell, a guy who really knows his mushrooms and what to do with them. A nice way to spend a stormy evening.

A new group, the Merritt Fermentation Club, created by some of Ken Litchfield's Merritt College students, is up and active. David Gardella, one of the MSSF's councilors, is the person to contact if you are interested in learning about things fermented, and not just hooch. You can check with David for details about the club and the upcoming Freestone Fermentation Festival to be held May 21st. In tribute to this new group, I've included a recipe I made years ago for Kim Chee with chanterelles. Other mushrooms may work in this recipe but haven't tried any myself. Be careful not to add too much cayenne. I did. Whew! The recipe is from "Of Told Mushroom Recipes", published ages ago by the Puget Sound Mycological Society. I don't know if it is still in print. Don't eat this dish before a big date.

### Kim Chee

- 3 pounds of cabbage or nappa, coarsely shredded in 1 inch lengths. Older cabbage works better than new because of the thicker leaves.

-1 head of garlic cloves

- Chanterelles, cut in 1-inch slices and blanched for 20 seconds in a lot of boiling water then patted dry (just blanching the whole mushrooms for 30 seconds and then patting it dry and tearing it into strips would work well, too)-- -Salt

-Accent (I'm being true to the original recipe; it's from the days before MSG was frowned upon)

-Cayenne

1) Wash the cabbage and shake out the excess water. Peel garlic cloves and split.

2) In a crock, put a layer of cabbage 1 1/2 inches deep. Scatter chanterelle slices over it.

3) Place 4 half cloves of garlic on the chanterelle layer. Sprinkle with 1 teaspoon salt, 1/4 teaspoon accent if you are using it, 1/4 teaspoon cayenne. Repeat layers until the vegetables are used up. Put a plate on top of it and set large, clean rocks on top. Let stand in a cool place for 7 to 10 days.

4) Eat with rice. Makes a good beer snack.

See you in the woods or at dinner,

Pat

base and has a white ring is a good one to look at in detail.

The first person to call it *Amanita muscaria* was Lamarck, who included it in his 1783 catalogue of plants. He gave a lyrical description, with emphasis on the beauty of this mushroom, its wonderful scarlet cap, nicely covered with white plush dots. But he refers to older literature, in particular Linnaeus' book *Species Plantarum*, published in 1753, where Linnaeus called the mushroom *Agaricus muscarius*. Linnaeus gave it only a one-sentence description, with references again to older books, where phrase names were used, like the mushroom with the red cap and the bulbous stalk – just the way we still describe this mushroom for friends and family. Linnaeus introduced the system of using two names to identify a species: one, a genus name (in this case *Agaricus*), the other a species name (*muscarius*). This system is still in use. However, Linnaeus and Lamarck used their genera, *Agaricus* and *Amanita*, in a much wider sense than we do now – both their genus names could be used for any gilled mushroom.

After these early writings the name remained in use for the next two hundred and fifty years and this is the name we still use for this species. It turns up in the 1821 book by Fries, *Systema mycologicum*, which is considered the real beginning of mycological systematics. An early record for California is provided by Murrill, an east-coast mycologist who visited the states of Washington, Oregon and California in the fall of 1911. Murrill wrote that he saw 'Brilliant orange and red sporophores of this deadly species' in the pine barrens of Newport, Oregon, and that fresh specimens were shown to him by Professor Setchell in Berkeley. Every guidebook has a picture of the fly agaric (its common name), and its bright red caps can be found all over the Northern Hemisphere, and even in the pine forests that have been planted on a huge scale in South America, Africa, New Zealand and Australia.

Linnaeus and Fries, both Swedish scientists, wrote their books in Latin. Lamarck on the other hand wrote his book in French. Linnaeus just gave a one sentence description, no picture, nothing, though, as an aside, he mentioned that the species 'kills bugs and eradicates them promptly'. With Fries it is the same story, no picture, and a very brief account of this species. Lamarck is the exception with his vivid description in florid language. Nowadays, there is a set of rules for describing new species and genera, the International Code of Botanical Nomenclature, which applies to plants and to fungi. The rules keep changing and new versions are prepared by committees on the nomenclature of different organismal groups (there is a committee that looks carefully at the proposals concerning names of fungi) and then are voted on by the attendees at botanical congresses.

Some of these rules: All names for plants and fungi have to be unique; for instance: the name *Melaleuca* for a mushroom genus had to be changed, as there was already a tree genus called *Melaleuca* (widely planted in our area) and the mushroom genus is now called *Melanoleuca*. However, the names can be shared by animals and plants or fungi: European beachgrass and a sand wasp are both called *Ammophila arenaria*. Also within a genus, every species has to have a unique name, and in big genera such as *Cortinarius* and *Russula* this might ask for a creative and imaginative mind.

The name has to be published, on paper and distributed to libraries. This rule is at the moment under reconsideration, as many journals will soon be on-line only, without any paper copy. There are journals, such as *Mycotaxon* and the free journal *North American Fungi*, that still print some copies of the journal and send them to libraries, but will not send paper copies to subscribers.

The description of a new species still has to be in Latin. A diagnosis suffices, i.e. a short comparison with other species. This requirement is also constantly attacked, and the last 25 years have seen a stream of proposals to get rid of this requirement. The on-line translation services can translate from almost any language into another, but Latin – no, that is not in their repertoire. It is now almost as difficult for an English speaker as



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

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it is for a Chinese or Estonian person to write in Latin.

One collection, in a public herbarium, has to be designated as the type collection for the species. In this way the name is connected to a real specimen, which can be studied to resolve disputes. At first it seems common sense to have this in the code, but times are a-changing in this respect too. DNA sequencing has changed the way new taxa are discovered. DNA is not just in entire specimens – dried fruitbodies – but also in spores, hyphae, or material isolated from soil, wood or water, without any knowledge of what the organism looks like. Instead of material to keep in a herbarium, there is now just some DNA in a tube, somewhere. Recently, a hitherto completely unknown group of soil fungi was discovered, and given the provisional and prosaic name ‘Soil Clone Group I’. Shouldn’t it be possible to name such widespread organisms that are known from their DNA signatures? To give you an idea about the scale of this problem, in 2009 more than half the batches of ITS sequences deposited in Genbank came from environmental samples, without specimens. This number has steadily been increasing over the last ten years. New sequencing techniques will make this number grow ever more rapidly in the coming years.

And yet, in 2009 more new fungal species were described without DNA sequence data than with. In some cases it does indeed not seem to be necessary to have molecular data. When I described the local species *Pseudobaeospora aphana*, there were only DNA data available for one species in the genus, a species that is morphologically quite different. So, I decided that molecular data for the new species were not needed (but produced them later anyway). In a group of species with few morphological differences, where the variability within a species and between species still has to be determined, it helps enormously to have sequence data to sort things out.

Getting back to the example of the fly agaric with which we started: Collections of that species from Europe, Japan, Siberia, and throughout North America have been investigated and sequence data from several parts of their DNA have been compared. What we thought what was one species that could vary in colour from deep red, through pale orange, to yellow, turn out to be divided into several distinct groups: One group occurs throughout Europe and Asia and spreads into Alaska, while a second big group occurs in North America, with a subgroup in the Northeast. Besides these two big units, there are several smaller distinct groups, one in the southeast of the USA, and three on Santa Cruz island off Santa Barbara. The colour variations do not correlate with the DNA groups. At the moment, we are left without a species name for the widespread North American taxon – the name “*Amanita amerimuscaria*” is used informally, but it has not been published under the rules set out above. It looks like more work has to be done to establish the boundaries of this taxon and see whether those local variants and groups also have morphological characters so they can be more easily distinguished.

Fungal taxonomy remains a subjective business. Some French mycologists even say that a taxon is good enough to be a species when they can recognize it. Others say that a species has to differ

in at least two morphological traits from its neighbours and others claim that a certain percentage of similarity in the ITS-region is all you need (the ITS is a specific part of the DNA that is widely used in fungal species recognition).

Yet, describing fungal diversity is more needed than ever. Though the exact number of undescribed species of gilled mushrooms is unknown, we do know that here in California many are still nameless, or only known under old and wrong names from elsewhere, such as *Amanita muscaria*. With easier rules, better infrastructure (including more data freely available on the web), and more people working in this field (this is wishful thinking on my part), it will happen!

One final remark, there is no rule in the code that says the person who describes a new species has to be a professional biologist. In Europe, most new species are described by people with other professions, from shop keepers to veterinarians. Yes, you can be involved too!



Else is a mushroom taxonomist describing species from California and beyond. She is also interested in conservation, introduced species, and mushroom diversity. Her scientific writings can be found at <http://pmb.berkeley.edu/~bruns/people/ev.html>. Mushrooms take up a lot of her time, but knitting is a good second.

Background information:

If you want to do a little research into species names and their histories, a great place to start is Index Fungorum ([www.indexfungorum.org](http://www.indexfungorum.org)) or Mycobank ([www.mycobank.org](http://www.mycobank.org)), both are places where names of fungi are given, with the authors and place of publication, and in the case of IF, there is often a direct link to the original publication.

Older books, such as Linnaeus’ *Species Plantarum* and Fries’ *Systema mycologicum*, are in the public domain of the Biodiversity Heritage Library ([www.biodiversitylibrary.org](http://www.biodiversitylibrary.org)).

The latest edition of the International Code for Botanical Nomenclature is on line and accessible for all: <http://ibot.sav.sk/icbn/main.htm>

More on the fly agaric:

Geml J, Tulloss RE, Laursen GA, Sazanova NA, Taylor DL, 2008. Evidence for strong inter- and intracontinental phylogeographic structure within *Amanita muscaria*, a wind-dispersed *ectomycorrhizal basidiomycete*. *Molecular Phylogenetics and Evolution* 48: 69-701.

More on environmental data and taxon discovery:

Hibbett DS, Ohman A, Glotzer D, Nuhn M, Kirk P, Nilsson RH, 2011 (in press). Progress in molecular and morphological taxon discovery in Fungi and options for formal classification of environmental sequences. *Fungal Biology Reviews*.

## AM I SMARTER THAN A 4th GRADER?

Curt Haney

I recently had the opportunity to visit the 4th grade class of Carol Camacho at the Susan B. Anthony Middle School in Daly City. Carol is a teacher and a fairly new MSSF member.



After attending the 2010 Fungus Fair at the Lawrence Hall of Science, she became very excited about fungi. So much so, that her enthusiasm for mushrooms was transferred by osmosis to the students in her classroom. She put up some mushroom posters in the classroom, started two mushroom growing kits and shared her mushroom identification field guide with them. She also led a foray with her students on the school grounds and she set up a dedicated table at the door to the classroom for students to have a place to display the mushrooms they found at home or on their way to school. The table was soon full of a wide variety of different species of mushrooms. The students, with Carol's help and a good field guide, started the process of identifying some of them.

As I was selling books at the Fungus Fair, I was approached by Carol and asked if I knew someone who would come speak to her students about mushrooms. When she told me her school was in Daly City, and very near my home, I said I would be glad to come speak to them.

About a month later, I arrived at her school, and to a room full of 33 very excited students. I had brought with me a collection of mushroom specimens I had collected the day before. I had planned to do a simple one hour show and tell. That changed when I discovered that these were no ordinary 4th grade students! They knew a lot more about fungi than I ever expected. I quickly adjusted my presentation to their already advanced level of mushroom knowledge. My talk soon turned into a give and take discussion with them and resulted in a very rewarding experience for me. At one point during the talk, one of the students wanted to discuss *Amanita muscaria*. I was then asked by one of the students if it was ok to eat it, as long as it was boiled first? At this point they really had my attention, so I gave them the politically correct answer.

Last week I received a really nice thank you card and some pictures of the students with their mushrooms. The students have also formed a club called "Ms Camacho's Room 31 Fabulous

Fungi Club", and they are still going strong.

The visit to the school, combined with receiving the card and pictures inspired me to share my experience with the MSSF Council and write this article for the Mycena News. The Council has also recently started discussing ideas on how we can expand our scholarship outreach program to both teachers and students in schools K-12. Watch for updated information on the MSSF education program in future issues of the Mycena News.

If you are a teacher in one of the many bay area schools and would like assistance with curriculum development or have a speaker come to your school and talk about mushrooms, contact a representative of the education committee. They are listed on the MSSF website, [www.mssf.org](http://www.mssf.org) under "Education". If you are interested in being a speaker at a future event or a school in your area contact Lou Prestia at: [President@mssf.org](mailto:President@mssf.org)

## Announcements

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### Scholarship Awarded

Each year the Mycological Society of San Francisco offers a scholarship to graduate students in mycology. The scholarship is named in honor of Esther Colton Whited and Dr. Harry Thiers. Esther Whited was an early member of the Mycological Society, a talented illustrator and dedicated student of fungi. Dr. Harry Thiers taught mycology at S.F. State university for many years and was the Mycological Society's first scientific advisor. The purpose of the MSSF scholarship is to encourage the study of higher fungi, particularly taxonomic studies of poorly known groups. A benefit to the MSSF is a requirement of the scholarship to present research results to a general meeting of the MSSF. This year's winner of the scholarship is Nikos Najarian of Humboldt State University. Niko's research is on the role of heart-rot fungi in creating openings in north coast conifer stands, their effect on age structure and diversity of under-story plants and animals. Many of these fungi are likely to be found in the Bay Area, thus his study is of interest to both amateur and professional mycologists.

### Volunteers needed for Cal Day

Please consider helping us out for Cal Day (UC Berkeley's open house) on April 16, 9 AM to 4 PM. Sign up for a two hour shift to tell visitors about MSSF (no extensive mushroom knowledge necessary). Email J.R. Blair at [jrblair@mssf.org](mailto:jrblair@mssf.org) or call him at 650-728-9405.

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## MSSF Calendar April 2011

April 4<sup>th</sup>: April Culinary Dinner

The Spring menu. Reservations required by April 1st.

April 19<sup>th</sup>: Speaker Stephanie S. Jarvis

This month's General Meeting will feature Stephanie S. Jarvis' talk on Puffballs and Earthstars. 7PM Randall Museum.

## CALL FOR VOLUNTEERS

### Membership Chair

Some familiarity with computers and databases is required for this very important role in the Society. Al Carvajal has used and developed the systems we use to make this process work without it being too much work for the Chair, and is ready to train a replacement. Please consider donating your time to the Society and helping with the important task of membership management.

If you are interested in volunteering please contact Lou Prestia at: [President@mssf.org](mailto:President@mssf.org)

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

The submission deadline for the May, 2011 issue of Mycena News is Sunday, April 17<sup>th</sup>. Please send your articles, calendar items, and other information to: [mycenanews@mssf.org](mailto:mycenanews@mssf.org)