Mycena News

The Mycological Society of San Francisco December 2008, vol. 59:09

Send submissions to *Mycena News*!

Mycena News is seeking content pertaining to any of the following topics. Please consider submitting an article to: mycenanews@mssf.org.

-Photos of this season's most beautiful mushrooms

-Foray reports and experiences in the field

-Your favorite recipes

-Mushroom related poems and artwork

Inside This Issue...

MycoDigest: An Old Friend Gets a New Name

Brian A. Perry

For years, one of the most commonly collected and highly sought after edible mushroom species in California has gone without a proper scientific name. Although many of you may not have realized this, the oak woodland chanterelle we so commonly collect here in the Bay Area and other regions of California, has had a name based upon a European species loosely applied to it. Undoubtedly, some of you have heard professionals or other knowledgeable fungophiles proclaim that our oak chanterelle is not the same species as that found in the coniferous forests of the Pacific Northwest, and that someone ought to put a good name on that species. Well, finally, in a forthcoming issue of the scientific journal "Economic Botany," David Arora and co-author Susie Dunham rectify this situation, providing the chanterelle so common to our California oak woodlands and mixed evergreen forests with a valid scientific name, *Cantharellus californicus* sp. nov.

Formerly known as *Cantharellus cibarius*, this chanterelle has been newly renamed *Cantharellus californicus*. Photo courtesy of Mike Wood and Mykoweb

As indicated by Arora and Dunham (2008), the species name *Cantharellus cibarius* Fr., based on material collected in France, has been applied at one time or another to all of the golden chanterelles we encounter in California (excluding of course, the white chanterelle *C. subalbidus* A.H. Sm. & Morse, and the funnel chanterelle *C. tubaeformis* Fr.). A recent study by Redhead and colleagues (1997) determined, however, that the common chanterelle species associated with *Tsuga* (hemlock) and *Pseudostuga* (douglas fir) in the Pacific Northwest is *Cantharellus formosus* Corner, originally described from material collected on Vancouver Island, B.C. In this same study, the authors reported the presence of another taxon, *Cantharellus cibarius* var. *roseocanus* Redhead, Norvell & Danell,

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MycoDigest is a section of *Mycena News* dedicated to the scientific review of mycological information.

PRESIDENT'S POST

This past weekend we held our annual Mendocino Woodlands Foray. Once again it was a huge success, i.e. fun had by all, thanks to everyone who contributed their time and energy to the event. It was not the porcini/chanterelle bonanza that we had last year but the diversity was terrific – at least 170 different species of fungi showed up on the identification tables! That's pretty good.

The foray could not have been done without a lot of people pitching in to help. I'm afraid I don't have a complete list of volunteers and staff but I'd like to acknowledge a few folks who seemed to me to be crucial to the smooth operation of the event. First of all, thanks to Charmoon Richardson, who is our off-site coordinator, for arranging for the site, putting together a fine program, and doing a lot of the preliminary work. Lou Prestia deserves a pat on the back for taking the reservations and checking people in on Friday, in addition to helping out where he was needed throughout the weekend. Tanya (oops—I'm embarrassed I don't know your last name) and her hard-working kitchen crew provided outstanding meals throughout—thanks to all of you including Dan Long, Bill and Carol Hellums, Al Carvajal, Jane and George Collier, Polly Shaw, Dulcie Heiman, and a bunch of people who I don't know (but I appreciate anyway!). We are grateful to everyone that provided us with an excellent program lineup: Brandon Matheny, Mike Wood, Ken Litchfield, Else Vellinga, Catherine Wesley, Andy and Gayle Still, Andy Maxon, and Julie Schleuder. Thanks to Norm Andresen for coordinating the forays (and leading one) and to Mark Lockaby, Al Carvajal, and Ken Litchfield for leading them. The identification crew did a great job putting names on some very obscure mushrooms—thanks to Brandon Matheny, Else Vellinga, Steve Trudell, Mike Wood and Norm Andresen for that. A special nod of gratitude goes to those few hardy souls who were on site to the very end, helping to make sure the buildings, grounds, bathrooms and kitchen were cleaner than when we arrived: Bill and Carol Hellums, Al Carvajal, Ken Litchfield, Norm Andresen, and Steve Trudell.

By now, those of you who were there have noticed there is one name that I've left out. That's because I want to reserve a whole paragraph to sing her praises. Thank you, thank you, thank you Sherry Carvajal. Sherry was our on-site coordinator and she did an outstanding job. In addition to doing a lot of preliminary work, such as procuring all of the food for the weekend, she was on the go the entire foray, making sure everything was running smoothly.

Continued to the right

ANNOUNCEMENTS

Fungus Fair Volunteers Needed

Volunteers are needed from Friday night through Sunday, December 5–7. Shift obligation is three hours. If interested please send a note to fungusfair@mssf.org.

MSSF Scholarship

The Mycological Society of San Francisco offers scholarships to full-time graduate students majoring in mycology and attending colleges and universities in northern California. The scholarships vary in amount from $700 to $1,500 and are given in the name of Esther C. Whited and Dr. Harry Thiers. All research proposals are welcomed, but special consideration is given to taxonomic studies of the higher fungi of the Pacific States.

Requirements include two letters of recommendation—one from a professional mycologist, a brief statement describing the research project, and an agreement to present the results at a General Meeting of the MSSF. Note, $200 of the scholarship will be awarded at the time of this presentation.

Students reapplying or modifying previous proposals need not resubmit letters of recommendation. The deadline for applications is December 31, 2008.

Send inquiries and letters to:
Robert Mackler
157 Mesa Ct.
Hercules CA, 94547.

SOMA Camp 2009

To be held on the weekend of January 17–19, 2009, SOMA Camp will feature forays, workshops, guest speakers, wild mushroom cuisine, and much more. Sign up on the web at www.somamushrooms.org for finalized event details.

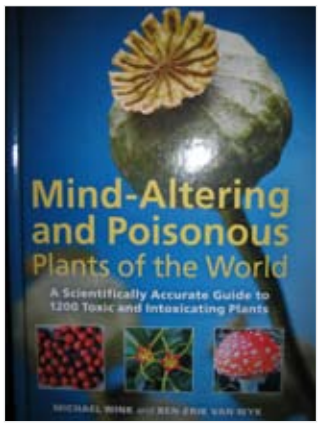
President's Post continued

She was on top of things from the git-go and made it look easy. Charmoon made a point of letting me know how valuable she was to him as a co-coordinator for the event. Here's to you, Sherry!

See you at the Holiday Dinner and the Fungus Fair. Good hunting.

~J.R. Blair, President

What's Bookin?



Several new books are now available to MSSF members at a 10% discount. I will be reviewing them over the next few months.

The first is: *Mind-Altering and Poisonous Plants of the World*. It is a new 464–page hardback book published in 2008 by Timber Press, Portland & London. The co-authors are: Michael Wink and Ben-Erik Van Wyk.

Praise for the authors' previous book Medicinal Plants of the World: …"an essential reference guide for healthcare professionals—doctors, nurses, and especially pharmacists—or anyone with an interest in medicinal plants and their uses." –Biology Digest "An in-depth, scientifically accurate, superbly presented, seminal survey and guide to the best-known medicinal plants….a reference that health care and professionals will relish and refer to time and time again." –Bookwatch.

There are not a lot of fungi in this book, but overall it is an excellent reference guide and a superb addition to anyone's personal library. This book, as well as several other new books, will be available at the next General Meeting.

~Curt Haney
MSSF Books Chairman

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Deadline for the January 2009 issue of *Mycena News* is December 15.
Please send your articles, calendar items, and other information to: mycenanews@mssf.org

Mycena News

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To subscribe, renew, or make address changes, please contact Alvaro Carvajal: alvaro.carvajal@sbcglobal.net or (415) 695-0466.

Past issues of *Mycena News* can be read on-line at www.mssf.org.

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MSSF QUICK START GUIDE
for Identifying Mushrooms

This questionnaire is designed to help you get started LOOKING at mushrooms. It is NOT designed to help you find edible mushrooms.

It is safe to handle all mushrooms. However, no one should eat a wild mushroom unless an expert has identified it as edible.

Bring this sheet and any mushrooms you find to the MSSF Fungus Fair at the Oakland Museum on December 6 & 7, 2008. There will be plenty of folks there to help identify your finds!

With this guide you will:

1 – Collect a mushroom.
2 – Identify a few basic features used by mycologists.
3 – Compare your mushroom to photos and descriptions of other mushrooms.
4 – Bring your mushroom and the completed Quick Start Guide to an MSSF meeting to discuss it with other MSSF members.

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1 - COLLECT SPECIMEN

Dig one or, if possible, several specimens from the habitat. Use a small hand shovel or a knife. Be sure to collect the whole mushroom; dig down to get the bottom. Store the specimen in wax paper or a paper bag; no plastic.

2 – DESCRIBE YOUR SPECIMEN

Complete the questionnaire on the next page about your specimen. This questionnaire covers many of the main external features (morphology) that are visible with the eye,

Make a spore print: Cut the cap off a specimen. Place it gills down on white paper and cover it with a bowl for several hours. Notice the color of the print left by the spores. Notice the design formed by the dropping spores.

3 – COMPARE YOUR SPECIMEN WITH OTHERS ONLINE

Go online to www.mykoweb.com to see photos of fungi. Compare your mushroom to the photos. Read descriptions. Do the descriptions match features you noticed about your mushroom? Notice the variety of shapes, colors, and sizes. Notice the scientific and popular names.

4 – SHARE YOUR SPECIMEN

Bring your mushroom, questionnaire, and spore print to the Fungus Fair or the next meeting of the MSSF. Starting at 7 pm, there is an identification table where you can display your mushroom and discuss your questionnaire with others. Talking with folks about your "critter" is a big part of the fun in fungus.

Mushroom Identification Questionnaire

Size

_____ How wide is the cap? Measure it.

_____ How long and how wide is the stem? (also called the stipe)

Color

_____What color is the cap?

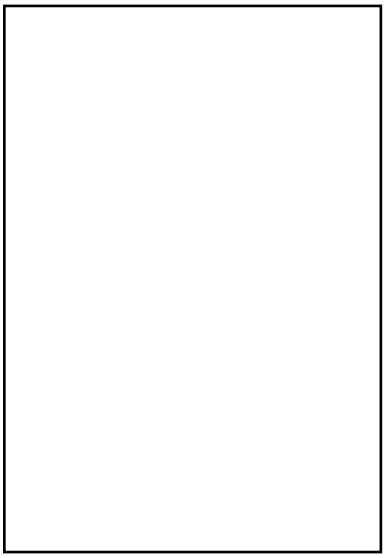
_____What color is the stem?

_____What color are the gills or pores on the underside of the cap?

_____What color are the spores on the spore print?

Shape

_____What shape is the cap? (dome, round, flat, funnel, cone, etc) Draw it in the box.



_____Is the stem wider or narrower at the bottom, or is it straight all the way down?

_____Is there a ring on the stem?

_____Is there a wide "cup" at the base of the stem, maybe underground?

Texture

_____Does the underside of the cap have gills or pores?

_____Is the stem smooth or shaggy or textured?

_____Is the cap dry, slimy, sticky, smooth, bumpy?

_____Are there spots on the cap? How many and what color?

_____Are the edges of the cap shaggy (fibrous)?

Habitat

_____Where did you find the mushroom? in grass, in dirt (soil), on leaves, under trees, or attached to wood?

_____Were there a lot of this kind of mushroom together, or was it alone?

_____If you know plants, what kind of tree or plant was growing near it?

MycoDigest continued

associated with *Picea* (spruce) in the Pacific Northwest. In a study by Dunham et al. (2003), another golden chanterelle species, *Cantharellus cascadensis* Dunham, O'Dell & Molina, was described from *Pseudotsuga* forests of the Cascade Mountains of Oregon on the basis of both molecular and morphological data. In both of these previous studies, the presence of an oak-associated taxon from California was indicated, but not formally described.

In the study of Arora and Dunham (2008), the authors use RFLP analyses of the nuclear internal transcribed spacer (ITS) region of the genome to examine the number of chanterelle taxa associated with California's oak woodlands and mixed forests. For those not familiar with RFLP, or restriction fragment length polymorphism analyses, it is a method in which a given region of the genome is amplified using the polymerase chain reaction (PCR), and then cut into fragments using restriction enzymes. The lengths of these fragments, which are due the number of nucleotides they are composed of, are then sized using gel electrophoresis. Using this technique, one can resolve patterns or "profiles" of fragment lengths that ideally are species specific. The results of Arora and Dunham (2008) resolved four unique RFLP profiles corresponding to *C. formosus*, *C. cibarius* var. *roseocanus*, *C. subalbidus*, and an additional species from the live oak woodlands of California, which they formally describe as *Cantharellus californicus* Arora & Dunham.

For those of you who routinely collect chanterelles in the live oak woodlands, mixed evergreen and coniferous forests of California, you are likely already aware of many of the morphological and ecological differences between *C. californicus* and the other golden chanterelle species, *C. formosus* and *C. cibarius* v. *roseocanus*. As indicated by Arora and Dunham (2008), *C. californicus* typically produces much larger fruiting bodies than either of the other species, with single basidiomes commonly weighing in at more than half, and often exceeding, a kilogram. Among the *Quercus agrifolia* (live oak) stands in the East Bay, I have encountered some waterlogged monsters that easily tip the scales at well over a kilogram. This does not always appear to be the case, however, as Arora and Dunham report that *C. californicus* tends to be smaller in size when found in mixed evergreen forests. In addition to size, the hymenium of mature *C. californicus* specimens also tend to become more "poroid" due to the development of numerous cross-veins between the lamellar folds. Micromorphologically, however, there is very little to distinguish these three taxa. Arora and Dunham also report that *C. californicus* is most similar in coloration to *C. formosus*, with a yellow-orange pileus and typically paler hymenium, differing from *C. cibarius* var. *roseocanus* by the later species' more intensely pigmented, yellowish hymenium. However, as indicated by Arora and Dunham (2008), a fair degree of color variation is exhibited by all three taxa, and the best means of determining species identification may be ectomycorrhizal host species and/or geographic location within California. In their analyses, Arora and Dunham found that the mixed evergreen forests from Sonoma County northward where *Lithocarpus densiflora* (tanoak) was common, but in which *Quercus agrifolia* was absent, contained only *C. formosus*, *C. cibarius* var. *roseocanus*, and the white chanterelle *C. subalbidus*. In the mixed evergreen forests of central coastal California where *Q. agrifolia* is present, however, nearly all collections examined where *C. californicus*. Although not as abundant as on the coast, *C. californicus* is also reported to occur with *Q. agrifolia*, and to a lesser degree *Quercus parvula* var. *shrevei*, *Quercus wislezenii* and *Quercus kelloggii* in the Sierra Nevada foothills. Additionally, this species has also been reported from at least one site in association with *Lithocarpus densiflora*, and reported, but not confirmed by the authors, with *Arbutus menziesii* (madrone) and *Arctostaphylos* spp. (manzanita). In the coniferous forests of the North Coast, only *C. formosus, and C. cibarius* var. *roseocanus* were encountered.

Based on the results of Arora and Dunham (2008), it is clear that *Q. agrifolia* is the primary ectomycorrhizal host of *C. californicus*, with *L. densiflora*, *A. menziesii* and *Manzanita* spp. potentially serving as secondary hosts in some localities. When collecting in the oak woodlands, or mixed evergreen forests containing *Quercus agrifolia*, *C. californicus* appears to be the only golden chanterelle species one is likely to encounter. It is wonderful to see that such beautiful fungal component of our live oak woodlands and mixed evergreen forests finally has a fitting name. ❁

Literature Cited:

Arora A. and S. M. Dunham. 2008. A new, commercially valuable chanterelle species, *Cantharellus californicus* sp. nov., associated with live oak in California, USA. Economic Botany (in press).

Dunham, S. M., O'Dell, T.E., and Molina R. 2003. Analysis of nrDNA sequences and microsatellite allele frequencies reveals a cryptic chanterelle species *Cantharellus cascadensis* sp. nov. from the American Pacific Northwest. Mycological Research 107(10):1163-1177.

Redhead, S. A., Norvell, L. L. and Danell, E. 1997. *Cantharellus formosus* and the Pacific Golden Chanterelle harvest in Western North America. Mycotaxon 65: 285-322.

Membership Renewals

Many of you have already renewed your membership for 2009 (or beyond), so be sure to check the mailing label on your *Mycena News* to find out when you membership expires.

If you have not renewed your membership for 2009 (or beyond), you can renew by sending a check made out to **"MSSF Membership," to MSSF Membership, c/o The Randall Museum, 199 Museum Way, San Francisco, CA 94114**; or by using the PayPal option on the MSSF website. If you are paying by check, and your name is on the check that is all that is required. Credit card renewals are also accepted. Please fill in your card information on the form below and mail it in the enclosed envelope.

Membership rates are:

Multiple year membership rates approved by MSSF Council for renewals beginning Jan. 1, 2005

	1-yr	2-yr	-5% 3-yr	-10% 5-yr	20 x 1-yr Lifetime
Regular	$25	$50	$71.25	112.50	500.00
Senior	$20	$40	$57.00	90.00	400.00
Student	$20	$40	$57.00	90.00	n/a
Electronic	$15	$30	$42.75	67.50	300.00

Regular members receive the yearly *Roster* of members and the *Mycena News* by mail.
Senior members must be over 65 and enjoy all the privileges of Regular membership.
Student membership is for full-time students and is equivelant to the Reglar membership.
Electronic members must download the yearly *Roster* of members and the *Mycena News* from the MSSF website.

Members in all categories are eligible to sign up for inclusion in the information sharing Yahoo group. Consult the MSSF website, www.mssf.org, for information.

MYCOLOGICAL SOCIETY OF SAN FRANCISCO - Membership and Membership Renewal Application
New Members please fill out as much information as you can. Members who are renewing need to fill out only the blanks for which information has changed within the last year. Please check the current Roster to see if any of your address, phone, and e-mail need updating!
Name 1:_____ Home Phone: _____
Name 2:_____ Business Phone: _____
Street/Apt#/PO:_____ Cell Phone:_____
City:_____ E-mail 1:_____
State:_____ E-mail 2:_____
Zip Code:_____ Interests:_____
New Membership?_____ Renewal?_____
Membership type: ____Adult/Family ($25) ____ Senior/Students ($20) ____ Electronic ($15)
If sending a check, please make it out to "MSSF membership" and mail it, with this form to: MSSF Membership, c/o The Randall Junior Museum, 199 Museum Way, San Francisco, CA 94114
If paying by Credit Card, please provide the following information:
Circle Type of Credit Card: MasterCard, Visa, Discovery, or American Express
Credit Card Number: _____ Expiration Date: _____

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MSSF Calendar, December 2008

Monday, December 1, 2008, Holiday Dinner for the general membership, 7pm, Hall of Flowers, Golden Gate Park, 9th and Lincoln, SF. As is usual, there will NOT be a Culinary Group meeting in December. The next Culinary Group meeting will be January 5, 2009.

Saturday–Sunday, December 6–7, 2008, MSSF Fungus Fair at the Oakland Museum. Saturday 10am–6pm, Sunday 12pm–5pm. Lectures will be given throught the day on Saturday and Sunday. Come check out our speciman tables, and talk to local experts about the latest fungal finds.

Sunday, January 11, 2009, Beginner's Foray at San Francisco Watershed. For many years now, beginners have joined Bill and Louise Freedman in discovering the fungi which the SF Water Department has arranged for us in the Watershed. We have found about 155 varieties so far. It is an eye-opening way to start the new year. We meet at the western end of Edgewood Road, just past the exit to Hillsborough on Route 280, on Canada Road. Park where the bicyclists park. Sunday, January 11, 2009 is the date, 10:00 AM to about 12:30 PM. Space is limited, so call Bill at 650-344-7774 or <loufreed650@yahoo.com> for a reservation. It may be wet underfoot; wear wet weather shoes. This is a study rather than a collecting trip. The Water Department doesn't supply water, so bring your own. Heavy rain cancels.

Saturday, January 10, 2009, Mills Canyon Beginner Foray. J.R. Blair will lead his popular fact-filled study foray down Mills Canyon, Burlingame on Saturday, January 11. Because of over-attendance in the past, this outing, co-sponsored with the Friends of Mills Canyon, will be limited to 25 guests by reservation only. We meet at the Adeline Drive entrance at 10:00 A.M. Heavy rain cancels. Wear durable shoes, the 1-1/2 mile trail with little elevation could be wet. We usually finish about 12:30P.M. Adeline Drive crosses Hillcrest Ave, which turns east off Skyline Boulevard just south of the Trousdale Ave. exit from Route 280. Parking is on the left of the second arterial stop at Adeline as you come down Hillcrest. For reservations please call Bill Freedman at 650-344-7774, or <loufreed650@yahoo.com or J.R. Blair at 650-728-9405 or jrblair@mssf.org.