

Next Meeting Aug. 17th 2009

SPORES Afield

The newsletter of the Colorado Mycological Society

August 2009

President's Column



"Medicinal Mushrooms
– Nutritive Supplements"

The information in this column in no way should be considered an endorsement or prescription by myself or the CMS for the

use of any mushroom or derivative for the treatment of any disease. Nor should it be considered a recommendation by myself or the CMS to use any mushroom or derivative as a nutritive supplement. Consult your Health Care Professional prior to taking any herb or extract.

Here is a list and summary of five of the mushrooms being investigated for their possible medicinal activity and available as nutritive supplements. References are available upon request.

Caterpillar fungus, *Cordyceps sinensis*: Native to Tibet and Southern China, this caterpillar parasitizing fungus is found in the wild above 10,000 feet. The wild fungus can be quite expensive. Extracts of mycelium and cultured grain are readily available. It contains a compound, Cordycepin, which is closely related in structure to the ubiquitous energy compound ATP (Adenosine triphosphate). This structural relationship may account for the reported use of *Cordyceps* to increase stamina and energy. *C.s.* is also used for tonifying the lungs and as an aphrodisiac. It is being investigated for its anticancer and antiviral activities. *Cordyceps sinensis* is one of the ingredients in the formulation the Chinese Army used to help adjust to the altitudes of Tibet.

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Speaker for the August Meeting:

Dr. Cathy Cripps

"Tundra Mushrooms: Colorado to the Arctic"

The high alpine above treeline and the cold snowy Arctic seem unlikely place to hunt mushrooms. However, a hardy group of cold-loving mushrooms bravely survive these harsh habitats of low temperatures, short growing seasons and drying winds. Just like miniature alpine plants, most are tiny in comparison to those at lower elevations, such as penny-sized *Lactarius*. The mushrooms are often overlooked because most are tucked away in protective micro-niches produced by plants and finely patchy terrain. A few giants such as the *Amanitas* actually tower over the miniature forests of dwarf willows, their symbiotic mycorrhizal partner. These fungi are absolutely crucial in Arctic-alpine habitats; some for their ability to decompose plant material and recycle scarce nutrients into the soil, some for bringing nutrients to plant roots, and others for aggregating minimal soils. The talk will cover the hardy Arctic-alpine mushrooms from the high passes and cirques of Colorado (Independence Pass, Loveland Pass, San Juans, to name a few) to those found in the Arctic at sea level.

Upcoming Events

- Aug. 15th Fair Setup, for more information see page 4.
- Aug. 16th Annual CMS Mushroom Fair at Denver Botanic Gardens, The Fair identifier this year is Dr. Cathy Cripps.
- Aug. 17th Dr. Cathy Cripps, "Tundra Mushrooms: Colorado to the Arctic".
- Aug. 22-23rd Buena Vista King Boletus Festival, contact buenavistaheritage@msn.com.
- Sept. 14th CMS Annual Cook & Taste. This year CMS member Pete Marcyzk will be preceding the festivities with a talk on cooking with mushrooms and choosing the right wine for your mushroom dish.
- Oct. 12th CMS Annual general meeting and Election of Officers.
- Nov. 1st CMS Mushroom Dinner, see note this page.

Bring mushrooms for identification and display to any meeting.

All meetings are held the second Monday of each month from Mar. to Oct. at 7:30 PM unless otherwise announced. In 2009 the Colorado Mycological Society will be meeting in the Asbury Event Center at 3011 Vallejo Street in historic North Denver. The Asbury Event Center is in the old Asbury Methodist Church (built in 1890) complex which is today privately owned and no longer functioning as a church. There are several entrances into the facilities. The door to our meeting room is at the northeast corner of the building.

Upcoming Forays

Update from President Marc Donsky

Hi CMS members! With the unusual moisture laden summer we have opportunities for many forays. If you are interested in leading or helping with a foray please contact myself, Ed, or Norm at the e-mails below. Here is a tentative schedule of our foray season. The Fair Foray led by Ellen Jacobson. The city foray led by Manny Salzman. An ID workshop foray with Ed Lubow and Vera Evanson. An edible foray. Or two. Check your CMS web site regularly before each weekend to see if a foray has been scheduled. Contacts for pending forays will be posted the week before each foray. Please Note: This schedule is subject to change. Check the CMS website before each weekend.

Marc Donsky <marc.donsky@ucdenver.edu>
Ed Lubow edlubow@gmail.com Norm Birchler
nbirchler@comcast.net.

8th Traditional Peak of the Season Foray II.

No details available. The meeting place will be our usual place at 9:00 a.m.

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SporesAfield

SporesAfield is published from March through October by the Colorado Mycological Society. CMS dues are \$28 for the first year and \$25 thereafter. Send membership dues to Linda deLeon, CMS Membership Chair, 14310 W. Fifth Ave. Golden, CO 80401-5226. All CMS members receive *SporesAfield* as part of their membership

CMS is an affiliated member of the North American Mycological Association.

CMS web site: www.cmsweb.org

A Note from Debbie Viess, our June 2009 Speaker

Dear CMS Members,

I would like to thank you for inviting me to speak to your club, and for your enthusiastic response to my talk. I was delighted to share with you my images and stories and discoveries about the wonderful world of amanitas, and I hope that you were inspired to discover more about these fascinating mushrooms.

I would like to go on record stating that NO amanita should be eaten lightly; the consequences of a mistaken ID could be deadly. My talk in no way was meant to imply that eating any amanita was a casual event. I also do not encourage the eating of *Amanita muscaria*, despite sharing with you the fact that some people do indeed parboil it to remove its water soluble toxins.

Muscaria is a toxic mushroom and should be treated as such. I do not share Arora and Rubel's conclusions in their October 2008 Economic Botany paper ("A Study of Cultural Bias in Field Guide Determinations of Mushroom Edibility Using the Iconic Mushroom, *Amanita muscaria*, as an Example") regarding the use of muscaria as an edible. I did bring that paper to your meeting for interested parties to peruse, as well as several other recent amanita publications, since they are not readily available to the public.

Knowledge is power, but foolhardy experimentation around any amanita species is certainly not recommended by me or any other responsible mushroom expert.

Sincerely,
Debbie Viess
Bay Area Mycological Society
www.bayareamushrooms.org

p.s. I would welcome feedback, positive or negative, from any or all of you who heard my talk. I understand that the eating of amanitas is a controversial position. My goal was to educate, not inflame. Please contact me at: [amanitarita\[at\]yahoo.com](mailto:amanitarita[at]yahoo.com)

(Forays continued from page 2)

14th Fair Foray.

We will be collecting specimens for the CMS Annual Mushroom Fair (Sunday, August 16th). It should be emphasized that this is not a teaching foray, but rather a collecting foray. Nevertheless, people who have participated in this foray in the past have found it very informative. The leader of this foray will be Ellen Jacobson. If you need more information, you may contact Ellen at 303-741-3836 or by e-mail at egj538@aol.com.

15th City Bicycle Fair Foray.

Join this bicycle foray through our city habitat (yards and parks) with Jason and Manny Salzman. We will be collecting mushrooms for the CMS Mushroom Fair later in the day. For more details contact Manny at 303-296-9359 or at lodomyco@earthlink.net.

29th-30th Pine Mushroom Foray.

No details available

September:

12th or 13th Pre- Cook & Taste Gourmet Foray:

This foray preceding the annual CMS Cook 'n Taste meeting will be led by Pete Marczyk, co-owner of Marczyk Fine Foods. For more details contact Pete by e-mail at pete@marczyk.com.

18th - 20th 2009 CMS Mycoblitz.

Join CMS for our second Mycoblitz in Rocky Mountain National Park. Look for details in the September SporesAfield.

Please note all forays meet at 9:00 am in the southeast parking lot (also known as the Stegosaurus lot) of the Morrison exit (exit 259) at I-70 unless otherwise announced. If you carpool from that point which is strongly encouraged, due to limited parking at most foray locations, please chip in gas money.

BRING EM BACK ALIVE!

Some suggestions for collecting mushrooms for further study and identification from the Herbarium of Fungi at the Denver Botanic Gardens.

When you find a mushroom that you want to show to an expert for identification (and possibly have it preserved for further study), here are some reminders:

Collect only fresh, moist, whole specimens. Unless you believe it to be very rare or unusual, do not bring in a "singleton". Try to get buttons along with other young to mature individuals. Use good collecting techniques, getting base of stipes. Brush dirt off lightly and make sure too much dirt doesn't damage the specimen. Include a few notes. On a small piece of paper to include with the specimen, record habitat, putting sprig or leaf of host plant or tree in with the specimen as a reminder. If the mushrooms are small and in moss or other bryophytes, leave that plant material around the specimen to help keep it moist. If possible, write down obvious features that might disappear, such as veil attachment, colors, odor, or taste. Make a note where you found the mushroom. Put specimen in a container using a firm container for small, delicate specimens and waxed paper for larger ones. Keep each collection separate from other kinds. Place it in a firm container such as a cottage cheese box or other small, lidded box (if the mushrooms are small). We find compartmented boxes used by fly fishermen excellent. Place a piece of damp paper towel in the bottom to keep the specimens moist. Desiccated specimens are hard to identify. Make a spore print for assessment of spore color to help with identification. Slip a piece of white paper under the gills. By the time you get home, you may have a usable print if you arrange the paper just below the gills. RosaLee uses the shiny side of freezer paper!

A FEW 'DO NOT' SUGGESTIONS:

Do NOT freeze or wash or put specimens in water.

Do NOT leave specimens in a hot car. Refrigerate or put in cooler.

Do NOT collect specimens in plastic bags. They sweat!

If you give a properly collected specimen to an expert (or bring it in to the Fair in August), your specimen may be preserved "in perpetuity" for science! We at the Herbarium are always grateful for your contributions. You may bring us a new Colorado record, or a new species! We have hundreds of great specimens (and some very rare ones) donated by members of CMS. Come see them!

By Vera Evenson, Curator
RosaLee Brace, Volunteer

Fair Flyer Insert

Inserted in this month's SporesAfield is a flyer for the upcoming CMS Mushroom Fair. Please help us advertise the fair by placing this flyer in a prominent place at your work, your local grocery store bulletin board, etc. The fair is the biggest event of the CMS season and we would like as many people to attend the as possible.

Note: please do not place this flyer on city light poles, telephone poles, street signs, etc.

Please mark your calendars!!!

The 2009 CMS
End-of-Season Fungi Feast
is scheduled for Sunday, November 1ST.
Look for details in the
September issue of SPORES!

SEPTEMBER MUSHROOM TASTING

SEPTEMBER 14th, 2009

We are planning a wild mushroom Cook & Taste for the September meeting. The Cook & Taste will be held September 14th at 7:30 in Asbury Event Center at 3011 Vallejo Street in historic North Denver. Members are encouraged to bring a mushroom dish to share with other members. Only the following mushroom species may be used:

Boletus barrowsii

Boletus edulis

Cantharellus cibarius

Commercial mushrooms from a grocery

Coprinus comatus

Dentinum repandum

Flammulina velutipes

Hydnum imbricatum

Lactarius deliciosus

Marasmius oreades

Matsutake - *Tricholoma magnivelare* or *Tricholoma caligatum*

Morchella angusticeps

Pleurotus ostreatus

Tricholoma flavovirens

All the dishes brought to the Cook & Taste must follow these rules:

- 1) All mushrooms must be well cooked. Raw mushrooms will not be allowed in any dish.
- 2) Use only one species of mushroom in each dish.
- 3) A written recipe prominently showing the species of mushroom in the dish and the cook's name **MUST** accompany each dish.
- 4) Leccinum species are not allowed!
- 5) If you have a supply of a good, common edible species of mushroom that you would like to use in a dish, but it isn't on the list above, call Marilyn Shaw at 303-377-1278. All exceptions must be approved in advance of the Cook & Taste.
- 6) Those who have no time to cook or cannot cook may bring drinks, desserts, salads, or bread (prepared food from the grocery is fine.)

(*President's continued from page 1*)

Reishi, Ling Chi, *Ganoderma lucidum*: This wood growing annual polypore is found in many parts of the world. It is found on a wide variety of deciduous trees and is occasionally reported from conifers. Along with the usual immune enhancing, anti-tumor, anti-viral polysaccharides, Reishi also contains a complex group of triterpenoid steriod like compounds with a variety of activities. This particular group has been named, after the genus; ganoderans, ganoderic, and ganoderenic acids. One of these ganoderic acids is reputed to have hepato-protective properties that make it useful in treating alcohol, hepatitis, and even mushroom poisoning liver damage. Reishi is reported to be anti-aging because of its anti-oxidant properties. A bitter tea made from the fruiting bodies is reported to be useful for allergies. This use is related to the reports of Reishi's ability to help absorb oxygen and increase stamina. It is another herb in the altitude formulations used by the Chinese Army. It is found in Chinese herb stores (etc.) as extracts, as tea bags, and as capsulated powders of whole mushrooms. In China, pharmacies carry capsules of pure spores.

Turkey Tail, *Trametes versicolor*: This is a common polypore found around the world. It contains a complex of β -glucan polysaccharides (poly-glucose) and glycoproteins (proteins with sugars attached), which are being researched for their immunostimulatory, anti-cancer, anti-viral, anti-microbial, and anti-oxidant properties. A commercial drug known as "Krestin" has been isolated from *Trametes versicolor*. This glycoprotein is approved in Asia as an anti-cancer drug. It is used in combination with chemotherapy. Studies with Krestin have been done, and continue, on its ability to treat a wide variety of cancers including gastric, breast, lung, and colon. Hen-of-the-Woods, Maitake, *Grifola frondosa*, is another polypore getting attention for the same properties as Turkey Tail.

Lion's Mane, Monkey's Head, *Hericium erinaceus*: This distinctive wood rotting toothed fungus was traditionally used in Chinese Medicine for stomach ailments. More recent research focuses on the anti-cancer and immunostimulatory properties being examined in many of the higher fungi. Isolation of a group of compounds called erinacines showed them to be active in nerve growth stimulation. This exciting discovery is leading to their examination for the potential of treatment of paralysis

and Alzheimer's. This mushroom is cultivated locally by Hazel Dell Mushrooms (Fort Collins) and can be found in our local super markets.

Agaricus species: Called *Agaricus blazei*, *A. brasiliensis*, and most recently shown by DNA studies to be *A. subrufescens*, this mushroom is in the group of yellow staining, almond flavor Agaricus, which here (in Colorado) includes *A. augustus*. This Agaricus species is being investigated for potential anti-cancer and anti-viral activity. Traveling in Taiwan, almost every family has a story of some relative using this mushroom alone or in combination with their chemotherapy. Research for cholesterol lowering and blood sugar modulating activity is also ongoing. These activities are being investigated in a number of mushroom species. Shiitake and Oyster mushrooms are both known to contain cholesterol-lowering compounds. The yeast *Monascus purpureus* (Red yeast rice) produces lovastatin (Mevacor®, Merck & Co., Inc). The blood sugar modulating activity may be related to the same polysaccharides that are responsible for immune system stimulation. Some of these polysaccharides are common to the cell walls of many mushrooms. It should be noted that a number of Agaricus species, including *A.s.* contain the carcinogenic hydrazine compound Agaritine. This apparent contradiction in benefits of this mushroom still needs to be studied.

These are five of the mushrooms found on health food store shelves. Current research is concentrated on looking at the higher fungi as a source of anti-cancer and anti-viral therapies. In Traditional Chinese Medicine mushroom are used to treat many ailments. The book, "Fungi Pharmacopeia", by Liu Bo and Bau Yun-sun, published in 1980 by The Kinoko Company lists over 100 species of mushrooms as medicinal. This list includes using *Boletus edulis* and many other species including several *Suillus* and *Russula* in a complex formulation for easing tendon and rheumatic pain, using morels for stomach aches and coughs, using puffballs as anti-inflammatory agents, and using stink horns for "blood activation" (whatever that may mean) among many, many others. Given the wealth of pharmaceuticals found from the lower fungi it is not surprising to see mushrooms revealing just as many interesting bioactive components.

BEGGING FOR BOLETES

By Ellen Jacobson

Several years ago as I was standing at my kitchen counter chopping away at a pile of partially frozen *Boletus edulis*, I felt my furry friend, Cashew the orange cat, twining and twisting around my legs. He was emitting his famous and piteous, "Give me food," meow. I supposed he was begging for a bite of Bolete since he assumes that anything on my cutting board is rightfully his.

Feeling generous, as I had many bags in my freezer, I tossed him a few pieces; he quickly ate them and continued his whining. Fearing for his life or worse, a mushroomless spaghetti sauce, I put up with his pestering and gave him no more. From that day on, Cashew appeared in the kitchen the minute I began slicing asking for his share.

His gourmet cravings soon spread to include Pleurotus and Morels and he convinced his companion cat, Lewis, that Porcini and Oysters were a delicious and perfect cat treat. As an independent and picky eater, however, Lewis always preferred Oysters.

I talked with friends and relatives and found that many of their cats also beg for wild mushrooms, particularly *Boletus edulis*, and eat them without any problems. Since dogs will eat anything, I have not extended my inquiries to the canine world.

Cashew settled down eventually and trained me to know exactly which wild fungi he preferred. His favorite was always sautéed Porcini either fresh or frozen. He did not like them dried although he would eat Risotto made with reconstituted Boletus. His second favorite was the Oyster. Again, fresh or frozen. He enjoyed Morels, fresh or dried, but did show a distinct preference for the Yellow Morels. He would not eat Chanterelles, but said he might try Lobster or Shrimp Russula. Cashew is gone now to be replaced by Rocky, a kitty who prefers mice to all other foods including mushrooms. Does your cat eat wild mushrooms?

Google provides no information about cats and dogs eating edible wild mushrooms; they caution pet owners not to allow pets to eat any wild mushroom. However, if your companion begs for Boletes and you are absolutely sure of your identification, there appears to be no harm in donating small amounts to your buddies. P.S. Cashew also liked green beans and cantaloupe.



Photo by Norm Birchler

For more information related to CMS, contact:

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COLORADO MYCOLOGICAL SOCIETY

