

Next Meeting April 8, 2002

SPORES Afield

The newsletter of the Colorado Mycological Society

April 2002

Spring is Here!

It's time to start thinking about our old elusive friend, the Morel. Scattered about in this issue like mushrooms on the forest floor are some helpful hints for finding the correct habitat, identifying, and cooking this tasty mushrooms. At the March meeting it was announced that there are tentatively going to be two forays, one in late April and one in May to look for the Yellow Morel (*Morchella esculenta*) **weather permitting**. May is also prime hunting time for the Black Morel (*Morchella augusticeps*). I look for these around scrub Aspen mixed with Lodgepole Pine, at around 7,000'-9,000'. Black Morels are usually where there is very little under growth and there is a mat of leaves or pine duff from the previous year. If there is allot of grass it is best to look elsewhere. Watch for other mushrooms as well, Oyster mushrooms (*Pleurotus populinus*) are usually out about the same time. Also watch for Shaggy Manes (*Coprinus comatus*) and possibly Velvet Foot (*Flammulina velutipes*).

Speaker for April's Meeting

Dr. Steven Miller

How to "know" what genus it is: The Gestalt of Mushroom Identification.

Have you ever been frustrated at a foray when someone told you what genus of mushroom you were looking at, but couldn't describe the characters of that genus? That's Gestalt based on years of experience.

Be frustrated no longer! This talk will examine the characters commonly used in the field to diagnose and determine genera of mushrooms and show examples of the most commonly encountered genera.

Steven L. Miller
Professor of Botany
University of Wyoming

Dr. Miller is the curator of the Wilhelm Solheim Mycological Herbarium and specializes in the natural history of large fleshy fungi, including aspects of their evolutionary biology, population genetics, biogeography and systematics.

Dr. Miller's recent research interest concerns the molecular systematics of fungi in the Russuloid lineage (Basidiomycetes), especially the genera *Russula* and *Lactarius*, and a comparative biogeography of these fungi worldwide. His lab continues to investigate the taxonomy and biodiversity of ectomycorrhizal fungi in the Rocky Mountains. Recent initiatives include generation of an ITS sequence database with over 600 species of *Russula* and *Lactarius*; completion of a DNA sequence database for 106 species of ectomycorrhizal fungi associated with lodgepole pine; an in-depth analysis of the contribution of basidiospores to the population genetics of several species of late stage ectomycorrhizal fungi; a study of the population biology of fairy rings, and a study of a mysterious fungus that grows and decomposes wood under the snowpack. Check out the Russulales website at http://w3.uwyo.edu/~fungi/Russulales_site.html for additional information.

Upcoming Events

- April 8th** Steven Miller,
"How to know what genus it is:
The Gestalt of Mushroom
Identification"
- May 13th** Cathy Cripps,
"Artic-Alpine Mushrooms:
Undiscovered diversity above
treeline"
- June 10th** To be announced
- July 8th** Marc Donsky,
"Mushroom Cultivation"
- Aug. 9th** Foray with Jack States, collecting
for the mushroom fair
- Aug. 10th** Mushroom fair setup
- Aug. 11th** Annual CMS Mushroom Fair at
Denver Botanic Gardens
- Aug. 12th** Jack States,
"Mystery and Magic in Mushroom
Identification: Will the REAL
Boletus edulis please stand up"
- Sept. 9th** Nancy Smith Weber,
"Morels"
- Oct. 14th** Terri Jensen and Karen Aguiar,
"Medicinal Mushrooms"

Spores Afield

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

CMS website: <http://www.cmsweb.org>

Fair Trade

An Adventure in Fungi and Friendship

By William Windsor

It began as one of the many small moments in life, those nondescript everyday moments which are usually forgotten soon after their passing. In fact, I no longer remember that first conversation, but I do remember that it was Norm who approached me during one of last spring's Colorado Mycological Society's monthly meetings. I had brought in some of the Yellow Morels I found that spring fruiting under narrow leaf cottonwood in Boulder, Colorado. Norm brought in some Black Morels he and Jeffery Dann had found at a higher elevation near aspen trees. Since we both lived in Boulder, we chatted casually and scheduled a foray together. From that small moment of camaraderie, developed a friendship that I now greatly value.

During our first Foray I learned that Norm had not yet found Yellow Morels in Colorado and that Matsutaki was one of his favorite edible mushrooms. I in turn shared that Morels were one of my favorite edible mushrooms and that I had never found Matsutaki. We both shared a similar foray style of seeking specific habitat rather than specific mushrooms. Not every correct habitat will have the mushroom you seek. But the mushrooms you seek will nearly always be found in the correct habitat. On that first foray we reached a simple agreement to teach each other the habitat of the mushroom that eluded the other.

During our early forays we learned that we shared many qualities and preferences. On one foray, Norm and his partner Karen and I searched for the elusive Yellow Morel. As we walked along a creek, Karen stopped and exclaimed "I smell mushrooms!". At first I thought that she was kidding, but Karen explained how she had learned to develop her sense of smell, and sure enough, just a few feet from us were a troop of Shaggy Mane mushrooms. Amazing!

Unfortunately, the season had passed for Yellow Morels, but I was able to locate good habitat for
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Black Morels by chasing spring weather up to higher elevations all the way until mid-June. We did find a small bounty of Morels, which eventually graced our dinner plates. The prime mountain habitat for Morels is to find semi-open areas with both aspen and pine mixed together. This elusive mushroom is never plentiful in Colorado, but by seeking the right habitat plus a little perseverance, the Morel will reveal itself to a dedicated seeker. There is one 'trick' that I will share with you about Morels and that is you must learn to see Morels with your mind, and not just your eyes. Morels blend in perfectly with their background environment and to spot them, the mind must 'filter' what the eye is seeing. When you do find a Morel, take a long and hard look at it, until you can picture the Morel in your mind. With practice and experience, your mind will become adept at filtering the background environment to help find Morels.

In mid-July, Norm took me on a foray to seek Matsutaki. This is very early in the season, but Norm wanted to teach me to recognize the proper environment. The prime habitat for Matsutaki is in the mountains in large stands of young to mid-aged Lodgepole pine. On this day, we traveled to a generally well-known Matsutaki hunting ground. Once there, we searched the ground for the tell-tale signs of cracked earth that betrays the young mushroom buttons growing beneath the surface. Norm followed behind me and signaled me to come look at a portion of the ground that I had just passed. I saw nothing that looked any different from the rest of the forest floor. Norm stuck his finger into the ground and pulled out a small white button mushroom with the distinctive smell that distinguishes Matsutake from all other mushrooms. He did this several times in this area, each time finding a young button in ground that I had already searched. I must admit that I was very impressed, for at this point, I still could not recognize the small disturbance that marked a Matsutaki mushroom. By our second Matsutaki foray, I started to develop the correct 'mind filter' to recognize the ground conditions and it was then

that I found my first Matsutaki. While I may never match Norm's incredible ability to find Matsutaki, he did teach me well enough that I can now consistently find both habitat and mushroom.

From a casual conversation, I have not only learned to find a delicious and elusive mushroom, but the time spend in forays with Norm and Karen has transcended into a wonderful friendship that is far from being limited to mushroom hunting. And while the topic and content of this essay may be focused upon elusive mushrooms, the morel of the story (forgive me a bad pun!) is to pay attention to the common moments and those about you. For it is there that you may just find that most elusive and valuable commodity, a true and lasting friendship.

**This is your last issue of
SporesAfield if you have not paid
your membership for 2002.**

If you have any questions as to the accuracy of the expiration date on the label or change of address, please contact:

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14310 W. Fifth
Golden, CO 80401-5226
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303-278-9582

The Library has moved

The library is now located at our Vice-Presidents home in Lakewood. He may be reached at 303-237-0356 or via e-mail at cchardwick@yahoo.com
Contact him about the books containing Morels.

Change of Foray Chairperson

In the March issue of *SporesAfield* the foray chair was listed incorrectly. The chairperson for this year is Tom Taggart, he may be reached at:

303-423-5317 or via e-mail at
tnttaggart@uswest.net

Morel Risotto

By Jeff Biolchini

Italians traditionally make mushroom risotto with porcini mushrooms; unfortunately I did not have much success finding *Boletus edulis* or *Leccinum insigne* last year. Luckily, the spring Morels more than made up for this disappointment. Given my available ingredients, I swapped Morels for the porcini in this recipe. The result was terrific, perhaps even better than with porcini.

The recipe is not difficult. However, be prepared for a half hour of constant stirring. This is necessary to release the starch that is characteristic of risotto. Other types of rice will not produce a dish even remotely resembling risotto. So, save yourself from the disappointment and pick up the real thing, arborio. It is cheapest purchased in bulk at a local health food store. For broth, I prefer chicken, but vegetable broth works well also.

A glass of Pinot Grigio or Verdicchio goes great with this dish, but limit yourself to a single glass because alcohol and morels do cause stomach upsets for some people. (The alcohol in the risotto evaporates leaving only the harmless flavor.)

1-1/2 cups Arborio rice
6 cups broth
4 Tbs. butter
1 medium onion
1/2 cup grated Parmesan cheese
1/2 cup white wine
1 handful of dried morels
cracked pepper

Place the Morels in a small pot and pour in as much broth as necessary to cover them. Bring to a boil and then turn the heat down to low. Simmer for 15 minutes. Meanwhile, mince the onion.

Remove the Morels from their soaking liquid, chop, and set aside. Strain the soaking liquid to remove any debris and set it aside. Keep this liquid separate from the rest of the broth. You may not use all of the broth, but you definitely want to use all of the soaking liquid.

Place the butter in a large skillet over medium heat. Once melted, add the minced onion and sauté until it becomes transparent.

From this point forward you will need to stir continuously. Add the rice to the onion and sauté for three minutes. Then pour in the wine.

Once the wine has been absorbed, begin adding the soaking liquid one cup at a time. After the liquid has been absorbed, add another cup. Use up the soaking liquid before moving on to the broth. Continue adding the liquid one cup at a time, stirring continuously, and waiting until the liquid has been absorbed before adding more liquid.

Once the rice is tender and all liquid is absorbed, remove from the heat. Mix in the cheese, Morels, and cracked pepper.
Buon appetito!

Morel Hint:

Sometimes small washes with Aspens will yield a handful of Morels, if they have an annual water source. Remember there are look-alikes.

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Morel Hint:

I personally think it's a good idea to have a tree identification book in your collection, particularly if you don't know your trees to well yet.

Narrow Leaf Cottonwood (*Populus angustifolia*)
Quaking Aspen (*Populus tremuloides*)
Lodgepole Pine (*Pinus contorta*)

"Cook 'em, Danno!" (with apologies to Hawaii Five-0) By Marilyn Shaw

The telephone rings. You look at the clock. It's 1:25 AM. You hope it's just an obscene call, but, no, it's your friends at the Rocky Mountain Poison & Drug Center. February is off-season for mushrooms around here, but that is no insurance against people getting sick from them.

These were chanterelles, of all things, stored in a freezer for the last five or six months. A couple began feeling ill about 9:30 PM, three hours after eating well-cooked mushrooms which had been given to them by a friend. The wife had had two episodes of diarrhea and was now feeling better, but the husband was experiencing recurrent and severe abdominal pains and was sweating. His eyes were not watering (an important diagnostic factor).

The following information was obtained from the wife. She had grown up in Austria, and had collected chanterelles, herself, both there as a child and later in this country. She was very familiar with the appearance of *Cantharellus cibarius* and had not noticed anything amiss with any of these. The mushrooms had been frozen raw. The color was good and they did not appear to have deteriorated while frozen. How much had they eaten? He, approximately one cupful, and she, about one half cupful. She didn't eat more because she noticed some tasted a little bitter. He did not notice any bitterness.

More questioning about the mushrooms pretty much ruled out the possibility of "bad actors" being involved. It should be noted that *Omphalotus olearius* and related poisonous species do not occur in the Colorado high country where chanterelles are found. Neither the habitat, nor the climate is right. We do have *Hygrophoropsis aurantiaca*, but whether or not it is poisonous is unclear. In a subsequent search of the North American Mycological Association's Mushroom Poisoning Case Registry (MPCR) Dr. Ken Cochran found no poison reports involving that species.

The husband was in a great deal of pain. We strongly recommended that he be taken to an emergency room to be evaluated, especially to be sure there was nothing else wrong. They were reluctant to go. (Saved me a 30 minute middle of the night trip across town.) The poison center nurse made sure they were properly informed and cautioned about the risks they were taking. On a follow-up call at 3 AM the wife said her husband finally had forcefully vomited a large amount. This was followed by an episode or two of diarrhea. By then he was feeling somewhat better.

Later that day the husband reported that they had both pretty much recovered. He also had been checked out by his personal physician who gave him a clean bill of health. I asked if they had any more of the mushrooms, and fortunately, there was another bag in their freezer. Arrangements were made for them to bring the specimens to my home in a few days when they were going to be in my neighborhood. (This was no longer an emergency.)

When the mushrooms were delivered, they appeared to have been frozen at the height of freshness. After thawing them in my refrigerator, I opened the ZipLock and immediately detected a rancid odor. There was more water than would normally be expected, as if they had been soaked. Since no dirt was visible on the specimens, I suspect that was the case. All the specimens were definitely chanterelles. Now, it should be pointed out that, in a case where there are leftover specimens, we know what wasn't eaten, but not necessarily what was. However, these folks appeared to be intelligent and well informed, so I felt confident the mushrooms they had eaten were the same as these.

A couple of factors still bothered me: the rancid odor, and the bitterness the wife mentioned. Time to do a test. I sautéed a few specimens thoroughly, then gingerly chewed a piece. It was bitter as could be. What would account for this? I suspected that, although the mushrooms were in good condition when picked and frozen, there had
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been deterioration while they were stored in the freezer. It goes without saying that uncooked mushrooms will be covered with various organisms when they are collected, and that some of those organisms will eventually cause spoilage of the specimens. While freezing slows the deterioration, it does not completely halt it.

I discussed the case, electronically, with Drs. Ken Cochran and Denis Benjamin of NAMA, and both thought my hypothesis had some merit. Further, Dr. Benjamin expressed the thought that there may be naturally occurring chemicals that might increase in concentration while stored in this way. Dr. Benjamin also stated that he had observed the same bitter taste in chanterelles he had frozen raw and kept for a few months, and that because of this he keeps raw frozen chanterelles no more than a month or two. It is almost certain that any mushrooms frozen raw might deteriorate sufficiently over a period of time to cause illness, although this would undoubtedly vary with the species involved.

Dr. Cochran checked the literature and came up with a few papers which discuss certain chemicals that have been found in chanterelles including cibacic acid, hydroxydecanoic acid, octadecanoic acid (stearic acid) derivative, indoleacetic acid, and indolecarboxylic acid. More information on these papers can be provided on request. Dr. Cochran also provided information from the MPCR on cases which had involved chanterelles. Since the inception of the registry several years ago, and through 2001 there have been seventeen reports involving *Cantharellus cibarius*. Four of those involved mixed ingestions (additional species). Of the twelve cases involving only positively identified chanterelles, the symptoms included, but were not limited to, nausea, vomiting, sweating, abdominal discomfort and intestinal cramps. It cannot be known with certainty in all cases whether factors other than eating the mushrooms were responsible for the illnesses.

Now, this article should not be interpreted as an indictment of chanterelles. I certainly will con-

tinue eating them without a moment's concern. However, it might be well to give more thought to the wisdom of freezing them, or any other mushrooms, raw. I always clean and process my catch, usually by sautéing, as soon as possible after collecting them. There are at least two benefits to this: they take up much less space in my freezer, and it keeps me from being too greedy. The thought of a night or two staying up till 2 or 3 AM, cleaning, slicing and cooking, helps me restrain myself in the field. Remember, you are under no obligation to pick every mushroom in sight, just because you are a member of a mycological society.

It is obvious that more information is needed on this subject. Is there a grad student who would like to pursue it? Do any of you happen to have any frozen raw chanterelles that have been kept for several months? If so, please see if any taste bitter or have a rancid odor. It would be helpful if you could test them for contaminants, or have them tested. University biology departments or state health departments might be willing to help. We would be most interested in the results, and your own experiences. Information on the condition of other mushrooms which were frozen raw would also be useful.

Meantime, it is obvious that no one should eat any mushrooms which look, smell, or taste "funny". And the strong recommendation for freezing is, "Cook 'em, Danno!"

Morel Hint:

I put the words (Morel mushroom) into the AOL search engine the other night and it came up with 6,296 different websites. Here are a few site that looked interesting, some will help you identify Morels and some are for fun and festivals.

www.morelsandmore.com

www.morelheaven.com

www.mykoweb.com mentioned at March meeting

www.morelfest.com

www.morels.com

www.nov55.com/mr

www.morelmushroomhunting.com

Morels should always be cooked thoroughly.

Member Profile



Name: Christopher Craig Hardwick
(I prefer to be called Chris)

Birth Place: Beaver Dam Wisconsin

Town of Residence: Lakewood, CO

Years in Colorado: 14

Years with CMS: 2

Years collecting: 2

Are you a member of other clubs?

American Chemical Society
Rocky Mountain Society of Aviculture

What do you do with the club?

I've just been elected Vice President and librarian of CMS.

What do you do for a living?

I am working as a scientist for Gambro BCT, a medical device company. It's a huge company with over 20,000 employees and locations in over 40 countries. I currently support a newly patented technology that eliminates pathogens (viruses and bacteria) in blood components using a vitamin (riboflavin) and light. It's a very exciting project and I love my job! I work mostly as an analytical chemist but often double as a biochemist.

Schooling:

I have a Masters degree in organic chemistry with

a Bachelors degree in chemistry and biology (double major), both from the University of Southern Colorado in Pueblo, CO.

Hobbies (past and present):

Hunting mushrooms (of course!), growing mushrooms, raising canaries, beekeeping, skydiving, riding dirt bikes, skiing, fishing, camping, hunting, archery, bowling, playing the drums/piano/guitar, woodworking, web page construction. (See <http://www.aaawebmaster.com> and <http://www.capsandstems.com>).

Favorite Foray (local):

My favorite foray was my first one up by... (The location is a secret of course!) I was in awe at how many mushrooms we found!

What was found?

My first find was a huge *Boletus edulus* that someone had picked and thrown out into the gravel road. It must have weighed a couple pounds! I picked it up, totally in awe, and found that it was very rotten and stained my hands! Not a very good start to my first foray. Also found were *Chanterelles*, *Hawk's wings*, *Suillus*, *Lactarius deliciosus*, *Cortinarius*, *Puffballs*, *Russula*, *Amanita muscaria*, *Ramaria largentii* and hundreds upon hundreds of unidentified mushrooms.

Favorite Foray (Out of state):

I've never been on an out of state foray.

Favorite general area to hunt:

I love to hunt in the mountains near small streams. I have been hunting in my back yard for some time and have found many species including stinkhorns, the winter mushroom, and some unknown species of *Agaricus*, maybe *campestris*. I plan to introduce new edible species to my yard.

Why?

I really love to hunt around trees near streams in the higher elevations. It is so green and it is great to get out in the woods and get some fresh air and exercise.

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Technique for finding mushrooms:

I like to join the forays that the club offers since they send out 'scouts' the week before and then take the whole group to the place that has the most mushrooms. This eliminates the chance of finding few or no mushrooms. This is also great for knowing which spots may yield the most mushrooms the following year. I like to bring along a topographical map and mark the exact spot that we find mushrooms.

Once in the woods how do you proceed?

I found the best way to hunt, especially in the woods with dense vegetation, is to take a few steps, stop and look around, take a few more, stop and look. Many times you will overlook mushrooms, especially those near or under vegetation if you just rush through. I like to carry a stick to turn over the side of the mushroom so I can identify it without having to bend over too much.

SporesAfield

Editor's Note:

I would like this column to become a regular feature as a way for members to get to know each other. If you would like to be interviewed please contact me at:

onebwwd@aol.com

303-440-7123

Norm Birchler

Morel Hint:

If all else fails hunt the local grocery store for Morels, but don't look down, look up because they are usually hanging above the fresh mushrooms. They sell for around \$7.00 a dried ounce, about 15 mushrooms.