



Among Fungi

Cascade Mycological Society Newsletter

Spring 2005 Vol. 6 Issue 2

Where are the Morels hiding this year?

CMS Events

General meetings are on the second Thursday of the month at Lane Community College, Science Building, Room 115 at 7:30 p.m. unless otherwise specified.

April 14, Thursday: MEETING

Cascade Mycological Society proudly invites all to a presentation by Dr. Kelly Collins, entitled "**Population Dynamics of the Pacific Golden Chanterelle: Which way do your genes flow?**"

Dr. Collins is a faculty researcher with the Oregon State University Plant Clinic and has exhaustively researched and studied our local and unique Pacific Golden Chanterelle. This talk should be of great interest to the casual mushroom forager as well as the serious mycologist.

WHERE: Lane Community College Main Campus, Science Building, Room 115

WHEN: Thursday April 14th @ 7:30 p.m.

CONTACT: Joe Spivack 683-4254, jspivack@epud.net

Morel Foray: sometime in **May**, probably the burn area near Corbett Sno-Park. We did pretty well there last year, so perhaps this year will be equally fruitful. Details to be announced. Check your email and the web-site, www.cascademyco.org. As of the last board meeting, it had not been decided who will scout the area and who will lead the foray, so if you have any interest in this, please contact Kyle Hammon (463-5447 hammonk@lanec.edu). The Board would really like to involve more members in these leadership activities so don't be shy.

VOLUNTEER OPPORTUNITY: CMS will need volunteers, most likely on a **weekend in April**, to help with the CMS **myco-filtration/myco-remediation Challenge Cost Share**. The initial task will be placing hog fuel to prepare for inoculation with mushroom spawn. Later, volunteers will be needed for other tasks. Please see the article "Myco-remediation Rocks", this issue, for more details. Contact Chris Melotti (746-7548) for more information.

Other Area Events

April 2, 2005, this Saturday, NATS foray: At Scott Overton's place, 24525 Ervin Road, south of Philomath, OR. Meet at Scott's at 10:00 AM. Please do not start truffling early as Scott has restricted areas. From the intersection of Airport and Bellfountain Rds: head west on Airport, cross Fern Road, turn left at the "T" intersection on Peterson Rd. Follow Peterson Rd about a mile, turn right on Ervin Rd. Go 3/4 mile to Scott's place on the right. Park on Ervin Rd, not in Overton's driveway. Dress for the weather, bring a lunch. For more information, contact Matt Trappe (trappem@yahoo.com; 541-929-8165).

April 5, 2005, Tuesday, NATS meeting: 7:30 PM, 313 Richardson Hall, Jefferson Way, OSU, Corvallis, Oregon. Guest speaker is Dr. Ari Jumpponen, a past NATS president and currently professor of mycology at Kansas State University. His topic: "**A Molecule's Tale - What Does DNA Teach Us About Fungal Ecology?**" For more information, contact Kentaro Hosaka: hosakak@science.oregonstate.edu.

May 13-15, Oregon Mycological Society Spring Foray, Suttle Lake Methodist Camp near Sisters Oregon: The foray host will be Dr. Micheal Beug. Dr. Beug is recently retired as a mycology professor from Evergreen State University. Registration is first come, first served. Kids under 2 are free. **Registration deadline is May 7th.** Cost is \$80 (2 nights, 5 meals). They expect a **bumper crop of Morels**. To register send \$, name, address and phone number to: Paul & Kathy Patrick 10235 SW Katherine St. Tigard, OR 97233 Also check the website www.wildmushrooms.org for more information.

Out of Area Events

June 5-10, 2005, Fungi of the Sierra Nevada, Sierra Nevada Field Campus, California: Once again Dennis Desjardin teaches his class on Spring Fungi. Taught in the northern Sierra Nevada, this class is a great way to learn spring fungi. While emphasis is on the fleshy fungi, you will also look at conks and lichens. You'll stay at San Francisco State University's field campus, just east of Sierra City, California. The facilities include a dining hall with great meals and a laboratory. You can bring your own tent or use one of their platform tents. There are flush toilets with hot water and showers.

I took this class in 1998 and learned a lot besides having a great time. Desjardin has quite a following and there is a group of people who take the class regularly. I learned as much from them as I did from Dennis. When I took the class, the chef cooked up our edible finds each night. At \$235 for a week long class (not including lodging and meals) in the beautiful setting, this a bargain. You'll come away with increased skills, useful keys and a good time.

To register contact Jim Steel at jsteel@sfsu.edu or (415)338-1571 or (650)738-1814 before June 1st. Or write: College of Science and Engineering, San Francisco State University, 1600 Holloway Ave., San Francisco, CA 94132-9987. After June 1st, write: C/o Sierra

Nevada Field Campus, Star Route, Sattley, CA 96124; (530)862-1230. *By Cheshire Mayrsohn*

July 21-24, 2005, NAMA Foray, University of Wisconsin-Lacrosse:

NAMA's annual national foray. Foray into perhaps the last remaining American Chestnut tree forest. Hosted by Dr. Tom Volk. For details, see www.namyco.org

August 18-21, 2005, 25th Anniversary of the Telluride Mushroom Festival, Telluride, Colorado:

The 25th annual Telluride Mushroom Festival is for people interested in edible, psychoactive, and poisonous mushrooms. The festival includes lectures, forays, hands-on identification and cultivation workshops, mushroom poetry, and a mushroom parade, which features festival participants dressed as mushrooms, spores, and other elements of the mycological world.

Complete information is available on the Festival's web site: www.shroomfestival.com. Or write, Fungophile, Attn. Mushroom Festival, Box 480503, Denver, CO, 80248-0503. Call 303-296-9359. Contact: Emanuel Salzman, MD.

October 12-17th, 2005, 3rd International Medicinal Mushroom Conference, Port Townsend, Washington:

The conference is sponsored by Fungi Perfecti, LLC. The focus of the conference will be the potential of mushrooms to counter smallpox and similar viruses. For more details go to www.fungi.com.

Speaking of Morels

Dateline March 23: So in talking with Chris Melotti, he has heard to folks **finding morels around Cottage Grove**. I'd start looking in any clear-cut, especially where they burned big piles last year. Other finds: *Geopyxis carbonaria*, often an indicator that **morel season has started**. Found at 3000 feet elevation up Shotgun Creek, outside Marcola.

Harvesting Morels after wildfire in Alaska:

The USDA just put out a new research note on morels in Alaska. Among the authors are Dave Pilz and Nancy Weber, two local mycologists and frequent speakers at CMS meetings. While it is focused on morel harvesting, it has good information on the life cycle of morels and distinguishing between true morels (*Morchella*), false morels (*Gyromitra*) and early morels (*Verpa*).

You can get a copy from:

<http://www.fs.fed.us/pnw/mycology/publications/full.html> Or: Publications Distribution; Pacific Northwest Research Station, P.O. Box 3890, Portland, OR 97208-3890.

By *Cheshire Mayrsohn*.

Myco-remediation Rocks

CMS is on the cutting edge of fungal technology. Better still, we are using this technology to ameliorate the environmental damage that human activities cause. In partnership with the BLM, Fungi Perfecti, Lane Forest Products, and a local landowner, CMS is demonstrating the potential of using fungi in road reclamation in order to improve salmon habitat and native plant succession.

Mycoremediation refers to the purposeful introduction of fungi, saprophytic and mycorrhizal, to remedy negative ecological conditions. Mycofiltration utilizes fungi to filter out sediments and other pollutants.

Paul Stamets has pioneered the use of fungi in forestry and agriculture, and the inspiration for this project came from Stamets' article "A Novel Approach to Farm Waste Management" in the Winter 2000/2001 issue of *Mushroom, The Journal of Wild Mushrooming*. Stamets coined the word mycofiltration.

In his article, Stamets described how, after he learned that runoff from his cows was causing fecal coliform pollution to his neighbors, he installed beds of mycelium to filter the runoff. Water quality dramatically improved in the area, sparking further research. He learned that the

mycelium effectively eats the bacteria, sequesters nitrogen, and slows the passage of water and effluent, thus cleaning the runoff water before it flows into groundwater, streams and rivers. In addition, the mycelium accelerated the soil building process by breaking down the organic materials more quickly than passive composting would. Stamets recommends mycofiltration as an efficient and profitable farming method to livestock farmers who also grow corn or wheat. The mycelium uses plant waste already present in corn and wheat farms (straw left over from harvest), composting it and building top soil rather than allowing it to run off with the effluent.

In the area of forestry, scientists are exploring mycofiltration as a method of road reclamation. Roads into forest lands facilitate resource extraction as well as recreational access. However, road construction uses heavy equipment that cuts the slope, and casts extra fill below the road. This process compacts soil and changes slope character, resulting in reduced soil infiltration. Water is concentrated through road drainage structures and subsurface flow is converted to surface flow. This surface flow causes erosion and sediment to flow into streams, which decreases aquatic habitat quality (by choking salmon-friendly gravel areas with sediment), and increases the risk of landslides. A road's presence influences ecosystems by fragmenting terrestrial habitats and allowing greater human access to an area. It is thought that road reclamation mitigates these impacts.

But there is no consensus as to the optimal method for road reclamation. Reclamation methods range from simply gating and abandoning a road to fully re-contouring the road area. One of the most often used methods is road ripping, which involves de-compacting the soil with heavy equipment such as a bulldozer fitted with a plow. Sometimes, topsoil, mulch, fertilizer is added to encourage re-vegetation. However, this method may encourage invasive weeds over native plants, and in the long term may not significantly reduce erosion or promote infiltration. Other methods, such as full re-

contour, may be effective in the long term but in the short term, they increase runoff.

Mycofiltration shows significant potential to improve these results, as a stand-alone method or in conjunction with other methods. For example, near Santa Rosa California, the Nature Conservancy used mycofiltration to restore a road cut in an area bordering the Santa Rosa Plateau reserve. The area was bare with little or no biological activity. The group ripped the road first, then applied mycorrhizal inoculum, native plant seed, and straw. Three months later, the results were encouraging. The native plants were successfully germinating with few invasive weeds present. See www.mycorrhiza.org/tenaja.htm. Stamets has undertaken similar projects in the Tahuya State Forest with similarly encouraging results.

With this knowledge, CMS proposed establishing a mycoremediation study site in the BLM's South Valley/Coast Range Resource area. The proposal is a Challenge Cost Share which is part of BLM's effort to build partnerships with its non-traditional constituent groups. BLM approved the proposal in Fall 2001. Since that time, with the effort and ingenuity of CMS members and partners, a lot has happened.

After an involved selection process, BLM has chosen an appropriate site for the project. In part, the site was chosen because of support for the project from adjacent landowner David Eisler, who is also president of the Siuslaw Watershed Council. Many CMS members participated in this process both in their capacity as CMS members and BLM professionals. These include Chris Melotti, as proposal author and CMS representative, Molly Widmer, BLM Botanist, and Rudy Wiedenback, BLM soil scientist.

The site is a 1400 foot section of dirt surface road located 3 miles north of Walton on Nelson Mountain Road (see picture below). The road to be removed runs along and is level with a stream, Shady Creek, a tributary of Chickahominy Creek, part of the Siuslaw Watershed. The river system supports native salmon and steelhead

populations. The area first became disturbed by logging when a dirt surface road was constructed, who knows when. Usually, the BLM would plant conifers to re-vegetate the unused road. But because the area was so shady, conifers would not grow well. Therefore, BLM had no alternative but to abandon the compacted road. The dirt road was left to passively regenerate.

The original logging operation also removed



woody debris (logs) from Shady Creek. Large woody debris in streams is an essential habitat component for salmonid species. The debris slows water and traps gravel used in nests and as habitat for aquatic insects that the fish eat. Therefore, in order to enhance the fish habitat, BLM brought in large woody debris with heavy equipment on this dirt surface road. As with many human activities, this action had the unintended consequence of compacting the road's surface thus increasing sediment runoff into the stream and degrading fish habitat.

As a result, this area has perfect conditions for a demonstration of mycoremediation methods. The idea is to determine how effective the mycelial mat is at infiltration as compared to areas with no mycelial mat.

The study protocol will involve 3 sections: one section will remain bare, another section will contain hog-fuel (a crude mix of bark, wood chips and fir needles) only, and the third section will

contain hog-fuel and mycelial inoculum. CMS will install buckets to catch the runoff and measure the amounts. The inoculum, all saprophytic, comes from Fungi Perfecti which specially selected the species (two species of *Hypholoma* and one *Pleurotus*) based on conditions and the available medium. The company intends on writing a paper on the results of the project. Lane Forest Products has agreed to provide the hog fuel at half price. Blachly Lane Electric Cooperative agreed to donate additional wood chips and will feature the project in their newsletter.

Setting up the study site will be relatively easy if we have lots of volunteers. We will apply a layer of hog fuel/wood chips at least 6 inches deep. We will introduce mushroom spawn into the chips. We will cover the inoculated wood chips with native straw. We expect that the spawn will knit together the wood chips and form a mat that will trap fine sediment that would normally wash into the stream. In addition, the mycelium will break down the cellulose in the wood chips which accelerates the soil building process and promotes quicker re-vegetation.

Lane Forest Products will deliver hog fuel on April 2. We will need volunteers to place the hog fuel shortly after that (for information call Chris Melotti, 746-7548). After Fungi Perfecti delivers the inoculum, we will need volunteers to plug the spawn into the wood chips. After that, we will need volunteers to place the plastic buckets that will catch the run-off, and then to gather data.

The payoff is huge in terms of our participation in this exciting new way of improving forest regeneration. We will enhance our reputation and gain publicity, but more importantly, we will advance knowledge of fungal technology and ecology. As a side benefit, members can learn cultivation methods from more experienced members. This project has taken a lot of volunteer energy to bring to this point and now is your chance to contribute to its success. See you at Shady Creek!

By Meredith Allen with source material from Chris Melotti, sources mentioned in the article, and the article "Benefits and impacts of road removal" by TA Switalski et. al. from the journal Front Ecol Environ 2004; 2(1): 21:28.

Quick Review of Last Month's Speaker on Medicinal Mushrooms

I found last month's speaker very interesting. John Silene spoke on preparing and using medicinal mushrooms.

Silene's research shows that all traditional medicinal uses of mushrooms use hot water extracts. An extract differs from a tea in that the mushrooms are heated in water for several hours to several days. The reason that this is important is that mushroom cell walls include chitin, a substance similar to the shells of insects. So to get the "goodies" out of the cells you have to break down these tough cell walls.

Silene says that this is best done by slow hot water extraction. He believes that hot water extracts contain more of the "goodies," and in a more useable form than mushroom medicines made from ground up mycelium.

Silene also made the point that many of the mushrooms used in medicine naturally grow on wood. He believes that to get the best medicinal mushrooms, they should be grown on wood, not grain.

The main "goodies" in mushrooms are various polysaccharides and beta-glucans. Both these substances are immune modulators. They keep your immune system purring along at a steady rate, helping to reduce the ups and downs. The ups and downs are when problems can start. Cancers can take hold at a low point in immune function and then hide from the immune system. An over-vigilant immune system can attack your own tissues resulting in autoimmune disorders such as lupus, rheumatoid arthritis or psoriasis. He suggested taking medicinal mushrooms as a tonic to keep things in balance. He suggests Reishi as a good overall tonic.

Maitake is used extensively in Asia as a cancer treatment. In this country, it is recognized by oncologists for its ability to boost blood count depressed by chemotherapy.

Can you hurt yourself with medicinal mushrooms? You may want to approach them carefully if you have a mushroom or mold allergy but other than that your body will use what it needs and dump the rest.

What about cooking mushrooms to gain their medicinal values? Soup made in your crock pot or slow cooker seems to be the way to go!

By Cheshire Mayrsohn

Student Needs Lichens

A student writes for help collecting **Letharia vulpina**: I am a graduate student in Ecology and Evolutionary Biology at the University of California, Santa Cruz. For my dissertation research project, I am doing a large scale study of the phylogeographic structure of *Letharia vulpina* fungal-algal partnerships, mostly in North America. I can't make it everywhere to do the collecting, and I'm looking for help from others. I have built a website (<http://bio.research.ucsc.edu/people/goff/letharia.htm>) to communicate with volunteers. The site includes a description of the project as well as a collection information form and county outline maps that show which areas have already been collected (not many, but soon to be more!).

If you find *Letharia vulpina* on a foray in North America or if you have herbarium specimens less than three years old that you would be willing to donate, I am grateful for your help!

Currently, my highest priority is to DNA-sequence (ITS) collections from locations at or near the edges of *Letharia vulpina*'s distribution. This is to estimate the extreme of genetic variation within Western North America. However, within the next year, I will sample over 300 thalli across 60 sites throughout Western North America. The edges of *Letharia vulpina*'s distribution include: Southern California, Baja California (Cedros Island), Mexico (states of Nuevo Leon and Veracruz), Arizona, Utah, Colorado (northern), Wyoming, South Dakota (Black Hills), eastern Montana, Alberta, British Columbia

and Yukon Provinces. Although my project centers on North America, I would highly value collections from the Pyrenees, the Canary Islands, Morocco, Cyprus, and the Caucasus.

If you have seen *Letharia* in extreme places such as Alaska, Yukon, Nebraska or Mexico, or know people I should contact about *Letharia* in such locations, I'd appreciate the information. If you would like to contribute some collections, do contact me: Susanne Altermann, Graduate Student, Department of Ecology and Evolutionary Biology, A316 Earth and Marine Sciences Building, University of California, Santa Cruz, CA 95064, (831)459-2832, salter@biology.ucsc.edu.

Board Report

At the last CMS Board meeting held on February 17, 2005, the Board discussed current activities and financial planning.

The **Fungal Feast** was a huge success thanks in no small part to Clive Wanstall, head of the Lane Community College culinary program and his students. Around 80 people attended. We took in \$655, which includes donations for the feast, some T-shirt sales, and new memberships. This puts us around the break even point. Serving the truffle butter and Metropol bread was particularly appreciated. We were cautious enough in passing out servings in order to avoid running out; we even had plenty of leftovers. On the other hand, we should have provided water. We did not have to purchase as many mushrooms this year because of donations; CMS provided to Clive Wanstall 10-12 lbs. hedgehogs, 6-7 lbs. winter chanterelles, 7 lbs. Maitake, 1 lb. dried *Boletus edulis*, 5.5 lbs. truffle butter, and 10 quarts of frozen chanterelles. Orin brought truffles for show and tell which was great. Discussion for next year involves: Do we want to involve more people and make some money? It would be great to have our cookbook for sale by then, and have lots of T-shirts for sale! Also, we need fresh or dried specimens to people can see what they're eating, and labels for the dishes.

The Board set aside an hour for long term **financial planning**. Because of our participation in Challenge Cost Shares (such as the *Bridgeoporus*

nobilis survey), the CMS coffers are far from empty. However, because funding for Challenge Cost Shares are dwindling, CMS cannot rely on these projects as a funding source. General expenses include the newsletter, NAMA dues, annual meeting, speakers, annual show, fungal feast, web site server, and the post office box. Expenses in 2003 were higher than usual, mostly for speakers, but also for set fees for non-profit support services and one-time purchases such as a booth for the fall mushroom show. Expenses in 2004 were not as high as in 2003, even including the cost of bringing Paul Stamets to speak. Overall, expenses are running between \$2500 and \$3000 per year, which exceeds the amount (about \$1300) brought in from membership dues. Merchandise sales supplement coffers but do not provide enough revenue to cover the remainder of fixed expenses plus any special expenses CMS may wish to undertake. Thus, although CMS currently has ample financial reserves, the Board anticipates conservative spending, and it will continue to pursue fund-raising opportunities. Suggestions in this area include expanding the fungal feast, applying for grants, and taking better advantage of opportunities that the mushroom show may present. All activities and money collected should feed our educational mission and should be respectful of volunteer time.

Finally, the Board decided not to purchase a digital camera, planned the May foray, discussed the need for a volunteer coordinator, and received an update on the myco-remediation Challenge Cost Share. The next Board meeting has not yet been scheduled.

If you have any input, please talk to a Board member or come to Board meetings. All Board meetings are open to members. Board meetings typically occur on the first Thursday of the month at a Board member's home. Call Kyle Hammon (463-5447) or



Chris Melotti ((746-7548) to learn the time and place for Board meetings.

By Meredith Allen. The Board Report is not the official meeting minutes.

Cascade Mycological Society
P.O. Box 110
Eugene, OR 97440

Officers:

President.....Kyle Hammon
Vice President.....Joe Spivack
Secretary..... Susie Holmes
Treasurer..... Chris Melotti

Members at large: Bruce Newhouse, Ron Hamill, Orin Schumacher, Mark Williams, Dean Johnston, Rudy Wiedenbeck

Newsletter editor: Meredith Allen (This newsletter edited by Cheshire Mayrsohn and Meredith Allen)
Foray Coordinator: Vacant
Website: Kendon Bright
Membership Chair: Cheshire Mayrsohn

This is the newsletter of Cascade Mycological Society. It is published four times a year, on a mycologically oriented schedule so expect them in late summer, fall, winter and spring.

PLEASE send articles, poems, drawings, announcements to Meredith Allen at intrepids2003@yahoo.com.

Thank you to Cheshire for all your hard work editing the newsletter up to now. It has always been an interesting and informative read. The new editor hopes she can keep the membership reading as well as Cheshire did!

Remember if you move or change your e-mail let the CMS know, that way you'll keep getting the newsletter and notices of CMS happenings:
Cascade Mycological Society P.O. Box 110,
Eugene, OR. 97440 attn: Membership Chair.

CMS is a non-profit under 501(c)(3). Donations are tax deductible to the fullest extent allowed under the law.

Cascade Mycological Society
1275 Sunnyside Drive
Eugene, Oregon 97404

Join us in Fungal Fun!

Mail completed form and check/money order to:

**Cascade Mycological Society,
P. O. Box 110,
Eugene, OR 97440**

- | | |
|--|--------|
| <input type="checkbox"/> Oyster (Senior/Student/low income) | \$ 10 |
| <input type="checkbox"/> Chanterelle (Regular) | \$ 15 |
| <input type="checkbox"/> Morel (Family) | \$ 30 |
| <input type="checkbox"/> King (or Queen) Bolete (Sustaining) | \$ 50 |
| <input type="checkbox"/> Horn of Plenty (Life) | \$ 300 |
| <input type="checkbox"/> Matsutake (Business/Agency) | \$ 100 |

Please make checks out to the Cascade Mycological Society. Thank you!

Name(s) _____

Address _____

City _____ State _____ zip _____

E- Mail _____

Phone _____

Is this a renewal? _____ (thanks) new membership? _____ (welcome!)

Change of address? _____