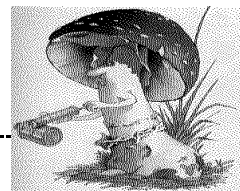


# Fungifama



The Newsletter of the South Vancouver Island Mycological Society  
August 2009

## Introducing the SVIMS Executive for 2009

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To broadcast a message to SVIMS members via  
email: svims-l@victoria.tc.ca

SVIMS web site: [www.svims.ca](http://www.svims.ca)

**Dues:** \$20.00 per year per household, payable in January  
by cheque made out to SVIMS or by cash at meeting.

**Meetings:** First Thursday of the month (no meetings  
December, January, July, and August), 7:00 p.m. sharp at the  
Pacific Forestry Centre, 506 Burnside Rd W, Victoria. Lots of  
free parking. The meeting room is near the main entrance  
door. Non-members welcome.

**Caution:** The South Vancouver Island Mycological Society (SVIMS) newsletter, Fungifama, is not intended as an (online) identification or medicinal guide to mushrooms. There are risks involved in eating and in using wild mushrooms. The possibility may exist that you are allergic to a specific mushroom, or that the mushroom may be anomalous. SVIMS, Fungifama and the authors on this site warn that the reader must accept full personal responsibility for deciding to use or consume any particular specimen.

## Monthly Meetings:

SVIMS meets the first Thursday of the month, February – May and September – November. Please remember to bring your own coffee cup.

### September 3

**Speakers:** John Dennis and Renata Outerbridge, SVIMS members



**Topic:** Mushrooming in Poland and our favourite edible mushrooms

### October 1

**Speaker:** Oluna Ceska, SVIMS member



**Topic:** The miniature beauty of fungi as seen through microscopy.

### November 5

**Speaker:** Richard Winder, SVIMS member



**Topic:** Medicinal mushrooms and their applications

**Also:** SVIMS elections

## Prez Sez

My husband and I are just home after enjoying a wonderful week in the Rockies. Wonderful, even though the last few days were full of rain and even some sleety snow. The rain seems to have been typical of this summer in the Rockies (in contrast to the forests west of the Rockies where dry forests and fires abound) because the mushrooms were popping out of the ground. A sight for spore eyes!

There were many *Cortinarius* species (aren't there always?), one of which (see below) had the most lovely cortina or web-like partial veil.



There were also lots of bolete relatives including this wondrous big *Leccinum*.



For a little while I was sure that there were also lots of truffles. We watched a golden-mantled ground squirrel (to an easterner like me these look like fat chipmunks) digging furiously by the side of the trail and then eating what was dug up.

Turned out the little guy was eating underground plant bits (roots perhaps or

small bulbs). But for a while there I imagined that I'd be dining off truffles that night.



Also fruiting was the very distinctive *Sarcosphaera coronaria*, which was a bit of a surprise because I last saw it in late spring collected from Royal Roads University.



And now I'm back home in Victoria, dreaming of fall rains and looking forward to the evening of Thursday, September 3, when SVIMS meetings start again!

## LOCAL EVENTS AND FORAYS

### **SVIMS Cowichan Foray**

October 16 – 18

Accommodation at the Cowichan Lake Education Centre. Cost is approximately \$172 for the weekend. To register contact Heather Leary at [hleary@shaw.ca](mailto:hleary@shaw.ca).



## **Swan Lake Mushroom Show**

Sunday, October 25

Location: Swan Lake Nature Centre

We collect mushroom specimens on the days leading up to the mushroom show, spend Saturday afternoon and evening setting out on display, identifying and labeling them, and then on Sunday we welcome the world to experience the glories of the fungi.

## **Cortez Island Foray**

November 6 – 8

This unique foray opportunity is being organized by Lee and Karen Towe. Please contact them at [lskr@shaw.ca](mailto:lskr@shaw.ca) for more information.

## **FAR AWAY EVENTS AND FORAYS**

### **Fall Foray in North River, Cape Breton**

September 18, 19, and 20, 2009

<http://www.nsmushrooms.org/2009-nova-scotia-mushroom-foray/>

Preparations are well under way for the 2009 Nova Scotia Mushroom Foray. All participants with an interest in exploring the wonderful world of mushrooms are invited, from rank amateurs to experienced professionals; young & old; families & individuals. Join us for a great weekend of science and socializing in beautiful North River, Cape Breton, where you will of course be collecting, identifying, discussing, and eating wild mushrooms!

### **Annual Sicamous and Shuswap Lake Wild Mushroom and Food Festival**

September 20 – 27, 2009

Sicamous, BC

<http://www.fungifestival.com/>

The 2009 Festival will guide people to identify and actually pick wild mushrooms, and have a gourmet experience in the Shuswap area. The festival week will provide exciting guided tours every day, Monday to Sunday, including Walking Tours and The Grand Camping Tour.

There will be many different forms of entertainment to keep everyone having fun. Everything from presentations, cooking,

and vendor's & exhibitors to informative slide shows. These will all be showcased in our Fungi Festival, Sept 25 – 27, at the Red Barn in Sicamous.

Celebrate the end of summer in beautiful British Columbia, and enjoy a Mushroom experience with us!

### **Bamfield Mushroom Festival**

**Saturday, October 3, 2009**

<http://www.mushroomfestival.ca/index.html>

The Bamfield Mushroom Festival is about promoting awareness of the natural world around us. It's a fun, all-day, all-ages celebration, which focuses on learning about the fascinating and diverse kingdom of mushrooms and fungi.

There's a scrumptious pancake breakfast in the morning, a guided mushroom walk, with 'Mushroom Jim' around mid-morning and another about mid-day, followed by a slide show, a delectable forest feast dinner, and the 'Mushroom Stomp' (dance) with a live band (restricted to ages 19 & over).

During the day there are identification tables displaying an assortment of local mushrooms. In short, it's a day of education, celebration, connection and community.

### **Fraser Valley Mushroom Club's Annual Mushroom Show**

Sunday, October 4, 2009

11 – 4

St Andrews United church

7756 Grand Street

Mission

The show provides displays of identified mushrooms and other fungi with their edible, poisonous or dubious status. Bring your own specimens for identification.

Contact: [juergen@shaw.ca](mailto:juergen@shaw.ca)

Admission: \$3.00, children under 12 free.

### **Vancouver Mycological Society Annual Fall Foray**

October 18-20, 2009

Manning Park, Manning B.C.

Info: [info@vanmyco.com](mailto:info@vanmyco.com)

Registration includes accommodation in dorm-style rooms at Manning resort, bedding & towels, all meals and forays from Friday to Sunday.

The Last Resort at Manning Park is a 3 story cabin that sleeps 50 friendly people in dorm-style rooms spread throughout the building. Bedding & towels are supplied by the lodge and meals are provided by the VMS including ingredients for a bag lunch on the Saturday & Sunday.

### **Edible Mushrooms at Breitenbush Hot Springs**

October 22-26

[www.mushroominc.org](http://www.mushroominc.org)

Telephone: 503-854-3320 for reservation

### **2009 NAMA Annual Foray**

November 26-29

Lafayette, Louisiana

Hosted by Gulf States Mycological Society

[www.namyco.org](http://www.namyco.org)

### **SOMA Wild Mushroom Camp 2010**

When: January 16-18, 2010 (Sat-Sun-Mon)

Online registration available soon.

Please join us!

To watch for further announcements and see the wide variety of activities at past SOMA camps, please check out our Website at [www.somamushrooms.org](http://www.somamushrooms.org)

For the 13th annual SOMA Wild Mushroom Camp we are planting a theme: Trees and Mushrooms.

Nestled in acres of oak, madrone, tan oak, redwood, and Douglas-fir near Occidental, California, we will sway from class to woods to dining feasts, enjoying it all. There is so much to enjoy! Mushroom forays, gourmet mushroom cuisine, classes & workshops on: mushroom identification, cooking, dyeing, paper-making, medicine making, photography, cultivation, and more.

Our delight is further assured with featured speakers: Tom Bruns on Saturday evening and Tom Volk on Sunday night.

## **MYCOLOGICAL WEB SITES**

### **Tree of Life: Fungi**

<http://tolweb.org/fungi>

The Tree of Life Web Project (ToL) is a collaborative effort of biologists and nature enthusiasts from around the world. On more than 10,000 World Wide Web pages, the project provides information about biodiversity, the characteristics of different groups of organisms, and their evolutionary history (phylogeny).

### **Fungi on E-Flora BC**

From Klinkenberg, Brian (Editor). 2008. E-Flora BC: Electronic Atlas of the Plants of British Columbia [www.eflora.bc.ca](http://www.eflora.bc.ca)

Presently on E-Flora BC, we present atlas pages for the macrofungi of British Columbia. The species information contained in these pages, including taxonomic descriptions and ecology, is directly based on the work by Ian Gibson and is derived from his program: Matchmaker, Mushrooms of the Pacific Northwest. Matchmaker is a program and fungal database developed by Ian to facilitate the identification of the mushrooms found in the Pacific northwest.

## **PASSINGS**

### **Mycologist Extraordinaire Robert J. Bandoni**

November 9, 1926 - May 18, 2009

<http://www.botany.ubc.ca/info/090629Bandoni.pdf>

UBC Professor Emeritus Robert (Bob) Joseph Bandoni passed away peacefully on May 18, 2009.

As a biologist, Bob was drawn to strange, diverse, and inconspicuous basidiomycete fungi. He was both a superb naturalist and an attentive scientist. By searching in places where no one else looked, he found many of the 'duck-billed platypuses' of the fungal world, fungi with astonishing and unexpected combinations of characters that helped reveal patterns of early fungal evolution.

He always had an experimental bent and some of his most highly cited papers were on culturing techniques, staining techniques, elucidation of mating systems,

and studies of spore dispersal. In the textbook chapters he wrote on fungi and slime molds for *Plants, an Evolutionary Survey* by RF Scagel, RJ Bandoni, JR Maze, GE Rouse, WB Schofield, and JR Stein (Wadsworth Publishing Company, Belmont, California, 1984). Bob had a knack for providing clear and interesting text, as well as answers to student questions that are missing from most other texts, such as 'How fast do slime molds move?' (Ans:2 mm per hour).

Strikingly, Bob was the first author of most of his papers and sole author of many. He had active and successful students but on principle, declined authorship on student papers. Of his co-authorships, several originated from collaborations with Neil Towers in studies of metabolites of fungi.

Although never much interested in mushrooms Bob was hired at UBC as a mycologist and as mycologists were expected to be authorities on mushroom identification, Bob fulfilled this duty with grace by helping to found the mushroom club, the Vancouver Mycological Society back in the 1970's and by writing the first field guide to identification of BC mushrooms 'Bandoni, RJ. 1976. Guide to Common Mushrooms of BC, published by the Provincial Museum.'

In the Botanical Electronic News No. 409 June 17, 2009, (see URL below) there is another tribute to Dr. Bandoni, written by Jim Ginns. The issue also contains articles entitled *Are There Invasive Mushrooms In The Puget Sound Region?* by Joe Ammirati with observations of Joshua Birkebak and Luke Bayler, and *Long-Term Survey And Inventory Of Macrofungi On Observatory Hill, Victoria, British Columbia, Canada (November 2004 - March 2009)* by Oluna Ceska.

<http://www.ou.edu/cas/botany-micro/ben/ben409.html>

## **ARTICLES OF INTEREST**

### **Mann releases mushroom doc on USB stick**

<http://www.cbc.ca/arts/film/story/2009/08/14/mann-mushroom-doc-drive.html>



Toronto filmmaker Ron Mann is distributing his latest documentary, *Know Your Mushrooms*, on this custom-shaped flash drive. (Timothy Neesam/CBC)

Canadian director Ron Mann is testing a new method of movie distribution, releasing his documentary *Know Your Mushrooms* on a customized USB stick.

The Toronto-based filmmaker was in the U.S. promoting his new doc — which follows mushroom-hunting gurus and explores mushroom culture — when he discovered a company that creates these flash drives in different shapes, including that of a mushroom.

"I thought, 'Wouldn't it be great if I put the film *Know Your Mushrooms* and released it on a USB drive?'" he told CBC News.

The director's initial order of 500 drives — which he's offered for sale at \$59.99 as part of a special edition set to hit stores Sept. 1 — has nearly sold out. A second run of mushroom flash drives is in the works, while a more traditional DVD release is also scheduled for this fall. "We did this as a fun project. It wasn't as a commercial venture," he said.

"As it turns out, it's hugely popular and we're now thinking of doing a number of films like this."

### **Scleroderma poisoning in Victoria By Shannon Berch**

Sunday evening, I received a phone call from a distressed pet owner. His puppy, a lovely Hungarian Visla, had eaten some fungus in their yard and was under the emergency care of a veterinarian. After eating the fungus, the puppy had vomitted — a lot! The vet encouraged the puppy owners to have the fungus identified in case

there might have been serious toxins to worry about. The pet owner emailed me some photos of the fungus in the hope that I could identify it for him. But I was stumped. It looked a bit liked a chicken breast burned on the BBQ (see below).



So, I asked the owner to bring the fungus in to work the next day so I could take a look at it face to fungus, as it were. When I mounted the spores on a slide and looked at them under the microscope, I quickly saw that the fungus was a *Scleroderma*, that had apparently been squashed flat exposing the dark spore mass.

All the mushroom guides say that *Sclerodermas* cause people to feel nausea and to vomit. Now I know that they do this to puppies too. So, dog-owners, be aware. This breed need lots of exercise (1-2 hours per day) and large off-leash areas are recommended. But off-leash areas like one's back yard can also house fungi like the *Scleroderma*. I am not a dog-owner myself so I wonder if puppies, like human toddlers, tend to put everything into their mouths.

The poisoning is of the gastrointestinal irritant type with no long term negative consequences. Which is good news for the dog-owners and for the pup who came home from the vet's energetic and excited to be home but with the new nickname 'Patches' because of the shaved area on his foot where the IV had been.

For more information on *Scleroderma*, see *The Genus Scleroderma* by Michael Kuo.  
<http://www.mushroomexpert.com/scleroderma.html>

## New GenomeBC research project: Barcoding of BC ectomycorrhizal mushrooms

From Dr. Mary Berbee, UBC

[http://www.genomebc.ca/genomics\\_programs/research\\_projects/SOF/barcoding.htm](http://www.genomebc.ca/genomics_programs/research_projects/SOF/barcoding.htm)

Barcoding is a Canadian initiative that receives resounding support from the world's scientific community because it provides a strategic approach to systematically characterizing biological diversity. Barcode databases consist of sequences from a small region of DNA from specimens representing diverse species.

Unlike most genomic projects that analyze many genes from one organism, the barcoding project involves applying genomic techniques to sequence one gene from each of 900 fungal specimens from the genera *Inocybe* and *Cortinarius*. These fungi grow symbiotically with pines, Douglas fir and hemlock trees, forming ectomycorrhizae, or 'fungus roots' that help the trees absorb nutrients. However, these fungi are so diverse that even specialists with years of experience studying them are unable to identify many of their species.

Researchers will build lab capacity, gearing up for high-volume DNA extractions and data analysis to enhance our ability to contribute efficiently to the international barcoding initiative. Through public outreach and collaboration in specimen collection and data exchange, this project will foster public involvement in UBC science while helping us to increase the mushroom collections in the new CFI-funded Beaty Biodiversity Museum by 600 specimens.

Because barcodes can be used to construct ecological microarrays or identify fungi from clone libraries, they will be used to correlate species presence and absence with ecological functions. Barcodes will provide a tremendous boost to fungal ecology as a tool for investigating tree interactions with the microbial world.

The sequenced barcodes of carefully identified specimens will serve as a new 'gold standard' for fungal identification and the biodiversity knowledge base will lead to



forest management practices that protect diversity in BC, the most biologically diverse province in Canada.

### **Mandate on mushrooms in Calaveras County, California**

By Dana M. Nichols (abridged by editor)  
[http://www.recordnet.com/apps/pbcs.dll/article?AID=/20090822/A\\_NEWS/908220331/-1/NEWSMAP](http://www.recordnet.com/apps/pbcs.dll/article?AID=/20090822/A_NEWS/908220331/-1/NEWSMAP)

A wild-mushroom vendor and the manager of the Murphys farmers market say they are dismayed by a Calaveras County Environmental Health Department order halting the sale of wild-harvested mushrooms at the Thursday afternoon market.

"I think it's a tragedy," said Eric Taylor, manager of the market and also a produce grower who sells there. "I hope we can work through it. I think they are an important resource for people, and they are a really great local food."

County officials say they were simply enforcing state law and ensuring the safety of food sold to the public. "Mushrooms being gathered on forestland is not an approved source," said Brian Moss, director of Calaveras County's Environmental Management Agency, which oversees the Environmental Health Department. Similarly, a person who gathers wild food rather than growing it on land he or she controls is not a producer and cannot be certified under California law, Moss said.

The mushrooms at markets debate has been simmering for decades, at the same time that California and other states to the north have developed an industry of people who commercially gather wild mushrooms in national forests and Bureau of Land Management areas.

Mushroom advocates said state rules haven't prevented wild fish from being sold in groceries throughout the state.

### **Forced Fungus Sex Could Unlock Key Energy Sources**

By Charles Q. Choi  
<http://www.foxnews.com/story/0,2933,538915,00.html>

Scientists believe that fungi could hold the key to breaking down tons of cellulose to make renewable biofuels. Helping a fungus have sex could lead to better ways of making biofuels, scientists now suggest.

To make renewable biofuels instead of manufacturing them from the sugars in food crops, researchers want to employ organisms that can make use of the hundreds of millions of tons of cellulose in sawdust, weeds and other plant scrap that would otherwise go to waste.

One especially promising organism when it comes to breaking down cellulose is the soil fungus *Trichoderma reesei*. It was originally discovered in the Solomon Islands during World War II eating away at the canvas and garments of the U.S. Army.

Improving this fungus was difficult because scientists thought it was asexual, which meant they couldn't breed different useful strains of it together for offspring better tailored to degrade cellulose.

Now researchers in Austria find this fungus isn't asexual after all. For the first time after its discovery more than 50 years ago, researchers have made it have sex.

The group this fungus belongs to, *Trichoderma*, includes several hundred species, including both sexual and asexual ones. By probing their DNA, investigators uncovered the genes responsible for mating and found them in *Trichoderma reesei*, proving it was theoretically capable of sex. However, it could not assume the female role.

Past studies had revealed that *Trichoderma reesei* was in fact genetically identical to another fungus, *Hypocrea jecorina*, which could assume both the male and female roles. The scientists managed to successfully mate *Hypocrea jecorina* with two mutant *Trichoderma reesei* strains known to be especially good at breaking down cellulose.

Although researchers could in the past dose the fungus with radiation or chemicals to randomly create potentially useful mutations, "it was not possible to combine beneficial mutations of efficient

production strains," said researcher Monika Schmoll, a microbiologist at the Vienna University of Technology. " Now it has become possible to cross these strains and mix their genetic material. Of course there is no guarantee that the combination of properties really results in even better strains, but in many cases it will work."

Sex can also lead to more fit strains. The methods used to create mutants could lead to strains of *Trichoderma reesei* that are good at making enzymes that break down cellulose, but otherwise "sometimes look quite poor and helpless," Schmoll explained. By crossing such a mutant with an ordinary 'wild-type' strain of the fungus, "there is the chance to preserve the high enzyme production, but to get rid of mutations that reduce growth and fitness by replacement with wild-type genes."

These findings might lead to better and more cost-effective ways of making biofuel. "I would be happy to see gas stations selling affordable bioethanol made from waste and plant material one day," Schmoll said. The researchers also noted that *Trichoderma* includes species that help plants by killing harmful fungi, and discovering ways of breeding strains of them together could help out farmers.

**Zombie ants controlled by fungus. Parasite manipulates infected ants into dying where fungus prefers to be**  
LiveScience

[http://www.msnbc.msn.com/id/322388708/ns/technology\\_and\\_science-science/](http://www.msnbc.msn.com/id/322388708/ns/technology_and_science-science/)

In a bizarre parasitic death sentence, a fungus turns carpenter ants into the walking dead and gets them to die in a spot that's perfect for the fungus to grow and reproduce.

The carpenter ants nest high in the canopy of a forest in Thailand, and they trek to the forest floor to forage. The fungus, *Ophiocordyceps unilateralis*, prefers to end up on the undersides leaves sprouting from the northwest side of plants that grow on the forest floor, the new study showed. That's where temperature, humidity and

sunlight are ideal for the fungus to grow and reproduce and infect more ants.

Once infected by the fungus, an ant is compelled to climb down from the canopy to the low leaves, where it clamps down with its mandibles just before it dies.

"The fungus accurately manipulates the infected ants into dying where the parasite prefers to be, by making the ants travel a long way during the last hours of their lives," said study leader David P. Hughes of Harvard University.

After the ant dies, the fungus continues to grow inside it. By dissecting victims, Hughes and colleagues found that the parasite converts the ant's innards into sugars that help the fungus grow. But it leaves the muscles controlling the mandibles intact to make sure the ant keeps its death grip on the leaf.

The fungus also preserves the ant's outer shell, growing into cracks and crevices to reinforce weak spots, thereby fashioning a protective coating that keeps microbes and other fungi out. "The fungus has evolved a suite of novel strategies to retain possession of its precious resource," Hughes said. After a week or two, spores from the fungus fall to the forest floor, where other ants can be infected.

Making nests in the forest canopy might be an evolved ant strategy to avoid infection, Hughes figures. The ants also seem to avoid foraging under infected areas. This too might be an adaptive strategy to avoid infection, but more study is needed to confirm it, he said.

How the fungus controls ant behavior remains unknown.

