Fungifama

The Newsletter of the South Vancouver Island Mycological Society
April 2006

Introducing the SVIMS Executive for 2006

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SVIMS web site: **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.

Monthly Meetings:

April 6: Slime! Mushrooms have it too.
Speaker: Dr. Mary-Lou Florian

Today fungal colonies are called biofilms because they excrete a slimy film - the film of the biofilm -attached to every surface on which they live. The film is a buffer between the fungal structures and the environment and surface, whether it be air, soil, rock or water. The film is the site for oxygen and carbon dioxide exchange, water storage, enzymatic activities and protection from antibiotics and toxic metals.

May 4: **Truffling in Spain** by Shannon Berch, SVIMS, Victoria BC

Memories of the SVIMS Survivors Banquet

June 1: **President's Picnic** - details TBD

September, 2006
Foray, identification workshop and mushroom cookery at Sooke Harbour House organized by Kevin Trim.

Sept 7: An Introduction to Fall Mushrooms by John Dennis, SIMS, Victoria BC

Oct 5: Mushrooms and their Habitats in the Amazon Jungle of Brazil by Jean Johnson, SVIMS, Victoria BC and Mushroom Madness

Nov 2: Mushroom Identification DVD by Taylor Lockwood and Elections.
Visit: www.fungiphoto.com/Treasurechest/MIT/mit

Prez Sez

By Christian Freidinger

The Earth's axis, raisins and pickles have a lot to do with each other. Because of the inclined axis of the Earth, the seasonal climates of the earth yield seasonal fruitfulness. Most living creatures have developed therefore some kind of storage mechanisms to better get over the lean times. So have humans. We developed a whole range of different preserving methods to preserve the 'fruits' for future times of need and to keep other interested creatures away. Interestingly, we acquired tastes, which find the flavour created by most preservation methods quite appealing.

We use salts and sugars, we sterilize and freeze, we distill with heat or frost, we use several bacteria, we smoke and brine. And we dry fruits, meats, and mushrooms. Drying preserves many mushrooms perfectly well, sometimes even enhances their flavour. Drying has many advantages: storage needs less space, no cooling energy is needed, no special bulky containers are necessary, any amount can be removed for cooking, no chemicals, salts, etc. are added.

Swapping prizes at the Survivors Banquet.

But food drying has some dangers as well. The drying process should be as quick as possible to prevent other creatures from multiplying. Bacterial decay can produce some very harmful substances. Drying with heat or outdoors (we have a very moist climate here) is not good enough.

A better and far more effective way is to rigorously dry the air around the produce thus forcing the evaporation of water. The easiest way is to use a "dehumidifier". Second-hand dehumidifiers are often found at garage and yard sales. The dehumidifier is basically a heat pump, like a fridge, which moves the ambient air over the cold side of the system to let the moisture condense and collect in a bucket and then warm it up to even more reduce the relative moisture. It is often used in moist, warm climates to improve the air quality by reducing the humidity.

Setting up an arrangement where the air is constantly circulated through some produce trays produces a dehumidifier with a very fast and efficient drying effect. It can be used not only for mushrooms but also for any type of juicy fruits. Dried Boletus, plums, pears, apples, they all can be dried to such a degree, that when stored properly, no additional preservatives are necessary. So, find a working (!) dehumidifier at a garage sale (around 15-25$) and together we will get them to work before the fall's bounty.

LOCAL EVENTS AND FORAYS:

Summer weekend trips with Joyce

Anyone interested in camping, hiking and maybe seeing a fungus or two this summer contact Joyce. Destination ideas: Della Falls, Carmanah, Strathcona or Bamfield. email:joleebc@lycos.com or 744-3644

SVIMS Annual Fall Foray

Oct. 13, 14, 15, 2006
Organized by Jack and Neil Greenwell
Lake Cowichan Education Centre
$83 per person, room and board for Friday night, Saturday and breakfast Sunday

Swan Lake Mushroom Show

October 29, 2006
Swan Lake Nature Centre

SVIMS will soon have a Library! Can you help us build it? If you have library contributions or suggestions for inclusions contact SVIMS Librarian. Donations of books, files, DVDs, CDs, tapes or any information related to mycology, ecology or food are welcome. Phone 744-3644 or email joleebc@lycos.com

FAR AWAY EVENTS AND FORAYS:

NAMA FORAY
17-20 August, 2006
Hinton, Alberta
This year the Edmonton Mycological Society will host NAMA in the foothills of the Rocky Mountains. Some of the specific sites identified are located within the ecologically diverse study areas of the Foothills Model Forest, including such areas as undisturbed and disturbed habitats; boreal, montane, and subalpine forests and wetlands. There will be some foraying from canoes along a pristine creek joining several beautiful lakes in William Switzer Provincial Park. For more information or to register, visit the NAMA website at **www.namyco.org.**

The Querétaro Mushrooming Mission
July 9 - 16, 2006
Querétaro, Mexico
www.wildmushrooms.ws

"Wonderful-Oaxaca" Foray Excursion
August 6 - 13, 2006
Oaxaca, Mexico
www.wildmushrooms.ws

Crested Butte Wild Mushroom Festival
17-20 August 2006
Crested Butte, Montana
http://crested-butte-wild-mushroom-festival.com/

Alaska's Wild Mushrooms – August 25-27, 2006 – Homer, Alaska
Contact Mary Jane and Tony Lastufka at 907-235-3633; ecotour@ptialaska.net; www.tentandbreakfastalaska.com.

Manning Park Foray
September 8 – 10, 2006
Vancouver Mycological Society
http://www.vanmyco.com/

Sicamous & Shuswap Lake Wild Mushroom & Food Festival
September 18 - 24, 2006
Needed: mushroom guides for tours
For more information or to volunteer, call 250-836-2220
www.shuswaplakemushroomfestival.com/

Newfoundland & Labrador Foray – Sept. 15-17, 2006 – Avalon Peninsula
Forays of 6-10 people will be conducted in various provincial and federal parks. Early registrants get a discount and are assigned more desirable accommodations. Faculty: Michael Burzynski, Dave Malloch, Faye Murrin, Ron Peterson, Stan Pieda, Greg Thorn, Andrus Voitk, Gary Warren. For more information check the website at: www.hnhs.ca/mushrooms.

7th Annual Yachats Village Mushroom Fest
October 20 - 22, 2006
Yachats, Oregon, USA
Phone 541-547-3530 or 800-929-0477
Fax +01-931-964-2200
www.yachats.org/events.html

OTHER MYCOLOGICAL EVENTS:

Cowichan Salmon/Mushroom Festival
October 28 & 29, 2006
Organized by Ingeborg Woodsworth
MayoCreekGardens@shaw.ca

INTERESTING MYCOLOGICAL WEB SITES

It's Morel Season!
http://botit.botany.wisc.edu/toms_fungi/morel.html

Have you got an interesting article, anecdote, poem or website to share? We'll include it in Fungifama. Email your submission to hleary@shaw.ca.

ARTICLES OF INTEREST

Reflections on Mushroom Poisoning – Part I By Michael Beug. From his presentation at the March SVIMS meeting

Typically there are about 70 cases of human mushroom poisoning and 30 cases of animal poisonings that are reported to NAMA for all of North America. Poison Control Centers receive about 10 times this number of calls but the vast majority of their calls involve calls where there are no symptoms –

usually where a child was seen looking at a mushroom or handling it and the parents have gone into a state of panic. Of the calls to PCCs, only about 0.5% of the total are regarding mushrooms.

About 1% of the people that are made ill by mushrooms die as a result. Most years there are no deaths due to ingestion of toxic mushrooms, but in years where the fruitings are abundant there can be several deaths in a year. The over-all average is about 1 death per year due to deadly mushrooms and 1 death every 4 years due to severe allergic reaction to mushrooms.

Amanita phalloides: (55 people poisoned)– 80% of all mushroom fatalities are the result of eating an *Amanita* in the Destroying Angel group. *Amanita phalloides* is the member of this group that is consumed the most frequently with 37% of the Destroying Angel poisoning incidents. Yet only 4% of the people who eat enough of this mushroom to get ill will die. Liver damage will be evident in about 50% of the cases and kidneys will also fail in 6% of the cases. Symptoms typically become evident in 6-11 hours but it can take up to 24 hours to realize you have been poisoned. Getting medical help as soon as you start to feel ill really improves your survival chances.

Amanita virosa: (54 people poisoned) and the highly similar *Amanita verna* have a pretty good survival rate. They cause liver damage in 20% of recorded cases, kidney failure 11% of the time and death in about 9% of the cases.

Amanita smithiana (8 people poisoned). Poisonings are reported on average of one every other year. They are characterized by 6-11 hour onset and kidney failure, which has occurred in 75% of reported cases, though no deaths have been reported. So far most incidents have involved mistaking *Amanita smithiana* for a Matsutake.

Amanita ocreata (9 people poisoned) appears to be the most toxic member of the Destroying Angel group. There have only been 9 people poisoned in thirty years of record keeping but liver damage was 100%, kidney failure at 80% and death at 40%. It is important to note that in humans and dogs nursing mothers can pass Amatoxins through their milk. To spot a Destroying Angel look for white gills and a white spore print, a cup-like volva at the base of the stipe and a ring on the stipe. The problem is that handling can obliterate the ring and the volva is below the ground surface and is easily missed. The resemblance to the choice edible Paddy Straw mushroom of Asia is striking. People also mistake these mushrooms for edible species of Amanita.

Amanita muscaria var. *muscaria* (109 people poisoned) is probably the most famous of all toxic mushrooms. It is the classical toadstool of Alice and Wonderland fame. It is called the Fly Agaric because if you crush some in a saucer of milk, it will attract flies, which become stupefied and drown. The mushroom also comes in white and brown varieties (*Amanita muscaria* var. *formosa*), but always with the characteristic three-ribbed volva and warts that rub or wash off of the cap. The active ingredients are muscimol and ibotenic acid. In total these compounds account for about 13% of all mushroom poisonings. The toxins reveal themselves on average 2 hours after ingestion. The symptoms are vomiting and diarrhea. In about 1/3 of the cases the victim experiences a drunken-like stupor often including distortions in time and space. Muscle spasms are common followed by drowsiness or a 6 to 36 hour coma. The mushrooms are not deadly but one inebriant froze to death and a few have suffered hypothermia.

Amanita pantherina (109 people poisoned) contains the same toxins but the reactions are much stronger with a higher probability of severe GI distress and severe disorientation. A few become violent. Complications include dermatitis and respiratory failure. Dogs frequently eat *Amanita muscaria* and *Amanita pantherina.* Cats occasionally do. The mushrooms can be lethal to cats and sometimes lethal to dogs, but usually it just looks like the animal is going to die and recovery is complete after about 12 hours of supportive care. Poisonings from either *Amanita muscaria* or *Amanita pantherina* are very common.

Amanita gemmata (5 people poisoned) rarely causes poisoning because it contains just a small amount of ibotenic acid and muscimol. In other parts of the world, however, there are very similar mushrooms that can be lethal.

In fact, a high percentage of all poisonings in North America result when people move here and pick mushrooms that look like those that they had picked in their home country. Wherever you harvest mushrooms, you need to learn the specific good mushrooms and the most dangerous poisonous mushrooms in order to collect safely. There are no general rules that work – like boiling the mushroom with a silver spoon and seeing if the spoon turns black or picking only mushrooms that grow on wood, etc.

Is *Amanita ocreata* on Vancouver Island?
By Shannon Berch

During the presentation by Mike Beug on Poisonous Mushrooms, he mentioned NAMA records of poisoning by *Amanita ocreata* and speculated on the likelihood of this species occurring on southern Vancouver Island. Later I asked Ian Gibson whether SVIMS has a record of this species, which we don't, but he forwarded my question to Jan Lindgren of the Oregon Mycological Society.

Here is what Jan told us, '*Amanita ocreata* does grow in Washington and Oregon. It is found in the spring, just after the morels are done fruiting, in the lowland by rivers. This is about the middle of May. One year we collected 75 of them at Woodland WA, which is just north of Vancouver, WA. The habitat is oak, hazelnut, snowberry, poison oak, alder, cottonwood, and blackberries. I think that it is associated with either the Oregon White oak, *Quercus garryana*, or the hazelnut, which may be either the native one or an escaped domestic variety. Joe Ammirati has looked at my material and confirms my identification. I simple KOH test will separate it from *A verna*. *A. ocreata* will give a yellow reaction and no yellow is seen with *A. verna*. *Amanita* o*creata* will also show a pinkish or buff color when fresh and is somewhat smaller. I have reports of it from several sites in Oregon and a few others in Washington, but I haven't seen the other WA specimens. I wouldn't be surprised if you found some in BC. Check the lowlands along rivers and streams in May'.

You may also want to check out Mike Beug's web site on *Poisonous And Hallucinogenic Mushrooms* at www.evergreen.edu/mushrooms/phm/index.htm

Were the dinosaurs done in by fungus?
By Carolyn Y. Johnson, Globe Correspondent, February 22, 2005

After a meteor slammed into the Earth 65 million years ago, "the great dying" began, decimating life in the oceans and killing off the dinosaurs -- with mysteriously little effect on mammals. Conjecture over what did in the reptiles has long fascinated everyone from school children to paleontologists, but a new theory suggests that a less earth-shaking possibility could have played a role.

"The forests went out. The fungi proliferated, and the Earth became a giant compost pile. An enormous number of spores were released," said Dr. Arturo Casadevall, an infectious disease researcher who proposed last month that air thick with fungal spores after the meteor hit could have overwhelmed animals' immune systems, causing sickness and death. If he's right, the large numbers of warm-blooded mammals and birds that survived the mass extinction might have had a natural advantage -- body temperatures too hot for fungal infections to take hold.

"It's just a beautifully creative suggestion," said Nicholas Money, a mycologist, or mold expert, from Miami University of Ohio and author of "Carpet Monsters and Killer Spores: A Natural History of Toxic Mold."

Casadevall, of Albert Einstein College of New York, laid out his suggestion in this month's issue of Fungal Genetics and Biology when considering a much larger question: "I ask you, why are we so hot?" He has long been troubled by the lives of warm-blooded animals, who must live a virtual food-finding mission because they burn so many calories each day just heating their bodies. Cold-blooded animals, on the other hand, need only eat once every few days. Where, he

wondered, is the advantage in a life of constant scurrying, foraging, and saving up food for the winter?

That question coincided with another puzzling trend: Fungal infections rarely give mammals more than a mildly irritating case of athlete's foot or a yeast infection but are often deadly to plants, fish, and insects. At a crucial time in natural history, the world's 1.5 million species of molds, yeasts, rusts, and mushrooms, also might have been a vehicle for natural selection. In the aftermath of the meteor that carved out the Chicxulub crater on the Yucatan Peninsula, the Earth probably was a cool, shady place. Researchers last year discovered fossil evidence of a post-collision "fungal spike," and in a world dense with potentially pathogenic fungi, warm-blooded animals might have had a unique advantage.

In such a situation, "every warm-blooded generation has a little advantage, and when the dust settles and the sun comes out again . . . the warm-blooded find themselves in a world with a lot more space," Casadevall said. Other evidence shows that the mass die-off didn't occur immediately after the collision, but about 300,000 years afterward -- raising the possibility that an intermediary factor, like fungi, could have played a part.

The trouble with the theory, experts said, is that no one is sure whether the dinosaurs were warm- or cold-blooded. Smaller cold-blooded animals like turtles, lizards, snakes, and frogs were able to weather the mass extinction, indicating that size, not body temperature, may have been a deciding factor. And, while there is wide agreement that a massive meteor struck the Earth 65 million years ago, other theories suggest that increased volcanic activity could have played a role in the extinction.

Stephen McLoughlin, a geologist from Queensland University of Technology in Australia who discovered evidence of the long-ago fungal explosion, said the spores that his group studied, which were preserved in a layer of coal in New Zealand, probably did not harm animals. He stated in an e-mail that he finds Casadevall's idea "intriguing" but, "while this may have been the case, it is virtually impossible to test."

Nonetheless, the main idea behind Casadevall's research -- that deadly fungi could have helped establish the age of the mammals -- is timely. Fungal infections are now emerging as an important force in nature again: Fungal diseases also may be contributing to the worldwide decline of the coral reefs, and appear to play a poorly understood role in the steady decline of amphibians. A study last year reported that a third of all amphibian species worldwide are facing extinction -- and while climate change, pollution, and habitat loss are all thought to play a role, many of the extinct and endangered frog species have been infected with the chtyrid fungus, which may interfere with their delicate, breathable skin, produce a toxin, or something else.

"Like everything in life, it wasn't just one thing" that killed the dinosaurs, Casadevall said. In the case of the amphibians, "you can imagine [the culprit] could be a weakening of their immunity caused by a fungus."

Origin of the Amphibian Chytrid Fungus

Ché Weldon*, Louis H. du Preez*, Alex D. Hyatt,† Reinhold Muller,‡ and Rick Speare‡
*North-West University, Potchefstroom, South Africa; CSIRO, Geelong, Australia; James Cook University, Townsville, Australia
http://www.cdc.gov/ncidod/EID/vol10no12/03-0804.htm

The sudden appearance of chytridiomycosis, the cause of amphibian deaths and population declines in several continents, suggests that its causative agent, the amphibian chytrid *Batrachochytrium dendrobatidis*, was introduced into the affected regions. A survey was conducted of 697 archived specimens of 3 species of the frog *Xenopus* collected from 1879 to 1999 in southern Africa in which the histologic features of the interdigital webbing were analyzed. The earliest case of chytridiomycosis found was in a *Xenopus laevis* frog in 1938, and overall prevalence was 2.7%. The prevalence showed no significant differences between species, regions, season, or time period. Chytridiomycosis was a stable endemic

infection in southern Africa for 23 years before any positive specimen was found outside Africa. We propose that Africa is the origin of the amphibian chytrid and that the international trade in *X. laevis* that began in the mid-1930s was the means of dissemination.

In a pregnancy test that was used from 1934 until a non-biological test was developed, the African clawed frog, *Xenopus laevis,* was injected with the urine of a woman and if the woman were pregnant the hormones in her blood would cause the frog to spawn within hours. For 34 years, the trade in *X. laevis* in South Africa was controlled by the then Cape of Good Hope Inland Fisheries Department (Western Cape Nature Conservation Board) at the Jonkershoek Fish Hatchery. As an indication of the numbers involved in this trade, 10,866 frogs were distributed in 1949, of which 3,803 (35%) were exported, and of the 20,942 frogs distributed in 1970, a total of 4,950 (24%) were shipped abroad. The earliest known case of chytridiomycosis in wild frogs was in 1938 in South Africa. The next earliest case outside South Africa was found in *Rana clamitans* from Saint-Pierre-de-Wakefield, Québec, Canada, in 1961.

After the introduction of nonbiologic pregnancy tests, *X. laevis* became important as a model for the scientific study of immunity and later embryology and molecular biology. *X. laevis* could have carried the disease globally, particularly if the prevalence was similar to that seen in wild-caught *X. laevis* today. In the importing country, escaped frogs, the water they lived in, or both, could have come into contact with local amphibian species, and subsequent transmission of the disease could have followed. The establishment of feral populations of *X. laevis* in Ascension Island, the United Kingdom, the United States, and Chile in 1944, 1962, the 1960s, and 1985, respectively, show that transmission could have become ongoing if these feral populations were infected.

Some fungus facts from Tom Volk

http://botit.botany.wisc.edu/toms_fungi/xmas.html

Stone Washed Jeans

Maybe someone bought you some soft stone-washed jeans for Christmas. Now, you didn't really think they make those variable-color, sort-of-faded-out jeans by hiring little old ladies with babushkas to take them out to the rocks on the stream and beating them? No! The jeans are placed in a large vat containing a fungus, *Trichoderma*, which produces enzymes (cellulases) that partially digest the cotton fibers of the jeans, for that stone-washed look

Request for Information

From Bryce Kendrick PhD, DSc, FRSC

Phone - (250) 655-5051 bryce@mycolog.com

I am studying the phenomena of rare vs. common macrofungi. Of course this begins by looking at records: how often do individuals or groups collect/see a particular fungus? This leads, of course, to other questions (as everything in science always does). Is a fungus likely to be less common if it makes a large fruit body rather than a minute one? Is it less likely to be recorded if it is very small or cryptic? Is it more likely to be found in habitats frequented by mushroom seekers or in other less-visited areas?

My request is to anyone with information on the actual longevity of agaric or other macrofungal fruit bodies, please share it with me. We know that some species of what used to be called *Coprinus* are extremely short-lived, and that polypores can persist for many years. But there are thousands of taxa that sit between those extremes, and they are the ones I would like to hear about.

Here is the kind of data I need:

Name of species. Size of fruit body (e.g., cap diameter, overall height). Approximate weather conditions and temperatures prevailing (mushrooms can freeze and sit there for months after their 'best before' dates!). Longevity of individual fruit bodies in days, with actual dates of initial development and final disappearance or decay.

I will be happy to give credit for any information I can use in the final compilation.

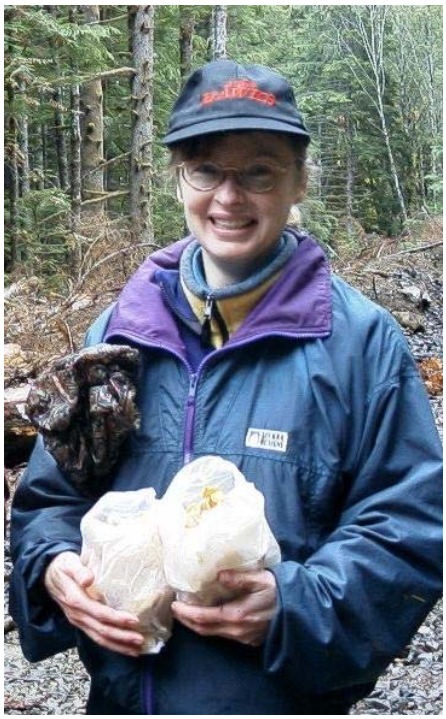
Joyce and Marcie at the Survivors Banquet

Calling All Mushroom Cooks

We need your help! We are planning to publish a **mushroom cookbook** as a fundraiser for our annual Bamfield **mushroom festival**. We need your recipes for our book! We are asking for recipe contributions from people of Bamfield and from all over the world, who have been to or wish they had been to our festival, to send us copies of their favorite **mushroom based recipes**. They will be very much appreciated; your name, home town and fun comments will be printed together with the recipe in the book if that's okay.

Please send recipes to Janet at tyeejan@island.net or Brunhilde at wcm@alberni.net

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.



In Memoriam

Sadly, one of our members, Elaine Aggett, who was just 51, passed away on March 8th. Elaine and her husband Tim joined SVIMS in 2002, showing an aptitude for finding chanterelles during that October's Cowichan foray. Elaine has been a regular attender of club meetings, and was at the banquet and our February meeting. She also went on some of the forays which cost her several days in bed recovering. But she came anyway in spite of being in a lot of pain, because she loved being out in the woods, loved to learn about fungi and all aspects of nature. Elaine had kept a copy of "the Oyster Song" (You are my sunshine), which triggered some happy childhood memories for her daughter and made her smile.

Donations in Elaine's memory may be made to the Royal Jubilee Hospice.