FUNGIFAMA

August, 1994 Newsletter of the South Vancouver Island Mycological Society Vol. 1.5

We're back, with:

Mushy mushrooms
Winder's Woodlot
Gourmet recipes
Foray info.
And more...

South Vancouver Island Mycological Society

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Membership and Meetings

To become a member of SVIMS, please contact Gilles Patenaude (Sea Lion Way, R.R# 4, Sooke, B.C., phone # 642-4566. Meetings are held at 7:00 p.m. Sharp on the first Thursday of every month, except July and August, at the Pacific Forestry Centre, 506 W. .Burnside Rd., Victoria.

Newsletter

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Winder's Woodlot

The dry Spring mushroom season may have disappointed us, but, believe it or not, this issue brings us to over 70 fungi reported for the Island in this newsletter. I am maintaining a checklist for the Island based on what is published in FungiFama. We'll see if we can't make the first version of the list available for file new year. As always, members who are willing to provide reliable reports for this year from their own collections are welcome to contribute to the effort.

The first post-rain fungus I found after the Sooke foray was *Coprinus lagopus*, the wooly inky cap. I had to use a microscope to identify this pretty little jewel, because the veil had shriveled up, making the cap appear mostly smooth without closer inspection. There were only two, growing in soma wood chips in my neighbor's garden. Aurora lists this fungus as "probably harmless- but also fleshless and flavorless". The second mushroom to appear was *Morchella deliciosa*, the late-fruiting white morel. This variant had a large head and parallel pits like a black morel, but the ridges and pits were both the same color- a uniform light tan. My wife Christene spotted it growing through some rotten boards in my garage, where some barbecue ashes had spilled. Aurora lists this fungus as "Delectably delicious"- but I had only one, and pesticides were stored nearby. So I cultured the fungus on sterile media- others where I work (at the Pacific Forestry Centre) are also working feverishly to culture their own morel find, so we will see who will be first. As of this writing, we've successfully gotten the fungus to form a tissue mass well beyond the simple sclerotial stage- but not full ascocarps (mature fruiting bodies or mushrooms) yet. The third mushroom to appear wasn't even close to my woods, but it was growing on a foot path in the Colquitz Park near Tillicurn Mall. It was a smooth Earthball, *Scleroderma cepa*. I also had to use the microscope to help identify this poisonous puffball. It has small, spiny spores. Now if only I can find an edible puffball..

Two more kinds of mushrooms appeared under my grand fir trees on Canada Day. These are the same three trees that produced an earlier fruiting of *Amanita pantherina*. There was a relative this time, *A. muscaria*, the beautiful but poisonous fly agaric. The good news is that a flush of drab but delicious *Boletus edulis* (common names King bolete, Cep, Steinpilz, Porcini, etc.) occurred right along with them. The boletes were delicious (and they are also being cultured in my lab). Out in the woods, I managed to find another member of the boletaecae at the same time- a faded bunch of *SuilIus caerulescens.*

During the month of July I spent a lot of time in Yukon Territory and Northwest Territories, driving around and looking for grass diseases. As you can probably guess, I stumbled into a few mushrooms. There were a lot of white-pored Boletaceae out there, from the scrubby boreal forest near Yellowknife to the tundra north of the Arctic Circle on the Dempster Highway. The variety was bewildering enough to make the Aurora key useless (one large white-pored, white-spored type had a cap with warts large enough that it could he mistaken for a Strobilomyces, except there was no black color, and the warts were very large and exaggerated. Things that make you go Hmmmmm... In the Arctic survival publication titled "*The Lost Whole Moose Catalogue*", there is a description of Arctic Mushroom hunting, in which the Bolete family, referred to as "Boletas", figure largely in the summer food harvest in the North. The article goes on to say that any bolete can be eaten. While this is certainly not true for most of the world, the predominance of the white-pored boletes that I saw in the Arctic makes me wonder if the majority of the bolete finds up there aren't edible. F.Y.I, there were also reports of *Agaricus augustus* ('The Prince') fruiting in early June. (That's one worth looking up in your field guides). Samples were brought in to P.F.C. and to Hannah Nadel by the public for identification.

May foray report- Sooke

Due to the rain and cold, the turnout for the Sooke foray was light (seven people in all). We all took a nice jaunt through the watershed towards Sooke Lake, but no fresh mushrooms were discovered- only dried out remainders from earlier in the season. Adolf informed of us that a foray he led the previous week had the same results. All was not lost, however, since there was a trusty *Pluerotus ostreatus* log in the back lot which faithfully provided mushrooms all month. So some oyster mushrooms were harvested and fried up with butter, onions, and wine, then passed around with the rest of the wine (Bordeaux, St. Emillion 1991) as we feasted on a *Boletus edulis* casserole brought by the Ceskas and other assorted goodies. An enjoyable afternoon was spent discussing the finer points of finding and preserving boletes and chanterelles in B.C. versus Europe. As long as mushroom dishes like this show up at outings, take my advice... Please! STAY AWAY! It leaves more for the rest of us! The short list of finds follows:

Amanita pantherina	(Panther amanita)
Armillariella mellea [sic]	(Honey mushroom)
Daedalea sp.	(Maze polypore)
Fornitopsis sp.	(Conk)
Nidula niveotomentosa	(Bird's nest fungus)
Pleurotus ostreatus	(Oyster mushroom)
Polyporous badius	(Black leg polypore)
Stereurn striatum	

-RSW

Definition

fama -ae (Latin) f 1. talk, rumor, report 2. saying, tradition 3. reputation 4. fame, renown, glory, name 5. infamy, notoriety 6. Public opinion.

Recipes Galore

These recipes were part of a promotional item in the latest financial report of Sylvan Spawn Inc. The recipes are by Jack Czarnecki, Proprietor and Chef of Joe's Restaurant.

Caribbean Shiitake Mushrooms

1/4 cup Water
2 tbsp Soy Sauce
1 tsp Brown sugar
2 tsp White wine vinegar
1/4 tsp Cayenne pepper
2 tsp Corn starch
18 Shiitake caps
1/2 cup Scallions, sliced
4 cloves Sliced garlic
1 tbsp Olive oil

1/2 cup Cubed pineapple
1/2 Sliced red pepper
1/2 cup Green bananas
1/2 oz Chopped cilantro
plantains, cooked tender & cubed

Combine water, soy, brown sugar, vinegar, cayenne pepper, and cornstarch in a small bowl and set aside. Sauté scallions and garlic over medium beat in olive oil in a large sauce pan for 30 seconds. Add Shiitake and continue to sauté for 2 minutes. If the Shiitake does not draw any water add about 2 tbsp water to mixture. Add pineapple, red pepper and bananas or plantains. Cover and let sit for 5 minutes. Add cilantro and liquid mixture slowly while stirring. Heat until the dish is lightly thickened. Correct back with water if too thick. Serve immediately over rice studded with almonds and golden raisins. Preparation time- 45 minutes. Makes 4 servings. Suggested wine- Riesling, sweet or dry.

Westphalian Sovereign Mushrooms

2 tbsp vegetable oil
1 tsp crushed garlic
1/2 small sliced onion
1 cup heavy cream
1/2 lb med. oyster mushrooms
1 tsp soy sauce
I/2 tbsp cream sherry
I/4 cup water
l tbsp corn starch
1/2 tbsp chopped parsley
1/2 oz Westphalian ham, finely chopped (or Proscuitto)
to taste salt

In a large skillet heat the oil over a medium flame. Add the onions and garlic and sauté until the onions become transparent. Add the mushrooms, keeping the flame on medium, and sauté while stirring occasionally. The mushrooms will begin to draw water, but some of this will evaporate as the mushrooms cook. Do not allow the mushrooms to cook so rapidly that all of the liquid evaporates, as you want to maintain some of this flavorful essence. Once the mushrooms sweat enough to just cover themselves with liquid, add the ham and cook the mixture for 10 minutes over low heat. Stir in the cream, salt, soy, and sherry and return to a light simmer. In a separate cup combine the water and cornstarch. Stir in the parsley with the mushrooms. While stirring add the cornstarch mixture a little bit at a time until the mushrooms are thickened. You may not have to use all of the mixture. Serve immediately over puff pastry, shells or in a nest of fresh alfalfa sprouts. Preparation time- 1 hour. Makes 4 servings. Suggested wine: Chardonnay, rich and woody.

Grilled Portobello Mushrooms

3-4 large Portobello caps
I cup olive oil
1 cup Red or white wine vinegar
2 tbsp Soy sauce
1 tbsp Dried herbs (1/2 cup fresh)
I tbsp Sugar

Cut the stems from the caps of the mushrooms. Slice each stem lengthwise. Combine the rest of the ingredients and blend well with a whisk for a minute or two. Let the marinade sit for an hour until the dried herbs soften. Place the mushrooms in a shallow dish oil pan and pour the marinade over the mushrooms, let the mushrooms marinate for 10 minutes, but not more, turning occasionally to ensure uniform coating. Remove the mushrooms from the marinade and place over a hot grill. Grill on each side for about 2 minutes. Remove from the grill, slice, and serve immediately. Preparation time- 30 minutes. Serves 4. Suggested wine: Sauvignon blanc.

Curried mushroom soup

2 lbs Domestic mushrooms
1 Sliced onion (buttons or cubes)
2 tbsp Soy sauce
2 cups Half-and-half
1/4 tsp Sugar
11 tbsp Quality curry powder
1 tsp Spanish paprika
I tbsp White wine vinegar
to taste salt
some Crème Fraiche
Or sour cream

Begin to sweat the mushrooms in a saucepan. To do this add a little (1/4 cup) water to the bottom of the saucepan and add the mushroom caps. Turn up the heat until the water boils then lower to a simmer and add the onions and cover saucepan with a tight-fitting lid. The mushrooms will release their liquid and shrink as they cook. This win take 5 to 7 minutes. While the caps are cooking combine the soy sauce, mushroom stems, and 1/3 cup of the half-and-half, curry, sugar, paprika, and vinegar in a blender or Osterizer and process until smooth. This puree should be fairly thick. Add the thick curried mushroom puree to the sweated mushrooms. Add the rest of the half-and-half. You may have to adjust for thickening. Also adjust salt if desired. Dish into bowls and add a dollop of the Crème Fraiche or sour cream just before serving. Preparation time- 1 hour. Makes 4 servings. Note that any domestic Agaricus varieties can be used, such as Portobello or Cremini.

Mouth watering yet7

Yikes! There's a fly in my mushroom!

by Hannah Nadel

On a recent plant and insect collecting trip to the southern interior of B.C. I noticed an interesting human behavior. Oluna Ceska, who seems sane enough, was patting *Leccinum* mushrooms. After beaming with delight as she spotted each of the rather sporadic *Leccinums* along the footpath through the woods, Oluna's expression would change to one of hopeful apprehension as she stooped and patted the brownish cap. She then either picked the mushroom with a triumphant cry, or muttered sounds of disappointment and moved quickly on, her eyes sweeping tbe ground for further possibilities.

When animals forage for food, they try to be as efficient as possible. Time is limited and they have much to do. They must find food, eat, wash, sleep, find mates, build nests, and produce and rear offspring within a limited lifetime. Spending too much time on one necessary activity may result in too little time spent on another, and the animal or its offspring could suffer. Clearly, the animal which spends the least amount of time deciding whether something is edible will have more time to spend looking for more food, and will, presumably, end up finding and eating more than a similar animal that spends a lot of time examining a potential tidbit to decide whether it is edible or not. What Oluna wan doing, I discovered, was minimizing the amount of time she spent deciding whether an edible mushroom was fit for the table or too riddled with worms to bother with (I'm assuming the technique works with mushrooms other than *Leccinum*). Rather than pick the mushroom, cut it open, and examine its flesh, she learned that a mushroom that feels firm to the touch is relatively worm-free, and that those that feel spongey or punky are riddled with worm burrows. She can test this with one or two quick pats. As well, Oluna had already reduced the amount of time she has to spend per trip deciding if a mushroom is edible, because she has learned to identify many edible species by sight and doesn't pat the bad-tasting or poisonous ones.

But this story was not meant to be about time management in the life of a mushroom eater. Rather, it was meant to touch on the all-too-familiar "worms" that can turn a mushroom-eater's delight to dolour, and a mushroom to, well, mush. Too often I get asked about what's tunneling in a favorite edible, so I'll give a brief account of what you might find in B.C.

First of all, like many things that are not what they seem to be, the worm-like creatures burrowing through your mushroom are not worms. They are insects. More specifically, they arc the young of' flies or, sometimes, beetles. Insects start their lives as eggs that hatch into larvae, and some, such as flies and beetles, undergo a resting stage, or pupa, before turning into winged adults (others change from larvae directly to adults). All growth occurs during the larval stage, and it's therefore no surprise that this stage is the most voracious. These eating machines enlarge and fatten, and periodically shed their skin as they outgrow it, finally moulting into a resting pupal stage during which they metamorphose into winged adults. After escaping from the pupal skin, the adults may or may not feed, depending on the species, and they do not shed their skin again. They don't grow, although the females may expand tremendously while carrying eggs.

In B.C., the most common fly larvae, or maggots, that you'll find feeding in mushrooms belong to the fungus gnat family, the Mycetophilidae (pronounced my-see-toe-fill-id-ee, from the Greek works for fungus -- *mykes*, and lover -- *philea*). They are not too hard to distinguish from other maggots in mushrooms because they have very dark heads and strong constrictions along their pale bodies. Like many other maggots, they are soft and thin-skinned, which makes them vulnerable to drying. Living inside a moist mushroom, or, in other cases, in rotting vegetation, protects them from drying and provides them with plenty of fungal tissue to feast on. The eggs are laid directly on the mushroom, usually on the underside in the spaces between the gills or in the pores (depending on what the mushroom has), and within a day or two the tiny, hatchlings begin feeding on these structures. At this stage the mushroom is still perfectly edible and the cap is firm. As they grow, the legless larvae burrow into the flesh of the stem and cap and literally eat themselves out of house and home. The burrows fill with digestive wastes and can he invaded by bacteria and other fungi; they generally appear rather brown or yellowish, and shouldn't be eaten. If you find a mushroom with burrows in the stem only, it is quite safe to simply discard the stem and cook up the cap. By my standards, a few tunnels in the cap won't hurt you either, but my gag threshold is perhaps higher than yours. [Editor's note: It is practically impossible to find even a small sample of *Boletus edulis* without one or two of these tunnels- they attract fungus gnats like flowers attract bees... -RSW]

When ready to pupate, after a week or so, fungus gnat larvae usually leave the rubble of the mushroom and pupate in the soil below it. After a few more days the dark, mosquito-like adults emerge, mate, and the females smell their way to a new mushroom on which to lay eggs. They usually prefer young mushrooms, perhaps because these will last longer and also probably because they're racing against other fungus gnats (and/or other insects) to provide their own offspring with the advantage of being the first on a limited island of food.

Other maggots you might encounter in a mushroom are the smoother-bodied and pale-headed relatives of the small flies that visit your fruit bowl at home and feature in your genetics class at school. This family of fly is the Drosophilidae (pronounced dro-soh-fill-id-ee, from the Greek words for dew or sap -- *drosos*, and lover -- *phileo*), also known as pomace flies or even as fruit flies, although they mustn't be confused with the true fruit flies (family

Tephritidae). Larvae of pomace flies feed on fungi in rotting vegetation, fruit, sap flows on trees, or directly in mushrooms. Their life cycles resemble those of fungus gnats, so I won't dwell on them further. The adults are quite different from the fungus gnats, being shaped more like a common house fly, but much smaller and usually colored a shiny honey-brown. Those of you who have studied genetics in school will remember the famous "fruit fly", *Drosophila melanogaster*, the laboratory rat of the insect world, whose giant salivary-gland chromosomes and rapid reproduction have made it the darling of geneticists. The larvae of this species feed on fungi in rotting fruits. The adults carry fungi or spores on their feet to inoculate ripe, newly-bruised on which they will lay their eggs. [Editor's comment: Alcohol-producing yeasts are one important type of fungus spread around in rotting fruit. Fungal fruit diseases can also be spread by these insects -RSW]

Many other families of flies feed at least partly on fungi, some on mushrooms, but most often on fungi that cause decay in plant material or dung. The dark-winged fungus gnats, family Sciaridae (sce-ar-i-dee), from the Greek *skieros* -shady, because they like shade), are often reported as pests in commercial mushroom houses. They also feed on fungi in decaying plant material such as rotting moss, which is why you might see hordes of them around your overwatered potted plants at home and in greenhouses. They are also rather mosquito-like, delicate and often minute, with dark grey wings.

Like flies, many families of beetles also feed on fungi. Some of them are very beautiful, as is reflected in names like handsome fungus beetles and pleasing fungus beetles. Some feed on mushrooms, but many can handle the tougher woody bracket fungi and other polypores. Unlike flies, the adults often feed on the same stuff as their larvae, and these two stages can be found together in one mushroom. Adult beetles are generally hard-bodied, with a pair of hard outer wings that fit closely over the back like a shell (the soft, transparent flight wings are folded under these protective wings and are not usually visible). The larvae are often wormlike, but, unlike maggots, they have three pairs of legs on the underside just behind the head, and the head is hard, usually brown, and armed with visible teeth (use your magnifying glass!). The pupa may be in the fungus or outside, depending on the beetle species. The life cycle of beetles is generally much longer than that of flies, but some can develop from egg to pupa during the short life of a soft mushroom.

In B.C. you might, through diligent search, find beetles of at least 10 families in soft mushrooms and in the harder brackets or other fruiting bodies. Many are rare. The showiest are the handsome fungus beetles (family Endomychidae, pronounced en-doe-my-kid-ee, from the Greek *endon* - within, and *mychos* -innermost recess; the meaning escapes me), and the pleasing fungus beetles (family Erotylidae, pronounced air-o-till-id-ee, for which I can't find any word origins that make any sense at all!). These striking beetles are shiny, and patterned black with a mix of red, orange, and/or yellow. The handsome fungus beetles are usually smaller but can reach 1 cm in length, about half the size of pleasing fungus beetles. If your mushroom has a drab beetle up to ½ cm in length, with spiny-looking margins on its "neck", it's probably a tooth-necked fungus beetle (family Derodontidae, pronounced dare-oh-don-tid-ee, from the Greek *deros*- skin, and *odontos*- tooth). A long, slender, flexible beetle with short outer wings would be a rove beetle (family Staphylinidae, pronounced staff-ill-in-id-ee, from the Greek *staphylinos* - an insect), usually found among the gills rather than in the flesh of the mushroom. Other families include an array of small, drab beetles fondly known as LBJs (Little Brown Jobs, just like the LBJs we love to ignore in the mushroom world). Some tooth-necked fungus beetles and round fungus beetles (which can curl into a ball) feed on slime molds. There's no accounting for taste.

Now we know more or less who in the insect world is eating our mushrooms. But it's not enough that our delicacies are full of flies and beetles, they have a variety of minute wasps, too! These, however, are not joining the feast; rather, they are parasitizing and killing the fungus eaters. They are the good gals, the natural controlling agents that help keep the world from turning into one huge, wriggling, buzzing mass of insects. These tiny wasps, usually 1-4 mm long, do not sting and have no interest at all in humans. We, however, should he kissing the ground under each of their six little feet! Wasps that parasitize mushroom eaters usually find mushrooms by smell, after which they search for eggs, larvae, or pupae of flies or beetles either by feel, vibrations, or again by smell. The females have a long, hollow, threadlike structure on their rear end through which eggs are laid on the victim (host) or inside it. The eggs hatch and the wasp larvae feed on the host insect, eventually killing it. The wasp larvae then pupate before turning into delicate, wasp-waisted adults. You might find the wasps as unsavory as the other insects in your mushroom, but remember that by killing many of the flies and beetles, the wasps prevent them from multiplying without check and infesting every single fungus on Earth. Also, they don't harm uninfested fungi. There are several families of parasitic wasps saving our mushrooms, and millions of species that parasitize and kill insects in our homes, gardens, fields, forests, and water.

Soon, if the rain comes, it will be time to go out and pat the mushrooms. Let's hope for a better autumn crop than we've had this Spring. But just remember that while most of you are leaving punky mushrooms alone, at least one deranged individual will be maximizing the number of interesting fungus-caring insects she collects by following you and picking precisely those mushrooms which you've patted and left behind. There's no accounting for taste, is there?

Animals that eat mushrooms

By R. Winder

Well insects aren't the only ones after your mushrooms (Heck, even fungi like fungi). Here is a list of the mycophagic vertebrate animals which I've run across during the course of my mycological studies (other than humans)- there's a story behind each of them:

Fungus	Predator
Elaphomyces spp.	Deer
(lichens)	Caribou
Morchella spp.	Moles
Pluteus cervinus	Elephants (captive)
Agaricus augustus	
(and other various)	Bears
(various)	Squirrels
Boletus edulis,	
Amanita spp.,	
and other various	Birds
Tuber spp.	Pigs

Upcoming Events

1 Sept. (Thursday) 7:00 pm. sharp

SVIMS general meeting, first meeting after the summer break. Held at the Pacific Forestry Centre, 506 W. Burnside Rd., Victoria, B.C. Nellie DeGeus from the Resource Planning Branch of the B.C. Ministry of Forests will speak on "Proposed Regulations for Wild Mushroom Harvesting", focusing on commercial harvesting in B.C. but also touching on recreational picking.

3-4 Sept. Lichen ID course

Offered by friends of Well's Gray Park. A few spaces are left at 115$ each, including lodging and most food. The Instructor- Trevor Goward, curator of lichens at UBC and co-author of Nature Wells Gray and The Lichens of British Columbia. He has been studying Wells Gray mushrooms since 1974, and B.C.'s lichens since 1976. For information, contact Helen Knight at 587-6532 a.s.a.p.

16-18 Sept. Mushroom ID course

Offered by friends of Well's Gray Park. A few spaces are left at 125$ each, including lodging and most food. Instructor- Trevor Goward. For information, contact Helen Knight at 587-6532 a.s.a.p.

17 Sept. (Saturday) S.V.I.M.S. Renfrew mushroom rally.

Departing for Port Renfrew from Evergreen shopping mall parking lot in Sooke (by the logger's pole) at 8:00 a.m. Parking in Port Renfrew and precise destination to be arranged. Mushroom hunt will hopefully be held in conjunction with a local group which conducts a number of informal nature hikes- we might get some expert local scouting. It is a long drive from Victoria- you may want to take advantage of local camping, the hotel, etc. A post rally I.D. session will be held in town if the harvest is good- a number of venues are available. Call Richard at 642-7528 for further information.

6 October 7.00pm SVIMS general meeting

Pacific Forestry Centre, 506 West Burnside Rd., Victoria

7-10 October PNW Fall foray (Thanksgiving weekend)

At the last general meeting, it was announced that several sites in B.C. were being considered for a joint Pacific Northwest foray with representatives from four or five PNW mycological societies (including SVIMS). The site has been selected- it will be at the Blue Lake Resort between Hope and Lilooet, off Hwy. 1 near the W. Stein Valley, in some of the last unlogged watershed forest in South B.C. There is a lodge, cabins, and a campground with space for R.V.s. Accommodations can he shared or individual. Food will be provided by the resort. Costs will be announced on the registration form to appear in September. Hannah Nadel and Renata Outerbridge are coordinating from our end.