



NATIVE PLANT STUDY GROUP

MYCOLOGICAL MEANDERINGS

Richard Winder took us on an ecological and identification journey into the world of mushrooms. As well as describing many mushrooms according to season, he gave us a glimpse into their critical importance in maintaining our natural environment.

Mushrooms inhabit a niche in which they are neither plant nor animal. Producing no chlorophyll, they cannot manufacture their own food and so are not considered plants. Their lack of internal organs, and immobility mean they are not animals, although they feed themselves by digesting other organisms. Mushrooms are considered “higher” fungi in that they have a fleshy fruiting body. Some are saprophytes that eat dead material and are responsible for decomposition while others are parasitic and feed off living material. Still others are mycorrhizal and have a mutually beneficial relationship with plants by exchanging nutrients.

The mycelium are a fine underground network of filaments that seek and digest food, while the “mushroom” that we find aboveground is the fruiting body that releases many millions of spores and whose shape is designed to push up through moss and soils. Some studies have found that the myce-

lium can transport sugar nutrients from a tree that with surplus supplies to a tree with greater needs. Amazingly, over 50 mycorrhizal mushrooms have been found in association with Douglas-firs. Many plants would not be able to compete successfully without their fungal connections.

Richard finds mushrooms an affirmation that life is tough but survives in a number of situations, such as in the fall when most plant species are dying or going dormant, many mushrooms come into full reproductive mode.

The 2003 fires in the East Kootenay Forest District provided opportunities to study and search for morels and other mushrooms. Apparently BC is the epicenter for morel speciation because of fire history and varied topography. *Morchella elata* was found in both a red and green form; in places covered in grey ashes grey pubescent morels were found (possibly *M. arthro tomentosa*). Morel spores have been found viable after 12+ years and some morels have a mycorrhizal-like relationship with oceanspray and spirea. When these plants are killed the fungus is stressed and fruits. When the fires are too hot, nutrients are consumed and no

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mushrooms fruit. Less intense fires (need 40% of duff removed) equals many mushrooms fruiting.

The question of over harvesting is an ongoing discussion. Europe is experiencing declining populations but is it the result of over-harvest or pollution? Richard believes there is no evidence that harvesting impacts productivity. 300 metric tons were picked in BC in 2004, which represents about 10% of the crop, but there are no real long term studies. In some areas in BC new research has been started into sustainability of the resource.

For more information, check the following resources:

- The South Vancouver Island Mycological Society (SVIMS) meets the first Thurs of the month at the Pacific Forestry Centre, 506 Burnside Road West at 7 pm. At the March 1st meeting: Adolf and Oluna Ceska: Photos from the David Arora foray in November

More Resources:

- fungiphoto.com
- bctruffles.org,
- Western Biologicals, Box 283, Aldergrove, BC V4K 3N2, 604-856-3339

Mushroom Field Guides:

- All the Rain Promises and More by David Arora
- Mushrooms Demystified (mushroom bible) by David Arora

The Native Plant Study Group meets on the third Thursday of the month from Sept through May except Dec at 7 pm in Rm D116, MacLaurin Building, UVic. Please join us. Membership fees are \$15.00 annually or a \$2.00 charge for drop-in.

Satinflower

*Polished purple blooms
Tossed by late winter's wind
Flaunting signs of spring*

SPEAKER SCHEDULE

March 15

Andrea Schiller:

For Better or Worse?

Andrea Schiller is a federal lands natural resources specialist involved in adaptive management techniques for rare species management. Learn about the ongoing attempts to preserve rare species on federal lands through invasive species removal.

April 19

Briony Penn:

Topic to be announced

Dr. Briony

Penn has garnered many awards and much attention in her crusades to preserve the natural world and enlighten the public. Her enthusiasm and passion for the environment as well as her creative problem solving in-

fuse Briony's writings, lectures and personal appearances. Her talk will be prove edifying and entertaining and not to be missed!

May 17

Dave Blundon:

Grasses Are Too Hard!

Ever felt like a subject is just too hard to attempt? But wouldn't it be wonderful to impress your friends and family with your astonishing grasp of grass identification?

Grasses and grass-like plants could be considered the foundation of our woodland, grassland and terrestrial herbaceous communities. Which are native and which are usurpers?

David Blundon, Biology Chair at Camosun College, will take us on a virtual identification tour of our local graminoids.



Manzanita

Arctostaphylos columbiana

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SPRING:

- *Amanita pantherina*: common in Feb/March, poisonous, mycorrhizal. Identified by the remnant of gills or vulva and warts on top of cap.

Reminder!! Just because you find insects and animals consuming mushrooms, it doesn't mean they are safe to eat. Use caution and if there is any doubt DO NOT EAT!

- *Amanita aprica*: find along Sooke River, pale yellow
- *Hygrocybe flavescens*-golden waxy cup- found near cedars

- Snowbank orange peel fungus-found right after snowmelt, decomposes conifer seeds

- Cup fungus (*Discomycete*) spores in cup

- *Geopyxis carbonaria*-Vulcan pixie cup, found after fires, these type of mushrooms help capture nutrients after a fire that might otherwise be eroded away.

- *Morchella elata*-black morel, also found after fires. Cook in a pan with a little sherry, "Put in your mouth and they sing"

- *Verpa bohemica*-thimble morel, found a month earlier than the black morels, like a sweet soil and are found in association with plants of the rose family, particularly oceanspray.

- *Discinia perlata*-pig's ears, found in the earth at the base of uprooted trees.

- *Gyromitra esculenta*-false morels, poisonous, with a volatile toxin.

Some populations of the mushrooms may not be as poisonous, toxicity can also depend on a person's metabolism

LATE SPRING:

- *Pleurotus ostreatus*-oyster mushroom: found in areas with fog and dying alders (coves), decomposer

- *Collybria acervata* found at Jordan River

Tip: it's easy to get lost in the woods. Be safe.

- *Coprinus comatus*-shaggy mane, cap starts to liquefy in old age which attracts flies. There is a beneficial relationship between the fungi and insects, to

aid in spore dispersal. Has been seen emerging through cement.

SUMMER:

- *Agaricus augustus*-"The Prince" tastes like almonds, sometimes found near driveways, identified by coloured fibres on cap, has a skirt-like ring or annulus

- *Agaricus bisporus*-pizza mushroom, is our domestic mushroom.

- *Fuligo septica*-dog vomit slime mold. This interesting organism has been thrown out of the fungal kingdom and is now considered

part of the *Protista* kingdom. Usually found in damp shady areas with abundant organic matter (like wood chips), but can move to brighter areas to reproduce. It is the stuff of science fiction.

- *Armillaria sinapina*-honey mushroom: edible, some people allergic to it, an opportunistic fungus that causes root rot.

- *Armillaria stoyia*: looks like shoe laces

Fungi that kill trees are considered by foresters and others

wanting high production values form trees to be a bad thing, but in ecological terms they ensures biodiversity. By killing some trees, new and different species can take their place, which in turn creates more habitat for other creatures (birds, insects, etc).

- *Clavaria delphus*: Found in Northern BC, a long, tall club-shaped fungus

- *Agaricus micromegathus*: found at the end of summer, has an almond smell

- Puffballs, late summer. Some edible, delicious with butter and garlic.

FALL:

- *Boletus edulis*-"King Bolete": aka porcini, world famous for their nutty aroma and fine culinary potential. Often in association with conifers; pines, spruce, hemlock, firs and oaks and birch.

Bolete pores have a fine white blush turning to olive green and a white reticulation at the top of the stem.



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- *Amanita muscaria*-fly agaric: Has a compound that can kill or slow down flies, perhaps to allow the mushroom time to release spores, that the flies can disseminate. Vikings fed European species of this plant to warriors known as “Beserkers”, which would cause a crazed rage and terrify the enemy. Mycorrhizal with firs, pines, spruce, birch and aspen.

- *Cantharellus formosus*-Pacific golden chanterelle: Taste similar to apricots, when dried

has a brownish colour, has ridges rather than gills, convoluted cap, mycorrhizal, prefers stands of 60-80 years, found at Jordan River and Lizard Lake.

- *Cantharellus cibarius* var. *roseo-canus*: when dried has a lemony colour

- *Craterellus cornocopioides*-horn of plenty

- *Cantharellus subalbidus*-white chanterelle: found near pines, conifer, manzanita, highly edible

- *Gomphus clavatus*-pig’s ears: looks similar to chanterelle, once considered part of that genus, also edible

- *Hygrophoropsis aurantiaca*-false chanterelle: not edible

- *Russulas* sometimes are found with a hypoparasite growing on them: *Hypomyces lactifluorum*-lobster mushroom grows on *Russula brevipes*: very flavourful

- *Cortinaria* has approximately 1000 species most of which are difficult to tell apart. The gills are often rust-coloured in age, this is a very important mycorrhizal genus that supports ecological functions.

Tip: Spore colour is an important identification tool.

- *Laccaria amethysteo-occidentalis*-Western amethyst lacaria, edible

- *Cystoderma* species-has a coating of mealy or powdery granules on cap and stem

- *Pleurocybella porrigens*-angel wings: edible, white, grows shelf-like on rotting conifers

- *Boletus mirabilis*-admirable bolete: edible with a lemony flavour, grows on rotten hemlock logs, has a

maroon cap and stem, mycorrhizal (use in chicken a la king).

- *Lactarius luculentus*-orange milk cap-has milky sap

- *Marsmiellus candida*-pinwheels

- *Strobilurus trullisatus*, decomposes fir cones

- Coral fungi are mycorrhizal, can be edible but might contain carcinogens



Beware: Mushrooms can bioaccumulate heavy metals as they clean up the soil. Beware of eating any harvested near roads, sprayed herbicides, etc.

- *Rozites caperata*-gypsy mushroom: edible,

Some mushrooms have potential health properties such as providing anti-viral drugs

- *Hericium erinaceus*-lion’s mane: delicious, grown commercially on sterilised sawdust with added inoculums, decomposer, found on hardwoods

- *Sparassis crispa*-cauliflower mushroom: found on pines in cold weather, parasitic (kills trees)

- *Tricholoma magnivelare*-pine mushroom: cinnamon and hot pepper flavoured, some think it has an old socks

odour. Use as shavings for flavour (not as fried mushroom).

- *Tricholoma apium*: only mushroom that has logging halted to protect its occurrence, might be only population outside of Europe

- *Cantharellus tubaeformis*-winter chanterelle (yellow foot) edible, bogs and cool mossy forests

- *Pseudohydnum gelatinosum*-toothed jelly fungus (spirit gummy bear): a late stage decomposer

- *Hydnum repandum*-hedgehog mushroom: mycorrhizal, edible, fruits in winter

Harvesting: Use a knife but keep clean (dip in container of bleach) to reduce risk of spreading disease.

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VOLUNTEER OPPORTUNITIES

For information on environmental activities visit the Green Diary
<http://www.earthfuture.com/greendiary/>

Every Saturday 1:30: Tour of Merve Wilkinson's Wildwood Forest, Ladysmith. Jay, 250-245-5540
<http://www.ecoforestry.ca/WildwoodMap.htm>

Interested in Eagles and habitat protection? WiTS (Wildlife Tree Stewardship Program) is looking for a volunteer coordinator for the CRD area. For more information please call Gwen Greenwood 652-2876

Become a volunteer at Swan Lake Christmas Hill Nature Sanctuary and expand your knowledge of the natural history of this area. For further details contact Joan at 479-0211 or email volunteer@swanlake.bc.ca.

Hospital Rock: Help restore a remnant Garry oak ecosystem, meet at 9 am Tues and Sunday mornings. We are looking for someone with graphic skills to help with displays and interpretive information, contact Agnes for more information at 721-0634 or thelynns@shaw.ca

Beacon Hill Park Ivy Pull, Saturdays (except long weekends), 9-12, southeast woods near Cook and Dallas. Bring gardening gloves. No dogs. Volunteers welcomed. Call Cornelia, 920-3556 or kacy@islandnet.com.

Oak Bay Native Plant Garden meet every Fri. 9-11, weather permitting. Corner of Beach Drive and Margate Avenue. New members welcome. Guided walks in March and April.

Brighton Avenue Walkway Restoration. Removal of invasives and re-planting of native species in a Garry Oak rocky outcrop situation. Work each Sun. 9:30 - 11:30. Meet at Hampshire and Brighton, 2 blocks south of Oak Bay.

GORP Winter Work Activities:
Volunteers appreciated! Contact Nathalie Dechaine at dechaine@saanich.ca or 475-5475

Sat, Feb 17
9:30 am – 11:30 am Playfair Park

Sat, Feb 24
9:30 am – 11:30 am Chatterton Hill

EVENTS AND OUTINGS

Feb 17, Sat: 10-4 Seedy Saturday, Victoria Conference Centre. Start of the organic growers year! Speakers, workshops. 250-385-0485

Sat 17, 1 pm CRD Parks. Horth Hill Hike. Meet at info kiosk in parking lot off Tatlow Road.

Feb 18, Sun: Saanich: Lochside Loop 1-3:30. Meet at Lochside Elementary, Royal Oak Dr.

Feb 24, Sat: Rare and Endemic Plants of the Northwest with Mark Turner. 7:30 at the Garth Homer Centre, 813 Darwin Avenue, \$5.00 admission

Feb 28, Wed: Saanich: Upper Goldstream Trail and Falls 9-11. Meet behind Tillicum mall, park and meet near Montana's Restaurant facing Colquitz River. Goldstream parking \$3/vehicle

Mar 1, Thurs: Saanich: Rithet's Bog to Emily Carr Park - 9:30-11. Meet on Dalewood, off Chatterton Way near kiosk

March 1, Thurs: Habitat Acquisition Trust 10th Anniversary Gala Dinner with Nancy Turner as guest speaker. Call 995-2428 or e-mail hatmail@hat.bc.ca for tickets (\$65.00)

Mar 4, Sun: CRD Parks. Lone Tree Hike at 1 pm

Mar 8, Thurs: Saanich: Layritz Park to Quick's Bottom 9:30-11. Meet at Layritz parking lot, off Glyn, off Wilkinson

Mar 11, Sun: Saanich: Shelbourne Valley Circle 1-3:30. Meet at footbridge, main parking lot of Cedar Hill Rec Centre.

Mar 15, Thurs: Saanich: Cedar Hill to Bowker Creek 9:30-11 Meet at Cedar Hill Rec Centre, 3220 Cedar Hill Rd in main parking lot

Mar 17, Sat: CRD Parks Upper Thetis 10-2. Meet at lakeside parking area.

March 31, Sat: The Fairfield Community Association is holding a workshop on "Biodiversity in Victoria: the Role of the Citizen-Naturalist", including speakers, discussion and a species count in Porter Park. Barbara Julian, 592 9340 (\$25.00)

Check the Victoria Natural History Society website for great walks that are coming later this spring: vicnhs.bc.ca

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THE SUCCESSION DANCE

In the natural world there exists a step by step series of interactions that occur in order to clothe the landscape we find around us. This process is known as succession. Onto bare rocks and minerals the first plant life to arrive will be minuscule algae and lichens. Very slowly, over the eons, they foster the building of soil. As the soil increases, so do the numbers and diversity of lifeforms. Swaying grasses and verdant mosses promote flowering perennials, which encourages the proliferation of shrubs and finally, the canopy of trees. Even there, different species of trees arrive at different times. The pine forests of New England give way to mature hardwood forests, whose spectacle of fall colours enchant us all, just as the familiar alder of the northwest coast precedes the majestic cedar, known by First Nations as the tree of life.



Various conditions affect which plants will establish and survive. Fires bring both destruction and rejuvenation. Pine cones that have been dormant for many years respond to the searing heat by germinating and blanketing the forests with their sun tolerant seedlings. Like an army of small bottle brushes, they cover the soil, protecting and nurturing it. Complexity is added as each new plant modifies and changes the environment, creating conditions ripe for more particular species. Layer upon layer of plants develop and intermingle in an ever changing dance of life.

BOTANY NIGHT SCHEDULE

Hosted by VNHS and Adolf Ceska. Held at the Swan Lake Nature House (3873 Swan Lake-off McKenzie), 7:30 p.m. the third Tues of the month, Sept through May excluding Dec. Everyone welcome, bring your friends.

Feb 20 "Oaks, Mosses and Ferns of our Garry Oak Ecosystem" Wynne Miles will talk about some rare and unusual non-flowering plants in our Garry oak stands. This includes lots of macroscopic and microscopic views of bryophytes.

Mar 20 "Wildflowers of Patagonia" Yvonne Rorison will present her impressions from the fascinating flora of Patagonia.

Apr 17 Members Night. Bring your slides or digital photos related or unrelated to botany of British Columbia, North America, or the Mother Earth. Contact aceska@telus.net if you plan to contribute.

May 15 "Plants and Poetry"

Andy MacKinnon will present a second installment of his Poetry Night. "Little bit of poetry does not kill you," says a Czech popular song of the old, good 1960's. Contact Andy at metchosinmacs@yahoo.ca if you want to participate

NATIVE PLANT STUDY GROUP (Sub-group of the Victoria Horticultural Society)

The NATIVE PLANT STUDY GROUP is a non-political group dedicated to learning about B.C. native plants, as wild populations and in garden settings, and to supporting conservation of native plants and their habitats. The group is guided by a volunteer steering committee. Members are encouraged to volunteer for this committee. Participation in outside events, by the group, or by individual members using the NPSG name, is dependent on approval of the steering committee or, where indicated, by the at-large membership. Activities requiring funding must receive approval by the general membership.

