NPSG
MARCH 2007

ADOLF AND OLUNA CESKA

NATIVE PLANT STUDY GROUP

SOME TROUBLES WITH FERNS: More Questions Than Answers?

Taxonomy is the science of classifying plants: how it is decided which species is which; is it a species or a subspecies?

Adolf and Oluna Ceska, BC botanists of renown, have been involved in the identification and study of ferns since they arrived in Canada in the 1970's. Adolf, as always the humourist, described science as beer + coffee + brainpower, plants come second. In 1978, they made the acquaintance of Don Britton, a fern specialist, who was spending his sabbatical year at UVic. Don was interested in quillworts, small ferns which, though usually aquatic, contain a few terrestrial species. At this time Oluna was working as a researcher on pigments in plants and did chromatography (colour separations) on ferns (this is one way to differentiate between species and varieties), unfortunately there was no money and many projects went unfinished. Adolf then amused us with examples of the difficulties of working with ferns.

Chapter One

Dryopteris marginalis aka male fern grows in eastern North America and is distinguished by having sori (reproductive organs) along the margins of the pinnae, (leaflets). It was reported from Meager Hot Springs, near Pemberton BC in the 1970's and from Warm Bay, near Atlin. When Botany BC (Botanical Organisation To Accomplish Nothing Annually) had its meeting in Atlin in 2004, Adolf and Oluna took the opportunity to search for the ferns, however they were not found.

The southern maidenhair fern (*Adiantum capillus-veneris*) is another unusual fern that seems to prefer hot spots. It is found only at Fairmont Hot Springs. Most of its distribution is in the southern US. A third fern, Hart's Tongue Fern (*Asplenium scolopednrium*) is found around the hot springs near Tofino and shares characteristics with a Japanese fern.

Chapter Two

Adolf gave us the benefit of his "two cents wort" in this section (thanks to Susan Lawrence for that gem!). *Asplenium adulterinum* (corrupt spleenwort) is a fern that Don Britton, after reading a paper by Moran, advised Adolf to look out for. The paper described *A. adulterinum* from Bohemia and (Don's thinking went) since Adolf is from Bohemia, he should be able to find it (as it turns out, this logic was entirely correct!). It is a species that was naturally created through reticular evolution (reticular evolution is evolution through chromosome doubling, within species-such as two *Erythronium* species hybridizing and producing a new species). *Asplenium trichomanes* (maidenhair spleenwort) and *A. viride* (green spleenwort) crossed

and produced a plant with double (hence fertile) chromosomes which behaves as a normal species. Don Britton posited that since *A. trichomanes* and *A. viride* are both found on Vancouver Island, then *A. adulterinum* could be here too. As chance would have it, Adolf and Bob Ogilvie were rerouted from a helicopter flight due to bad weather and flown instead to a large limestone area. The first plant they saw as they stepped out of the helicopter was *Asplenium adulterinum*! It is recognizable because it has inherited distinctive traits from both parents. *A. trichomanes* has red rachis (main stalk of the leaf) and *A. virides* has green rachis, thus producing *A. adulterinum* with rachis that are red below and green at the tip. The spore shape is halfway between the two parent spore shapes. One way to recognize hybrids is the offspring have colour patterns from both the parents.

Tadeus Reichstein (1897-1996) was a Nobel prize winner who was an authority on *Asplenium* species and who supported many botanists in their study of ferns. He stated that *Asplenium adulterinum* ssp *adulterinum* is a cross between *A. trichomanes* ssp *trichomanes* and *A. viride* and grows on ultramafic rocks. *Asplenium adulterinum* ssp. *presolanense* is a cross between *A. trichomanes* ssp. *inexpectens* and *A. viride* and are found on calcium rich soils. However all species seem to be found growing in situ in Chilliwack and thus the esteemed Nobel prize winner was wrong. (I don't know about you, but if a Nobel prize winner can get it wrong, that makes me feel a lot better!). The study and the BC material of *Asplenium adulterinum* is now in hands of Dr. Johannes Vogel, the Keeper Regius of the British Museum herbarium, who has visited Vancouver Island and the Chilliwack area twice in the past.

OAK FERN

Chapter Three

Fragile fern (*Cystopteris fragilis*) occurs all over North America (I have some on Camas Hill) and it is distinguished by spiny spores and by having three pigments (found through chromatography). *Cystopteris dickieana* is known only from one grotto in Scotland. It has rounded, lumpy spores and only two pigments. After looking at some unusual *C. fragilis* herbarium specimens from Blackwell Mt in Manning Park, Adolf and Oluna packed up their dissecting microscope and went in search of the odd fragile ferns. They found rugose (wrinkled) spores on ferns with southern exposure, spiny spores from ferns on northern exposures and in the shady area below, hybrid spores that were both rugose and spiny. However the pigments were all the same, instead of showing some differences. Adolf concluded things were in a mess!

Chapter Four

Oluna was visiting Colockum Pass in Central Washington when she spotted an *Isoetes* species she had not seen before. Thinking it might be a new species, she was ready to name it after their friend Don Britton. However when Don heard the news he conclued it might be *Isoetes minima*, a very small terrestrial quillwort with spiny spores, that was described from Wilhelme Suksdorf's collection from near Spokane, WA in 1898. In 1922, this species, known at that time from two herbarium sheets, was erroneously included in another quillwort species, *Isoetes howellii*. Later, Oluna and Adolf found *Isoetes minima* in British Columbia near Trail and collected enough material to enable W. Carl Taylor, a North American *Isoetes* specialist, to study the DNA and isozymes. Carl confirmed that *Isoetes minima* is a good species on its own. Several other problems in the quillwort genus still remain unresolved.

Other species for which taxonomic information is confused are: *Equisetum boreale*; *Selaginella sibirica* and *Lycopodium clavatum "integerrimum"*. Adolf suggest if we are interested in these and other mixed up taxonomic mysteries that we should 1) get our feet wet, 2) collect, collect, collect and 3) spend more time in the field. The last sounds pretty good to me!

The Native Plant Study Group meets the 3rd Thursday Sept-May (except December) at 7:00 pm in Room D116, MacLaurin Bldg., UVic. Membership fees are $15.00 annually or a $2.00 drop-in charge.

NATIVE PLANT STUDY GROUP

MARCH 2007

NATIVE PLANT GARDENING FOR FOOD

Want to try your hand at a different sort of food gardening? How about growing some of our native plants for food?

Nothing is easier to grow than nodding onions, they multiple like crazy while supplying lovely pink blooms and delicious small onions. They like full sun to part shade, some occasional watering and a medium rich soil. Onion soup anyone?

All the Montias are edible and great for a salad, *Montia perfoliata* and *M. siberica* are aptly called miner's lettuce. Once you get some plants started they self seed freely (try to stop them!). They grow well at my place in part shade in a compost based soil. However they do equally well in poor conditions.

FIREWEED

Did you know that goldenrod, shooting star and columbine flowers are edible and can add a certain, "je ne sais quoi" to your salad? (Eat columbine flowers in moderation, they add a touch of beauty and a sweet flavour but do not ingest any other part of the plant, it is toxic). Columbine is another plant that will self seed prolifically once you get a plant started. Grow in part shade, in rich soils with supplemental watering. Goldenrod is easy to grow, preferring full sun and some extra watering, give it plenty of room to move though! As a benefit, goldenrod and other from the aster family supply nectar to pollinators and butterlies. It is hard to believe that you would grow enough shooting stars to pluck some flowers for a salad but they come easily from seed, prefer part shade and a rich soil. They do take three or four years to flower from seed. Plan ahead for that dinner party!

I have read that all parts of stonecrop are edible and have a slightly cucumber like flavour, however of the few I tried, most were quite bitter, more like a cucumber that has been grown under stress, perhaps the fresh new leaves are better. It is easy to grow if you supply a very gritty soil with a stoney mulch and water sparingly, if at all (watch for the eggs and caterpillars of the Moss's elfin butterfly, especially in the flowers). Twisted stalk berries are also reputed to have a mild cucumber-like flavour. Grow in part shade in rich conditions and supply ample water.

Use small quantities of alumroot leaves to sharpen the flavour of a bland salad. Alumroot (*Heuchera micrantha*) is our native species of coralbells and is easy to grow and tolerant of a wide range of growing conditions, it grows fast and large in rich soils.

Fireweed leaves and shoots are full of vitamin c and beta-carotene and can be eaten raw or cooked. The entire young plant can be treated like asparagus (crepes?). Once you get fireweed started it is a reliable self seeder and as an added bonus, the flowers are exquisite. Fireweed needs full sun, some extra watering and lots of room to spread.

Tiny monkeyflower (*Mimulus* sp) leaves can be incorporated to add a slightly salty taste to foods. Once established, monkeyflowers will self seed with abandon. They like full sun and a well drained soil..

Elderberry fritters can be made by dipping the flowers of either the red or blue species in a batter and frying. The blue fruit makes an intoxicating elderberry wine. BEWARE! Use only blue fruit, the red is toxic (it might help you to remember: **red is dead**). Elderberry prefers a slightly moist, nitrogen rich soil, in part shade.

Stinging nettle has long been used as a spinach substitute, and is high in vitamins A, C and D. Use only the young plants and check carefully for butterfly eggs and caterpillars as many species (satyr anglewing, red admirable, Milbert's tortiseshell and

west coast lady) use nettles as a host plant. Grow in full sun to part shade in very rich, moist soils. Even if you don't eat them, grow them to add habitat for the butterflies. They spread, so give them LOTS of room. If you are fortunate enough to have a pond or some large planters (kid's swimming pools), grow some cattails. Young cattail shoots can be peeled, then stir fried and are somewhat like bamboo shoots. Apparently the green pollinating flower heads can be treated like corn on the cob. I have read that the pollen can be scraped off, dried and used as a flour. Beware if they are growing in stagnant or polluted water, they will pick up a disagreeable flavour or toxins.
We have some delicious berries in this area. Salal fruit are yummy eaten raw or maybe heated and poured over ice cream? Plant in part shade with some sun for best berry production. Salal plants prefer acidic, humus rich, poor to medium nutrient soils.
Oregon grape makes an excellent and tasty jelly. Try it on a slice of toast, it's a delicious way to start your day. Tall Oregon grape needs full sun, a medium rich soil and is drought tolerant. Dull Oregon grape has equally tasty berries, however it is a lower growing, shade tolerant, drought adapted plant which prefers a medium rich, coarse soil.
Evergreen blueberries and huckleberries both belong to the same tasty family. Evergreen blueberries need full sun and poor to medium, well drained, acidic soils while huckleberries are shade lovers and appear to need humus rich conditions as well.
Enjoy growing something a little different, amaze your friends, feed your enemies and help supply a little more habitat for our wild neighbours.

References:
GL Tilford, 1997. Edible and Medicinal Plants of the West
Klinka, K et al, 1995. Indicator Plants of Coastal British Columbia
Pojar J and A MacKinnon, 1994. Plants of Coastal British Columbia.

VOLUNTEER OPPORTUNITIES

Every Saturday at 1:30 pm: Tour of Merve Wilkinson's Wildwood Forest, Ladysmith. Jay, 250-245-5540
http://www.ecoforestry.ca/WildwoodMap.htm
Volunteer at Swan Lake Nature Sanctuary
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. Contact Agnes at 721-0634 or thelynns@shaw.ca
Beacon Hill Park Ivy Pull
Saturdays (except long weekends), 9 am-Noon 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. from 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.

NPSG WEBSITE

*Have you visited our beautiful new website at **www.npsg.ca**? It has been built through the talented and generous efforts of Valerie Elliott and Stephan Jacob of ID2 Communications (www.id2.ca)*

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.

Native Plant Study group members are required to become members of the Victoria Horticultural Society. Fees are $25.00/yr and help pay for insurance to cover field trips. Send $ to Box 5081 Stn. B, Victoria, V8R 6N3

NATIVE PLANT STUDY GROUP

MARCH 2007

SPEAKER SCHEDULE

April 19
Briony Penn "Mystery Presentation"
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 infuse 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.

EVENTS AND OUTINGS

*For information on environmental activities in our area check the **Green Diary** at*
http://www.earthfuture.com/greendiary/
*Check the **CRD Parks** website for information on their many programs: www.crdparks.bc.ca*
*For info on all **VNHS** trips, call Agnes Lynn at 721-0634 or email her (thelynns@shaw.ca) or check the Victoria Natural History Society at vicnhs.bc.ca No pets please. For longer trips bring lunch and drinks, wear appropriate footwear.*

• *Sat March 17* CRD From 10-2. **Upper Thetis Hike**. Meet at the lakeside parking area.
• *Sun March 18* CRD **Devonian Park** 1-3 Local plants in myth, magic and medicine.
• *Tues. March 20*, VNHS Botany Night:
Wildflowers of Patagonia
Yvonne Rorison with the flora of Patagonia. Swan Lake Nature House, 7:30 p.m.
• *Sun, March 25* 10 am VHNS
Satinflowers of Mount Wells
Meet at parking lot on Humpback Rd

• *Sun March 25* 10-1:30 CRD **Hike Mt Wells** and view the wildflowers. Meet at the info kiosk on Humpback Rd
• *Tues March 27*, VIRAGS **Dryland Ferns** at 7:30 pm with Judith Jones of Fancy Fronds Nursery near Seattle. Gordon Head United Church, 4201 Tyndall
• *Fri March 30* from 1 to 8 p.m. and *Sat Mar 31, 9-4* **VIRAGS Spring Show** at Cadboro Bay United Church, 2625 Arbutus Rd. Plants for sale. Admission is by donation. Non-member exhibitors are welcome. Details: 389-1379 or jacqbradbury@shaw.ca
• *Sat March 31* CRD **Bear Hill Spring Prowl**. 1 pm Meet at the boat launch parking lot off Brookleigh Rd
• *Fri, April 6* VNHS 10 am **Enjoy Good Friday at Mill Hill**
• *Sun, April 8* VNHS 10 am **Celebrate Easter Sunday at Oak Haven and Gore Parks**
Spring wildflowers. Meet at the entrance to Oak Haven Park on Garden Gate Dr., off Benvenuto Ave.
• *Mon, April 9* VNHS 10 am **Easter Monday Leisurely Wildflower Walk up Lone Tree Hill**
• *Tues, April 10* VNHS **The Butterflies of Vancouver Island"** Derrick Marvin of Duncan with butterflies of Vancouver Island. Meet at 7:30 p.m. in the Matthews/McQueen Theatre (Room C-103) in the David Strong Building.
• *Thurs, April 12* VNHS **Evening Stroll up Horth Hill**
Spring wildflowers. Meet at 6 pm in the parking lot
• *Fri, April 13* VNHS 10 am **Thetis Lake Park** Meet at the main parking lot.

NATIVE PLANT STUDY GROUP

MARCH 2007

• *Sun, April 15* VNHS 9 am **Jocelyn Hill**
Join Rick Schortinghuis see the wildflowers esp. the gold stars (*Crocidium multicaule*)
• *Tues, April 17*
VNHS **BOTANY NIGHT** Members' Night
Bring your botanical pictures of BC, North America, or the Mother Earth. Contact Adolf if you plan to contribute: aceska@telus.net Swan Lake Nature House, 7:30 p.m.
• *Wed, April 18* VNHS **Short Evening Walk up Bear Hill** See calypso orchids (Calypso bulbosa) right beside the path. Start at 6:00 p.m. Take the Pat Bay highway north past Elk Lake. Turn left at the traffic lights at Sayward Rd. Follow road around left, then right to continue on Brookleigh along the north side of Elk Lake to Oldfield Rd. Then right from Oldfield on to Bear Hill Rd. which is another right. Continue on Bear Hill Rd. to the parking lot. Please note exact instructions as there is more than one way to get to Bear Hill.
• *Fri, April 20* **Visit to Lake Cowichan Wildflower Reserve** We will visit the pink lilies (*Erythronium revolutum*) as well as stop to explore other areas along the Cowichan River. Meet at Helmcken Park and Ride at 9:00 a.m. to car-pool.
• *Sat & Sun, April 21st and 22nd*, **Swan Lake Native Plant Sale** 10:00 a.m. to 3:00 p.m. Admission price is $3/day, $5 for weekend pass, includes talks. Free to Friends of the Sanctuary.
Sat, April 21
11:30 How to Replace your Lawn with Native Plants with Pat Johnston
12:45 Bugs Building Better Gardens: Earth Friendly Pest Management Techniques with Jessica Dawe, the Bug Lady
2:00 Dealing With Wind and Salt Spray and other Challenges with Pat Boyle,
Sun, April 22
11:00 Landscape Design with Native Plants with Willie McIllvary
12:15 Enhancing Your Enjoyment of Backyard Wildlife with Bill Merilees
• *Sun, April 22* VNHS 9 am
Plants of Uplands Park and Cattle Point
Join Matt Fairbarns to see rare and endangered plants. Meet at the nature sign at the Cattle Point waterfront parking area at 9:00 a.m.
• *Thurs, April 26* VNHS
Meander Around UVic's Finnerty Gardens
Meet at 6:00 p.m. for an approximately 1 hour tour. To find the Chapel, go around the Ring Road and look for Parking Lot 6.
• *Fri, April 27* VNHS
Mount Tzouhalem Ecological Reserve
Enjoy the rare deltoid balsamroot (*Balsamorhiza deltoidea*) as well as other Garry oak meadow wildflowers. Meet at Helmcken Park and Ride at 9:00 a.m. to car-pool. Possible stop at Somenos to see the Garry Oak Preserve there and check out a few birds.
• *Sat, May 5*
16th Annual Camas Day
Beacon Hill Park - Details to come!

SATINFLOWERS

RELATED ORGANISATIONS

Check out these other very informative and educational organizations that deserve our support:
• Victoria Natural History Society: www.vicnhs.bc.ca
• Native Plant Society of BC: www.npsbc.org
• South Van Is Mycological Society: www.svims.ca