menziesia

Newsletter for the NPSBC Native Plant Society of British Columbia
Summer 2003 Volume 8, Issue 3

Enjoyable NPSBC Annual General Meeting planned for Galiano Island

Date: Saturday, September, 13, 2003
Location: Galiano Island, at the South Galiano Community Hall, located 3 km from Sturdies Bay Ferry Terminal

By Susan Bastin

Details for this you-do-not-want-to-miss AGM are coming together. And have we got a great day planned for you!

Note: Non-members are welcome. So bring your Mom, your neighbour, a friend…

Our meeting is scheduled for a 12:30 pm start. We hope to keep it short, finishing no later than 1:30 pm. Ferries arrive from approximately 9:30-11:00 am. This timing should give everyone a chance to visit during a bring-your-own lunch. The Society is happy to provide coffee, tea and dessert.

Note: Please bring your own mug.

At 1:30 pm we will drive to our tour destination. The Galiano Conservancy Association has planned, for us, a tour of two very special sites. The tour will be completed by 4:30 pm, providing adequate time to reach the ferry terminal for those wishing to return home. Our first stop will be Laughlin Lake, which is home to a tremendous diversity of interesting wetland plant communities, resident and migratory birds, several species of amphibians, several endangered species of dragonfly, the red listed painted turtle and a healthy family of beavers. There is an extensive history of disturbance but restoration activities abound.

Leaving Laughlin Lake we will enter District Lot 63. This is a very young plantation forest in the Pebble Beach Reserve. It is the focus of a holistic forest restoration project, aimed at bridging the mature forest tracts by increasing diversity and natural functioning in this simplified, single-storeyed Douglas-fir monoculture.

There is no 'hiking' involved; the entire tour is a simple walk.

Note: Please see additional articles regarding these sites in both this newsletter and on the NPSBC web site <www.npsbc.org>.

Transportation information (i.e. B.C. Ferries schedules) can be obtained on the B.C. Ferries web site <www.bcferries.ca>. Also, there is information regarding schedules on the NPSBC web site.

Note: Reservations for vehicles are strongly recommended. We would like to avoid inundating this lovely little island with heavy vehicle traffic. So, we are suggesting the use of car pools, bicycles and walk-ons. There is potential in Galiano Conservancy members assisting us with their vehicles for pick up from ferries. We will continue to work on these ideas and will post them on our

See "AGM" p. 3

What's inside

Events

Vancouver, Thurs, Sept 18

Vegetable Sheep: Plants from the Land Down Under. Dr. Alan R. Reid PhD, Botanist and Horticulturist for Gardenworks Garden Centres. Alan is a native of New Zealand and is a graduate of the University of British Columbia with a Doctoral degree specializing in biosystematic studies (a big word meaning he was interested in a lot of things!) of the Australasian Gnaphalieae (another big word for little yellow Australian daisies!). After graduation he was a federal specialist in Alberta testing potato crops for export and acted as a testing official for the Government of Mexico. Prior to that he collaborated with Dr. Tod Stussey (University of Southern California and Los Angeles County Museum) to investigate primitive relatives of sunflowers. Currently Alan is completing an inventory of the pine trees of VanDusen Botanical Garden, which will be available as a set of interactive maps on CD-ROM.

This slide show will show several different plant groups from New Zealand; ancient forests, strange ferns, orchids and Vegetable Sheep! Sponsored by the Vancouver Natural History Society's Botany Section. 7:30 pm at the Vancouver Museum, 1100 Chestnut Street, Vancouver.

Vancouver, Thurs, Oct 2

Chasing Spring around the World. Join everyone's favourite TV gardener, David Tarrant, as he fills you in on the behind-the-scenes scoop of his latest project – Spring, a 13-week TV series to be aired on HGTV. David had the "onerous" task of filming the glories of spring as it arrived around the world. Springtime in Paris, London or South Africa takes on a whole new meaning. Cedar Series Lecture in

See "Events" on p. 10

NPSBC workshop: Mosses and Bryophytes

Where: UBC (meet in front of the bookstore)
When: October 4 and 5, 2003, 9 am - 5 pm.
Instructors: Dr. Wilf Schofield and Shona Ellis
Registration Coordinator: Shona Ellis - tel: 604-682-3069, fax: 604-822-6089, e-mail: shona@interchange.ubc.ca
Send registration to: Workshop, 208-1350 Comox St., Vancouver BC V6E 4E1. Make cheques payable to NPSBC.
Cost: Members of NPSBC $60.00, non-members of NPSBC $80.00.
Tentative schedule: Saturday, Oct 4 - Field trip around UBC campus in the morning, identification in the lab in the afternoon; Sunday, Oct. 5 - Field trip to higher elevation (perhaps lab work, depending on weather).
Recommended books and equipment: "Some Common Mosses" by Dr. W.B. Schofield (Royal British Columbia Museum Handbook), "Field guide to Liverwort Genera of Pacific North America" by Dr. W.B. Schofield, hand lens (x10) , appropriate footwear, waterbottle. Please bring your own lunch to this workshop.

"AGM" cont'd from p. 1

web site. Those interested in car-pooling from Vancouver Island, please contact Linda Beare (e-mail: halcyon@telus.net) or Susan Bastin (fax/phone: 250-361-3122). Those interested in car-pooling from the mainland, please contact Frank Skelton (email: feskelton@telus.net, phone 604-228-8879).

Accommodation information for Galiano Island is available through the Tourism BC web site (www.HelloBC.com or phone 1-800-HELLOBC). Additional information is on the NPSBC web site. We have planned the meeting and tour around ferry schedules, allowing people to return home the same day. However, some people are planning a weekend visit. There are many interesting things to see on the island. Some of these are briefly described on the NPSBC web site. There is also information regarding our tour hosts, the Galiano Conservancy Association. Some sites to visit are: the Galiano Conservancy Association Native Plant Nursery; the Pebble Beach Reserve; the Bodega Ridge Reserve; Mount Galiano; The Bluffs; Dionisio Point Provincial Park; Montague Provincial Park; Bellhouse Park and last, but not least, the Hummingbird Pub.

Isn't it time you planned a getaway weekend?

Any other questions regarding this grand event can, hopefully, be answered by Lynn Woodgate (email: rwoodgate@shaw.ca) or Susan Bastin (phone/fax: 250-361-3122, mail: 3132 Earl Grey St., Victoria, B.C. V9A 1W9).

Wanted: new editor for *Menziesia*

Yes, after eight years of editing *Menziesia* on a quarterly basis I've decided to move on. Much has happened since the NPSBC's founding meeting in Victoria so many springs ago and I've learned a tremendous amount about native plants since I put my hand up and muttered, "Yeah, I could do the newsletter." But now other interests have come to the fore in my life and it's time to let someone else assume the task of editing this publication.

I'm really just a gardener with an interest in botany; it would be great to have a genuine botanist take the helm as editor or editorial coordinator. Perhaps someone with desktop publishing skills (the newsletter is currently created using PageMaker software) will come forward to help with that end of things.

If you'd like to know more about what the job entails, please contact me at 1-604-885-9769 or harryh@dccnet.com.

Best of luck to the society and to my successor!

~ Harry Hill, Roberts Creek, BC

Conservation of Laughlin Lake

By Claudia Copley

After three years of fundraising by conservation agencies, Laughlin Lake on Galiano Island is now protected forever. Environment Canada provided the final $63,115 required to protect Laughlin Lake through the Georgia Basin Ecosystem Initiative. This contribution concludes a joint $165,000 fundraising effort by Habitat Acquisition Trust (HAT), Galiano Conservancy Association, and the Islands Trust Fund.

Fresh water is a precious commodity on the Gulf Islands. These are some of the driest places in Canada in the summer and wildlife is drawn to it from all around. In addition, several endangered species make Laughlin Lake home and are dependent on its continued existence, so HAT sees the acquisition of Laughlin Lake as a significant step in the protection of our natural environment.

Laughlin Lake is one of the few lakes in the region that has no human development along its shores. The 11-hectare (27-acre) property provides essential habitat for an abundant and diverse population of birds, mammals and amphibians. As the largest body of freshwater on Galiano Island, Laughlin Lake is important in a region that has only 1% of its area covered by freshwater ecosystems.

Galiano Conservancy Association now owns the Laughlin Lake property. The property will be further protected by a conservation covenant held jointly by Habitat Acquisition Trust and the Islands Trust Fund. A draft management plan for the property has been developed to guide the long-term use and protection of the site.

Individual donors gave a total of $45,885 towards the purchase. Donations were also received from Mountain Equipment Co-op, the Barraclough Foundation, the Burton Charitable Foundation and the Kaatza Foundation. The Real Estate Foundation of British Columbia supported the development of the management plan.

Restoration Work at Laughlin Lake

By Odin Scholz

Ecological restoraton efforts at Laughlin Lake have taken a big step forward with the recent installation of a standpipe. The pipe will allow the North Galiano Volunteer Fire Department emergency access to water from the lake. The standpipe increases the efficiency of filling up the water

See "Laughlin" on p. 9

Workshop participants get high studying BC grass

By Vanessa Pasqualetto

This 2003 May long weekend saw a gathering of Poaceae "die-hards" at the NPSBC's grass identification workshop at Camosun College in Victoria. The two-day workshop was organized and presented by two of the society's directors - Perry Grilz and David Blundon.

Of the 24 participating in the weekend's educational activities, the majority of the group had a background in biology, forestry or conservation, but by no means was this a prerequisite. The workshop objectives consisted of familiarizing each budding grass-enthusiast with the vegetative and floristic characteristics of the Poaceae and its common tribes (*Plants of Coastal British Columbia*) and groups (*Illustrated Flora of British Columbia*), and honing our field identification skills focusing on the grass species of coastal British Columbia.

One and a half days were spent in the lab peering at grass bits through a dissecting scope, learning, or relearning, and organizing the pertinent terminology and structures – rhizome, sheath, auricle, ligule, spikelet, floret, glumes, lemma and palea. Soon we were ready to break free and explore the grasses on the outside, eager to test our new-found knowledge while distinguishing bromes (bidentate awned lemmas) from fescues (plain-old awned lemmas!). Some are quick and easy, such as the bulbous bluegrass (*Poa bulbosa* ssp. *vivipara*) while others require more of an exhaustive effort!

Dave Blundon examines a grass specimen collected by a workshop participant.

Of the 78 genera and 253 grass species present in BC only a handful of the ones covered in the workshop is native, a stark reminder of our impact on the natural environment and the virility of many invasive plant species, particularly Eurasian grasses.

We closed the workshop with a walk through a once-restored, but currently overrun, Garry oak habitat adjacent to the college, followed by a hike at the Swan Lake Christmas Hill Sanctuary. Both localities provided us with ample grass material and we even uncovered a Garry oak grass species, *Elymus glaucus* (blue wildrye), battling tenaciously for its own rightful place in the meadow. ✍

Special thanks to Susan Bastin for providing live specimens and many of the grass samples used in the workshop.

Vanessa Pasqualetto is member of the NPSBC Development, Education and Research committees.

Looking at the class from left to right - front row: Dave Blundon, Anna Colangeli, Nicole Ayotte, Emily Gonzales, Marta Donavan, Vanessa Pasqualetto, Geri Poisson, and Kent Anders; second row: Liis Jeffries, Linda Young, Gary Williams, Heidi Guest, James Miskelly, Nicole Pressey, Moira Greaven, Phil Henderson, and Mark van Kluenen; back row: Paul Sanborn; Leslie Glover, and Andrew Burkinshaw. Missing from picture: Robin Annschild, Ray Travers, Odin Scholz, Leslie Phillips, and Perry Grilz (photographer).

Photos: Perry Grilz

E-Flora BC update

By Brian Klinkenberg, Ross Waddell, and Fred Ganders

The NPSBC E-Flora BC project has been a going concern over the last few months, with many active volunteers helping out in the areas of fund-raising, computer programming and data entry. The project is currently guided by the NPSBC Research Committee, which acts as a Steering Committee for the project, and is a wonderful partnership between the NPSBC, the UBC Herbarium and the Spatial Data Lab in the Department of Geography, UBC. Research Committee members and partners are working on E-Flora in various capacities, including fund-raising, computer programming, development of our image bank and generally just promoting the project.

The Steering Committee is now in the midst of active fund-raising, and committee members Fred Ganders and Vanessa Pasqualetto have been completing and submitting grant applications to a variety of funding agencies, including Shell Canada, Mountain Equipment Co-op and the Canada Trust Friends of the Environment. There are many more to be tackled, so anyone interested in helping with this initiative would be very welcome. The good news as of this printing is that Shell Canada has just awarded E-Flora a $5000 grant! Congratulations to Vanessa for a very successful application!

Because of the attractive public and educational nature of the project, we have also had several key donations come in to the project recently. One of the most important offers of help has come from Gerald Carter. Gerald is a professional computer programmer, and his company Suresoft Development Corporation has offered to assist us with the programming needed to get E-Flora up and running. Gerald brings a team of affiliated computer programmers with him who would like to embrace E-Flora as a suitable educational, conservation and research initiative that they as a team can support. Gerald's team members have many years of experience in programming and web page development, and they would like to put their skills to use in helping E-Flora become a reality. They will be working with our existing programming and mapping team which presently consists of Rachel Wiersma, Ingrid Huang, Jose Aparicio, Paul Digney, Teresa Hanson, Greg Burroughs and Brian Klinkenberg.

We should also point out the very valuable contribution of Paul Digney to the development of our mapping and programming needs for the project. Paul is a former IBM systems expert who has been donating his time, assisting us with formulating our programming needs and understanding what it will take to accomplish these. Paul has been working closely with Brian and the mapping and programming team for the last several months, as well as talking with the herbarium team to get a sense of what the data encompass and what we would like to accomplish. This has been a tremendous help in the development of the interactive mapping, which has been initiated and developed by two BCIT programming students: Rachel Wiersma and Ingrid Huang. Rachel and Ingrid have now completed their BCIT course, and have completed the first steps in developing the programming for our interactive distribution maps, and have designed the "look" of the maps. They plan to continue with E-Flora as volunteers for the next few months to continue working on the map development.

Another very important area where contributions have been coming in to E-Flora is in the development of our image bank—photos that can be used on the E-

Photo: Frank Skelton

Fairyslipper/Calypso bulbosa: Orchids will be the pilot group of plants for Phase Two of the E-Flora BC project.

Flora species pages. The image bank is being coordinated by Frank Skelton and Gary Lewis, who will be assisted in setting up the database for it by Greg Burroughs. One of the most important components of the image bank is the contributions by photographers, and we have been very lucky to have several expert photographers come forward to offer both photos and assistance in the development of the image bank. These include David Blevins, Gerald and Irmgard Carter, James Biro and, just recently, Paul Pratt. The image bank will be critical for public identification of plants species, and in providing some insight into the habit and habitat of our BC species. The first set of images to go up will be for the orchid pilot project.

Significant partnerships have also been developed this year between E-Flora BC and the BC Ministry of Forests (MOF), and the BC Ministry of Sustainable Resource Management (MSRM). The MOF will be providing us with major components of the BEC (Biogeoclimatic Ecosystem Classification) database for use by E-Flora. This will provide us with important ecological information that will be called up when a species search is carried out. In addition to this ecological data, the MSRM will working with us to develop PDF files for all the information contained in the *Illustrated Flora of BC*, and this will allow us to access critical information on species status, distribution, and descriptions as well as taxonomic keys. These keys will be linked to directly from each E-Flora species' page. This is a tremendous donation of data and a partnership which allows us to embrace the work done by many of BC's outstanding botanists, including George Douglas, Del Meidinger, Jim Pojar, Jenifer Penny and many others.

The UBC Herbarium has recently added to their donation to E-Flora and are donating a summer student position to work entirely on specimen data entry to help speed up our data entry needs for E-Flora. They have also provided new software for the E-Flora computer in the herbarium and technical assistance in setting up the computer and software. On a parallel note, the UBC Department of Geography has donated the Internet Mapping Software for use in the project, and are providing internet access for E-Flora in order to facilitate the development of the biogeography databases.

We are presently working on developing additional partnerships and encouraging donations of many kinds to the project. There are several other key cooperative ventures being worked on at present which we will report on in the next issue of *Menziesia*. We hope to encourage extensive involvement in E-Flora by various groups and agencies, all aimed at making this project an excellent example of a comprehensive, interactive, public initiative. If you are interested in helping out, or donating to the project, let us know. We could use all the support we can get! Contact us at eflora@geog.ubc.ca ✍

Brian Klinkenberg is Associate Professor in the Department of Geography, UBC; Ross Waddell is Corresponding Secretary for the NPSBC; and Fred Ganders is Director of the Herbarium, UBC.

But these plants look so nice and green and innocent...

By Pat Boyle

Yes, some plants we have, or have had, in our gardens look wonderful, but they have a more sinister side to them. A decade ago, I remember attending a Calgary Horticultural Society meeting, and being told that purple loosestrife (*Lythrum salicaria*), a Eurasian native plant, was choking waterways from Ontario to the Rockies. We gardeners were urged to pull our lovely loosestrife, and the sooner the better! I had seven of these plants in my perennial border. What could replace those purple spires at the back of the border?

Well, to be honest, replacements were easy to find – a few new monkshood (*Aconitum* ssp.), false sunflower (*Helianthus* ssp) and sneezeweed (*Helenium* ssp) – and the garden looked just fine. In fact, I thought, finding the right plant for the right place and tackling design challenges are some of the reasons we love gardening.

As Vancouver Island gardeners, we now face similar plant and design challenges from several species brought here a century ago by European settlers. In their new northwest environment, free of former disease or predator controls, these introduced plants have become invasive, just like loosestrife.

Victorians are always eager to show visitors the fields of blue camas (*Camassia quamash*) beside the sea, and the fawn lilies (*Erythronium oregonum* & *E. revolutum*) blooming under Garry oak trees at Beacon Hill Park. These remnants of a formerly vast ecosystem define, in part, our spectacular natural environment along the southern and eastern coasts of the Island. Only five percent of Garry oak woodlands, home to 694 plant species and sub-species, however, remain. Invasive,

When the leaves on English ivy turn from triangular to round, look out - it's going to flower, fruit and spread.

introduced species, particularly Scotch broom (*Cytisus scoparius*), English ivy (*Hedera helix*), daphne laurel (*Daphne laureola*), gorse (*Ulex europaeus*), Himalayan blackberry (*Rubus armeniacus*) and orchard grass (*Dactylis glomerata*), are degrading the remnants of this exceedingly diverse ecosystem.

Our forests, too, are getting smothered, particularly with English ivy, daphne laurel and holly (*Ilex aquifolium*) in shaded areas, and Scotch broom, common hawthorn (*Crataegus monogyna*), gorse and blackberry along sunnier edges. A walk through parks like Francis King, Swan Lake, Mount Douglas, Uplands, Witty's Lagoon or Goldstream will confirm the rampage. Our fawn lilies, camas, columbine (*Aquilegia formosa*), shooting stars (*Dodecatheon hendersonii* & *D. jeffreyi*), and trilliums are getting covered by ivy; the native mahonias, beloved by gardeners around the world, are being displaced. The enviable diversity of our forests and woodlands is being threatened.

So what can we, as gardeners, do to help? Well, for starters, we can pull or remove the offending plants in our gardens and along our fences and roadsides. In and around Victoria, English ivy is the most visible culprit among the invasive plant species. For years, gardeners have used it as a groundcover. If ivy is contained and trimmed regularly, growing only triangular leaves, it presents no problem. But it is a very aggressive plant, and only conscientious tending will keep it under control. Left alone for only a year, ivy will quickly start to twine up trees and crawl under, over or through fences. As soon as ivy reaches its adult phase, characterized by round leaves, flowers and fruit, it becomes a real problem. Birds will feed on the fruit and drop the seeds in remote Garry oak meadows and forests. The seeds will germinate, and the plant will grow with its usual vigour. It will climb more trees, crawl over native plants, reach the fruiting stage, and continue its invasive cycle.

Broom is another pervasive plant, particularly in sunny Garry oak meadows. There it sucks up scarce moisture and shades sun-loving native plants like camas, shooting star, spring gold (*Lomatium utriculatum*) and western buttercup (*Ranunculus occidentalis*). At Government House in Victoria, thanks to the efforts of volunteers, broom has been almost entirely eliminated in the woodlands, and meadow plants are again thriving. On the Saanich peninsula and in the Cowichan valley, during the winter "weeding season", communities have organized weekend "broom pulls". Volunteers lop off large broom at ground level, or lever them out with a weed wrench, while the smaller plants are hand-pulled. But broom has a huge seed bank, which means that regular checking for seedlings is essential for up to a decade after removal of the adult plants.

How can we find out more about ivy, broom and other invasive plants? Here in Victoria, we can access information from the locally based Garry Oak Ecosystem Recovery Team (GOERT), which has produced fact sheets on the most common invasive species, and provided a Decision Support Tool for the control or removal of many of these species. You can go to GOERT's web site, www.goert.ca, then select "Reference". GOERT will distribute the same information in a manual, which will soon be available in the VHS library.

As gardeners, we love the outdoors, and appreciate the beauty of plants. We also understand that our northwest native plants are precious not only to us, but to gardeners around the world. The states of Washington and Oregon have declared English ivy a noxious weed, and the municipality of Lake Cowichan has passed a bylaw on broom. The municipality of Saanich is working on a noxious weed bylaw right now. The big stick is looming. In a spirit of community and environmental awareness, we can each, voluntarily, do our part in getting rid of invasive species and keeping our magnificent wild landscape, with its unique plants, as part of our northwest heritage. ✍

Patricia Boyle is co-chair of the NPSBC Research Committee.

Drawing: Christopher Brayshaw, *Trees and Shrubs of British Columbia*

Solidago canadensis: a North American native plant invading Europe

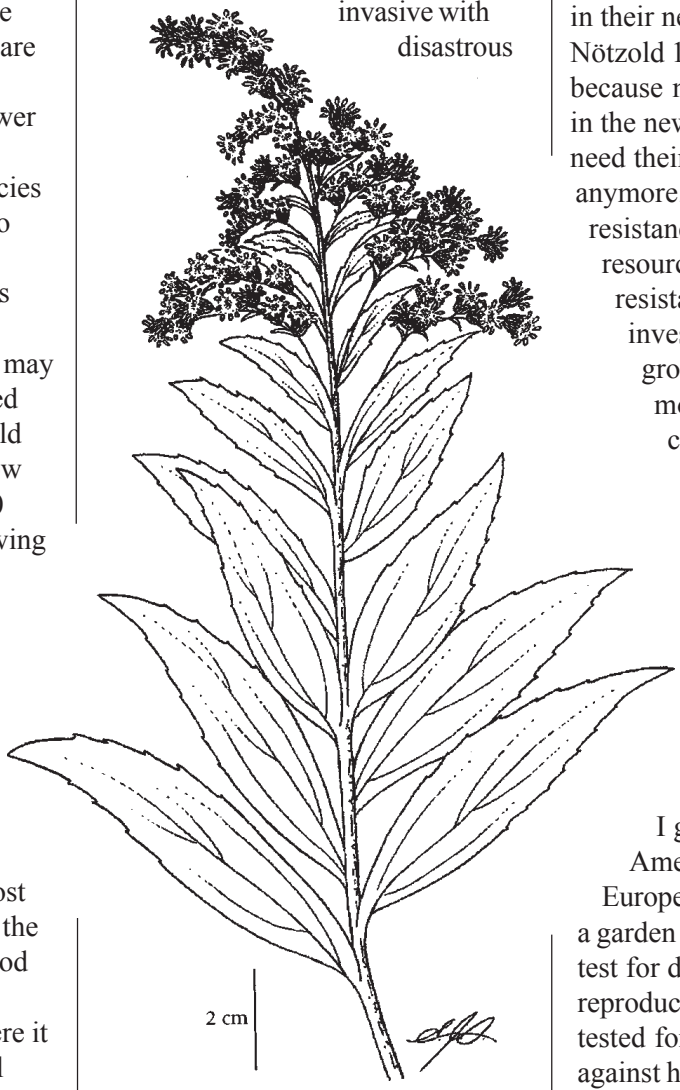
By Mark van Kleunen

Most of you will know about the threat that alien invasive plants such as Scotch broom (*Cytisus scoparius*) and English ivy (*Hedera helix*) pose to the native flora and ecosystems of British Columbia. However, it might be less generally known that some of the plants that are native here are less innocent than they look and are invading other continents. For example, the yellow monkey-flower (*Mimulus guttatus*) has been introduced as an ornamental species from western North America into eastern North America, New Zealand and Europe. The species has escaped from gardens into natural riparian habitats where it may impede stream flow. In the United Kingdom there has been a fivefold increase in the range of the yellow monkey-flower during the last 20 years (Truscott et al. 2002), showing that this species is on its way to conquering Europe.

The yellow monkey-flower, however, is still relatively innocent when compared to the Canadian goldenrod, *Solidago canadensis*. This species was introduced into Europe in the 17th century and is now recognized as one of the most aggressive weeds in Europe. As the story goes, the Canadian goldenrod was first planted in the botanical gardens of London, and from there it was distributed to other botanical gardens and nurseries throughout Europe. Now the species can be found from northern Italy to southern Scandinavia along roadsides and railroads and in old fields, and it still has not reached its potential range. Moreover, the species has also been introduced into Asia and Australia.

Although many species have been introduced from one continent to another, only a small fraction of them have become invasive with disastrous consequences for native ecosystems. It is, however, still unpredictable why some species become invasive and others not. Based on the observation that many invasive species appear to grow taller in their invasive ranges than in their native ranges, it has been hypothesized that these plants may be so successful because they lack natural herbivores and pathogens in their new ranges (Crawley 1987). This has inspired other people to also introduce natural herbivores and pathogens as biological control agents. Based on this so-called enemy release hypothesis other biologists hypothesized that invasive plants may have undergone evolutionary change in their new range (Blossey and Nötzold 1995). They argued that because natural enemies are absent in the new range, plants there do not need their resistance mechanisms anymore. Moreover, because resistance mechanisms cost resources, plants that lack resistance mechanisms might invest more resources into growth and the production of more offspring. As a consequence plants with low resistance but high growth rates are expected to take over in the new ranges.

I tested this so-called EICA (evolutionary increased competitive ability) hypothesis for the Canadian goldenrod (van Kleunen and Schmid 2003). I grew plants from ten North American (native) and nine European (invasive) populations in a garden in Zurich, Switzerland to test for differences in growth and reproduction. In addition, I also tested for differences in resistance against herbivory. To do this, I simulated herbivory on half of the plants by clipping half of the leaves and by spraying them with the



Canadian goldenrod has stormed the ramparts of Europe.

Drawing: *Illustrated Flora of British Columbia, Volume 1*

chemical jasmonic acid which induces similar responses in plant as herbivory by insects.

To my surprise, I did not find a higher rate of growth and reproduction for European plants compared to American plants, but that rather the reverse was true. European plants grew less tall and had smaller inflorescences than American plants. Moreover, plants from both continents did not differ in resistance to the simulated herbivory treatment. The lower growth rate and reproduction of European plants to that of American plants suggests that European plants may have suffered from inbreeding when the population was still small shortly after the species arrived in Europe. This makes it even more remarkable that the Canadian goldenrod is so invasive in Europe. Probably the life history characteristics of the Canadian goldenrod including its tall stature, the production of a large number (> 10 000) of seeds and perennial rhizomes, have pre-destined this species to be a successful invader. ✍

Literature

Blossey, B., and R. Nötzold. 1995. Evolution of increased competitive ability in invasive nonindigenous plants: a hypothesis. Journal of Ecology 83:887–889.

Crawley, M. J. 1987. What makes a community invasible? Pages 429–453 *in* A. J. Gray, M. J. Crawley, and P. J. Edwards, editors.

Colonization, succession and stability–the 26th symposium of the British Ecological Society held jointly with the Linnean Society of London. Blackwell Scientific Publications, London, UK.

Truscott, A. M., L. Newell, and P. E. Hulme. 2002. Distribution of monkey flower–*Mimulus guttatus*–along the tributaries of the River Dee, Aberdeenshire. Page 9 *in* Abstracts of the British Ecological Society Annual Meeting at the University of York, UK.

Van Kleunen, M., and B. Schmid. 2003. No evidence for an evolutionary increased competitive ability (EICA) in the invasive plant *Solidago Canadensis*. Ecology *in press*.

Invasion of the monkey-flowers...

I am planning a project on evolutionary genetics in alien plants. The study species is the yellow monkey-flower, *Mimulus guttatus*, which is native to western North America, and has been introduced into Europe, New Zealand and eastern North America. For the project, I need seed material from populations in the native and introduced ranges. I want to ask for your help in collecting seed material. Depending on the latitude and environment, *Mimulus guttatus* produces seeds between June and September.

Please, e-mail me at the address below if you know a population of *Mimulus guttatus* in western North America, eastern North America, Europe or New Zealand of which you could collect seeds. I can then send you more precise instructions on how to collect the seeds and which information I need about the population.

I would also be glad if you would know people that would be able to collect seeds from outside British Columbia.

Thanks for your help,

Dr. Mark van Kleunen
Department of Forest Sciences
University of British Columbia
2424 Main Mall
Vancouver BC V6T 1Z4
Canada
Tel: 001 604 822 5841
E-mail: vkleunen@uwinst.unizh.ch

"Laughlin" cont'd from p. 3

truck and eliminates the fire truck having to drive through Greig Creek water to fill up at lakeside. Restricting vehicles from accessing the lake edge will greatly reduce impacts on the land and water. Trail access only also opens the door to further ecological restoration. In conjunction with standpipe installation, a quarter hectare of ecologically valuable riparian habitat has undergone some direct restoration treatment.

The bulk of the treated land had been seriously compacted due to past land use. Severe compaction limits or prevents vegetative growth, which hinders any beneficial soil development and holds ecological values at a minimum. With the use of an excavator compacted soils were broken up to improve conditions for vegetative growth. Large pieces of wood (coarse woody debris) were added to the site to provide instant structure to an otherwise barren scape. The addition of logs and stumps to the site increases the appeal of the site to insects, amphibians, birds, small mammals and some plant species. The wood will aid in the retention of moisture on the site and also help build the soil as it breaks down over time. Native plant species were salvaged from the standpipe installation site and, along with other plants from the Native Plant Nursery, were replanted on the site to help speed up the healing process. Grass and mulches will also be employed as part of the restoration strategy.

Restoration efforts required the partial excavation of the old access road, at the point where the creek used to cross the road. A foot bridge will be installed over this section of trail before next spring. Please do take note of our efforts at the site and watch it grow over time. ✍

The Plant Centre at the University of British Columbia's Botanical Garden

By Hugh Daubeny

One of the many highlights of the UBC Botanical Garden is the Plant Centre, attached to the "Shop in the Garden" at the main entrance. In fact, the Centre was described in the *Globe & Mail* as one of the "best little nurseries in B.C." Next time you are on the campus, stop by the Centre to see the wide range of perennials, shrubs, trees, and grasses offered A section of the Centre is devoted to native plants, some of which have been propagated by the Friends of the Garden, the "FOGs". Others have been obtained from speciality nurseries in the coastal area. As I write this, in early May, tree species available include *Juniperus scopulorum* (Rocky Mountain juniper), *Arbutus menziesii* (arbutus), *Acer circinatum* (vine maple), *Rhamnus purshianus* (cascara) and *Quercus garryana* (Garry oak). Among the shrubs are *Rosa nutkana* (Nootka rose), *Oemleria cerasiformis* (Indian-plum), *Potentilla fruticosa* (shrubby cinquefoil), *Ribes sanguineum* (red-flowering currant), *Vaccinium parvifolium* (red huckleberry), and *Amelanchier alnifolia* (saskatoon).

Perennials include *Erythronium oregonum* (white fawn lily or Easter lily), *Trillium ovatum* (western trillium), *Lupinus arcticus* (Arctic lupine), *Saxifraga ferruginea* (Alaska saxifrage), *Sedum oregonum* (Oregon stonecrop), *Tellima grandiflora* (fringecup), *Aruncus dioicus* (Goat's-beard), *Allium cernuum* (nodding onion), *Arenaria macrophylla* (rosy pussy-toes), *Sisyrinchium littorale* (shore blue-eyed grass), and *Viola glabella* (yellow wood violet). Species particularly appropriate for use as ground cover include *Dicentra formosa* (western bleeding heart), *Dryas octopetala* (white mountain-avens), *Cornus unalaschkensis* (formerly *canadensis*) (bunchberry or dwarf dogwood), *Smilacina stellata* (star-flowered Solomon's-seal), and *Gaultheria shallon* (salal). As the season progresses other species will be available, including some that are relatively rare. Efforts are made to always have a range of species adapted to different environments from moist humus-rich woodland shade to dry sandy or gravelly open sun.

The native plants have been propagated from seed or from cuttings. Never are they taken directly from the wild unless destruction of the habitat is anticipated. This year such a situation occured with Westen Trillium which was flourishing on a site destined to be bulldozed for construction of a housing development. Mature flowering plants were rescued (or it might be appropriate to say "repatriated") by the owner of a small nursery in the Fraser Valley. Subsequently these came to the Centre and were a particularly popular item in the days leading up to Easter.

Cultivars selected by the garden staff from native populations are often available. These include 'Purple Haze' penstemon (*Penstemon fruticosus*), 'Thunderbird' evergreen huckberry (*Vaccinium ovatum*), 'White Icicle' flowering currant (*Ribes sanquineum*), and 'Vancouver Jade' kinnikinnick or bearberry (*Arctostaphylos uva-ursi*). Of course, the Centre sells other UBC introductions,, including 'Blue Ravine' clematis and the popular 'Summer Snowflake' viburnum, neither of which were selected from native populations.

If any of you have plants you might wish to market at the Centre, please contact me by e-mail at hdaubeny@telus.net or by phone at 604-731-8537, or phone the Botanical Garden Office at 604-822-3928. ✍

"Events" cont'd from p. 2

Floral Hall at Vandusen Botanical Garden at 8 p.m. Tickets available in advance from the administration office as well as at the door. Members $10, non-members: $15. Members only: Purchase the series of 3 for $24.

Vancouver, Thurs, Nov 6

Greening the City, Cedar Series Lecture, with Cornelia Hahn Oberlander OC. In this presentation she shows through her research the challenges and rewards of "greening" urban areas to create healthy spaces that bring pleasure throughout the seasons. 8 pm in the Floral Hall at VanDusen Botanical Garden. Tickets available in advance from the Administration Office as well as at the door. Members $10, non-members: $15 Members only: Purchase the series of 3 for $24.

Whenever I used to see the pictures of Adam, I wondered what would have happened if he had worn a bigleaf maple. Eve would never have been tempted and everyone would be in the Garden of Eden instead of just us lotus eaters on the Coast.

~ Briony Penn,
A Year on the Wild Side

Diane Douglas named honorary lifetime member

By Ross Waddell

At its Annual General Meeting in September 2002, the Native Plant Society bestowed a much deserved honorary lifetime membership on Diane Douglas (formerly Gertzen). Beginning in 1994, Diane served as the principal organizer involved in the formation and development of the Society and she was one of its founding members. Though she would be modest about the impact of her efforts, Diane was working behind the scenes through each and every step of the development of the Society leading to its formal establishment in 1996.

Diane grew up in Alberta and she often reflects on the prairie experience and its influence on her interest in native plants and habitats. She obtained a Bachelor of Science degree, majoring in Agriculture and then worked for the Alberta Ministry of Agriculture at Brooks, teaching horticulture for a time at Olds College. Together with her family, she later moved to Ontario where she obtained her Master of Education degree at Algonquin College in Ottawa.

Diane returned to Western Canada and worked for a short time at the BC Ministry of Agriculture before moving to the Ministry of Forests in 1992. She became Culturist, Special Projects with the Silviculture Branch, working with the Christmas tree industry and its various associations through the 1990's. Don Summers, her current manager at the Ministry's Tree Improvement Branch, notes that her clients still rave about her contributions during her time there.

She had a close working relationship with the Ministry's

Photo: Frank Skelton

nursery and seed orchard extension specialists, organizing many successful workshops and other extension activities. In the mid 1990s, native plants were added to her portfolio. The initiative to develop a public society representing those who work with, study and enjoy native plants and habitats was facilitated by Diane through the Ministry of Forests with the support of the BC Tree Seed Dealers Association.

Diane was the principal organizer of the major events that led to the etsablishment of the Society: the Native Plant Forum which attracted 300 people to Vernon in 1995; the Inaugural Meeting of the Society in Abbotsford in 1995; and the First Membership Meeting in Kamloops in 1996. She also organized meetings of the steering committee for the new society which were held at VanDusen Botanical Garden in Vancouver; and she coordinated the development of the constitution and registration of the Society as well as the establishment of the membership database.

During the first years of the Society, Diane organized immensely popular workshops on seed collection and native plant propagation at Ministry of Forests and Agriculture Canada research stations. These workshops were an excellent introduction to the native plant industry in the province and from there a broader community of interest developed. Diane's work promoting seed research and extension culminated in the publication in 2001 of the "Native Woody Plant Seed Collection Guide for British Columbia" which she co-authored with Mishtu Banerjee and Kim Creasey.

More recently, Diane has served on the Development Committee for the Society and on the organizing committee of the Pacific Northwest Native Plant Sale at the UBC Botanical Garden. Douglas Justice, first president of the Society and now Associate Director of the Botanical Garden, comments that Diane's excellent relationship with the nursery industry ensured that the event would be superbly organized and a success for the participants. Diane also currently serves her professional community as secretary for the British Columbia Institute of Agrologists, Vancouver Branch.

The establishment of the NPSBC Native Plant Society of British Columbia would not have happened without the efforts of Diane Douglas and the Society wishes to thank her for building the foundation on which the organization rests. Though she has been honoured for what seems a lifetime's worth of service (in reality only a decade), the Society looks forward to sharing in Diane's interest and commitment to British Columbia's native plants and habitats for many years to come. Thanks Diane! ✍

Manual published for growing several herbaceous species of the BC northern Interior

By Carla Burton

The Spring 1998 issue of *Menziesia* featured an article entitled "Making native plant seed available for mainstream land management," which described an FRBC-sponsored research project initiated by Symbios Research & Restoration (of Smithers, BC). In that article, my partner and I described our program to develop reliable supplies of herbaceous native plant seed for use in restoration, by growing these plants under cultivation and harvesting the seed they produce. Although there is still much work to be done to finally achieve our goal of having native seed reliably available at a reasonable cost, much valuable information was gleaned from this research. As a result of our research and the work of others, we are seeing an increased use of native plant materials for revegetating disturbed and degraded lands in northern British Columbia and elsewhere.

In order to share what we have learned and to further encourage the use of native plant species, we have recently completed a manual entitled *A Manual for Growing and Using Seed from Herbaceous Plants Native to the Northern Interior of British Columbia*. This manual first provides general guidelines for the propagation and cultivation of herbaceous plants indigenous to the northern Interior of British Columbia, with information on harvesting, cleaning and storing the seed. It also provides guidelines for designing seed mixtures, and selecting suitable application rates for using native plants in the revegetation of disturbed soils.

Most of the manual consists of species by species information on the biology, husbandry and use of 31 herbaceous plant species, including eleven grasses, four sedges and rushes, four legumes, six composites, and six representatives of other plant families. Almost all of these species are perennials, with individual plants expected to persist in fields and in the wild for three or more years. Maps of the range of each species in northern British Columbia are provided, as are photographs of their growth habits and seeds. Information is given on growth form, site preferences, seed size, germination behaviour, techniques for seed production, harvesting and seed processing, and considerations for use in revegetation. It is expected that these principles and techniques will apply to work with other native herbaceous species as well.

Though based on several years of research and experience, as supplemented by the published literature, this manual must be considered a first approximation of the knowledge needed to grow and use these plant species. Growers and revegetation specialists who work with these plants are encouraged to try different techniques, to monitor their effectiveness, and to record the results. It is hoped that updates can be posted on the worldwide web.

Cost of the manual is $25.00. If you would like to order one please e-mail us at symbios@bulkley.net and we'll ship one out to you. Cheques should be made payable to Symbios Research and Restoration and mailed to Box 3398, Smithers, B.C. V0J2N0. Although the manual describes species native to the northern Interior of British Columbia, many of these species reported are found throughout much of British Columbia and the rest of North America so the manual can be a useful guide for people doing restoration work across a very broad area. ✍

Review

Geology and Plant Life: The Effects of Landforms and Rock Types on Plants
Arthur R. Kruckeberg
University of Washington Press, Seattle, 2002.
ISBN 0 295 98203 9
304 pages, hardbound, US$35.00

Reviewed by Paige Woodward

Dr. Kruckeberg is of course professor emeritus of botany at the University of Washington; many of us have hiked with him, or own dog-eared copies of his *Gardening with Native Plants of the Pacific Northwest* and *Natural History of Puget Sound Country.*

In this latest book, Dr. Kruckeberg says that geology is the main influence on what plants live where. "The plant world exists by geological consent, subject to change without notice" ; "Geologic control of the biosphere is primary."

This bald assertion may seem rash at first but it is more like special pleading. Dr. Kruckeberg does not dismiss plants' interaction with climate, time and other living creatures: "I fully appreciate the seamlessness of ecosystems." He is simply exasperated by how ecologist whippersnappers skimp geology in their studies of fashionable things like reproduction, symbiosis and community structure. Dr. Kruckeberg has spent decades studying the "geology-plant interface," as he calls it; he has coined the term geoedaphics to

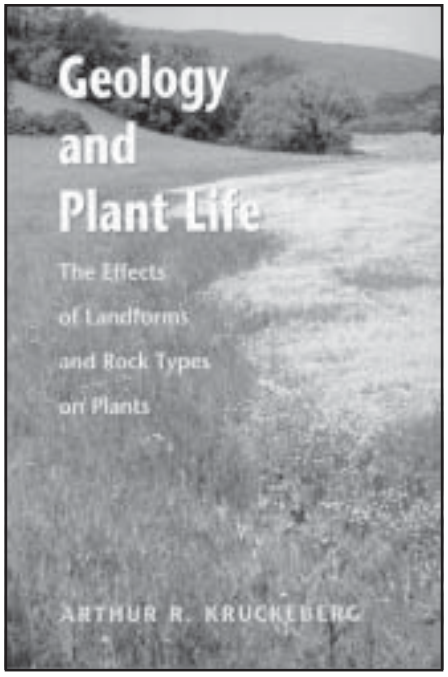
describe the relationship; and in this book he lays before us what he has learned.

The book richly repays reading, but you will have to work at it, for the writing is exhaustive in some places, thin in others, repetitive, full of jargon, and occasionally circular. What is wonderful is that much of this material is new, or familiar but seen in new ways. What is trying is that it hasn't yet settled into simplicity.

Let's get the word geoedaphics out of the way first. *Edaphics* are "soil effects." *Geoedaphics* includes the effects of not merely soil but all inanimate geological processes, landforms and rocks. *Geoecology,* another recent word, seems to cover most of these meanings, but *geoedaphics* includes even deep time, volcanic eruptions and continental drift.

Now how is geology primary? Like so: First came the planet, then came life. The planet's skin is rock. Most soil is made from rocks. Big landforms — vast plains, mountain chains and so on — define regional climates. Within regional climates, smaller landforms and soil types determine what plants grow where. Geological diversity promotes floristic diversity. Diversity promotes speciation. Whenever your brain is about to rebel against geological hegemony, Dr. Kruckeberg drops in another soothing acknowledgment that all is really one, he's just highlighting geology. "The environment is holocoenotic [interdependent], even as I make a case for the primacy of geoedaphic influences."

The book covers so much ground – the entire planet and all the plants upon it – that no review can summarize it fairly. As a hiker and a grower of plants, I most value Dr. Kruckeberg's discussion of plants and soils, especially plants and exceptional soils such as serpentine and limestone. Dr. Kruckeberg's lifetime study is the "serpentine syndrome"— the unique gestalt of serpentine soils and life forms — so



it is not surprising that the sections here on serpentine are fascinating.

Serpentine soils come from igneous rocks rich in heavy metals such as iron, magnesium and nickel. Often the molten rock wells up where tectonic plates meet. Sometimes it squeezes up between other rock formations, producing a patchwork of serpentine "islands". Serpentines are toxic to most plants, but havens for plants that can adapt to them, such as *Darlingtonia californica,* the rare pitcher plant endemic to serpentine seeps in California and Oregon. But some plants are equally happy on serpentine and off it. These are called *bodenvag* ("soil wanderers" in German). *Typha latifolia* (cattail) is not native to mine tailings but it will grow there. Some species called *bodenvag*, however, are not *bodenvag* at all. They have divided genetically into races adapted to serpentine and non-serpentine soils, it's just that they haven't been divided taxonomically. An example Dr. Kruckeberg mentions is *Adiantum aleuticum*, the western maidenhair fern.

The book is filled with what were probably magnificent colour photographs of geoedaphic phenomena around the world: karst formations in Cuba, China and Jamaica; the Red Mountain serpentine area of New Zealand, which has been preserved pristine.... How much these images might have helped the exposition! It is a real grief that they are all black and white, and printed on paper so soft that crucial detail is lost.

Though many of the plant-geology relationships in this book are in western North America, British Columbia is scarcely mentioned. We are fortunate that Dr. Kruckeberg was interested in investigating plant-geology relationships so deeply. Now I long for enlightenment about the magnificent geology of British Columbia and its effects on our native plants. ✍

Paige Woodward is co-owner of Pacific Rim Native Plant Nursery (www.hillkeep.ca)

As we had hoped, things are exquisitely beautiful. The mountains still wear fresh snow. Scarlet columbine and red and orange Indian paintbrush cover the open places. Beds of pink Calypso orchids–"fairy shoes"–are scattered through the woods. There are violets, yellow daisies, white Solomon's-seal in profusion. Feathery saskatoon and wild rose bushes cascade down the open banks. The most gorgeous of all are the acres of blue and purple and white lupines scattered through the poplar groves. It is all so much more colorful than forests in the tropics. These northern woods with their contrasting dark evergreens and light deciduous trees, their floors gay with brilliant flowers, are fresh and clean and good compared to the monotonous stifling jungles I've seen in Fiji and Java and Sumatra.

~ Theodora C. Stanwell-Fletcher, *Driftwood Valley*

Plant profile:
Acer macrophyllum

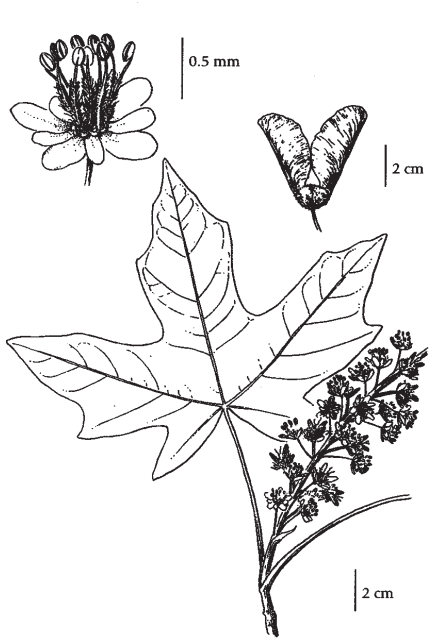
By Richard Hebda

We have long recognized the vital role of shade trees in creating a pleasant environment around our homes. Most shade tree species and varieties hail from distant regions and lands. British Columbia is home to one of the most noble, but for some reason little used, shade trees, bigleaf maple (*Acer macrophyllum*).

Bigleaf, broadleaf or Oregon maple grows as a tall spreading tree to 30 m high, casting filtered shade beneath. In undamaged trees, the widely spreading root system supports a short trunk .5-1.5 m across, from which reach out great limbs. However many trees have been cut, and hence grow as groups of tall greyish sapling stems. Old branches are bedecked with colourful mosses, leafy and crusty lichens. Young twigs are a pleasant medium green. Fat green buds end the branches during the winter.

Leaves of bigleaf maple are the largest of any tree in British Columbia. Their form is typical for maples; three to five sharply-tipped lobes with deep indentations between. In spring the leaves begin soft yellow green in the sun's light and soon expand to full size some more than 30 cm across. In fall their rich yellow forms paint each tree, then fall to earth to be crunched underfoot.

The 10-15 cm long flower clusters rival any in the genus. They burst forth in early spring revealing often 50 or more small greenish yellow fragrant blooms. Male and female flowers are separate, but occur in the same cluster. Each flower consists of petal-like sepals, and five petals which surround either a group of long spindly stamens or a two-parted ovary with two stigmas. The clusters magnetically draw pollinating flies until each tree hums like a giant machine. Fruits are rather large, typical maple keys consisting of a wing and body. The spiny hairs, which cover the surface of the body, will penetrate and irritate the skin. In British Columbia the maple's natural range includes most of Vancouver Island and the adjacent mainland coast, extending well up major valleys. Bigleaf maple is reported from Alaska, but the main distribution extends mostly west of the Cascade Mountains south to California with an outlying population in Idaho. Bigleaf maple revels in moist rich soils especially along rivers, streams and floodplains. Curiously you will find it on moist rocky slopes often rooted in the rubble at the foot of cliffs. The tree also thrives in disturbed settings.



Drawing: Christopher Brayshaw, *Trees and Shrubs of British Columbia*

along roads and fence rows.

Although some authors consider bigleaf maple of little horticultural value, it makes an outstanding shade tree. The airy canopy produces light, rather than oppressive shade. Once the leaves fall, weak but welcome winter sunlight can penetrate into the home. Because of its size, this maple may not suit sophisticated urban gardens, but it cannot be beat as a huge specimen tree for a large yard, park or street planting. You can easily raise maple trees from seeds planted in ordinary soil. Often, hundreds of seedlings struggle to survive under majestic parent trees. These seedlings transplant easily in the moist winter and spring. You may have a problem growing a traditional flower garden below the thirsty tree. Native species such as salal *(Gaultheria shallon),* Oregon-grape *(Mahonia* spp.) and sword fern *(Polystichum munitum)* will thrive in its shade.

Bigleaf maple wood found many uses among our coastal Native Peoples. From it they made dishes, spoons, rattles, bark shredders, adze handles and numerous other tools. The wood is perhaps best known for the carving of beautiful spindle whorls and canoe paddles. Many aboriginal peoples valued the wood as a fuel, for it burns hot and clean. Bigleaf maple is an excellent fuel tree today too, because it can be cut to harvest the firewood and re-sprout fresh new suckers for future wood production. Well managed root systems and stumps could yield firewood for many decades. Natives used the bark to weave ropes and baskets. Leaves were spread over and under food in steam pits and picking baskets. Incidentally, people have tried to make syrup from spring sap but apparently the sugar concentrations are too low and the day-night temperature changes too slight for a good flow.

The scientific name *Acer* is the

same as the classic Latin name for maple. The species name "macrophyllum" celebrates the trees most obvious feature, the big (*macro*) leaves (*phyllum*).

If you're looking for a shade tree or an excellent permanent firewood source, try our native bigleaf maple. This under-appreciated native species deserves to be more widely grown. ✍

Reprinted from *Coastal Grower*. Richard Hebda is Curator of Botany and Earth History, Royal British Columbia Museum, Victoria.

Errata

As Malcolm Martin noted in a message to the NPSBC e-mail list, gremlins ate part of his article on needle-leaved navarretia in the spring 2003 edition of *Menziesia*. Apologies to Malcolm for the mysterious deletion of several sentences and a subheading. For clarification, we print below two sections of his article as they should have appeared on page 12. Please also note that the line drawings of the navarettia seeds should have been labelled (b) (a) (c) rather than (a) (b) (c).

~ Editor

Flowering

Long and narrow tubular throats are characteristic of the Phlox family, particularly of its small annual members, and although flowers are usually bright and colourful and presumably attractive to insects, this construction can present physical problems to insect pollination. In the case of Needle-leaved Navarretia the flowers are a pale lilac and project obviously from the calyx. Prior to anthesis the frame containing study plants was covered with a fine-meshed gauze to exclude all insects.

A start to stem extension was evident at mid-May and by the beginning of June plants were developing flowering heads. For undersized individuals on the lowest frame level inhibited by insufficient soil depth this began soon after the second pair of opposite leaves reached full size but for larger plants on the upper levels the same stage awaited the second alternate leaf. Proliferation of side branches, leaves, and heads at the end of each stem took place rapidly thereafter, and initial leaves below the heads withered.

On June 13th most of the upper level plants (5 - 7 cm tall at the time) were in flower, many of those on the middle level (5 - 6 cm tall) were also, but no plants (4 - 5 cm tall) on the lowest level had started flowering although they did so shortly after.

Seed formation

Despite exclusion of insects, seeds were present in all the flowers of the study plants examined indicating high success in self-pollination. In the field, ripening of seeds depended to some extent on location as plants growing where dampness lingered remained green and flowering longer into the season whereas those growing peripherally dried and matured earlier as ground moisture evaporated. By the end of August seeds were dry and brown.

An average well-grown plant was found to have 12 capsules in the largest head, surrounded by 3 other flowering heads with 9 capsules completing the central complex, and 3 secondary heads on lower branches each carrying 4 capsules. At 4 seeds per capsule (occasionally 3) this plant produced 130 seeds. Higher and lower totals would be found on further examination.

New members

New NPSBC members since March 15, 2003

Lyn Noble, West Vancouver
Gary Williams, Coquitlam
Annette Krammer, Delta
David Noble, North Vancouver
Dave Peterson, Vancouver
Sheldon Helbert, Edmonton, Alberta
Dior Holmes, Vancouver
Erin Despard, Vancouver
Kristina & Katie Recalma and George Sim, North Vancouver
Stephanie Robb, Vancouver
Antoinette Geisen & Frank Heinzelmann, Vancouver
Dr. Rolf Mathewes, Maple Ridge
Leslie Glover, Victoria
Robin Annschild, Salt Spring Island
Andrew Burkinshaw, Abbotsford
James Miskelly, Victoria
Ray Travers, Victoria
Anna Colangeli, Victoria
Nicolle Ayotte, Victoria
Emily Gonzales, Vancouver
Marta Donovan, Victoria
Nicole Pressey, Prince George
Heidi Guest, Victoria
Odin Scholz, Galiano Island
Liis Jeffries, Merritt
Dr. Leslie Phillips, North Saanich
Geri Poisson, Victoria
Linda Young, Saanichton
Scott Black Cobble Hill
Sarah Walker, Peck, Idaho USA
Lynne Williams, Vancouver
Barbara McConnell, Aldergrove
Miranda Burgess, Vancouver
Jane Richardson, West Vancouver
Saleem Dar & Jenyfer Neumann, Vancouver
Pam Clancy, Vancouver
Linda Eaves, Burnaby
Linda Jennings, Point Roberts, WA USA
Leonard Basaraba, Richmond
Sheila Watkins, North Vancouver
Bruce McCowan, Victoria
Christine Munro, Burnaby
Ginette Pepin, North Vancouver

NPSBC e-mail discussion list

Founding NPSBC board member Adolf Ceska has set up an e-mail discussion list as a convenient forum for members of the Society to discuss topics related to the native plants and botany of British Columbia. The list is unmoderated, but the hope is that discussion topics will be limited to botanical research, plant ecology, ethnobotany, native plant propagation, gardening with native plants, and events sponsored by the Native Plant Society of BC or similar organizations.

TO SUBSCRIBE to the list: Send a mail message containing 'subscribe NPSBC-L' (no apostrophes) to:
Majordomo@victoria.tc.ca

TO SEND MAIL to the list, address your message to:
NPSBC-L@victoria.tc.ca

If you have any questions regarding the discussion list, please send them to the list administrator at NPSBC-L-owner@victoria.tc.ca

What's on the Web

BC Conservation Data Centre
http://srmwww.gov.bc.ca/cdc/

Central Washington Native Plants
http://www.cwnp.org/

Ecological Society of America
http://www.esa.org/

Ecology Web Links
http://www.botany.net/Ecology/

Flora of North America
http://hua.huh.harvard.edu/FNA/

Green Plant Phylogeny
http://ucjeps.herb.berkeley.edu/bryolab/greenplantpage.html

Horticultural Centre of the Pacific
http://www.hcp.bc.ca/

Land Conservancy of BC
http://www.conservancy.bc.ca/

Mushrooms of the Pacific Northwest
http://www.pfc.cfs.nrcan.gc.ca/biodiversity/matchmaker/

Nearby Nature (Naturescaping)
http://www.plantnative.org/

Natural Habitat Gardens (nursery)
http://www3.telus.net/public/a5a43197

Native Plant Society of Saskatchewan
http://www.npss.sk.ca

Nature Serve Online Encyclopedia
http://www.natureserve.org/

No Ivy League, Portland
http://noivyleague.com/

North American Native Orchid Alliance
http://www.flmnh.ufl.edu/naorchid/

Northwest Lichenologists Inc.
http://www.proaxis.com/~mccune/nwl.htm

Sudden Death Oak Fungus
http://kellylab.berkeley.edu/SODmonitoring/

Species at Risk Conference, Victoria
www.speciesatrisk2004.ca

Sudden Oak Death Syndrome
http://www.suddenoakdeath.org

Vegetative Characters
http://csdl.tamu.edu/FLORA/tfplab/vegchar.htm

Mission Statement

The purpose of the NPSBC Native Plant Society of British Columbia is to encourage knowledge, appreciation, responsible use and conservation of British Columbia's native plants and habitats.

Menziesia is published 4 times a year by the NPSBC. Upcoming submission deadline: September 15 (Fall). Subscription is included in membership to the NPSBC. Annual membership fees are: $20 - Individual; $30 - Household; and $75 - Sustaining member.

Please note that advertising space is available in *Menziesia*. A 3.5" x 2" space costs $20 for one insertion. Send a cheque or money order (made out to NPSBC), plus ad text or business card to editor Harry Hill (see below) by publishing deadline.

Newsletter submissions should be sent to:
Menziesia
Attn: Harry Hill, Editor
RR22, 1533 Park Ave., Roberts Creek, BC, V0N 2W2
Tel: 604-885-9769
E-mail: menziesia@dccnet.com

NPSBC memberships should be sent to:
Erin Skelton, Membership coordinator
3860 West 19th avenue
Vancouver BC, V6S 1C8
Telephone: 604-228-8879
E-mail: feskelton@telus.net

NPSBC correspondence should be sent to:
NPSBC
Attn: Ross Waddell
2012 William Street, Vancouver, BC, V5L 2X6
Tel: 604-255-5719
E-mail: information@npsbc.org