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Newsletter for the NPSBC Native Plant Society of British Columbia
Winter 2001 Volume 6, Issue 1

President's report

By Claudia Schaefer, NPSBC President

While the year 2000 seemed to come and go so quickly, I hope that it was a good year for Native Plant Society members. The Society experienced changes in the board, and although we lost some valuable directors, we gained several fabulous people. An honourable mention must go to Ross Waddell, who has gone above and beyond to make sure the Society runs smoothly. While his term is now up, he continues to help the board and members with a number of issues. Thank you Ross! Other directors' terms on the board will end this spring, and we hope that members will think about joining the team – just call any director to find out how you might participate.

The workshops that went on around the province in 2000 were found to be thoroughly informative and highly enjoyable by those that attended. Dr. Wilf Schofield, assisted by Dr. Terry McIntosh, gave a superb two-day workshop in Chilliwack introducing members to mosses and liverworts. Pat and Paige Woodward graciously hosted the workshop at their Pacific Rim Native Plants nursery. The participants and leaders enjoyed the workshop so much that there is talk of having a dryland moss version this year in the interior of the province.

Grasses are ubiquitous in our province, yet a hard group of plants to identify, so many members turned to the guidance of knowledgeable leaders this past summer. Don Gayton led a workshop in the Kootenays near Cranbrook, and Perry Grilz and Dr. David Blundon were instructors of a grass workshop in the Peace River area. We thank all workshop leaders for their time and willingness to share their knowledge and passion. The workshop events of the past year would also not have been possible without the superb organizational work and enthusiasm of David Williams. We are greatly indebted to him. Brenda Ramsay, one of our board's directors, helped him significantly in his endeavours, and we are thankful that she will take over much of the workshop organization in 2001, now that David is busy with other projects. Perry Grilz and Rozalyn Harris will be helping her, but any other help that members can offer, whether by suggesting a workshop/field trip, leading one, or offering assistance in local planning, would be greatly appreciated.

In 2001, our proposed workshop ideas include identification of plants in the aster family, mosses and liverworts of the Okanagan, and one or two grassland nature walks and plant identification day trips. There were two sedge identification workshops scheduled last year, which had to be cancelled due to low registration. As it turned out, there was much interest but members' schedules did not allow them to attend, so we will try again this year! We also want to have some nature walks, for those members who would like to know more about the local forest/wetland/rock

See "Report" on p. 3

What's inside

NPSBC Board of Directors

*italic line indicates committee responsibilities.

Events

Victoria, Thurs, Jan 18

Native Plant Study Group. UVIC grad student Wendy Cocksedge will speak on non-timber forest products. 7 pm. Oaklands Community Centre, 2827 Belmont Avenue. For information please call 361-3122. Meetings are open to the public for a $2 drop in fee or membership for the season, which runs from September to April, is $10.

Vancouver, Thurs. Jan 18

Botany Night. "Flowers of the Kananaskis" by Rene Savenye. Sponsored by the Vancouver Natural History Society, Botany Section, and the NPSBC. 7:30 pm. Vancouver Planetarium, Kitsilano Room, 1100 Chestnut Street.

Victoria, Thurs, Feb 15

Native Plant Study Group. Ross Waddell, will speak on water conservation through native plants. 7 pm. Oaklands Community Centre, 2827 Belmont Avenue. For information please call 361-3122. Meetings are open to the public for a $2 drop in fee or for a $10 season membership.

Vancouver, Thurs. Feb 15

Botany Night. A presentation on maples by Douglas Justice. Sponsored by the Vancouver Natural History Society, Botany Section, and the NPSBC. 7:30 pm. Vancouver Planetarium, Kitsilano Room, 1100 Chestnut Street.

Victoria, Thurs, Mar 15

Native Plant Study Group. UVIC grad student Trevor Lantz will speak on devil's club. 7 pm. Oaklands Community Centre, 2827 Belmont Avenue. For information please call 361-3122. Meetings are open to the public for a $2 drop in fee or for a $10 season membership.

Vancouver, Thurs. Mar 15

Botany Night. A presentation by Laurence Brown on: Camosun Bog - its plant treasures and its restoration by the "Crazy Boggers," and trilliums, including where and when they can be found, and his search for unusual growth forms of this beautiful plant. Sponsored by the Vancouver Natural History Society, Botany Section, and the NPSBC. 7:30 pm. Vancouver Planetarium, Kitsilano Room, 1100 Chestnut Street.

Vancouver, Sun, Apr 8

Pacific Northwest Native Plant Sale. Participating nurseries will sell directly to the public, with an extensive collection of containerized trees, shrubs and perennials for purchase. This year a demonstration native landscape will be temporarily installed at the entrance to the sales area in the parking lot, and educational demonstrations on native plant propagation and other topics will take place in the pavilion inside the Botanical Garden. These will complement other, continuing features of the sale: exhibits by organizations with an interest in native plants and habitats, horticultural information on native plants, and tours of the BC Native Garden. Organized by the Native Plant Society of BC and the Friends of the Garden. UBC Botanical Garden. 11 am – 4 pm.

Vancouver, Sat, Apr 21

Native Plants for Urban Gardens. Discover the natural beauty and versatility of our native BC plants. Sharpen your idenification skills and learn about the best native plants for landscaping. You will take home seeds collected at VanDusen to grow in your garden. Instructor: Eva Antonijevic (NPSBC board member). VanDusen member: $27. Non-member: $32. VanDusen Botanical Garden, 5251 Oak St. 1:30

– 4 pm. Phone 604-257-8666 for more information.

Vancouver, Wed, June 20 & 27

Foraging for Wild Edible and Medicinal Plants. Discover the special properties our native plants possess. Herbalist Sarah Orlowski will discuss the natural history and uses of edible and medicinal plants, and offer practical preparation methods. A variety of wild delicacies

See "Events" on page 13

Evergreen's Growing Active workshop series

Have you ever imagined making nature part of your school? Evergreen is offering "Growing Active," an exciting workshop series designed to help you transform your local school ground into a healthy and *living* learning environment.

In March, we'll be in Victoria and partnering with LifeCycles to offer workshops on Getting Started and Site Design (Mar. 17 from 12-4 pm), and Native Plants and Food Gardens (Mar. 24 from 12-4 pm). Evergreen will also visit the North Shore (Tuesdays, Feb. 6 to 27, 6:30 to 9 pm), Surrey (Thursdays, Feb. 8 to Mar. 1, 6:30 to 9 pm), and Coquitlam (Tuesdays, Mar. 6 to 27, 6 to 8:30 pm), to offer workshops on Getting Started, Site Design, Native Plants and Fundraising.

Phone LifeCycles at (250) 383-5800 or Evergreen at (604) 689-0766 for more information.

"Report" continued

outcrop plants and wildflowers, and less about sedge perigynia and grass lemmas… If this kind of trip interests you, please contact one of the board members so we can locate the trip in the right region.

Since many members have busy summers, it is often hard for them to commit to workshop dates in advance. In order to prevent workshops being cancelled due to low registration when there actually is enough interest out there, we suggest registering early, and if necessary as the season progresses, cancelling before the deadline to receive a full refund.

The Society's newsletter continues to be an enjoyable and informative read, and links members from across the province. We owe great thanks to its editor, Harry Hill, for doing a wonderful job each issue. I also know what Harry requested for Christmas, and perhaps you can show him that he was nice last year and not naughty, by fulfilling his wish in 2001. More than anything, he would like to hear from you, the members. Did you do some field work that related to native plants in the last year or two? Are you conducting research on native plants or habitats? Are you noticing things about the native plants in your local woods? Did you go somewhere in the province and look at native plants or habitats? If you answered yes to any of these, please write down the experience in half a page, a page or two pages, and send it to Harry!

We are very grateful to the following authors of articles, poems and book reviews in last year's newsletters: Brenda Costanzo, Hugh Daubeny, Marta Donovan, George Douglas, John Dove, Lucy Duso, Marilyn Fuchs, Richard Hebda, Phillip Henderson, Clive Justice, Brian Klinkenberg, Peter Lesica, Malcolm Martin, Alan Mitchell, Briony Penn, Jenifer Penny, Larry Pyn, Peter Trower, Roy Taylor, Terry Taylor, Many Vaartnou, David Williams and Paige Woodward.

Other activities of the Society this past year include the sponsorship of events such as an ethnobotany workshop at the Gardening for Wildlife festival at Swan Lake Christmas Hill Nature Sanctuary in Victoria, and Botany Nights of several natural history and horticultural societies. A major event sponsored by the Society has been the Native Plant Sale at the University of British Columbia. This past year, a portion of the proceeds went to the Society, but more importantly, the sale serves as a way to promote the use and appreciation of native plants, and to return our gardens to a more natural state. Many members and directors have graciously given their time to present exhibits on behalf of the Society at various events in the province. This helps greatly to spread the word promoting the use or protection of native plants in gardening, restoration, and habitat management. The NPSBC also contributed to the development of a demonstration native plant landscape at the Vancouver Museum, part of the new Backyard BiodiverCity exhibit.

The NPSBC web site has been in the works for some time, and will likely be up and running early in the new year. Things to look for on the site include an updated native plant nursery and seed suppliers list, as well as a photographic archive. The latter is something that many members have shown interest in, and for which the Society often receives requests for from outside groups. We hope to have many images of native plants available on the site to download, as well as slides available for loan at a repository.

Please take a moment today to consider what activities you would like to see the Society involved in during the coming year, or what way you yourself might like to become involved, and let us know. Our wish for the New Year is that our members tell us how to make the Native Plant Society even better in 2001. §

Abronia umbellata ssp. *acutalata*: Rarest plant on the planet or the rarest plant in Canada?

By George W. Douglas, British Columbia Conservation Data Centre, Ministry of Environment Lands, and Parks, British Columbia

Pink sandverbena on a Vancouver Island beach (with feathers).

Abronia umbellata ssp. *acutalata* (pink sandverbena) has an interesting history in British Columbia. It was first reported by J.K. Henry from Pachena Bay (near Bamfield) prior to 1915 (Henry 1915) and was later collected there in 1927. A second collection, from Ahousat (near Tofino) was made in 1915. Officially, it was not seen again until the summer of 2000 by Jim Hamilton, who lives along the Pacific Coast Trail in Pacific Rim National Park. Jim tells us that a previous neighbour in the Park saw this species in 1941 on the same beach where he located the plant. Although Mr. Hamilton has lived near this beach since 1954 and explores it often every summer, this is the first time he has seen it.

On September 11, 2000 a Conservation Data Centre field team (George W. Douglas, Jenifer Penny and Beth Rogers) visited the site. Two *Abronia umbellata* ssp. *acutalata* plants were examined on the upper beach, just below the driftwood zone. The plants were growing in fine sand in a plant community comprised almost solely of scattered *Cakile maritima,* a European introduction. The plants measured 2 x 1.5 and 1 x 0.75 metres in diameter. The larger plant had about 200 flower/seed heads while the smaller had about 100 heads. About 20 seed heads were collected for propagation and further research. A search of about 2 km of beach on foot and a quick aerial reconnaissance by helicopter over about 30 km of coastline did not reveal additional *Abronia* plants.

On the Oregon Coast another pink sandverbena (*Abronia umbellata* ssp. *breviflora*) has received special attention due to its rarity. Tom Kaye, a Ph.D. graduate student at Oregon State University has, for the past five years, conducted research on this taxon (Kaye *et al*.1998, 1999). This species has probably always had low numbers in Oregon since the plant is mainly an annual and depends almost solely on regeneration from seed after it is washed away each year by strong winter storms. In addition, since the turn of the century plant numbers have been greatly reduced in Oregon due to loss of its open habitat caused by the invasion of *Ammophila arenaria*, a European grass. More recently, off-road vehicles have also threatened these habitats. *Abronia umbellata* ssp. *breviflora* seeds were propagated in the greenhouse, seeds collected, then dispersed at appropriate upper beach sites along the southern Oregon coast. Although germination percentage is high in the greenhouse, it is low in the field. About one/4,000 seeds germinates and survives into the growing season. Both hand dispersal of seeds and transplants on the Oregon beaches have achieved some short-term success. At seeding rates of 50,000 seeds/site, the initial establishment of plants ranged from 0 to over 1500. Survival of greenhouse transplants at several sites has proved successful. The long-term success of both methods, however, depends on the recruitment of new plants, their seed production and subsequent survival of some of them as short-lived perennials. While on a golfing holiday on the Oregon Coast, a week after my return from Pacific Rim National Park, I was able to accompany Tom and his associates to some of his research sites.

The question, whether this British

Photo: George Douglas, BC Conservation Data Centre

Columbia plant is the rarest plant on the planet or just the rarest plant in Canada, depends on its taxonomic status. American botanists in California and Oregon (eg., Peck 1961, Kaye *et al.* 1998, 1999) often extend the range of ssp. *breviflora* as far north as Washington or British Columbia. In contrast, Standley (1909), Tillett (1967) and Washington/ British Columbia botanists (Hitchcock *et al.* 1964, Douglas 1998, 1999) have recognized ssp. *acutalata* (or *A. acutalata*) as occurring in Washington and British Columbia.

If the latter treatments are shown to be justified by morphological studies - following the original treatments by Standley (1909, 1918) and DNA examination, then our plant is indeed rare on the planet, having been declared extinct in British Columbia by the Conservation Data Centre (Douglas 1998) and in Washington by the Washington Natural Heritage Program (1994). It could easily return, however, to its extinct status with the coming of storms this winter.

I am currently comparing material from Oregon with our British Columbia collections while Keith Karoly, Reed College, OR. is studying DNA from the British Columbia populations (grown on from seed by Tom Kaye) and will compare it with his previous studies of California and Oregon material. Hopefully, we will be able to answer some of our taxonomic questions upon completion of this research.

It now appears that our British Columbia plant has already returned to its extirpated/extinct status. Just before the end of the year, Jim Hamilton informed me that the two *Abronia* plants were swept away during the first big storm of the year in mid-October. Although there is now a potential seed bank, the numbers of seeds are minimal and it may be another half-century before the species appears again in British Columbia. §

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Society for Ecological Restoration, BC Chapter, inaugurated

The first meeting of the BC Chapter of the Society for Ecological Restoration was held on April 8 and 9, 2000, at the BC Forest Service research station on Cowichan Lake. The first day was a business meeting, attended by 31 participants, followed on the second day by a field trip to nearby riparian and hillslope restoration and stabilization projects.

The agenda included options for organizational structure, nomination and election of officers, identification of volunteer co-ordinators and action items, and presentations.

It was decided the BC group would be a chapter of the Society for Ecological Restoration (SER), which is headquartered at Arizona. SER has more than 2500 members in 24 countries, publishes two journals and a newsletter, and holds conferences internationally.

The aims and objectives of the newly formed BC Chapter will include:

- Encouraging prevention of environmental degradation, as well as restoration of that which has occurred.
- Ensuring that ecological restoration is addressed in land use plans by becoming involved in planning processes.
- Assuming an educational role to raise awareness (but not getting involved with political debate or protests).

See "Restoration" on p. 13

BC's new environmental stewardship award

By Pat Woodward

A new environmental stewardship award marks a major step toward wider use of native plants in man-made landscapes in BC. Initiated this past year by the BC Landscape and Nursery Association in association with Naturescape, the "ground-breaking" award was developed with wide input from members of the NPSBC. Full endorsation by the Society of an annual Environmental Stewardship competition will be considered for 2001.

The concept of giving public credit for the use of native plants in public places was informally proposed to the board of the NPSBC in the fall of 1998. This idea was referred to the BCLNA as an organization more practised in the field of award giving. There it was routed through the Native Plant Committee and emerged, in the spring of 2000, as a much broadened proposal for Environmental Stewardship. This was endorsed by the Board of Directors of the BCLNA. and Naturescape, BC, also lent its official support.

This public province-wide competition for Environmental Stewardship took the BCLNA beyond the scope of the awards that the Association had established within the landscape/nursery industry. Development and production of the award was also an example by the industry of cooperation with and support for allied but non-commercial organizations around shared horticultural and landscaping goals.

The working group for development of the first award was a sub-committee of the Native Plant Committee of BCLNA. The group faced two difficult tasks: defining the criteria for judging and devising a process that could handle environmentally sound entries from both amateur individuals and professional groups. The sub-committee called upon many members of NPSBC, several of whom also have affiliations with the BCLNA and with Naturescape, to contribute ideas for criteria to use in judging, as well as strategies to accommodate the wide range of expected entries. Among those who brought their ideas to meetings and/or contributed extensive written submissions were: Eva Antonijevic, Susan Bastin, Theresa Duynstee, Angela Deering, Ross Waddell, Pat Woodward, and Paulus Vrijmoed.

The administrative staff of the BCLNA handled all the mechanics of the award. This included securing an industry sponsor, sending out hundreds of nomination and application forms, receiving and preparing the entries for judging, presentation of the awards and final press releases.

Winners were:

Individual: Patricia Johnston, Garry Oak Meadow Preservation Society

Quasi Public Agency or Non-governmental Organization: Promontory Ratepayers Association Rotary Heritage Forest — Rotary Club of Vancouver South

Corporate: Byland's Nursery in Kelowna

Public Agency: Engineering, Parks and Environment Dept of North Vancouver

Contractor: no entries in this category

The industry sponsor, Evergro/ Westgro underwrote the awards. Leo Sunder made the presentations to the three of the five winners who were able to attened the BCLNA annual banquet on November 18 and certificates were forwarded to the others.

Judges were: Peter Levelton, Dave Mitchell, Pat Woodward, Edward van Veenendaal and Paulus Vrijmoed. They were guided by the criteria adopted by the working group:

1 Landscape Design

1.1 Intent: Does the project meet its intent?

1.2 Functionality: How does the site (installation) work over time?

1.3 Aesthetics

1.4 Degree of potential achieved: i.e. complexity of stewardship challenges.

1.5 Physical structure: Is it properly constructed?

2 Horticultural Considerations

2.1 Origin of plant material

2.2 Plant quality

2.3 Planting conditions

2.4 Matching plants to places

2.5 No invasive exotics

3 Environmental Considerations

3.1 Biodiversity

3.2 Regional identity: local materials, both plants and construction materials

3.3 Habitat: attraction of birds, butterflies etc.

3.4 Sustainability/succession

3.5 Maintenance of air, soil and water quality

3.6 Three R's — Reduce, Re-use, Recycle

4 Educational Impact

4.1 Demonstration of Environmental Stewardship

4.2 Public education and interpretation

4.3 Community involvement

4.4 Partnerships and collaboration

4.5 First Nations/ethnobotanical information

4.6 Involvement of educational institutions

5 Ethical Considerations

5.1 Respect original ecology of land, people, community

5.2 Restoration

5.3 Consistent with Naturescape Guidelines

5.4 Consistent with NPSBC code §

Land trusts in BC: a promise to protect

By Paula Ramsay, The Land Conservancy of BC

In many cases, landowners want to ensure protection of a particular feature of their land, but do not want to give up ownership. For these people, the conservation covenant can be an important land preservation tool. It was not until 1994, however, that non-governmental agencies in BC, such as land trusts, were allowed to hold conservation covenants.

For such a complex term, a covenant is actually a very simple concept. It is a voluntary, written agreement between a landowner and (usually) a conservation agency in which the landowner promises to protect the land in particular ways. The promises the landowner makes will be attached to the land forever, regardless of who owns the land.

What does this mean in practice? Suppose you own a small, urban farm or property that contains grasslands in BC's interior. It comes to your attention that your backyard is home to several endangered species of native plants and/or animals. You begin to be haunted by nightmares of condos and development destroying the special features found on your land once you are no longer the owner. Since you cannot afford to donate your land for conservation purposes and you do not want to sell, you feel powerless to the whims of future landowners. Thanks to conservation covenants, however, you are in control.

Once you decide to use a conservation covenant, you should find the appropriate agency, probably a land trust, and, with their help, begin drafting your contract. In the simplest case, you would likely agree to forbid development on the property. Covenants are very adaptable, however, and if you liked you could also agree to maintain the property by removing any non-native, weedy plants. Any terms, which you and the land trust agree upon, can be included in the covenant. The decisive factor is that all of the promises you make apply not only to you, but also to *every future landowner*.

Once you have created your covenant, and all parties have signed it, the land trust would file it with the land title office and it would become a permanent part of the property. The land trust is responsible for monitoring. In most cases, this means that a representative will come once a year and walk the property, making sure that none of the promises in the covenant have been broken.

Suppose you sell the land to a sweet old man, who later sells the land to Ms. Townhouse. The next year when the land trust arrives, they find that she has begun to clear the land for development. What powers of enforcement does the land trust have? Initially, the trust will approach Ms. Townhouse and inform her of the violation, and if necessary, proceed with formal arbitration. If this is unproductive, however, the land trust does have the authority to take her to court.

As a general rule, land trusts are very enthusiastic about conservation covenants. The Land Conservancy (TLC), for instance, holds over 40 covenants with another 25 in negotiation. Clearly, this is a very simple overview of covenants and should not be used as a guide for actual protection. TLC is very excited that the rules are changing, and fantastic tools such as conservation covenants are available to us. No amount of rule changing, however, will alter what our organization fundamentally relies upon – the sense of environmental and social responsibility of landowners and members throughout British Columbia. The most rewarding aspect of voluntarily protecting land will always be the resulting sense of personal contentment. If you would like to place a covenant on your land, please contact TLC in Vancouver at (604) 733-2313 or in Victoria at (250) 479-8053.

The Land Conservancy of British Columbia is a province-wide, non-profit, land trust that strives to protect ecologically and culturally sensitive places in British Columbia. We are a fairly new organization, but have nonetheless been extremely successful since our formation in 1997. In addition to our many covenant holdings, we have raised over $2.5 million to purchase and protect over 77,000 acres of land since our inception. §

Ecological Gifts

Take advantage of new tax rules! As recently as February 2000, the federal government has made improvements to the tax rules that surround donations of ecologically significant land. Under the new standards, you can now use your donation receipt to exempt up to 100% of your income from income tax (it used to be only 20%). Your capital gains tax has been reduced from 75% of the gain to 25% of the gain. These changes represent significant savings for donors of land and conservation covenants. For more information please contact TLC at (250) 479-8053 or (604) 733-2313. §

Sustainable harvesting potential of salal (*Gaultheria shallon*) - case study of a non-timber forest product

by Wendy Cocksedge, School of Environmental Studies, University of Victoria

Salal is a bush in the Heather (Ericaceae) family, and normally is fairly shrubby, growing about a half-metre tall. In forests and in humid conditions, however, it can grow about two metres tall. Salal is a tough plant, with wiry stems and leathery leaves.

Salal produces dark blue berries in the summer which are edible and very sweet. In fact, salal berries were much prized by the west coast indigenous peoples but are used much more rarely now.

The leaves, however, are the current reason for the commercial interest in salal, as the leaves and branches are a highly desired floral product. The leaves are attractive, evergreen and hardy, and if properly stored, the branches can last up to six months once cut. Salal is shipped throughout the world, including North America, Europe, and Japan. The commercial sale of salal branches falls only behind wild mushrooms, in terms of economic non-timber forest product (NTFP) value in BC. Salal has a sales revenue of $42-45 million (Can) in 1997 in BC (Draeseke, 1998; Wills and Lipsey, 1999).

There is much controversy over whether the harvesting is affecting the long-term viability of the plants in certain areas. While one opinion is that as salal grows so copiously along the coast, the amount which is actually harvested won't have any real effect, others say that over-harvesting has visibly denuded some areas, and therefore commercial harvesting is better to be avoided. The focus of my graduate work at UVic is to determine if salal can be harvested sustainably. It would be very good if it could prove to be sustainable because salal, as a NTFP, can help to provide an economic supplement or alternative to traditional timber cutting for forest-based communities.

In order to have a sustainable industry, not only the industry requirements, but also the plant requirements must be acknowledged. By examining the morphology of salal we can better understand how to harvest it and how it could be affected by commercial harvesting.

Salal is a bush which has what is called determinate sympodial growth (Koch, 1983). What this means is that at the tip of the new shoot, typical of most plants, is an area of cells which are able to divide and enlarge, and this creates the growth of the shoot. An area of cells, where there is active cell development like this, is called a meristem. Because it is on the tip, or the apex, of the shoot, it is called an apical meristem.

The determinate sympodial nature of salal is due to this apical meristem ceasing its function – or dying – at the end of every growing season (Bell, 1991). This means that the cells lose their ability to divide and enlarge and therefore once a branch has finished elongating in its first year, it has reached its final growth. This is considered determinate growth. This finished branch, all derived from the one apical meristem, is called a sympodial unit. Salal is composed of many sympodial units - each originating off of an older one, so it has sympodial growth. For comparison, a tree, which is monopodial, has one main stem, whereas salal is really just a multitude of branches, each growing off one another. Although the branch is considered to be of determinate growth because it grows for only one season, the actual amount of growth will vary year to year, depending on environmental factors such as light and moisture. So the actual length of the branch is not necessarily pre-determined.

So these sympodial units – the branches – how do they form? In the spring a bud on a previous sympodial unit (or older branch) will become active. That is, the cells in the apical meristem will begin to divide and enlarge, and the shoot will begin to form. As the salal shoot elongates, it forms leaf primordium. Primordium simply means the primal state - it is an area of cells which can divide and grow as in a meristem, but a primordium is programmed to form a certain plant structure. Leaf primordium obviously form a leaf. These leaf primordium will develop into leaves in the same growing season The leaves develop as the shoot grows. Within the axil of each leaf – where the leaf joins the stem – is a new shoot primordium. However, unlike the leaves, the shoot primordium – or bud – will not grow in the same year in which it is formed; rather it will remain dormant for at least one year. Which brings us to another important point about salal - it has the ability to maintain buds in dormancy for many years.

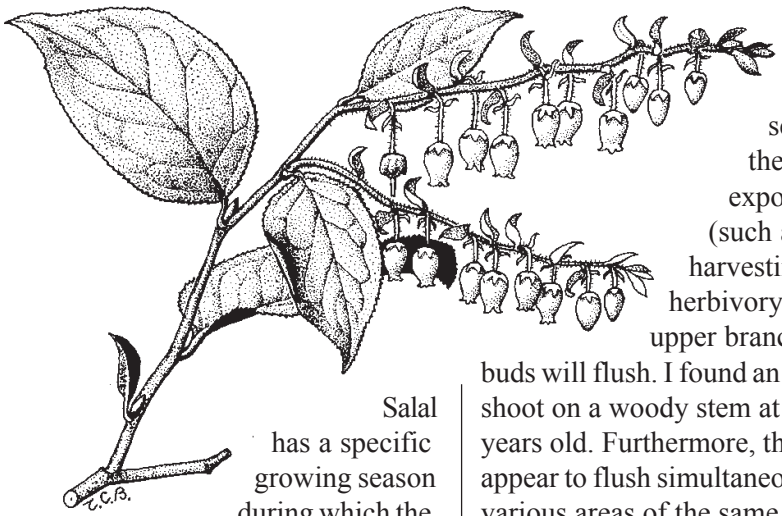

Illustration: T.C. Brayshaw, *Trees and Shrubs of British Columbia*

Salal has a specific growing season during which the sympodial units, or branches, will grow, and this is called rhythmic growth (Sabhasri, 1961). The shoots begin to elongate in the spring - April to May, depending on weather and elevation. The new shoot will harden up by June. It will continue to grow in length and diametre, though, until the fall, when the cold weather sets in. No new leaves or shoots will develop over the winter.

In salal, which shoot primordia develop off of the old branch appears to be at least somewhat dependent on the environment – it is not entirely pre-set by the plant's genetics. All studies I've seen on salal agree that salal growth is very much dependent on light – more so than either moisture or nutrient levels (Sabhasri, 1961; Koch, 1983; Huffman et al., 1994; Klinka et al., 1989; Messier, 1992; Smith, 1990). Though the latter factors play a role, in terms of shoot development, light is the important factor. Further, the shoot primordia – or buds – remain viable for years; apparently indefinitely (Koch, 1983). This means that the age or the part of the plant does not matter so much as its exposure to light.

This holds for what I've found so far in the field. It is most common to see bud elongation off of the previous year's growth, but it is not at all uncommon to see elongation on older stems, particularly two to three years old, but many much older. When an older, lower section of the stem is exposed to light (such as by the harvesting or herbivory of the upper branches), the buds will flush. I found an elongating shoot on a woody stem at least six years old. Furthermore, the shoots appear to flush simultaneously from various areas of the same bush, both on last year's growth as well as the two-year, three-year, or older branches of the bush.

So what does all this mean for harvesting? We know that salal has determinate sympodial growth – so we know that each year, the shoot meristem aborts itself – whether it is cut or not, the stem is not going to grow any longer. This lends itself to harvesting in that the salal bush is not comprised of one main stem with a limited number of branches coming off, like a tree. Each branch has the capacity to produce many more branches.

The ability of salal to keep dormant buds until needed, and the indication that they're light dependent, also lends itself to harvesting. It can even be seen as a form of pruning. Most new shoot growth is on the one- and two-year-old stems, but this may be due to these stems having the most available light. If the bush is opened up, and the light reaches the older stems, then the shoots are seen to develop from these areas. What this means is that removing some of the one and two year old branches – which is what is harvested commercially – will not necessarily remove or inhibit the plant's ability to produce shoots.

Further, more shoots may develop amongst the various new and old branches of the plant which had been formerly dormant – so the overall new material produced by a bush may not be any less than if it had not been harvested. It's possible, due to the opening for light, that it may be more, but this is not certain. It is not known, though, if this will have more or less effect on the plant. That is, it is possible that a plant has to expend more energy initiating shoots from one area or age class of the plant than another, which may have some long term effects. It's said by some in the industry that harvesting the woody stems will lead to a decrease in yield.

So another aspect we know, which is very well known to pickers, is that the growth is in the spring. Salal cannot be harvested from late spring into summer, due to the flushing of the buds. Commercially, the branches aren't viable because the new shoots are too soft and green and will not last in storage. This is good, because ecologically, the plant only develops new shoots once a year. If these are damaged or removed the plant has no further chance of vegetative expansion for that year, and all of the energy and photosynthate reserves which went into the new shoots would be lost without ever having been of use to the plant.

Picking can technically resume in the mid-summer. Many pickers consider this advantageous because the leaves are fresh and beautiful, the weather is good for the picker, and the sooner they start the less they will have to worry about the area being picked by someone else.

However, the picking should probably not be initiated until late summer or early autumn, for two reasons. The first is, as I've mentioned, for the benefit of the plant. The shoots and leaves have one purpose for the plant, and that is to produce and store photosynthates. Much of the photosynthates are taken from the leaves to be used and stored in other parts of the plant, such as the older stems and roots. If

the plant has the advantage of using the new leaves for photosynthesis during the whole summer, when the light availability is the greatest, then the plant will theoretically have more reserves from which to draw for the next year's growth. The second reason is for the picker. The bundles are sold by weight, and as the new branches continue to increase in weight - as they elongate, gain water, and lignify - over the summer, the picker will actually be further ahead financially to wait until the growth has completed for the year. On the other hand, waiting until the fall would mean a very large gap in income for both the picker and the businesses, and for many this wouldn't be feasible.

Overall, it would appear so far that harvesting could be done sustainably. Salal is very adventitious and sends out roots and shoots where it can (Sabhasri, 1961). The issue is probably not whether to harvest, but how to harvest. A number of people in the industry have been harvesting their areas for many years, and although there are variable volumes year to year, they believe that the overall productivity of the site have not decreased.

The potential problems come from lack of knowledge or concern, and from a complete lack of legislation (Turner and Cocksedge, in press). Most people would agree the areas around cities are overpicked, and that this is affecting the viability of the plants in those areas. There needs to be more research and subsequent education on sustainable harvesting practices, and there needs to be some sort of regulation based on the research. The best regulation would be self-imposed, either by those in the industry or by the community. Involving those in the industry is very important, because this is not only going to increase the compliance of the laws, but there is also a significant volume of local knowledge about salal that is held by those in the industry which needs to be considered.

There is definitely a requirement for more knowledge to determine the best way in which to ensure a sustainable salal industry, and more education is required for the pickers, the public, and the political decision makers. But given this, I think there is the potential for salal to be a sustainable alternative or supplemental income for forest based communities. §

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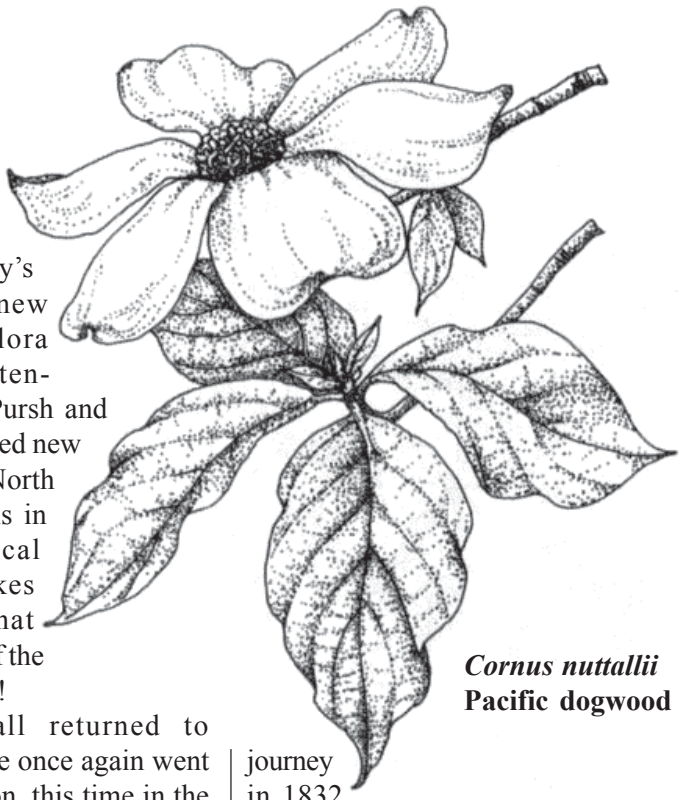
Thomas Nuttall, naturalist



Cornus nuttallii
Pacific dogwood

By Brenda Costanzo, M.Sc.

Our provincial flower, the Pacific dogwood (*Cornus nuttallii*) was named after Thomas Nuttall who was originally trained as a printer in England. In 1808, he emigrated to Philadelphia and became one of the key figures in botanical exploration of North America in the early 19th Century.

Nuttall was originally sponsored and trained in his botanical endeavours by Benjamin Barton of the Academy of Natural Sciences in Philadelphia. Barton, the vice president of the American Philosophical Society, sponsored both Fredrick Pursh) (1774-1820) and Thomas Nuttall in their North American field work. It was Barton's dream to publish his own Flora of North America. Nuttall's first assignment was to explore Chesapeake Bay during the summer of 1809 for Barton. The next year, Barton sent Nuttall to the Great Lakes region, and here he met up with William Hunt of the American Fur Trade Company. The Company was leading an expedition up the Mississippi and Missouri Rivers leaving from St. Louis in the spring of 1811. Nuttall decided to leave his botanical work in the Great Lakes to join the Company, and while in St. Louis he met up with another botanist/naturalist John Bradbury (1768-1823). Nuttall and Bradbury worked independently on the expedition, collecting their own sets of plants, and ended up in North Dakota by the fall of 1811. At this point, due to the impending war with the British, Nuttall left for England from New Orleans instead of returning to Philadelphia. In doing so, he took both his and Bradbury's plant collections with him. In London, Fredrick Pursh described Bradbury's collection and new species in his Flora Americae Septentrionalis (1814). Pursh and Nuttall also published new species from the North America collections in Curtis's Botanical Magazine — makes one wonder what Bradbury thought of the whole arrangement!

In 1815 Nuttall returned to Philadelphia, and he once again went collecting for Barton, this time in the mountains southeast and up the Red River to Oklahoma. During this time, he worked on updating Andre Michaux (1746-1802) and Pursh's Floras of North America. Nuttall set and printed his own Genera of North American Plants (1818), thereby using the skills he had acquired while apprenticing with his father in England. In October of 1818, Barton sent him to the Arkansas Territory, a journey that took over six months and covered 5000 miles. When Nuttall began collecting for Barton in 1808, he was paid $8.00 per month plus expenses! How's that for a budget?

From 1822-1833 Nuttall was the curator of the botanic garden at Harvard University, and a lecturer of natural history. Here he published a botany textbook entitled An Introduction to Systematic and Physiological Botany (1827). A noted ornithologist, Nuttall also produced A Manual of the Ornithology of the U.S. and Canada: The Land Birds (1832). While at Harvard in 1833, he received a small collection of plants from a fur trader, Nathaniel Wyeth (1802-1856). This collection was from Wyeth's journey in 1832 from St. Louis, via the Oregon Trail to Fort Vancouver (Washington), as well as parts of Idaho, Montana and Wyoming. In exchange for this collection, Nuttall was asked to name the plants, and although he did prepare the manuscript, the publication was halted when Wyeth asked Nuttall to join him the following year. Nuttall decided to resign from Harvard to go with Wyeth to the Columbia River in 1834. Over the next two years (1834-36) Nuttall travelled in the Pacific Northwest, California and Hawaii collecting thousands of plants. While in the northwest, Nuttall noted that the Pacific dogwood was a separate species and provided some ornithological notes on the use of the fruit by birds. Audobon named the species after Nuttall, and valid publication of the name followed by Torrey and Gray in their Flora of North America in 1840.

Upon his return from the Pacific Northwest, Nuttall worked at the Academy of Natural Sciences in Philadelphia from 1836-1841. Here he described the hundreds of new species that he had found, and sent

Illustrations: Lesley Bohm, *Davidsonia* newsletter, UBC

manuscripts to John Torrey and Asa Gray for their then proposed Flora of North America. Torrey dedicated his 1826 Compendum of the Flora of Northern and Middle States to Thomas Nuttall, and also named a genus in the Rosaceae family after him.

When Nuttall inherited his uncle's English estate in 1842, he left the United States and returned only once before his death. Over the years 1842-1852, his North American Sylva was published in Philadelphia (the longer title is: North American Sylva; or a description of the forest trees of the United States, Canada, and Nova Scotia, not described in the work of F. Andrew Michaux…). Thomas Nuttall died in England on September 10, 1859.

Here's a partial list of plant genera from our region that have *nuttallii* as the specific epithet: *Arabis*, *Arenaria (=Minuartia)*, *Atriplex, Cornus*, *Delphinium* (*nuttallianum), Elodea*, *Homalothecium* (moss), *Isoetes*, *Saxifraga*, *Viola.* §

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Green...

Green I love you green.
Green wind. Green branches.
~ Federico Garcia Lorca

The force that through the
green fuse drives the flower
drives my green age.
~ Dylan Thomas

It's not easy being green.
~ Kermit the Frog

Tossing rocks into the placid pool of plant taxonomy

By Thor Henrich

A very large rock has been tossed into the placid pool of classical plant taxonomy. This article will describe the implications of the resulting wave on the palaeobotanical community at large.

On August 6, 2000, I travelled with Adolf and Oluna Ceska from Victoria to Portland, Oregon, to attend "Botany 2000, New Frontiers in Botany," for the annual meetings of the American Bryological and Lichenological Society, American Fern Society, American Society of Plant Taxonomists, International Association of Plant Taxonomy, and the Botanical Society of America. As a member of the Palaeontological Section of the latter group, I was keen to attend this gathering of approximately 900 attendees, for 4 days of talks, poster sessions, and informal meetings with current palaeobotanists. I divided my time mainly among the systematic and palaeobotanical sessions, which I briefly report here (for more info, abstracts, etc. see the website: http://www.botany.org/bsa/portland).

The 'rock in the pool' was actually launched last summer (1999) at the 16th International Congress held at the Missouri Botanical Gardens in St. Louis. Dubbed 'Deep Green' and with a grant of $285,000 USD, 200 scientists from 12 countries confronted classical Linnaean taxonomy (where all organisms are divided into the standard taxa we all learned in school - kingdom, phylum, class, order, family, genus, species, mainly on the basis of morphology), to replace it with phylogenies based on new data, involving sequencing of DNA and other strategic biomolecules, statistical analyses, and phylogenies based on cladistics (construction of hypothetical 'phylogenetic trees' or cladograms). See their website at: http://ucjeps.herb.berkeley.edu/bryolab/greenplantpage.html

That Botany 2000 was hit by a wave of tsunami proportions from the 'Deep Green' rock is evidenced by the excitement observed in the otherwise staid halls of Academe. Using sophisticated lab hardware, complex probability theory, and ornate computer programming, otherwise impossible-to-handle massive data sets are crunched down to produce the modern analog of the old 'family trees.' Called cladograms, these branching diagrams are read left to right, to show increasing diversity and presumed evolutionary pathways for the taxa under consideration. Reaction to the new methodology has been swift, from "It's moronic!" (William Berger, Curator of Botany for the Field Museum in Chicago), to "I think it's the greatest thing since sliced bread." (Michael Donoghue, Director of Herbarium, Harvard University). Some random notes from these sessions follow.

1. Plants should be in not one but three 'kingdoms' (i.e., clades), called red, green, and brown.
2. Land plants are most closely related to the alga, *Chara* (stonewort).
3. Fungi are much more related to animals than to higher plants.
4. Existing phylogenies of living plants may or may not be supported by cladistic analyses. While some older phylogenies are supported by the new techniques, it some cases new and unsuspected relationships

are discovered. In birds, for example, vultures are more closely related to cranes, than to raptors (e.g., hawks).
5. Mosses and liverworts are more closely related to each other, than to hornworts.
6. *Amborella* is the most ancient living dicot. Native to New Caledonia in the Pacific, at present there is only one living specimen in the United States - at the Arboretum at the University of California at Santa Cruz.
7. The ANITA clade is the most basal for the angiosperms. A is for *Amborella*, N is for *Nymphales* (water lilies), I is for *Illicium* (Chinese star anise), T is for *Trimenia*, and A is for *Austrobaileya*, all are sisters in the ANITA clade.
8. Monocots seem to lie above the ANITA clade, but below the Eudicots (all the rest of the dicots above ANITA).
9. Magnolids, long postulated to be the basal group, are now placed at the bottom of the Eudicots, still low but above ANITA.
10. *Acorus* is sister clade to all monocots.
11. *Calycanthus* (spice bush) is very closely related to *Umbellularia* (California bay).
12. Legumes show highest diversity in the tropics of Africa and South America. Most North American legumes are derived from European origins.
13. If an island is continental (not oceanic), tropical (not temperate), and emergent through the Tertiary, it will show high rates of endemism.
14. Morphological stasis may be associated with species with disjunct distributions (e.g., *Liriodendron*).
15. North American plants show both stasis and rapid evolution. Adaptive radiations appear to arrive in pulses (i.e., discontinuous).

Cladistic phylogeny is attempting to integrate data from classical morphology, biochemistry, and palaeobotanical sources. An interesting first, as an example: a group of researchers have been able to extract 'geolipids', in this case terpenoids from Miocene (*Clarkia* Flora of Idaho) fossil leaf and cone material from five different fossil conifers (*Metasequoia*, *Taxodium*, *Cunninghamia*, *Glyptostrobus*, and *Calocedrus*), compared them to their modern counterparts, and found significant differences which can distinguish the genera from each other, as well as demonstrate degrees of interrelationship. If the new system of cladistic phylogeny becomes widely adopted, the old Rules of Binomial Nomenclature will be replaced by the PhyloCode, with a new set of rules based on cladistics (see http://www.ohiou.edu/phylocode).

An interesting and well organized treatment of this information can be found on the website:
http:// www.ucmp.berkeley.edu/exhibit/phylogeny.html
and is highly recommended to the reader who wishes to learn more about this new and rapidly emerging branch of bioscience. §

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"Restoration" continued

Meetings, conferences and technical workshops are possibilities. Outreach activities and education (public, media relations, professional development) will involve local organizations such as the stream-keepers and broom pullers, as well as provincial societies such as the Native Plant Society of BC. Awards could be given in recognition of restoration work. The BC Chapter will reach out to and interact with First Nations communities regarding traditional activities such as aboriginal burning.

The following officers were appointed by acclamation or election: President: Phil Burton, Smithers [symbios@bulkley.net] (250) 847-0278, Vice-President: Don Eastman, Victoria, Secretary: John Parminter, Victoria [john.parminter@gems7.gov.bc.ca], Treasurer: Dave Polster, Duncan.

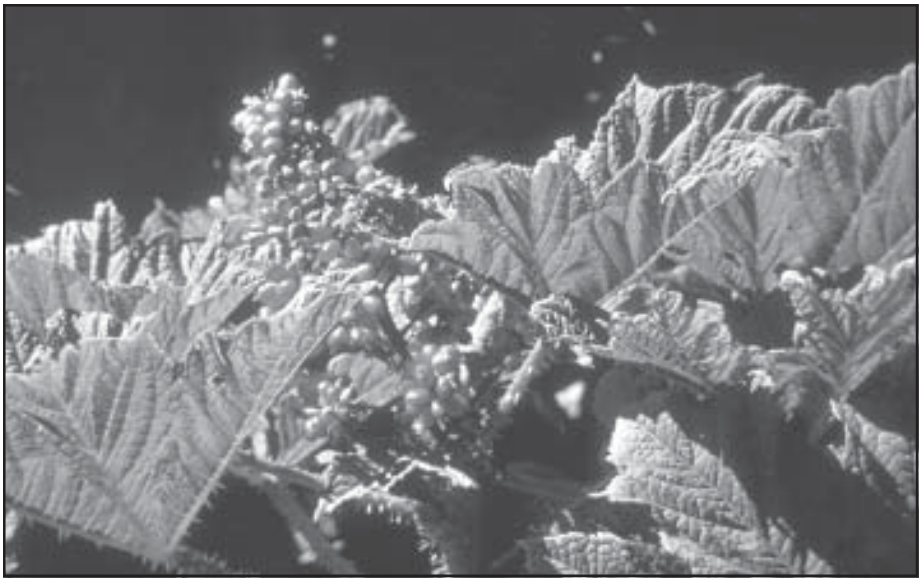
The next general meeting of the BC Chapter will be in the fall of 2001 and will be associated with a small symposium/workshop. §

"Events" continued

will be sampled at the first session. The second session will be an informative field exploration at Jericho Beach. VanDusen member: $48. Non-member: $53. VanDusen Botanical Garden, 5251 Oak St. 6:30 – 9:30 pm. Phone 604-257-8666 for more information.

Smithers, July 26-29

The first **Botany BC** get-together in the new decade, century and millennium will take place in Smithers (54 deg. 45' N, 127 deg. 10' W) in the beautiful Bulkley Valley. The activities will start on Thursday, July 26 (late afternoon) and end on Sunday, July 29. We will explore a wide variety of habitats from the valley bottom to alpine areas, from open dry scrub-steppe to wetlands and old moist forests. Illustrated talks will include: "Natural History of Bulkley Valley" (Rosamund Pojar); "Wetlands of British Columbia" (W. Mackenzie); "Moonworts by Daylight" (Patrick Williston); and "The All-embracing Web: Mycorrhizae, Mushrooms, and You" (M. Kranabetter). Mark these dates in your calendar and look for more inform-ation in the Spring *Menziesia*! §



Plant profile:

Oplopanax horridus

By Richard Porter, Streamside Native Plants, Courtenay

One of the most spectacular shrubs in our nursery is also one of the most underutilized in the native plant landscape: *Oplopanax horridus* (devil's club). Its reaching golden stems, bright red berries, and huge light-green maple shaped spreading leaves – possibly backlit by a fleeting ray of sun – can provide incredible structural beauty on the far edge of a pond or any moist background area in partial shade. The emphasis here is on 'background' since the small sharp spines that cover the stems break off in the skin, fester easily, and cannot be removed – hence the common name. Devil's club is also deer resistant, although it is valuable elk and grizzly bear forage, so one needs to know which species of wildlife frequent the nocturnal garden habitat!

Devil's club prefers moist but well drained soils. Our local native representative of the Ginseng *(*Araliaceae*)* family is found from Alaska to Oregon and also occurs around Lake Superior. In our vicinity it is a common riparian plant with its arching habit and up to three-metre stems providing excellent stream cover for fish. Devil's club also exhibits strong human buffering capabilities and we often recommend it in riparian revegetation projects where it is desirable to protect fragile streambank areas from human traffic! In fact one of the most common questions from visitors to the Streamside nursery is "Why are you growing that stuff?" – followed by some tale of horror involving a loss of footing and a wild grasp at whatever nearby vegetation would prevent a headlong plunge into the water.

Oplopanax horridus is also one of the most important First Nations' medicinal and spiritually protective plants. I have listened to a native elder describe how exactly the right plant would be selected and its healing spirit humbly requested to come to the aid of the ailing person before it was harvested. The entire plant would then be used to produce a medicinal broth. As a pancreatic tonic it is reputed to be effective as a blood-sugar regulator. It has been used to treat arthritis, respiratory and digestive tract disorders, and to increase endurance. Devil's club also enjoys one of the longest entries in the indispensable *"Plants of Coastal British Columbia…"* by Jim Pojar & Andy MacKinnon, who state that, among its many other uses, devil's club sticks and charcoal were used as protection against evil influences.

Although it can be grown from seed, devil's club spreads naturally by layering. The tall sinewy stems eventually contact the ground and take root, sending up new plants to form extensive stands. It is the peeled bark from these spineless horizontal stems that is most widely marketed today as a medicinal herb.

The market for wildcrafted devil's club is still much smaller than the millions of dollars earned each year by salal pickers in BC, yet it has some potential to grow. Because of its occurrence in mainly fragile riparian areas however, harvesting devil's club in the wild can be ecologically very damaging and must be carried out with great care, if at all. Trevor Lantz, a graduate student at the University of Victoria, is developing culturally and ecologically sound guidelines for its sustainable utilization as a non-timber forest product.

At Streamside we harvest small amounts of rootbark from the devil's club growing naturally on our nursery property. Not only does this provide us with a marketable commodity, but also our propagation material – since the plant is easily grown from cuttings – and the native stand is left intact! We simply prune out the portions of horizontal stem from between nodes that have already taken root and produced new plants. The bark is easily peeled from these stem sections and dried, filling the air with spicy and unforgettable aromas…and it makes a great tea! §

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Book reviews

Mr. Menzies' Garden Legacy. Plant Collecting on the Northwest Coast. By Clive L. Justice.
Cavendish Books, Delta, BC, 2000. Paperback, 137 pp.+ indices, $22.95. ISBN 1-55289-020-1

By Paige Woodward

Archibald Menzies, namesake of the journal you are reading, has never enjoyed the fame he deserves. This vivid and quirky book by Clive Justice sets out to change that.

Menzies (1754-1842) was, of course, the first European to collect and describe many plants of the Pacific Northwest coast. He botanized here in 1787-88 as ship's surgeon with a British fur-trading venture. He returned as ship's naturalist in the seasons of 1792-93-94, when George Vancouver charted the coast from California to Alaska.

Menzies sent hundreds of new plants back to the Royal Gardens at Kew from these expeditions, not least of them *Menziesia ferruginea,* the false azalea, emblem of the NPSBC. A summary of his important collections here and around the world appeared in *Menziesia* Vol. 3, Issue 1 (1998).

He might have become a god of botany, but fate has made Menzies obscure. Many of the live plants he sent to Kew died in transit. Red tape and politics kept most of his herbarium specimens unpublished for decades. Later plant explorers got credit for some of his discoveries; *Cornus nuttallii,* for example, our flowering dogwood, is named for Thomas Nuttall [see article on page 11]. Menzies' journals were neglected, too. The ones from BC and California with Vancouver were finally published in the 1920s, but quickly slipped out of print; his Alaska journals were not published until 1993.

Enter Clive Justice. A prominent BC plantsman and landscape architect, now retired, he sometimes adopts the costume and persona of Archie Menzies to teach Vancouver schoolchildren about native trees. Justice now further honours his hero – and does us all a huge favour – by gathering in one book some basic facts about Menzies and the plants he found, and their role in gardens.

Justice is excellent on plants – their forms, their needs, suggestions for combining them. He has no compunctions about mixing native plants with non-natives, and he holds (some might disagree) that though red-flowering currant and tall Oregon grape "made it into the English garden directly," most native plants need "horticultural tinkering" to become garden-worthy. He treats the politics of big-time botany with a similarly worldly twinkle. He describes the waters of the Inside Passage like a sailor. All this is a great pleasure to read.

To wrest so much lore from the archives cannot have been easy, however, and indeed some problems of editing remain.

The book's title may focus on the Northwest Coast, but the narrative wanders, "that reminds me" style. There's a lot about Menzies in places like New Zealand and Tierra del Fuego, and a lot about plants that are neither native to our region nor even linked to Menzies. It's as though two separate manuscripts – one about Menzies botanizing around the world, the other about interesting plants suited mainly to Vancouver gardens – had been shuffled into one on short notice.

Appendix A is a welcome if sketchy chronology of European discovery on the West Coast before 1808, when Simon Fraser reached the Pacific. Appendix B reprints a list of plants that Menzies discovered, and that bear his name, in far-off Hawaii. Strangely, there is no complete list of the plants Menzies collected on the Northwest Coast. There's a portrait of Menzies' patron at Kew, Sir Joseph Banks, but no portrait of Menzies himself, though several exist.

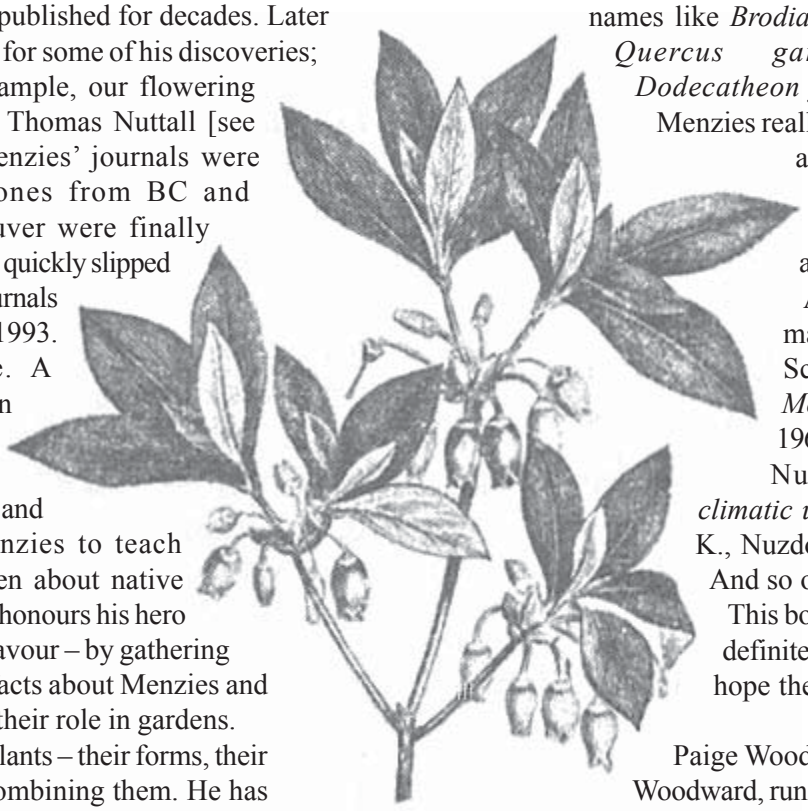
Countless typos have made it into print – merely annoying on maps labelled "Antartica," but deadly in botanical names like *Brodiaea cornaria* [coronaria], *Quercus garriyana* [garryana], *Dodecatheon jefferyii* [jeffreyi]. Did Menzies really write *Linneae borealis,* and not *Linnaea?* We can't be sure.

Several illustrations appear more than once.

Also troubling are the many scrambled citations. Schofield, *Some Common Mosses...* was published in 1969, not 1959; Klinaj, K. and Nuzdorfer, F. , *Biogeo-climatic units...* should be Klinka, K., Nuzdorfer, F.C. and L. Skoda. And so on.

This book is almost a classic, and definitely a collector's item. Let's hope there's a revised edition. §

Paige Woodward and her mother, Pat Woodward, run Pacific Rim Native Plants nursery near Chilliwack. She can be reached at pwoodwar@dowco.com or (604) 792-9279.



Menziesia ferruginea
False azalea

Illustration: After Smith, *Menzies Journal of Vancouver's Voyage*, Archive of British Columbia Memoir V; copied from *Mr. Menzies' Garden Legacy*

What's on the web

In response to a question from Malcolm Martin on the NPSBC mail list regarding botanical research on the web, botanist/ecologist Adolf Ceska had the following suggestions:

1) You can find some interesting answers if you try general search machines such as

http://www.google.com or http://www.altavista.com

2) I use CARL UnCover to scan recent journal publications for a certain keyword or the author. CARL stands for the "Colorado Association of Research Libraries" and the UnCover provides tables of contents of all journals as soon as they arrive to the CARL's libraries. This service is free of charge. For a relatively low annual subscription you can select up to 100 journals (or title keywords) and CARL will send you – by e-mail – tables of contents of these journals (or the references to the selected keywords) when the journal issues come to the library. The UnCover Reveal Home Page is

http://uncweb.carl.org/reveal/

or you can telnet to PAC.CARL.ORG

This database is not limited to botanical journals, you can find a great variety of natural history journals and journals from all possible other fields.

3) For botanical literature: Just recently, the Kew Royal Botanic Gardens put their "Kew Record of Taxonomic Literature" out as an on-line database. The on-line service is free of charge, but you should enter your e-mail address as a "subscription," otherwise you will get only a fraction of the available references. The web page is at

http://www.rbgkew.org.uk/kr/KRHomeExt.html

Please note that the Internet is case-sensitive, so you have to type capitals as they are in the address.

4) The Canadian botanical literature is covered (with some noticeable gaps and without more recent updates) in the "Botanical Specialists & Literature" database at

http://www.cciw.ca/eman-temp/scientists/botanists/intro.html

5) If you are looking for the botanists specializing in certain plant groups, use the Index Herbariorum:

http://www.nybg.org/bsci/ih/searchih.html

And good luck!

New members

Since September 15, 2000

Individual and Household Members:

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Gary Schaan, Victoria
John Gordon, Vancouver
James Ginns, Penticton

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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 deadlines: March 15 (Spring), June 15 (Summer), September 15 (Fall), December 15 (Winter, 2002). Subscription is included in membership to the NPSBC. Annual membership fees are: $20 - Individual; $30 - Household; and $75 - Sustaining member.

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