

The Diversity of British Columbian Native Plants for Nursery Production

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The extremes of British Columbia's climate and natural landscape are primary reasons for its diversity of native plants. British Columbia's geography encompasses alpine meadows in the mountainous regions of Revelstoke, Whistler, and Manning Park; the rainforests of the Queen Charlotte Islands and the west coast of Vancouver Island; the arid regions of the Okanagan Valley in the interior of the province; and the lower altitude areas of the Fraser Valley.

Visitors to British Columbia will soon become aware of its provincial flower—*Cornus nuttallii* (Pacific Coast dogwood). This deciduous tree is renowned for its large white flowers in the spring. However, it is not an easy tree to grow in the urban landscape as it does not like root disturbance and its bark splits if exposed to excessive sun. In addition, the last decade has seen an increasing incidence of anthracnose caused by the pathogen *Discula* sp. Dogwoods which are under stress from a long hot summer are particularly prone to infection.

The potential of this native tree for plant breeding was seen by Henry M. Eddie, one of the province's pioneer nursery growers, who emigrated from Scotland in the early part of this century. In the 1940s he began to hybridise *C. nuttallii* with *C. florida* (East Coast dogwood) and some of its pink selections, to try to bring together the best qualities of both species. He developed a number of selections with white or pink flowers, as well as compact and pendulous habits. During a major flooding of the Fraser River these *Cornus* selections at his nursery in Chilliwack were washed away with the rapid turbulence of the water. However, all was not lost; the previous year he had planted his most promising selection in a field adjacent to the present-day Vancouver International Airport. Subsequently named *Cornus* 'Eddie's White Wonder', this cultivar brings together the best attributes of both species—pure white flowers, intense fall colour, and a compact small to medium size for the urban landscape.

Modern technology in coniferous forest tree production has been successfully adapted for native plant production. Innovations in container design, mechanical handling, and changes in the environment for precision growing have significantly reduced the production period and improved subsequent establishment in the landscape.

The last 5 years in particular has seen an increasing number of nurseries specialising in native plants to satisfy the wholesale demand for reclamation, highways, and commercial landscapes. Through public education programs, the home gardener is now also much more aware of the diverse uses of native plants. Some retail centres have set aside sections in their displays specifically to promote these plants. However, specific cultural information on native plants, such as low nutrition and moisture requirements, is sometimes lacking.

To meet this increasing demand for native plants, the Plant Introduction Scheme at the UBC Botanical Garden (PISBG) has given much attention to the evaluation

and introduction of improved clonal selections and/or plants which are little known but have great commercial potential.

The most successful selection has been the evergreen ground cover *Arctostaphylos uva-ursi* 'Vancouver Jade'. Well over 1.5 million plants are now produced annually in British Columbia. Its success is due to its ease of propagation, dense habit, attractive flowers and diverse use in the landscape. It has also provided a significant export market to Washington State and Oregon.

Dr. Wilf Nicholls, Research Scientist at the Botanical Garden, has undertaken a systematic collection of many species in the province. One of his priorities has been *Penstemon*, which are ideal for dry sunny locations. The introduction, *Penstemon fruticosus* 'Purple Haze' has made a considerable impact in the interior of the province, Vancouver Island, and in the Pacific Northwest of the United States. It is a plant that does not tolerate excessive overhead irrigation or excessive nutrition which cause stem dieback and restriction in root development. This selection is now being hybridised with *Penstemon rubicola* and other U.S. species to encourage diversity in both habit and flower colour.

Two native broadleaved evergreen introductions which should be trialed in Australia are *Paxistima myrsinites* 'Emerald Cascade' (syn. *P. myrtifolia* 'Emerald Cascade') and *Vaccinium ovatum* 'Thunderbird'. 'Emerald Cascade' is a compact weeping form of the myrtle boxwood (Oregon box), while 'Thunderbird' is a very floriferous soft-pink-flowered selection with outstanding reddish-coppery new growth.

As earlier indicated, native plants are not necessarily the easiest to propagate and subsequently produce under nursery conditions. Some of these problems include:

- Inconsistency in propagation, e.g. *Arctostaphylos uva-ursi* and *Shepherdia canadensis*;
- Poor growth with the standard nutrition, growing media, and irrigation regimes used in most nurseries;
- Genetic variation leading to a lack of crop uniformity;
- When grown in containers the plants may be too tall or their flower colour reduced at the point of sale. As some native plants have a very short flowering season, followed by dead seed heads and foliage, they may be unsightly and unappealing.

It is likely that in southeastern Australia and Tasmania there are already five British Columbia (BC) native plants which are either grown as the type species or as their selected cultivars. These are *Ribes sanguineum*, *Potentilla fruticosa*, *Arctostaphylos uva-ursi*, *Mahonia aquifolium*, and *Cornus sericea* (syn. *C. stolonifera*). The following BC native plants also have great potential in the region.

***Philadelphus lewisii* (mock orange).** A hardy drought-resistant multistemmed shrub to 2 m, with masses of fragrant white flowers in May. It occurs throughout southern Vancouver Island, with its Mediterranean/Californian climate and, is absent from the wetter Lower Mainland but common again in the Okanagan Valley, a dry belt with intensely cold winters.

***Eriogonum umbellatum* (sulfur buckwheat).** A hummock-forming perennial from subalpine areas of south-central BC. Mounds of leafy rosettes are covered in creamy yellow inflorescences in summer.

***Fragaria chiloensis* (sand strawberry).** An excellent evergreen herbaceous

groundcover with lustrous deep-green leaves that grows best in sun and sandy soils. A parent of our cultivated strawberry.

***Rosa woodsii* (Wood's rose).** A slightly dwarf selection is showing great potential for bank and roadside plantings, as suckering stabilises soil. Compared to the wild type, brilliant red stems and petioles accent the finer glaucous leaves. Festooned for 2.5-cm pink flowers in June.

***Cornus canadensis* (bunchberry).** An excellent flowering herbaceous groundcover for a woodland garden. In dappled shade and organic soils it will give carpets of white flowers, red berries, and dense foliage. Intense sun and drying winds can burn this plant.

***Penstemon fruticosus* 'Purple Haze' (shrubby beardtongue).** A superb rock garden plant or groundcover in exposed sunny spots. Good drainage is important for this naturally occurring scree-slope species which produces masses of purple flowers in spring. Low nutrients and low water keep this plant as a tight tussock.

***Camassia quamash* (camass lily).** A bulbous plant of the coastal prairie areas of southern Vancouver Island. Intense blue-purple flowers in early spring are held above linear leaves. Perfectly adapted to summer drought, the plant flowers using stored winter moisture.

***Prunus virginiana* var. *demissa* (chokecherry).** A drought-hardy deciduous shrub or small tree. Pure white inflorescences of small flowers are held horizontally or droop rather like *P. padus*. The fruit is bitter but makes fine jelly and jam. A few cultivars exist including a weeping form.

***Holodiscus discolor* (ocean spray).** This wonderful deciduous arching shrub is crowned with foam-like inflorescences of tiny white flowers in spring and early summer.

***Allium cernuum* (nodding onion).** An excellent perennial onion with pink flowers hanging in pendulous inflorescences atop a robust tuft of linear foliage. Flowering in spring, it remains a healthy green throughout droughty summers.

***Lonicera ciliosa* (western honeysuckle).** Scentless but beautiful trumpet honeysuckle covered in orange blooms in early summer, followed by attractive masses of red berries. It can climb on fences, other shrubs, and trees.

CONCLUSION

The demand for native plants will continue to grow, especially for reclamation, highway plantings and commercial landscapes. However, whether for the home garden or the large-scale urban landscape, native plants should not always be used because they are native. Some native plants are inappropriate as they may sucker, become invasive, be unsightly or short lived. The majority of good garden plants in use today within British Columbia are not native to western North America but originated in Asia, Europe, and other areas of North America. Native plants should be used in balance with non-natives to beautify gardens and public landscapes.

REFERENCES

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