

## Ornamental Climbing Plants at the University of British Columbia Botanical Garden

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### INTRODUCTION

The University of British Columbia Botanical Garden is the oldest university botanical garden in Canada. It was established in 1916 under the Department of Biology and was essentially a teaching garden, but at the same time served an important role in the beautification of the new campus. In 1968 the university's board of governors designated a new 70-acre site for the construction of a new botanical garden. The challenge to design and develop this project was taken up by the Garden's former director, Dr. Roy L. Taylor.

Today the Garden has over 14,000 accessions, some 10,000 different plants and plays a major role in education and research, as well as in developing close ties with the community and the professional horticultural industry.

### CLIMBING PLANTS

The Vancouver climate provides an excellent growing environment for a diverse collection of climbing plants. The collection of vines is considered to be one of the best in North America for a northern temperate climate. The Garden has many locations where these plants can be tested, including perimeter fences, a large wooden arbor and summer hanging baskets and containers. However it is the coastal forest area of the David C. Lam Asian Garden, one of the Botanical Garden's components, where vines are seen at their best. They are able to grow up and into large specimens of native coniferous trees, e.g., *Abies grandis*, *Tsuga heterophylla*, *Pseudotsuga menziesii* and *Thuja plicata*. The David C. Lam Asian Garden contains a number of rare species, including *Actinidia hemsleyana*, *Aristolochia heterophylla*, and *Holboellia fargesii*.

***Actinidia hemsleyana*.** *Actinidia hemsleyana* is native to Eastern China and grows up to 10.0 m. high. Besides its narrow leaves, its main ornamental feature is the very conspicuous fine red hairs it bears on its new growth. Greenish-coloured flowers are produced in June. Propagation is by single nodal softwood cuttings in June, using 0.5 to 0.8% IBA in talc. The cuttings take four to five weeks to root under mist. It is important that the rooting mix not become overwet, as rotting of the stem and auxiliary bud will result.

***Aristolochia heterophylla*.** *Aristolochia heterophylla*, from Western China, is a shrubby climber growing up to 3.0 m. in height. The leaves are soft and pubescent. The small typical "Dutchman's Pipe" flowers are pale yellow and tinged purple, developing to bright yellow at the flower's center. This vine has great potential for growing up a trellis in small gardens, as well as in patio containers. It is propagated by softwood cutting in late May to early July, using 0.3 to 0.5% IBA in talc.

***Holboellia fargesii*.** *Holboellia fargesii* has to be one of the best of all evergreen climbers, but is unfortunately virtually unobtainable in the nursery trade. The new yellow-green growth turns to a dark green, making the deeply lobed leaves particularly attractive. The pendant pale-lavender flowers in the late spring and early summer are outstanding. This vine grows well in both shade and nearly full sun in Vancouver. Unfortunately the selection of this species we wish to introduce into nurseries is extremely difficult to propagate. No success has been achieved with softwood, semi-riewood or even micropropagation. Plans are underway to see if it will graft successfully onto *Holboellia coriacea*, *Akebia quinata*, and *Stauntonia hexaphylla* — all members of the family Lardizabalaceae.

## PLANT INTRODUCTIONS

In British Columbia there has been a surge of interest in climbing plants from home gardeners, landscape designers and nursery growers. Recently the development of new and improved selections has been a priority for the Garden's Plant Introduction Scheme. The first plant releases were made through this program in 1983 and to date 17 introductions have resulted in over 10.0 million plants being produced in North America. Besides climbers, these introductions include shrubs, trees, perennials and groundcovers. In British Columbia alone there are now 43 nurseries participating in the program.

***Clematis* Introduction Program.** *Clematis* 'Blue Ravine' was the first vine released through the Plant Introduction Scheme. It was bred by Mr. Conrad Erlandson of Abbotsford, British Columbia, by hybridising *C.* 'Nelly Moser' with *C.* 'Hybrida Sieboldii' (syn. *C.* 'Ramona'). He subsequently gave it to the UBC Botanical Garden. It retains the best qualities of both parents. *Clematis* 'Blue Ravine' grows to 2.0 to 3.0 m. in height. An abundance of large flowers are produced in May and June, with a few later in the season. The flowers are 15 to 20 cm. across, with seven or eight soft violet-blue wavy petals with a darker pinkish-blue midrib. It is ideal for containers and for trellises for small gardens, as it flowers low down on the previous season's wood. In nursery production this also means that flower buds are quickly set on small liner plants and may need to be removed to obtain good extension growth. *Clematis* 'Blue Ravine' is now one of the best selling cultivars in Canada. A seedling from it, with silver-blue flowers, is currently under trial. Soon to be released through the program is a very attractive selection of *C. chiisanensis* from wild collected seed in Korea. Its clear-yellow solitary pendant flowers are considerably larger than the type species and turn orange-red near the pedicel. It is one the earliest yellow-flowered species in Vancouver, thus making it a useful addition for retail sales. Later the stems turn purple-black and small silver-white seed clusters appear. It is a tidier plant than *C. tangutica* or *C. tibetana* ssp. *vernayi* (syn. *C. orientalis*). Also being evaluated are some interesting selections of wild collected seed of *C. koreana* var. *fragrans*. The flower colours range from mid-purple through to yellow and the shapes of the flowers vary considerably.

A *Clematis* breeding program has been initiated for this popular genus. The goals of the program include hybridisation of different species and/or cultivars in order to develop:

- Scented large-flowered cultivars
- Multi-flowered racemose cultivars with medium to large flowers
- Yellow cultivars that do not fade in the sun



- Compact selections for small patios and pot plant production

**Other Breeding Programs.** Breeding new climbing plants has been a major focus for Dr. K.W. Nicholls, the Garden's research scientist. He has successfully bred a new *Lonicera* by hybridising the Chinese species, *L. tragophylla*, with the Canadian-bred cultivar, *L. ×brownii* 'Dropmore Scarlet'. *Lonicera tragophylla* is noted for its large inflorescences of yellow flowers and attractive new foliage. *Lonicera ×brownii* 'Dropmore Scarlet' has much smaller red flowers and its hardiness withstands the harsh Canadian winters. Selected from the seedling progeny was an outstanding plant which subsequently produced large inflorescences of orange-red flowers but retained the foliage of *L. tragophylla* and the hardiness of *L. ×brownii* 'Dropmore Scarlet'. This plant was subsequently named *L. 'Mandarin'* and has been released to the program's participating nurseries for sales commencing in March 1998.

There is a definite demand for more evergreen vines suitable for the Pacific Northwest and for this work the Lardizabalaceae show considerable potential.

Plans are underway for interspecific and intergeneric hybridisation of *H. fargesii* with *H. coriacea*, *A. quinata* and *S. hexaphylla*. Climbing plants will continue to be an important part of the Garden's collections. The UBC Botanical Garden provides an ideal environment for exploring new ways they can be used in the landscape. In the nursery production of these plants it is essential that particular attention is paid to correct naming, good hygiene and other cultural techniques to ensure quality plants are produced for the vibrant market demand.