

# SUCCESSFULLY INTRODUCING PLANTS FROM BOTANICAL COLLECTIONS INTO THE NURSERY AND LANDSCAPE INDUSTRIES

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The Plant Introduction Scheme of the University of British Columbia Botanical Garden (PISBG) was initiated in 1980 by the Garden's previous Director, Dr. Roy L. Taylor<sup>2</sup>, and nine plants have been released to date into the B.C. nursery trade for subsequent wholesale, retail, and landscape sales. Descriptions of the material released, propagation methods, and the procedures for evaluation and introduction of plants are documented in the references listed at the end of this paper. Plants released through the PISBG programme that are registered with the Canadian Ornamental Plant Foundation (COPF) are *Anagallis monelli* 'Pacific Blue', *Arctostaphylos uva-ursi* 'Vancouver Jade', *Genista pilosa* 'Vancouver Gold', *Ribes sanguineum* 'White Icicle', *Rubus calycioides* 'Emerald Carpet' and *Viburnum plicatum* 'Summer Snowflake'. Recommended but non-registered plants are *Diascia rigescens*, *Microbiota decussata* and *Teucrium scorodonia* 'Crispum'.

The role of this paper is to relate our experiences as a basis for recommendations to a botanical garden, or similar institution, wishing to successfully introduce their plant material. In our opinion, botanical gardens are generally far too conservative in the use of, and introductions from, their plant collections. There is often a tendency for gardens to collect material with no apparent overall objective and to consider the plants collected merely as "collectors items", with little consideration as to how they can be made available to the nursery trade, urban landscape, and home gardener. Our recommendations can be listed under eight headings.

## INDUSTRY INVOLVEMENT

The primary users of the plant material must be involved and consulted from the very start. The key players are the wholesale and nursery growers, landscape architects and contractors, together with parks boards. The nurseries involved should be chosen from growers selling both locally and across the country, as well as having the ability to export their product. During this phase, it is

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vital to have thorough consultation with the industry so that they are fully aware of the programme's objectives.

## COMMITTEE STRUCTURE AND FUNDING

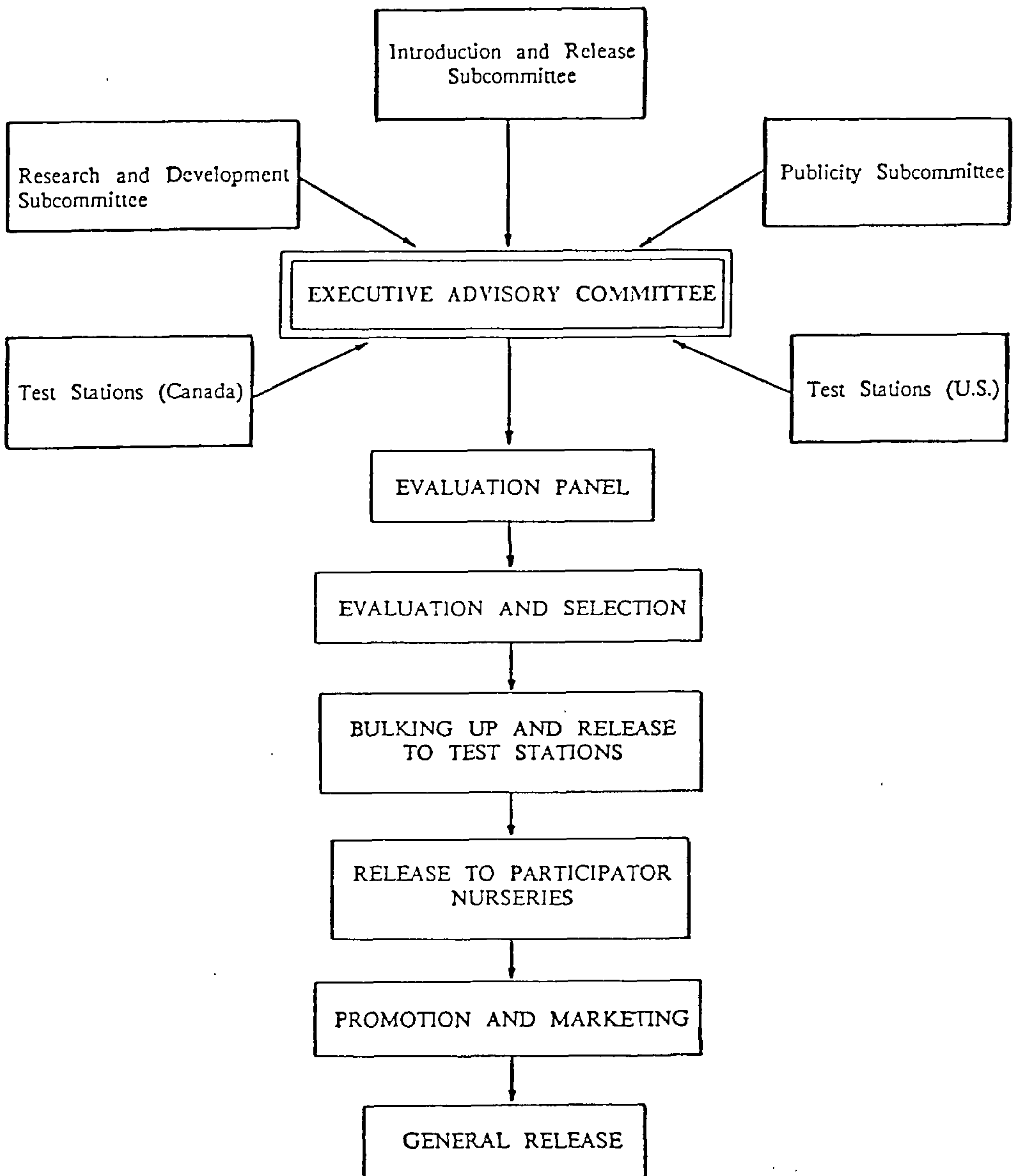
It is imperative to select the executive committee members from people who will contribute both positively and constructively. Our advice is to keep the committee to no more than ten individuals representing key sectors of the industry. One of our early goals was to evaluate the reasons why other institutional and commercial introduction programmes had or had not been successful. As a result of this evaluation, several criteria were set for the PISBG. It is very important to meet regularly, particularly initially, so that industry can see that action is being taken. Too many good programmes lose their impetus by excessive committee work with slow and inconclusive results.

Once the executive committee has resolved the objectives, we have found that a series of sub-committees with a membership of four to five members is an effective way for the programme to proceed. The three sub-committees of the PISBG programme are for *publicity, research, and introduction and release*—the latter being the “core committee” that makes the final choice of plants to be released, sets royalties, and is used by the Garden to provide advice on “trouble-shooting” to the programme. The following diagrammatic representation reflects the organizational structure of the PISBG programme.

Ideally, a new programme requires some “seed-funding.” Considerable effort was made to recruit and lobby for outside funding for the PISBG. This was subsequently achieved by funding from the Science Council of British Columbia—an organization that supports joint research and industry programmes—and the Devonian Group of Charitable Foundations in Calgary, which supports diverse horticultural projects in Western Canada. Funding is more easily attracted when the goals and procedures have been formulated before approaching groups—this shows the potential agency that the necessary homework has been carried out and that the program is viable.

A number of botanical gardens may have insufficient nursery resources of their own to support an introduction programme. With this in mind, we placed considerable emphasis on upgrading and expanding our facilities. The nursery should be the “core” of any botanical garden because inaccurate accessioning and/or production and planting of poor quality plants has uneconomic long-term consequences.

DIAGRAMMATIC REPRESENTATION OF THE P.I.S.B.G. PROGRAM





## REVENUE FROM THE PROGRAMME

It is vital that one fundamental principle is understood—both industry and the botanical garden must receive revenue from the plants selected and sold. The PISBG programme receives revenues from three main sources—royalties, sales of cuttings, and sale of mother (stock) plants. Currently, these account for revenue received in the region of \$30,000 Cdn. —we anticipate this will increase in the region of 10 to 15% per annum. A new plant introduced into the market will provide new sales but may also partially or fully substitute an existing product. For example, in British Columbia, *Arctostaphylos uva-ursi* 'Vancouver Jade', a local selection of the important native ground cover, has increased new sales, particularly for export, but it has also replaced sales of the type species and existing cultivars due to its superior qualities.

Participator nurseries in British Columbia have been excellent in making royalty payments, but we have missed out on royalty payments from other countries. Our most immediate concern is to resolve this problem either by using nurseries to patent new plants on our behalf in their respective countries or by formulating a contract between the University and a particular nursery.

A direct economic benefit has been provided to the nursery industry of British Columbia such that an independent economist, hired by the Science Council of British Columbia, estimated that sales to wholesale nurseries from participator nurseries was \$1.9 million cdn. in 1987.

## EVALUATION PANEL FOR PLANT SELECTION

There are over 13,000 different plants in the Garden's collections in Vancouver and therefore criteria have to be formulated as to the choice of individual plants to be selected for introduction. Maximum impact is achieved by inviting an evaluation panel selected from different sectors of industry to attend annually, or more frequently as the necessity requires, to thoroughly assess each plant for possible selection. We view up to a maximum of 14 plants in one day. Each member of the panel completes a detailed evaluation form for each plant to determine its uses, market outlet, economic impact, and positive and negative characteristics, together with its over-all suitability for introduction. After analysis of the forms, the possible selections are narrowed down to three plants by the introduction and release sub-committee.

To ensure that the programme makes a quick impact, we recommend that ground covers, perennials, or easy-to-propagate shrubs are chosen initially. This produces material for sale in a relatively short space of time and also allows for royalties to be returned to the programme at an early phase.

One important note is that the botanical garden should use its

expertise to ensure that a plant is correctly named and that any new cultivar is correctly registered. It is vital to make comparisons with existing clones, and outside expertise should be sought to verify that it is correct for a particular plant to be given a cultivar name. The choice of cultivar name is important for its public success.

## PRODUCTION OF MOTHER PLANTS, AND RELEASE TO PARTICIPATOR NURSERIES

After selection of the plant for introduction, there are essentially two ways by which the bulking-up of material for release can proceed. *Firstly*, a designated nursery can undertake this—this, however, could innocently lead to the accusation of some bias. *Secondly*, the botanical garden or institution can produce the mother (stock) plants—we use the latter method. Some 500 to 1000 mother plants are produced and sold in minimum lots of 50 at a premium price to participator nurseries. When distributed, it is essential that a contract be signed to determine the date of public release, royalty payment, and the number of plants to be made available at the time of release. Our experience has shown that the latter is the most unpredictable. The PISBG programme began with nine participator nurseries and today there are 26.

Two-way communication between the garden and nurseries during the phase from release to the participator nurseries until the date of public release is vital to ensure that they adhere to the recommended production schedules. It is also very important that the garden takes notice of, and amends from, the industry experience. The botanical garden can advise on propagation and production methods from its own research and development, but a considerable amount of information results from the commercial situation. If an important problem arises during the research phase, release of the mother plants is delayed until trials on a commercial site.

## TESTING AND EVALUATION IN THE PUBLIC LANDSCAPE

Each plant selected for the programme has usually been growing in the Garden for a minimum of six to seven years. The varying climatic conditions of North America meant that seven test sites in Canada and six in the United States were arranged at different institutions. Average winter temperatures range from  $-44^{\circ}\text{C}$  through to  $+4^{\circ}\text{C}$ , according to site. This resource information has been invaluable. However, a test site is only as good as the care that the plants are given. The liaison provided by the botanical garden is important to ensure that knowledge gained from the test sites is made available to industry. On a number of test sites, summer temperatures and humidity have been a greater factor for successful growth of the plants than winter hardiness.



We have a clause included in the programme that allows pre-release of plants for a high-profile public landscape site. However, more recently we have been working with the provincial Department of Highways for testing plants in different areas of British Columbia. It is strongly recommended that the Department of Highways be involved with the programme because of the potential number of plants involved.

## PUBLICITY AND PROMOTION

Our experience has shown that funding for, and time spent on, publicity and promotion is well rewarded. This phase of the programme has been directed to:—

- (i) Production of a special stick (for liner pots) and tag label (for one gallon and upward) so that the potential buyer at a retail outlet knows that the plant has come through the PISBG programme. The participator wholesale nursery is responsible for ensuring that the labels are placed on the plants.
- (ii) Promotional brochures, posters, and weatherproof garden centre display labels.
- (iii) Media involvement through contacting garden clubs, press, radio and television. One press release about the 1988 introduction of *Ribes sanguineum* 'White Icicle' resulted in five interviews being given to newspapers across Canada and in three radio interviews.
- (iv) Providing seminars for retail garden centre staff. Direct contact with those employees actually selling the plant is necessary for a plant to be successful.
- (v) Production of coloured information sheets on each plant for distribution to landscape architects and potential buyers of the material. These sheets contain photographs, descriptions, and culture of the plants; propagation and production information are also summarized.
- (vi) Participation in trade shows with the major nursery trades associations. The PISBG plants have been a feature of the exhibits in shows in British Columbia and Ontario. We are currently investigating the production of a video presentation on the PISBG programme.

## RESEARCH AND DEVELOPMENT FOR POTENTIAL PLANTS

It is relatively straightforward to select the initial "winning plants" from the botanical collections. Long-term success of the programme is ensured by having plants at various stages of development so that introductions can be provided on an annual basis. We

shall be proceeding with the following goals in order to achieve this:—

- (i) Wild field collections of British Columbia native plants to select natural variants for habit, hardiness, flowering, etc.
- (ii) Joint research with experts already at this University into micropropagation to regenerate species which are difficult by conventional means.
- (iii) Commence plant breeding programmes, particularly with native perennials and deciduous and broad-leaved evergreen shrubs.

With these goals in mind, a Foundation has been set up in the name of Henry M. Eddie, one of the province's pioneer nurserymen and plant breeders. The Foundation has a board of trustees with strong industry representation and will set up an endowment fund to support the future research and development of the PISBG programme. The plan is to raise \$1.0 million Cdn. over five years.

In conclusion, I have tried to summarize the past, present and future of our programme to encourage botanical gardens in both Australia and New Zealand to formulate similar joint programmes with their nursery and landscape industries. Five institutions in North America are in the process of modelling the PISBG programme, which has given us considerable encouragement. Plant collections can be described as "living museums", but botanical gardens have an important use in ensuring that the very best of their plants are selected for ultimate use in private gardens and the public landscape.

#### REFERENCES

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