

ANALYSIS OF THE SALES AND USE  
OF LANDSCAPE PLANTS  
IN BRITISH COLUMBIA  
1967 - 1968

by

Doris Magdalene Morris

B.S.A., University of Toronto, 1952

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Department of Plant Science

The University of British Columbia  
Vancouver 8, Canada

Date April 29, 1970.

## A B S T R A C T

In this study, plant sales records for a 12-month period ending in 1968 from five British Columbia Lower Mainland nurseries were compiled for analysis of quantities sold of each species, their cash value and nursery size, and the types of customers to whom plants were sold. Landscape projects designed by three Vancouver landscape architects over a two-year period, 1967 - 1968, were studied to learn how plants were being used, and what quantities and species were required for 10 types of landscape situations and six geographic locations. Plants were listed according to quantities sold or specified to show species which were being used in large amounts.

Computerized methods of data collecting were employed to test methods of conducting a continuing inventory of plant material requirements and supplies.

Sales data from five nurseries were compared to British Columbia Department of Agriculture totals for a similar period of time 1966-1967. On the basis of acreage, the sample was estimated to be 37.8% of the total nursery production for Lower Mainland British Columbia. The projected sample data were comparable to government figures in most plant categories except for estimates of total sales of roses, rhododendrons and azaleas. This suggests that nurseries specializing in roses, or rhododendrons and azaleas sell a large proportion of these plants.

Plants were shipped from the nurseries studied to many types of customers. In the sample it was found that 58.9% of the value of sales were made to purchasers within the immediate area. Shipments to the Prairie Provinces constituted the largest percentage of the value of plants sold outside the Lower Mainland, 13.6% of total value.

Large growers within the Lower Mainland purchased a larger proportion of plants sold than any other type of customer, 17.9% of total value. This figure shows the extent of specialization and interdependence of the industry. It also indicates that survey figures based on nursery sales do not give a true estimate of production, as perhaps 20% to 25% of the value of sales represent plants traded within the industry two or more times.

Retailers, landscape contractors and large growers in the sample purchased plant material of nearly equal value. The garden centre type of operation appeared to be the major retail outlet purchasing nursery plants from growers, rather than the chain or department store.

Distribution figures determined in this survey, however, can only be a small indication of the total picture, since the nurseries tend to be a highly variable group.

Data collected from landscape architects' planting plans was analysed in a number of ways: First, plant species were ranked in order of quantities used over a two-year period. Second, the quantities of plants specified for 10 types of landscape projects and for six

geographic locations were listed, and the average number of plants used for each type of landscape development was calculated. Third, The frequency of use of various plant species and cultivars was examined. Plants used frequently by three landscape architects were listed, and also plants used by two of the three designers, or by only one designer.

It is apparent that the landscape architects made frequent use of a comparatively short list of plants, and that a few species were specified in large quantities for mass-planting effects. Broadleaved evergreens and ground covers were the two plant categories favoured by the landscape architects; quantities specified annually made up a large part of the total Lower Mainland production of these plants, 58.7% and 69.1% respectively. In comparison, the quantities of conifers and trees used by landscape architects was very low, only 5.3% and 2.6% of estimated Lower Mainland production.

Most of the plants used in great quantities were specified by all three designers studied, although it was shown that one landscape architect alone can create a big demand for a particular plant when he uses a favourite species frequently.

Ways were suggested in which growers and landscape architects may cooperate to introduce new types of landscape plants to the short list of frequently-used species.

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## A C K N O W L E D G E M E N T S

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Members of the British Columbia Nursery Trades Association and the British Columbia Society of Landscape Architects have been invaluable in gathering statistics for this study. Special thanks are directed to the five nurseries and the three landscape architects who allowed me to use their records for analysis.

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## INTRODUCTION

"Growing trees and shrubs are, in the main, the essential structural material of garden design, just as stone, wood, bricks and mortar, steel and concrete, are the materials of architecture." 3

Brenda Colvin, Landscape Architect

"In architecture materials can usually be made, if they are not already in supply, within the period when the architect is making working drawings to the time when they are required on the site. This is not so with the nursery, which must necessarily plant in advance of the order ..... It seems to me vital that our profession should stabilize the demand for plants; but since we are individuals and artists, I am at the moment at a loss as to how this commitment can be accomplished. Speaking personally, however, I should be only too happy if my palette of plants could be reduced from a million odd to a hundred or so." 8

G.A. Jellicoe, Landscape Architect

In this study an analysis is made of the types of landscape plants used and sold in the British Columbia Lower Mainland region, with emphasis on those species and cultivars most frequently specified by landscape architects. By understanding the current demand for plants for use in the British Columbia landscape, predictions of future plant requirements may be made.

The professional landscape architect has an influence on the market for nursery-grown plants in both a direct and an indirect way. His designs not only create a demand for a quantity of plants to be supplied by the nursery industry, but they also influence non-professional designers and property-owners to create landscape designs using similar types of plant material. The planting styles initiated and pursued by landscape architects are indications of future trends.

The problem of supplying suitable nursery-grown plants for large-scale landscape developments is a major concern of the landscape architect and the nurseryman. In the early years in British Columbia the nursery business supplied fruit trees and landscape plants to individual farmers and home-owners. The quantities of plants sold were not large. In recent years, however, the picture has changed. Increases in population and new demands for a quality human environment have created the need for large numbers of plants for the urban scene, for parks, malls, roof gardens, street and highway planting, schools and colleges, as well as apartment complexes and single-family homes. Nursery plant sales have changed from small-volume sales at the retail level, to large-volume wholesale production for commercial customers.

Landscape design in Vancouver has made its greatest advances since the Second World War. A number of professionally-trained landscape designers established private practices or became members of government and university organizations during the 1950s and '60s. In 1963 the British Columbia Society of Landscape Architects was formed with twelve charter members. Name Act Legislation was passed by the British Columbia Legislature in 1968 making the British Columbia Society of Landscape Architects the official organization for all British Columbia landscape architects, the first group in Canada to receive such recognition. By 1969 membership in the Society had grown to include 39 regular, associate, and junior members.

This study of plant sales and use was undertaken at the suggestion of members of the British Columbia Society of Landscape Architects and the British Columbia Nursery Trades Association. Its main purpose has been to determine the landscape architects' preferences for various types of plants, and to relate this information to nursery plant production. In order to plan for future sales, the nursery operator must understand his customers' plant requirements. This survey views the landscape architect as a "consumer" of nursery plants, since his choice of plant species affects a portion of nursery sales.

Nursery sales information has been analysed in several ways: First, the sales figures for one year from five Lower Mainland nurseries were compiled to determine the quantities sold of each plant type and species. Second, the sample sales data were projected on the basis of acreage to estimate total Lower Mainland production, and the resulting estimates were compared to British Columbia Department of Agriculture figures. Third, a study was made of the types of customers to whom shipments of nursery stock were made.

Landscape architects' plant lists were analysed to learn how plants were being used, the frequency of use, and the quantities and species required for 10 types of landscape situations and six geographic locations.

This analysis of plant sales and use has necessarily been preliminary in nature, since no comparable work has been done previously. In many ways it can be considered a pilot study to test methods of conducting a continuing inventory of plant material requirements and supplies.

It is not within the scope of this study to comment on the suitability or lack of suitability of certain plants for use in the British Columbia landscape. This survey merely lists those species used frequently and in quantity by landscape architects, and the species sold in large quantities by nurserymen. It remains for growers and designers with long experience in the British Columbia coastal area to determine whether, in fact, the species presently grown and used are the best for the purpose, or whether other species should be substituted.

#### Other Surveys of Plant Sales and Patterns of Use:

Studies have been made in other localities to determine preferences for various types of nursery plants, cut flowers, flowering plants, and related products. A survey carried out in the Northeastern States<sup>13</sup> compiled data from 1,445 interviews with homeowners chosen at random. Information was obtained about family income, house age, length of occupancy, property value, size of landscape area, education of home-owner, possession of landscape plans, and plans for future buying and renovating. Various attitudes and preferences were ascertained, and ways were suggested in which nurserymen may increase sales

and services to home-owners in the Northeastern States. This study dealt with the small property owner as a consumer of nursery plant material.

Another survey carried out by the United States Department of Agriculture, Economic Research Service,<sup>7</sup> analysed data from 14,866 interviews with a random sample of adults throughout the United States. The questions asked were related to the purchases of floral arrangements, cut flowers, corsages, potted plants, bedding plants, nursery stock, artificial flowers, and other related products. Seasonality of purchases, occasions for buying the products, and demographic characteristics of the buyers were studied for variations related to these factors.

Canadian statistical information on sales and markets for nursery-grown plants is fragmentary. Surveys have been carried out by the Horticulture Branch, British Columbia Department of Agriculture at five-year intervals since 1955. They provide information on numbers and value of plants sold, with plants listed in various categories such as trees, conifers, rhododendrons, other broadleaved evergreens, and so on. No attempt has been made up to this time to list the quantities sold of each species. The Horticulture Branch collects data by personal interviews with growers throughout the province. Some of the sales figures represent growers' estimates rather than actual counts.

The Dominion Bureau of Statistics, Canada Department of Industry, Trade and Commerce, publishes reports of quantities of plants shipped annually from Canadian nurseries, listing plants by genus and in some cases, species. These figures are based on questionnaires completed and returned by nurserymen. Since many growers have not participated in these surveys the Dominion Bureau of Statistics totals do not truly represent the whole industry. For example, 1965 figures were based on returns from 32 British Columbia nurseries, and 1966 figures included 56 nurseries.<sup>5</sup> The British Columbia Department of Agriculture lists 109 growers licensed to sell nursery stock under the Plant Protection Act in 1968.<sup>2</sup>

The landscape architects have been aware that their plant requirements have been increasing from year to year, but no accurate count of numbers of shrubs and trees specified has been done. A plant survey by means of member questionnaires was attempted by the British Columbia Society of Landscape Architects in 1966-67, but it was not completed.

#### Nursery Plant Production 1955 - 1967

Nursery stock produced in 1955, when the first survey was undertaken by the Horticulture Branch, British Columbia Department of Agriculture, totalled 1,392,897 plants, with a cash value of \$782,676.<sup>1</sup> Of this total value, 38.3% represented sales of fruit trees and fruit tree rootstocks, 20.8% conifers, 4.3% trees, 7.7% deciduous shrubs, 8.8% broadleaved evergreens, including rhododendrons and azaleas, and 20.1% sales of other plant types.



By the time of the 1966-67 survey, production of nursery plant material had increased to 3,055,310 plants with a total value of \$2,386,538.<sup>2</sup> Quantities of plants produced had more than doubled in the 11-year interval, and the dollar value of plant sales increased to three times the original figure.

Fruit trees and fruit tree rootstocks made up 26.2% of the value of production in 1966-67. The proportion of the value of sales of other plant types was as follows: 10.5% trees, 28% conifers, 4.1% deciduous shrubs, 10.2% broadleaved evergreens including rhododendrons and azaleas, 21% other plant types.

The landscape plant industry in British Columbia is a growing segment of the economy that is often overlooked by the agricultural community in its concentration on food crops. As more of the population becomes concentrated in the cities, however, the demands for improved environmental conditions will necessarily increase demands for nursery-grown plants, and also for service industries related to the design of outdoor living spaces, their construction and maintenance. While many urban improvement schemes are proposed, little thought or research is given to the mechanics of providing suitable plants for urban conditions, or to their installation and care.

This thesis outlines present sales and use of landscape plants in the British Columbia Lower Mainland in an effort to establish a starting

point from which other investigations may begin. It is hoped that methods used in this study may be adapted for use on a larger scale to survey the entire nursery industry and its related fields of landscape contracting, garden maintenance and garden supply retailing.

## METHOD AND PROCEDURE

A system of code numbers was devised to represent each species of plant and its nursery size. Code numbers and quantities were then recorded by the author on fortran data sheets, and subsequently the data were keypunched on IBM computer cards. Sums of the quantities for each code number were compiled by IBM 360/67 computer.

The code numbers were then translated to plant name and type, and the quantity of shrubs or trees was assigned to the most appropriate category: shade and flowering trees, conifers, deciduous shrubs, rhododendrons and azaleas, other broadleaved evergreen shrubs, heathers, ground covers, vines and creepers, bamboo, ferns and miscellaneous plants.

### Kinds of Data Gathered from Nursery Sales:

The quantity of plants sold, the variety name, nursery size, price, and name of purchaser were recorded on data sheets by means of code numbers. Sales records (invoices or record books) of five nurseries for a twelve-month period ending in 1968 were used in this study. Names of purchasers of nursery stock were recorded for four nurseries only.

In some cases, exact nursery size or price was not available from the record of sale. Size was then estimated from price by means of wholesale nursery catalogues, or price estimated from size and variety name. Some bulk sales were included in the study as "unidentified plant material" because information on variety sold, quantity or price was entirely lacking. In all cases, wholesale prices before taxes

and discounts were recorded.

Because of the large number of sales and the difficulty of recording the sales information in a concise form, only five nurseries could be included in this study; however, the nurseries chosen represent as closely as possible the various types of nursery businesses operating in the British Columbia Lower Mainland.

Nursery No.1 could be classed as a large-volume primary producer of a comparatively short list of landscape plants. Its sales are almost entirely large-sized wholesale shipments to other wholesalers and retailers.

Nursery No.2 also has a large volume of sales but handles a much longer list of plant species than Grower No.1. The sales recorded for Nursery No.2 consist largely of smaller consignments of nursery stock to landscape contractors and garden maintenance firms as well as to other wholesalers and retailers.

Nursery No.3 specializes in fruit trees and fruit tree lining-out stock as well as some hardy types of landscape plants.

Nursery No.4 caters to the needs of landscape contractors and sells a wide variety of plants, many of them in large sizes or large quantities.

Nursery No.5 typifies the small landscape nursery operation selling fruit trees and landscape shrubs and trees to both wholesale and retail customers. No information was available on type of customer to whom Nursery No.5 sold plant material. All distribution figures are based on information from Nurseries 1, 2, 3 and 4.

### Kinds of Data Gathered for Analysis of Landscape Use of Plants:

A total of 229 landscape architects' plans were studied and data recorded by the author for quantity of plant material specified, variety name, nursery size, geographic location, and type of project. The three landscape architecture firms who design a major proportion of projects undertaken in British Columbia permitted their work for the years 1967 and 1968 to be used in this study.

Consecutive job numbers that are assigned to each landscape architect's project as it is received were used to determine the date of each landscape plan, since many jobs are in the process of completion for more than one year. Thus only those plans having a job number prefaced by "67" and "68" for which a detailed planting plan was executed were included in this study. The 229 plans are therefore only a part of the total work of three landscape architects for a two-year period.

The quantities of various plant materials used by the landscape architects were compiled for each of six geographic locations: Vancouver and the Lower Mainland, Victoria and suburbs, other parts of Vancouver Island, and Gulf Islands, Sechelt and Upper Coastal regions, Interior British Columbia, other provinces and the United States. Information on type of project was recorded for single-family residences, multiple-horizontal residences, multiple-vertical residences, commercial developments, industrial developments, golf courses and clubs, parks, schools and colleges, public buildings, roadsides and town squares.

### Definitions of Terms Used in This Study

Grouping plant material in categories such as "shade and flowering trees", "deciduous shrubs", "broadleaved evergreen shrubs", allows convenient comparison between plants of similar type; however, there is no single definition which will identify a "tree", a "shrub" or a "ground cover". this study lists trees as those woody plants which are normally grown with one main stem, and shrubs as those with several stems, but there are many exceptions. Ground covers are principally those low perennials, shrubs and sprawling vines which usually have the ability to spread rapidly and keep close to the ground.

For the purpose of totals, each plant species, variety or cultivar is listed in one category only, although many plants could be fitted into more than one group.

### Nomenclature

Some confusion in names exists in the nursery trade, but as far as possible, all apparent differences between nursery names and correct scientific names have been resolved by using several recent references.<sup>14, 15, 21</sup> Many names in these publications have been checked with the unpublished Hortus Third encyclopaedia of cultivated plants, courtesy of the Bailey Hortorium, Cornell University, Ithaca, New York. Following these sources, scientific names are somewhat simplified, omitting the capitalization of species names but retaining the "ii" suffix where applicable. Hybrids are designated by the sign "X" between the generic and specific name, as in Cytisus X praecox.

Names of cultivars, plant types which have originated and persisted in cultivation, are designated by English names in single quotation marks, for example, Pyracantha coccinea 'Orange Glow'. Common names have been used in some discussion.

## NURSERY SALES STATISTICS

The amount and value of plant material sold by five Lower Mainland nurseries in a twelve-month period ending in 1968 is given in Table I a. Of the total cash value of \$454,780., 83% or \$378,128. represents the sales of landscape types of trees, shrubs and ground covers of marketable size. Sales of fruit trees and fruit tree lining-out stock account for 7% of the total value, and small-sized plant material of all types accounts for an additional 7%; 3% of the plant material sold is unidentified as to name or type.

Table I b lists the quantities and value of landscape plants of various types sold by five Lower Mainland nurseries in 1968. The data show that conifers represent the largest quantity of plants sold (28%) and also the highest cash value (42.3% of the total value). Shade and flowering trees account for 20.7% of the total quantity, but their cash value is 31.8% of the total. Ground cover plants represent 25.3% of the number of plants sold but only 3% of the total value. Broad-leaved evergreens exclusive of azaleas and rhododendrons make up 10% of the landscape plants sold, and constitute 10.6% of the cash value. Other categories of plants make up the balance.

Sales figures for one year were gathered from five Lower Mainland nurseries representing various types of nursery operations. Of the 568 acres planted to nursery stock in the study area<sup>2</sup>, the sample five nurseries represent 215 acres, or 37.8% of the total production.



TABLE Ia

PLANT SALES - FIVE LOWER MAINLAND NURSERIES

Sales for a 12-month period ending in 1968

83%	Shade and flowering trees, shrubs, ground cover plants, heathers, roses, ferns, grasses, vines, bamboo. (Excluding perennials, alpine, bedding plants)	TOTAL VALUE. . . \$378,128.
7%	Small-sized plant material, lining-out stock.	TOTAL VALUE. . . \$ 30,566.
7%	Fruit trees and fruit tree whips. . .	TOTAL VALUE. . . \$ 32,957.
3%	Unidentified plant material. . . . .	TOTAL VALUE. . . \$ 13,129.
TOTAL VALUE of plant sales tabulated for Five Lower Mainland Nurseries. . . . .		\$454,780.

TABLE Ib

SALES OF LANDSCAPE TREES AND SHRUBS GROUPED IN ELEVEN CATEGORIES

	<u>Quantity</u>	<u>% of Quantity</u>	<u>Value</u>	<u>% of Value</u>
Shade and Flowering Trees:	54,478	20.7%	\$120,259.	31.8%
Conifers:	73,521	28.0%	160,217.	42.3%
Deciduous Shrubs:	14,905	5.7%	15,180.	4.0%
Roses:	4,813	1.8%	4,923.	1.3%
Azaleas:	2,964	1.1%	5,685.	1.5%
Rhododendrons:	2,633	1.0%	9,197.	2.4%
Other broadleaved Evergreens:	26,687	10.0%	40,002.	10.6%
Heather:	11,095	4.2%	3,621.	.9%
Ground Cover:	66,432	25.3%	11,379.	3.0%
Vines:	1,973	.8%	2,426.	.6%
Bamboo, Grasses, Ferns, Miscellaneous:	3,285	1.3%	5,239.	1.4%
TOTAL	262,786	99.9%	\$378,128.	99.8%

A survey carried out by the British Columbia Department of Agriculture in 1966-67<sup>2</sup> estimated the total sales of landscape plants of marketable size in the British Columbia Lower Mainland as 1,050,619, and their value as \$1,148,908. (excluding alpine and perennials). On the basis of \$1,148,908. as the total value of sales, the five nurseries sampled represent \$454,780. or 39.6% of the total production.

Table II lists the estimates of the total production of nursery stock in the British Columbia Lower Mainland. Columns 1 and 2 show estimated total sales for a twelve-month period based on the sample five nurseries as 37.8% of the total acreage. Columns 3 and 4 show British Columbia Department of Agriculture figures for a similar period in 1966-67. Sales of hedge plants were not listed separately in the sample. For the purpose of comparison, the quantity and value of plants listed as "hedging" in the British Columbia Department of Agriculture survey was divided into three parts and added to three other categories: Conifers, Deciduous Shrubs, and Broadleaved Evergreen Shrubs.

The total value of sales of nursery-grown plants for the whole province of British Columbia in 1966-67 was estimated to be \$2,386,538. and additional nursery stock valued at \$1,021,874. was imported from other countries.<sup>2</sup> This \$1,021,874. value represented plant material of all types, including seedlings, rooted cuttings, liners and bulbs, as well as shrubs and trees of marketable size.

ESTIMATES OF TOTAL SALES OF LANDSCAPE PLANTS  
BRITISH COLUMBIA LOWER MAINLAND(12-MONTH PERIOD)

<u>Types of Plants</u>	<u>Estimated total sales of Lower Mainland Nurseries based on sample as 37.8% of total acreage</u>		<u>B.C. Dept. of Agriculture Estimates of Total Sales 66/67</u>	
	<u>Quantity</u>	<u>Value</u>	<u>Quantity</u>	<u>Value</u>
Shade and Flowering Trees:	144,121	\$318,145	145,083	\$257,106
Conifers:	194,500	\$423,854	204,611*	\$375,546*
Deciduous Shrubs:	39,431	\$ 40,158	55,753*	\$ 77,982*
Roses:	12,732	\$ 13,023	291,790	\$219,592
Azaleas:	7,841	\$ 15,039	24,793	\$ 32,263
Rhododendrons:	6,965	\$ 24,330	12,049	\$ 45,034
Other Broadleaved Evergreens:	70,600	\$105,825	58,939*	\$ 85,998*
Heather:	29,351	\$ 9,579	28,101	\$ 12,936
Ground Cover:	175,746	\$ 30,103	222,775	\$ 35,948
Vines:	5,219	\$ 6,417	6,725	\$ 6,503
Bamboo, Grasses, Ferns:	8,690	\$ 13,859	-	-
Unidentified Plant Material:	-	\$ 34,732	-	-
TOTAL:	<u>695,196</u>	<u>\$1,035,064</u>	<u>1,050,619</u>	<u>\$1,148,908</u>

\* Hedging added to three categories: conifers, deciduous and broad-leaved evergreen shrubs

"Imports make up temporary shortages in locally-produced nursery stock, or else supply types of plant material not available in British Columbia. Quantities of plants imported have been decreasing since 1966-67; however, some nursery-grown plants will continue to be shipped in to the province from the United States and Europe as long as prices remain competitive." 11

The main species of trees, conifers, broadleaved and deciduous shrubs, heathers, vines and ground covers, bamboo and ferns sold by five Lower Mainland nurseries in a twelve-month period are listed in Table III. Species are ranked according to quantities sold.

The sales figures show that Betula verrucosa 'Laciniata' and cultivars of Acer platanoides were leading in tree sales; Mugho Pine was the leading conifer; Cotoneaster acutifolia was the top-selling deciduous shrub; Zabel's Laurel and Warminster Broom led in sales of broadleaved evergreens. Information on the sales of named azaleas and rhododendrons was scarce, but Kurume Azaleas and Rhododendron 'Scarlet Wonder' were sold in the largest quantities of those tabulated. Top-selling ground cover plants were Hypericum calycinum and Vinca minor; the leading climbing plant was Boston Ivy; the novelty plant sold in largest quantities was Pampas Grass.

TABLE III

## PLANT SALES - FIVE LOWER MAINLAND NURSERIES

Quantities sold in a 12 - month period ending in 1968.

Shade and Flowering Trees:

1.	Betula verrucosa 'Laciniata'	8,677
2.	Acer platanoides 'Emerald Queen'	4,470
3.	Acer platanoides 'Crimson King'	2,850
4.	Acer palmatum 'Atropurpureum'	2,210
5.	Betula verrucosa 'Youngii'	1,794
6.	Magnolia kobus	1,673
7.	Populus nigra 'Italica'	1,668
8.	Prunus cerasifera 'Atropurpurea'	1,553
9.	Cornus florida 'Rubra'	1,326
10.	Acer palmatum	1,301
11.	Cornus nuttallii 'Eddiei'	1,290
12.	Prunus subhirtella 'Pendula'	1,220
13.	Betula verrucosa 'Tristis'	1,200
14.	Sorbus aucuparia (assorted cultivars)	1,161
15.	Gleditsia triacanthos inermis	1,139
16.	Acer platanoides 'Summershade'	1,139
17.	Salix babyionica	1,092
18.	Crataegus oxyacantha 'Paul's Scarlet'	1,062
19.	Betula verrucosa	930
20.	Sorbus aucuparia 'Rossica'	888
21.	Malus moerlandsii 'Lizet'	862
22.	Malus 'Royalty'	822
23.	Betula verrucosa 'Fastigiata'	813
24.	Acer palmatum 'Dissectum' (assorted cultivars)	793
25.	Acer circinatum	763
26.	Malus 'Hopa'	704
27.	Prunus x blireiana	686
28.	Malus moerlandsii 'Profusion'	642
29.	Cornus florida	623
30.	Prunus serrulata 'Kwanzan'	588
All other shade and flowering trees		8,539
Total trees:		54,478

## PLANT SALES (Continued)

Conifers:

1.	<i>Pinus mugho mughus</i>	12,069
2.	<i>Juniperus chinensis</i> 'Pfitzeriana Aurea'	8,915
3.	<i>Thuja occidentalis</i> 'Fastigiata'	6,424
4.	<i>Juniperus sabina</i>	3,995
5.	<i>Picea pungens</i> 'Glaucua'	3,993
6.	<i>Juniperus chinensis</i> 'Pfitzeriana'	3,043
7.	<i>Thuja orientalis</i> 'Aureo-nana'	2,849
8.	<i>Juniperus sabina</i> 'Tamariscifolia'	2,561
9.	<i>Juniperus scopulorum</i> 'Blue Haven'	1,989
10.	<i>Chamaecyparis lawsoniana</i> 'Ellwoodii'	1,429
11.	<i>Chamaecyparis lawsoniana</i> 'Columnaris'	1,390
12.	<i>Thuja orientalis</i> 'Fruitlandi'	1,348
13.	<i>Juniperus sabina</i> 'Skandia'	1,230
14.	<i>Juniperus chinensis</i> 'Pfitzeriana Glaucua'	1,225
15.	<i>Picea glauca albertiana</i> 'Conica'	1,066
16.	<i>Thuja occidentalis</i> 'Woodwardii'	955
17.	<i>Juniperus chinensis</i> 'Pfitzeriana Compacta'	815
18.	<i>Picea abies</i>	741
19.	<i>Chamaecyparis lawsoniana</i> 'Lane'	733
20.	<i>Cedrus deodara</i>	692
21.	<i>Chamaecyparis obtusa</i> 'Nana Gracilis'	654
22.	<i>Thuja occidentalis</i> 'Holmstruppi'	590
23.	<i>Juniperus horizontalis</i> 'Plumosa'	535
24.	<i>Juniperus sabina</i> 'Arcadia'	514
25.	<i>Thuja plicata</i> 'Aurea'	490
26.	<i>Thuja plicata</i> 'Atrovirens'	460
27.	<i>Juniperus chinensis</i> 'Mint Julep'	453
28.	<i>Juniperus chinensis</i> 'Armstrong'	446
29.	<i>Juniperus communis</i> 'Hibernica'	439
30.	<i>Juniperus squamata</i> 'Meyeri'	433
All other conifers		11,045
Total Conifers		73,521

## PLANT SALES (Continued)

Deciduous Shrubs:

1.	Cotoneaster acutifolia	2,520
2.	Cotoneaster horizontalis	1,015
3.	Forsythia intermedia 'Lynwood'	916
4.	Rosa rugosa and Rosa foetida (assorted cultivars)	699
5.	Lonicera tatarica (assorted cultivars)	627
6.	Cornus alba 'Argenteomarginata'	552
7.	Hamamelis mollis	542
8.	Syringa vulgaris (assorted cultivars)	532
9.	Berberis thunbergii 'Atropurpurea'	435
10.	Cornus alba 'Gouchaultii'	400
11.	Berberis thunbergii 'Atropurpurea Nana'	390
12.	Philadelphus x virginialis	377
13.	Cornus alba 'Sibirica'	367
14.	Cotinus coggygia 'Purpureus'	342
15.	Philadelphus (assorted cultivars including 'Enchantment' 'Waterton' and 'Belle Etoile')	317
16.	Spirea (assorted cultivars)	310
17.	Hamamelis x intermedia 'Ruby Glow'	300
18.	Hamamelis x intermedia 'Jelena'	285
19.	Hydrangea paniculata 'Grandiflora'	258
20.	Hamamelis mollis 'Brevipetala'	255
21.	Ribes sanguineum and Ribes 'King Edward VII'	240
22.	Berberis thunbergii	237
23.	Chaenomeles japonica and Chaenomeles speciosa	211
24.	Tamarix odessana 'Pink Cascade'	203
25.	Viburnum opulus 'Nanum'	200
26.	Fuchsia magellanica 'Riccartonii' and F.m. 'Mme. Cornelisseum'	182
27.	Spirea x vanhouttei	180
28.	Weigela (assorted cultivars)	155
29.	Viburnum opulus 'Roseum'	147
30.	Hydrangea macrophylla	135
	All other deciduous shrubs	1,576
	Total deciduous shrubs	14,905

## PLANT SALES (Continued)

Azaleas:

## Evergreen types:

Kurume Azaleas	2,060
Glendale Hybrids	125
Kaempferi Hybrids	45
Gable Hybrids	15
Macrantha	8

## Deciduous types:

Mollis Azaleas	402
Knaphill Hybrids	144
Exbury Hybrids	94
R. schlippenbachii	48
Ghent Hybrids	1

No species designated 22

Total Azaleas: 2,964

Rhododendrons:

Scarlet Wonder	608
Elizabeth	217
R. ponticum	161
Jean Mary Montague	119
Blue Tit	61
Unique	56
Bow Bells	54
Brittania	36
R. catawbiense	33
Loder's White	25
Pink Pearl	20
Mrs. G.W. Leak	17
Blue Peter	14
Blue Diamond	13
R. impeditum	12
Vulcan	11
Cunningham's White	10
Alice Street	10
Loderi King George	8
R. wardi	8
Purple Splendour	7
Rosa Mundy	6
C.B. Van Ness	5

All other Rhododendron  
species and cultivars 1,122

Total Rhododendron 2,633



## PLANT SALES (Continued)

Other Broadleaved Evergreens:

1.	<i>Prunus laurocerasus</i> 'Zabeliana'	3,416
2.	<i>Cytisus</i> x <i>praecox</i>	3,082
3.	<i>Cotoneaster dammeri</i>	2,013
4.	<i>Mahonia aquifolium</i>	1,847
5.	<i>Pernettya mucronata</i>	1,108
6.	<i>Ligustrum ovalifolium</i>	973
7.	<i>Berberis julianae</i>	865
8.	<i>Pieris japonica</i>	815
9.	<i>Prunus laurocerasus</i>	780
10.	<i>Cotoneaster salicifolia floccosa</i>	700
11.	<i>Viburnum davidii</i>	639
12.	<i>Cotoneaster</i> 'Saldam'	519
13.	<i>Prunus laurocerasus</i> 'Otto Luyken'	422
14.	<i>Berberis buxifolia</i> 'Nana'	414
15.	<i>Fatsia japonica</i>	412
16.	<i>Mahonia nervosa</i>	411
17.	<i>Ilex crenata</i> 'Convexa'	354
18.	<i>Aucuba japonica</i>	333
19.	<i>Berberis verruculosa</i>	329
20.	<i>Photinia</i> x <i>frazeri</i>	322
21.	<i>Lavandula officinalis</i>	314
22.	<i>Aucuba japonica</i> 'Variegata'	296
23.	<i>Buxus sempervirens</i>	276
24.	<i>Pyracantha coccinea</i> 'Orange Glow'	260
25.	<i>Skimmia japonica</i>	226
26.	<i>Prunus lusitanica</i>	211
27.	<i>Berberis stenophylla</i>	208
28.	<i>Pyracantha coccinea</i> 'Lalandii'	190
29.	<i>Spartium junceum</i>	188
30.	<i>Abelia grandiflora</i> and A. 'Edward Goucher'	168
All other broadleaved evergreens		4,596
Total broadleaved evergreens		26,687

TABLE III (Continued)

## PLANT SALES (Continued)

Heather:

Assorted Erica and Calluna	11,095
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Vines and Creepers:

1. Parthenocissus tricuspidata	336
2. Clematis (assorted large-flowered cultivars)	278
3. Wisteria sinensis	232
4. Polygonum aubertii	200
5. Hedera canariensis	159
6. Clematis montana (assorted cultivars)	122
7. Hedera colchica and other variegated cultivars	120
8. Lonicera periclymenum 'Belgica'	96
9. Hedera 'Cordata' and 'Microfolia'	96
10. Lonicera japonica 'Halliana'	65
11. Hydrangea petiolaris	61
12. Parthenocissus quinquefolia	58
13. Vitis - assorted cultivars	36
14. Jasminium nudiflorum	27
15. Jasminium officinale	26
16. Lonicera heckrottii 'Goldflame' and 'Dropmore Scarlet'	24
17. Parthenocissus quinquefolia 'Engelmannii'	13
18. Aristolochia durior	10
19. Clematis armandi	9
20. Celastrus scandens	5
All other vines and creepers	0
Total vines and creepers	1,973

## TABLE III (Continued)

## PLANT SALES (Continued)

Ground Covers:

1.	Hypericum calycinum	15,825
2.	Vinca minor	9,839
3.	Vinca minor 'Mrs.Bowles'	8,150
4.	Hedera helix	7,993
5.	Pachysandra terminalis	5,686
6.	Arctostaphylos uva-ursi	5,449
7.	Ajuga reptans	3,001
8.	Euonymus fortunei 'Colorata'	2,710
9.	Vinca minor 'Aureo-variegata'	1,801
10.	Hedera helix 'Baltica'	1,700
11.	Euonymus fortunei 'Gracilis' or 'Silver Edge'	1,415
	All other ground covers	2,863
	Total Ground Covers:	66,432

Bamboos, Grasses, Ferns and Miscellaneous Plants:

1.	Cortaderia selloana	2,038
2.	Yucca filamentosa	247
3.	Pseudosasa japonica	231
4.	Phalaris arundinacea picta	209
5.	Bamboo - assorted species	200
6.	Polystichum munitum	153
7.	Phyllostachys aurea	92
8.	Gunnera chilensis	30
9.	Phormium tenax	29
10.	Eulalia zebrina	26
11.	Phyllostachys nigra	25
	All other miscellaneous plants	5

Total Bamboo, Grasses, Ferns and  
Miscellaneous Plants 3,285

Although considerable information was gathered on nursery sizes of plant material sold by the nurseries studied, it was difficult to present all of the detail within the context of this report. However, all very small-sized plants and lining-out stock were listed separately from marketable sizes. Liners made up 7% of the total value of sales of the five nurseries sampled ( Table I a ).

A list of unusually large-sized and high-value trees, conifers, and rhododendrons is presented in Table IV. Large-sized plants made up 4.9% of the total cash value of trees, 2.6% of the total value of conifers, and 21.2% of the total value of rhododendrons sold by the five nurseries studied.

TABLE IV

Sales of Large-sized Trees (over \$20.00 value)

	Quantity sold by 5 nurseries <u>12-month period</u>	Average Unit <u>Price</u>	Total <u>Value</u>
Acer circinatum 20-25'	1	\$300.00	\$300.00
Acer negundo 1½-2" cal.	1	20.00	20.00
Acer palmatum 6-8'	2	20.00	40.00
Acer rubrum 'Schlesinger' 4" cal.	13	23.00	300.00
Acer sp. (assorted species)			
large size, boxed	15	21.17	317.50
Aesculus x carnea 2" cal.	3	25.00	75.00
Betula verrucosa 15-20'	4	26.25	105.00
Betula verrucosa 'Youngii'			
large size, boxed	5	19.80	99.00
Crataegus x lavalleyi 3" cal.	6	43.50	261.00
Cladastrus lutea 8-10'	4	20.00	80.00
Fagus sylvatica 'Atropunicea'			
large size, boxed	7	35.00	245.00
Liriodendron tulipifera			
large size, boxed	15	100.00	1,500.00
Magnolia x soulangeana 'Alba' 7'	2	45.00	90.00
Magnolia stellata 6-8'	2	35.00	70.00
Platanus x acerifolia			
large size, boxed	4	104.75	419.00
Populus alba, large size	10	27.00	270.00
Prunus x yeddensis 'Akenono'			
2-3" cal.	2	27.50	55.00
Prunus subhirtella - large size	2	27.50	55.00
Prunus serrulata (assorted cultivars) large size	26	20.00	523.00
Quercus palustris 2-4" cal.	15	55.67	835.00
Quercus robur 'Fastigiata'			
large size, boxed	5	25.00	125.00
Total	<u>144</u>		<u>\$5,884.50</u>

Percent of total sales  
of trees:

.26% of total quantity  
4.9 % of total value

TABLE IV (Continued)

Sales of Large-sized Conifers (over \$20.00 value)

	Quantity sold by 5 nurseries <u>12-month period</u>	Average Unit <u>Price</u>	Total <u>Value</u>
Cedrus atlantica 'Glaucua'			
8-12'	5	\$22.00	\$110.00
Cedrus deodara 8-10'	2	20.00	40.00
Chamaecyparis lawsoniana			
'Glaucua Speck' 8-10'	2	42.00	84.00
Chamaecyparis lawsoniana			
'Stewartii' 6-10'	1	55.00	55.00
Chamaecyparis nootkatensis			
'Pendula' 4-7'	6	40.00	240.00
Pinus nigra - large, boxed	2	67.50	135.00
Pinus sylvestris 20-25'	11	60.00	660.00
Assorted Conifers	13	35.00	455.00

Sales of Large-sized and High Value Conifers (\$8.00 to \$20.00 value)

Abies pinsapo 'Glaucua'	2	\$ 8.00	\$ 16.00
Cedrus deodara 'Aurea' 4-6'	8	9.12	73.00
Cedrus libani 'Nana'	1	10.50	10.50
Chamaecyparis lawsoniana			
'Erecta Viridis' 6-10'	22	9.05	199.00
Chamaecyparis lawsoniana			
'Golden King' 6-7'	1	15.00	15.00
Chamaecyparis pisifera			
'Plumosa Aurea' 5-6'	18	8.00	144.00
Chamaecyparis sp. assorted cultivars	2	15.00	30.00
Picea abies 10-12'	1	10.00	10.00
Pinus sylvestris 6-8'	74	8.78	650.00
Pinus sylvestris 8-10'	27	14.07	380.00
Sequoiadendron giganteum	4	9.50	38.00
Taxus baccata 3-4'	3	8.67	26.00
Thuja occidentalis 'Warreana' 5-6'	1	9.00	9.00
Thuja plicata 8-12'	7	12.50	87.50
Thuja sp. assorted, large	8	11.62	93.00
Tsuga heterophylla 6-8'	84	8.00	672.00
Total	305		\$4,232.00

Percent of total sales of  
conifers:

.4% of total quantity  
2.6% of total value

TABLE IV (Continued)

Sales of Large-sized Rhododendrons (over 24")

<u>Name</u>	<u>Quantity</u>	<u>Average Price</u>	<u>Total Value</u>
'Anna Rose Whitney'	1	\$13.50	\$13.50
'Blue Diamond'	4	6.00	24.00
'Cynthia'	1	16.00	16.00
'Cunningham's White'	10	9.00	90.00
'Gomer Waterer'	4	6.00	24.00
'Jean Mary Montague'	22	8.23	181.00
'Loderi King George'	8	12.00	96.00
'Mrs. G.W. Leak'	17	11.18	190.00
'Mrs. A.T. de la Mare'	2	6.00	12.00
'Mrs. Betty Robertson'	4	6.31	25.25
'Pink Pearl'	11	6.55	72.00
R. ponticum	11	6.11	67.25
'Sappho'	1	6.00	6.00
'Unique'	56	7.38	413.55
R. wardii	8	12.00	96.00
Rhododendron - no variety specified	68	9.19	624.75

Total Large-sized  
Rhododendrons

Sold: 228 \$1,951.30

Percent of Total Sales of Rhododendrons:

8.7% of total quantity  
21.2% of total value

Distribution of Nursery Stock:

Plants are shipped from British Columbia Lower Mainland nurseries to customers in Eastern Canada, the Prairie Provinces, the British Columbia Interior, Vancouver Island, Sechelt and the Upper Coast, and to the Pacific Northwestern States as well as to the local area. The amount and value of these shipments from four nurseries for a twelve-month period ending in 1968 is shown in Table V.

Purchasers of nursery stock in the Lower Mainland fall into many categories: landscape contractors, retail garden stores, chain and department stores, government agencies and parks, and other nursery growers, as well as a number of miscellaneous customers. The amount and value of sales to various types of customers within the Lower Mainland area is listed in Table VI.



DISTRIBUTION OF NURSERY STOCK

Value of Plant Material shipped from four Lower Mainland Nurseries in a twelve-month period ending in 1968.

	<u>1</u> <u>Nursery</u>	<u>2</u> <u>Nursery</u>	<u>3</u> <u>Nursery</u>	<u>4</u> <u>Nursery</u>	<u>Total</u> <u>&amp;</u>	<u>% of</u> <u>Total</u>
Sales within Lower Mainland:	\$86,974.	\$76,936.	\$17,785.	\$77,599.	\$259,294.	58.9%
Prarie Sales:	\$34,862.	\$13,762.	\$ 4,287.	\$ 7,070.	\$ 59,981.	13.6%
Vancouver Island Sales:	\$15,256.	\$14,016.	\$11,643.	\$ 9,168.	\$ 50,083.	11.4%
Ontario Sales:	\$30,846.	0	0	0	\$ 30,846.	7.0%
B.C. Interior Sales:	\$ 8,027.	\$ 1,182.	\$ 8,085.	\$ 2,015.	\$ 19,309.	4.4%
U.S.A. Sales:	\$18,507.	0	0	\$ 318.	\$ 18,825.	4.3%
Sechelt and Upper Coast Sales:	\$ 1,310.	\$ 885.	0	0	\$ 2,195.	.5%
TOTAL:	\$195,782.	\$106,781	\$41,800.	\$96,170.	\$440,533.	100.1%

DISTRIBUTION OF NURSERY STOCK

Value of Plant Material shipped from four Lower Mainland Nurseries  
to various types of customers within the local area.

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SALES FOR A 12 - MONTH PERIOD ENDING IN 1968						
	<u>1</u> <u>Nursery</u>	<u>2</u> <u>Nursery</u>	<u>3</u> <u>Nursery</u>	<u>4</u> <u>Nursery</u>	<u>Total</u>	<u>% of</u> <u>Total</u>
Shipments to Large Growers:	\$50,119.	\$15,775.	\$ 7,361.	\$ 5,494.	\$78,749.	17.9%
Shipments to Landscape Contractors:	\$ 1,691.	\$24,985.	\$ 131.	\$41,939.	\$68,746.	15.6%
Shipments to Retailers:	\$12,518.	\$13,691.	\$ 4,607.	\$ 7,998.	\$38,814.	8.8%
Shipments to Gov't Agencies, Schools, Parks:	\$ 3,575.	\$ 7,275.	\$ 474.	\$11,280.	\$22,604.	5.1%
Shipments to Chain and Department Stores: *	\$10,910.	\$ 5,604.	0	\$ 679.	\$17,193.	3.9%
Shipments to Small Land- scape Nurseries:	\$ 6,894.	\$ 1,385.	\$ 2,049.	\$ 1,377.	\$11,705.	2.7%
Shipments to Retailers - Landscapers:	\$ 1,090.	\$ 4,319.	\$ 1,489.	\$ 2,733.	\$ 9,631.	2.2%
Shipments to Wholesale Distributors:	0	\$ 3,902.	\$ 515.	\$ 431.	\$ 4,848.	1.1%
Miscellaneous Sales:	\$ 177.	0	\$ 1,159.	\$ 5,668.	\$ 7,004.	1.6%
Total Ship- ments within Lower Mainland:	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	\$86,974.	\$76,936.	\$17,785.	\$77,599.	\$259,294.	58.9%

\* Includes some plant material destined for chain and department stores  
outside the Lower Mainland.

### STATISTICS ON LANDSCAPE USE OF PLANTS

Plant lists from 229 projects were compiled for analysis. All developments studied were designed over a period of two years (1967 and 1968) by three Vancouver landscape architects, and most were at the planting stage in 1969 or will be planted in 1970.

The quantities of plant material needed to execute 229 plans according to landscape architects' specifications are outlined in Tables VII and VIII. One hundred and thirteen projects in 1967 required 252,228 plants, and 116 projects in 1968 used 391,751 plants, an increase of 55.3% over the previous year. Data from each of the three landscape architecture firms showed an increase in numbers of plants specified in 1968 compared to numbers of plants specified in 1967. Landscape Architect A used 30.6% more plants in 1968 than in 1967; Landscape Architect B increased his plant requirements by 63.5%, and Landscape Architect C showed the largest increase of 72.2% from 1967 to 1968.

The largest quantity of plants used by landscape architects were ground cover types (65.6%) followed by broadleaved evergreens exclusive of azaleas and rhododendrons (13.3%). Deciduous shrubs constituted 5.5% of the total quantity and conifers made up 5.1% of the total. Other categories of plants were used in smaller quantities.

In Table IX landscape architects' projects are listed by type, showing 90 plans for single-family residences, 24 plans for multiple-

TABLE VII

LANDSCAPE ARCHITECT'S USE OFPLANT MATERIAL

Quantities of Plants Specified by  
three landscape architects in  
229 planting plans - 1967/68

	<u>1967</u>	<u>1968</u>	<u>Total</u>	<u>% of Total</u>
Trees:	5,290	5,059	10,349	1.6%
Conifers:	16,412	16,135	32,547	5.1%
Deciduous:	13,495	21,628	35,123	5.5%
Azaleas:	3,505	2,532	6,037	.9%
Rhodo:	2,572	3,679	6,251	1.0%
Broadleaf:	38,422	47,285	85,707	13.3%
Ground Cover:	157,063	265,681	422,744	65.6%
Vines:	1,115	4,570	5,685	.9%
Heather:	7,105	11,190	18,295	2.8%
Bamboo, Ferns, Grasses:	7,249	13,992	21,241	3.3%
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	252,228	391,751	643,979	100.0%
Number of Plans:	113	116	229	

TABLE VIII

QUANTITIES OF PLANT MATERIAL SPECIFIED BY THREE LANDSCAPE ARCHITECTS

	Landscape Architect A		Landscape Architect B		Landscape Architect C		Two-year Total	% of Total
	1967	1968	1967	1968	1967	1968		
Shade and Flowering Trees:	1,903	2,158	2,296	1,959	1,091	942	10,349	1.6%
Conifers:	4,512	5,888	6,662	3,772	5,238	6,475	32,547	5.1%
Deciduous Shrubs:	4,624	8,817	1,893	4,736	6,978	8,075	35,123	5.5%
Azaleas:	753	1,387	2,752	1,002	-	143	6,037	.9%
Rhododendrons:	702	1,604	956	583	914	1,492	6,251	1.0%
Other Broadleaved Evergreens:	10,694	19,681	13,960	10,896	13,768	16,708	85,707	13.3%
Ground Cover:	53,097	54,622	59,555	123,855	44,411	87,204	422,744	65.6%
Vines:	166	172	447	349	502	4,049	5,685	.9%
Heather:	2,598	3,108	916	2,102	3,591	5,980	18,295	2.8%
Bamboo, Grasses Ferns:	4,263	11,410	2,261	699	725	1,883	21,241	3.3%
TOTAL	83,312	108,847	91,698	149,953	77,218	132,951	643,979	100.0%
% of Total	12.9%	16.9%	14.2%	23.3%	12.0%	20.6%	99.9%	

Landscape Project Types

Type	Landscape Architect A		Landscape Architect B		Landscape Architect C		Total
	1967	1968	1967	1968	1967	1968	
(1) Single-family residence:	18	14	7	12	17	22	90
(2) Multiple-horizontal residences:	3	4	3	3	6	5	24
(3) Multiple-vertical residences:		1		2	5	3	11
(4) Commercial:							
retail	1	7			4	1	
office bldgs.	1	2	2	1	3		
service stations	6				11	10	49
(5) Industrial:	1	3	1		1	5	11
(6) Resorts, clubs golf courses:	1	1	1	1			4
(7) Parks and play-grounds		4		1			5
(8) Public bldgs.	1	1	3				
churches		1		1	1		
hospitals	1			1			10
(9) Schools and colleges	5	4	9	4			22
(10) Roadsides town squares	1	2					3
TOTAL	39	44	26	26	48	46	229

horizontal residences, 11 plans for multiple-vertical residences, 49 commercial and 11 industrial plans, four resort and golf course plans, five parks and 10 public building plans, 22 school and college plans, and three plans for roadsides and town squares.

The quantities of plant material specified for 10 types of landscape projects are outlined in Table X, and the average number of plants specified for each type of project is listed in Table XI.

Of the total 229 planting plans designed in 1967 and 1968, 177 projects were located in the British Columbia Lower Mainland, 10 in Victoria, 10 in the balance of Vancouver Island and the Gulf Islands, five in the Sechelt and Upper Coast region, 18 in the British Columbia Interior, and nine in the Prairie Provinces and the United States.

The quantities of plant material specified for six geographic regions over the two-year study period are listed in Table XII. Species of plants selected for various locations are listed elsewhere (Tables XIX and XX).

#### The Landscape Architects' Choice of Plant Species:

Table XIII lists the average number of plants specified annually by three landscape architects. The plant species and cultivars are ranked in order of quantities used, the average of two years given in column 2.

The tree species used in the largest quantity is Acer circinatum and the conifer used in the largest quantity is Juniperus chinensis 'Pfitzeriana Aurea'. Other types of plants specified in the largest

TABLE X

QUANTITIES OF PLANT MATERIAL SPECIFIED BY THREE LANDSCAPE ARCHITECTS IN 229 PLANTING PLANS

## Plant Material Listed for Ten Project Types

	Single- family Houses	Multi- horiz. Houses	Multi- vertical Houses	Comm- ercial	Ind- ustrial	Resort, Golf Courses	Parks	Public Bldgs.	Schools, Coll- eges	Road- sides	
Number of Plans:	90	24	11	49	11	4	5	10	22	3	
Trees;	1,404	2,656	663	593	367	290	605	598	3,024	149	
Conifers:	3,263	9,336	1,119	4,181	1,651	1,039	601	1,830	7,833	1,694	
Deciduous Shrubs:	2,894	13,390	3,008	1,477	823	507	1,067	1,162	8,180	2,615	
Azaleas:	1,408	901	458	187	34	40	654	73	2,282	-	
Rhododendrons:	2,674	1,345	110	367	79	-	609	211	856	-	
Other Broadleaf:	13,807	19,422	5,047	10,347	3,898	1,244	3,871	7,816	20,255	-	
Ground Cover:	94,944	75,906	35,666	27,491	19,310	7,000	30,089	34,471	97,867	-	
Vines:	1,790	2,559	138	445	14	15	59	25	640	-	
Bamboo,Grasses;	8,956	2,146	439	670	578	64	1,604	656	6,128	-	
Heather:	6,683	6,742	141	1,330	170	-	129	275	2,825	-	
Total; (two-year period)	137,823	134,403	46,789	47,088	26,924	10,199	39,288	47,117	149,890	4,458	∞
% of Total:	21.4%	20.9%	7.3%	7.3%	4.2%	1.6%	6.1%	7.3%	23.2%	.7%	



TABLE XI  
LANDSCAPE ARCHITECTS' USE OF PLANT MATERIAL - AVERAGE NUMBER OF PLANTS SPECIFIED PER PLAN

Averages Listed for Ten Project Types

	Single- family Houses	Multi- horiz. Houses	Multi- vertical Houses	Comm- ercial	Ind- ustrial	Resort, Golf Courses	Parks	Public Bldgs.	Schools, Coll- eges	Road- sides
Trees:	16	111	60	12	33	73	121	60	137	50
Conifers:	36	389	102	85	150	260	120	183	356	565
Deciduous Shrubs:	32	558	273	30	75	127	213	116	372	872
Azaleas:	16	38	42	4	3	10	131	7	104	-
Rhododendrons:	30	56	10	7	7	-	122	21	39	-
Other Broadleaf:	153	809	459	211	354	311	774	782	921	-
Ground Cover:	1,055	3,163	3,242	561	1,755	1,750	6,018	3,447	4,449	-
Vines:	20	107	13	9	1	4	12	3	29	-
Heathers:	74	281	13	27	15	-	26	28	128	-
Bamboo, Grasses:	100	89	40	14	53	16	321	66	279	-
Total:	1,532	5,601	4,254	960	2,446	2,551	7,858	4,713	6,814	1,487

TABLE XII

QUANTITIES OF PLANT MATERIAL SPECIFIED BY THREE LANDSCAPE ARCHITECTS IN 229 PLANTING PLANS

## Plant Material Listed for Six Geographic Locations

	Lower Main- land	Vic- toria	Other Van. Island	Sechelt, Upper Coast	B.C. Int- erior	Other Provinces Countries
Number of Plans:	177	10	10	5	18	9
Trees:	7,402	407	649	524	538	829
Conifers:	21,656	890	1,464	587	3,434	4,516
Deciduous Shrubs:	12,243	615	595	225	6,406	15,039
Azaleas:	5,684	298	19	36	-	-
Rhododendrons:	5,589	153	468	31	10	-
Other Broadleaf:	69,227	4,305	6,468	3,005	428	2,274
Ground Cover:	308,040	17,973	30,756	7,260	27,548	31,167
Vines:	4,899	53	7	46	60	620
Bamboo, Grasses, Ferns:	17,132	112	2,105	1,504	227	161
Heathers:	15,707	1,564	718	306	-	-
TOTAL (Two-year Period)	467,579	26,370	43,249	13,524	38,651	54,606
% of Total:	72.6%	4.0%	6.7%	2.1%	6.0%	8.5%

The Landscape Architects' Choice of Plant Species

Shade and Flowering Trees:		Quantity specified annually - by 3 Landscape Architects (Average of 2 years)
<u>Species:</u>		
1.	Acer circinatum	617
2.	Rhus typhina	405
3.	Betula verrucosa	306
4.	Arbutus unedo	177
5.	Prunus x yeddensis 'Akebono'	169
6.	Cornus nuttallii	149
7.	Prunus serrulata 'Kwanzan'	148
8.	Platanus x acerifolia	138
9.	Populus nigra 'Italica'	135
10.	Acer palmatum	122
11.	Cornus nuttallii 'Eddiei'	120
12.	Prunus cerasifera 'Atropurpurea'	119
13.	Acer platanoides	117
14.	Malus 'Royalty'	111
15.	Sorbus aucuparia	90
16.	Quercus coccinea	88
17.	Acer ginnala	88
18.	Quercus palustris	87
19.	Malus 'Hopa'	85
20.	Quercus rubra	84
21.	Prunus serrulata 'Shirotae'	84
22.	Liriodendron tulipifera	82
23.	Prunus serrulata 'Amanogawa'	80
24.	Prunus subhirtella 'Autumnalis'	79
25.	Rhus typhina 'Laciniata'	75
26.	Acer rubrum	67
27.	Carpinus betulus 'Fastigiata'	66
28.	Aralia elata	57
29.	Acer platanoides 'Crimson King'	57
30.	Aesculus hippocastanum	39
All other tree species and cultivars		1,134
Average number of Shade and Flowering Trees specified in planting plans annually		5,175

TABLE XIII (Continued)

<u>Conifers:</u>	Quantity specified annually - by three Landscape Architects (Average of two years)	
<u>Species:</u>		
1. Juniperus chinensis 'Pfitzeriana Aurea'	4,888	
2. Pinus mugho mughus	3,861	
3. Juniperus chinensis 'Pfitzeriana'	833	
4. Pinus sylvestris	615	
5. Tsuga canadensis	569	
6. Thuja orientalis	560	
7. Tsuga heterophylla	496	
8. Pinus nigra	421	
9. Thuja plicata	340	
10. Juniperus sabina	324	
11. Juniperus horizontalis 'Douglasii'	297	
12. Pinus contorta	294	
13. Juniperus sabina 'Tamariscifolia'	288	
14. Thuja plicata 'Atrovirens'	234	
15. Taxus cuspidata 'Nana'	229	
16. Juniperus horizontalis 'Plumosa'	224	
17. Thuja occidentalis 'Fastigiata'	221	
18. Thuja plicata 'Aurea'	181	
19. Juniperus virginiana 'Hetzii'	150	
20. Juniperus horizontalis	150	
21. Pinus mugho 'Pumilio'	117	
22. Pseudotsuga menziesii	109	
23. Juniperus virginiana 'Canadertii'	101	
24. Cedrus deodara	86	
25. Juniperus chinensis sargentii	70	
26. Juniperus horizontalis 'Glaucua'	48	
27. Chamaecyparis lawsoniana 'Allumii'	44	
28. Juniperus scopulorum 'Hill's Silver'	44	
29. Taxus cuspidata	30	
30. Sequoiadendron giganteum	29	
All other conifers	421	
Average number of Conifers		
specified in planting plans annually..... 16,274		

TABLE XIII (Continued)

<u>Deciduous Shrubs</u>	Quantity specified annually - by three Landscape Architects (Average of two years)
<u>Species:</u>	
1. <i>Potentilla</i> sp. (assorted cultivars)	3,553
2. <i>Viburnum opulus</i> 'Nanum'	1,881
3. <i>Cotoneaster adpressa</i>	1,642
4. <i>Hydrangea macrophylla</i>	1,011
5. <i>Cotoneaster acutifolia</i>	869
6. <i>Cornus alba</i> 'Argenteo-marginata'	855
7. <i>Berberis thunbergii</i> 'Atropurpurea'	618
8. <i>Euonymus nana</i>	568
9. <i>Spiraea bumalda</i> 'Froebelii'	546
10. <i>Cornus stolonifera</i>	535
11. <i>Cotoneaster franchetii</i>	453
12. <i>Spiraea x vanhouttei</i>	408
13. <i>Forsythia</i> sp. (assorted cultivars)	365
14. <i>Symphoricarpos albus laevigatus</i>	363
15. <i>Sambucus racemosa</i>	330
16. <i>Rosa</i> sp. (assorted cultivars)	325
17. <i>Rosa rugosa</i> and <i>Rosa foetida</i> (assorted shrub roses)	297
18. <i>Cotoneaster integerrima</i>	261
19. <i>Vaccinium parvifolium</i>	229
20. <i>Philadelphus</i> sp. (assorted cultivars)	215
21. <i>Euonymus alata</i>	186
22. <i>Spiraea arguta</i>	174
23. <i>Cotoneaster horizontalis</i>	165
24. <i>Caragana arborescens</i>	165
25. <i>Euonymus alata</i> 'Compacta'	155
26. <i>Cotinus coggygia</i> (assorted cultivars)	148
27. <i>Viburnum opulus</i>	127
28. <i>Berberis thunbergii</i>	118
29. <i>Ribes alpinum</i>	110
30. <i>Hydrangea arborescens</i> 'Grandiflora'	95
All other deciduous shrubs	795

Average number of Deciduous shrubs  
specified in planting plans annually ..... 17,562

TABLE XIII (Continued)

44

## Rhododendrons

Quantity specified  
annually by three  
Landscape Architects  
(Average of 2 years)

<u>Name</u>	<u>Colour</u>	
1. 'Elizabeth	Bright red	384
2. 'Vulcan'	Brick red	213
3. 'Unique'	Yellow, tinged peach	171
4. 'Unknown Warrior'	Soft red	164
5. 'Blue Diamond'	Lavender blue	153
6. <u>R. Williamsianum</u>	Pink	151
7. 'Jean Mary Montague'	Bright red, frilled	116
8. 'Purple Splendour'	Deep purple with dark blotch	115
9. 'Bow Bells'	Bright pink	113
10. 'Cilpinense'	Shell pink	100
11. 'Brittania'	Red, ruffled	95
12. 'Gold Mohur'	Buff yellow	94
13. 'Cynthia'	Rosy crimson	86
14. 'Gomer Waterer'	White, flushed lilac	78
15. 'Pink Pearl'	Pink	74
16. <u>R. ponticum</u>		62
17. 'Luzan'		60
18. 'Loder's White'	White	58
19. 'Mrs. Furnival'	Pink with crimson blotch	55
20. 'Blue Tit'	Light blue	38
21. 'Beauty of Littleworth'	White with red-flocked throat	35
22. 'Madame Masson'	White with yellow	31
23. 'Jock'		26
24. 'Moonstone'	Creamy pink	24
25. <u>R. carolinianum</u>	Pale pink	23
26. 'Naomi' (in variety)	Pink or mauve	22
27. <u>R. fortunei</u> seedling	Lilac pink	20
28. 'Blue Peter'	Lavender blue purple blotch	19
29. 'Carita'	Primrose yellow	14
30. 'Loderi King George'	White	13
31. 'A. Bedford'	Lavender blue	13
32. <u>R. impeditum</u>	Mauve	12
33. 'Lo Shan' seedling		12
34. 'Cunningham's White'	White with yellow blotch	11
35. 'Anna Rose Whitney'	Deep pink	8
36. <u>R. augustinii</u>	Blue lilac	8
37. 'Mrs. W.C. Slocock'	Primrose yellow	6
38. 'Hummingbird'	Pink, shaded vermillion	6
39. 'Faggetter's Favorite'	Cream	6
40. 'Cotton Candy'	Pink	6

All other Rhododendrons and cultivars

431

Average number of Rhododendrons specified in planting

plans annually ..... 3,126

TABLE XIII (Continued)

Azaleas:

<u>Hybrid Groups</u>	<u>Quantity specified annually by three Landscape Architects (Average of 2 years)</u>
1. Kurume Azaleas	1,525
2. Azalea Gumpo	330
3. Glendale Azaleas	288
4. Exbury Azaleas	219
5. Gable Azaleas	166
6. Kaempferi Azaleas	196
7. Knaphill Azaleas	61
8. Mollis Azaleas	12
 All other Azaleas	 222
 Average number of Azaleas specified in planting plans annually .....	  3,019

TABLE XIII (Continued)

<u>Other Broad-leaved Evergreens:</u>		Quantity Specified annually by three Landscape Architects (Average of 2 years)
<u>Species</u>		
1. <i>Cytisus x praecox</i>		6,324
2. <i>Prunus laurocerasus</i> 'Zabeliana'		6,102
3. <i>Mahonia aquifolium</i>		5,597
4. <i>Cotoneaster dammeri</i>		3,363
5. <i>Berberis julianae</i>		2,066
6. <i>Cotoneaster salicifolia floccosa</i>		1,526
7. <i>Prunus laurocerasus</i> 'Otto Luyken'		1,410
8. <i>Viburnum davidii</i>		1,353
9. <i>Cotoneaster</i> 'Lofast'		1,116
10. <i>Daphne cneorum</i>		981
11. <i>Ilex crenata</i> 'Convexa'		955
12. <i>Pieris japonica</i>		901
13. <i>Berberis verruculosa</i>		900
14. <i>Cytisus x praecox</i> 'Albus'		810
15. <i>Viburnum rhytidophyllum</i>		723
16. <i>Berberis darwinii</i>		612
17. <i>Cotoneaster</i> 'Saldam'		601
18. <i>Lavandula officinalis</i>		523
19. <i>Cytisus</i> 'Hollandia'		495
20. <i>Pyracantha coccinea</i> 'Lalandii'		485
21. <i>Ilex crenata</i> 'Hetzi' and <i>Ilex crenata</i> 'Green Thumb'		434
22. <i>Cytisus x kewensis</i>		394
23. <i>Skimmia japonica</i>		375
24. <i>Prunus laurocerasus</i>		339
25. <i>Ilex crenata</i> 'Aurea'		338
26. <i>Photinia x frazeri</i>		319
27. <i>Fatsia japonica</i>		317
28. <i>Cotoneaster microphylla</i>		291
29. <i>Eleagnus pungens</i> 'Aureo-maculata'		244
30. <i>Viburnum tinus</i>		216
All other Broad-leaved Evergreens (exclusive of Rhododendrons)		2,744
Average number of Broad-leaved Evergreens specified in planting plans annually.....		42,854



TABLE XIII (Continued)

Heathers:

<u>Species</u>	<u>Quantity specified annually by three Landscape Architects (Average of 2 years)</u>
1. <i>Caluna vulgaris</i> 'H.E.Beale'	1,854
2. <i>Erica carnea</i> 'King George'	1,244
3. <i>Erica carnea</i> 'Vivelli'	1,146
4. <i>Erica carnea</i> 'Springwood'	1,137
5. <i>Calluna vulgaris</i> 'Alba Caletton'	666
6. <i>Erica x darleyensis</i>	382
7. <i>Erica carnea</i> 'Ruby Glow'	358
8. <i>Erica carnea</i> 'George Randall'	247
9. <i>Erica cinerea</i> 'David Eason'	240
10. <i>Erica carnea</i> 'Spring Beauty'	233
All other <i>Erica</i> and <i>Calluna</i>	1,641
Average number of Heather specified in planting plans annually .....9,148	

Ground Covers:

1. <i>Hypericum calycinum</i>	45,275
2. <i>Vinca minor</i>	40,915
3. <i>Hedera helix</i>	39,885
4. <i>Arctostaphylos uva-ursi</i>	23,638
5. <i>Gaultheria shallon</i>	16,980
6. <i>Pachysandra terminalis</i>	11,041
7. <i>Ajuga reptans</i>	8,428
8. <i>Arenaria verna caespitosa</i>	6,208
9. <i>Thymus serpyllum</i>	3,206
10. <i>Vinca minor</i> 'Mrs. Bowles'	2,692
11. <i>Pachistima canbyi</i>	2,666
12. <i>Hedera helix</i> 'Spearpoint'	2,335
13. <i>Euonymus fortunei</i> 'Gracilis' or 'Silver Edge'	1,309
14. <i>Vaccinium vitis-idea</i>	875
15. <i>Sasa pygmaea</i>	804
16. <i>Vinca major</i> 'Variegata'	775
All other Ground Cover plants	4,340

Average number of Ground Cover plants  
specified in planting plans annually.....211,372

Vines and Creepers:

Quantity specified  
annually by three  
Landscape Architects  
(Average of 2 years)

<u>Species</u>	
1. Hedera canariensis 'Variegata'	1,877
2. Parthenocissus tricuspidata	210
3. Clematis paniculata, C. tangutica and C. virginiana	180
4. Parthenocissus quinquefolia	152
5. Clematis armandi	141
6. Clematis (assorted large-flowered cultivars)	69
7. Lonicera periclymenum 'Belgica'	60
8. Polygonum aubertii	46
9. Jasminum nudiflorum	27
10. Wisteria sinensis	20
11. Hydrangea petiolaris	20
All other Vines and Creepers	41

Average number of Vines and Creepers specified  
in planting plans annually..... 2,843

Bamboos, Grasses, Ferns and Miscellaneous Plants

1. Polystichum munitum	7,836
2. Yucca filamentosa	814
3. Phyllostachys aurea	764
4. Pseudosasa japonica	353
5. Blechnum spicant	208
6. Phalaris arundinacea picta	200
7. Phormium tenax	133
8. Cortaderia selloana	99
9. Phyllostachys nigra	60
10. Yucca glauca	72
11. Typha latifolia	41
12. Phyllostachys bambusoides	25
All other miscellaneous plants	16

Average number of bamboos, grasses, ferns, and  
miscellaneous plants specified in planting  
plans annually ..... 10,621

quantities are as follows: Deciduous shrubs, Potentilla sp. (assorted cultivars); Azalea, Kurume hybrids; Rhododendron 'Elizabeth'; Broadleaved evergreen Shrubs, Cytisus X praecox; Heather, Calluna vulgaris 'H.E.Beale', Ground Cover, Hypericum calycinum; Vine, Hedera canariensis; and Fern, Polystichum munitum.

#### The Frequency of Use of Certain Plant Species and Cultivars:

Some plants were used frequently in a large number of designs during the two-year study period (Table XIV). Rhododendron species and hybrids, and the conifer Pinus mugho mughus were specified in more than half of the projects designed in 1967 and 1968. Fourteen other plants were chosen for more than one-quarter of all landscape designs in the two-year period.

Many plant species were used more frequently by one landscape architect than another. Some species were employed fairly consistently by all three landscape architects in both 1967 and 1968 plans (Table XV) while others were used in a less regular manner by the three designers (Table XVI). Plant species used frequently by only two of the three landscape architects are shown in Table XVII and those used exclusively by one designer are listed in Table XVIII.

TABLE XIV

PLANTS USED FREQUENTLY IN A LARGE NUMBER OF PLANTING DESIGNS

during the two-year study period

Rhododendron species and hybrids					
used in.....	132	designs	of	total	of 229
Pinus mugho mughus used in .....	127	"	"	"	"
Mahonia aquifolium used in.....	93	"	"	"	"
Juniperus chinensis					
'Pfitzeriana Aurea' used in.....	91	"	"	"	"
Cotoneaster dammeri used in .....	74	"	"	"	"
Betula verrucosa used in.....	70	"	"	"	"
Yucca filamentosa used in .....	66	"	"	"	"
Fatsia japonica used in .....	66	"	"	"	"
Pinus sylvestris used in.....	65	"	"	"	"
Cotoneaster salicifolia					
floccosa used in .....	65	"	"	"	"
Pieris japonica.....	63	"	"	"	"
Pyracantha coccinea.....	63	"	"	"	"
Hedera helix.....	62	"	"	"	"
Vinca minor.....	60	"	"	"	"
Rhus typhina .....	59	"	"	"	"
Berberis julianae .....	57	"	"	"	"
Prunus laurocerasus 'Zabeliana'.....	56	"	"	"	"
Acer circinatum.....	55	"	"	"	"
Polystichum munitum.....	55	"	"	"	"
Hypericum calycinum .....	52	"	"	"	"
Calluna vulgaris 'H.E.Beale'.....	49	"	"	"	"
Cytisus X praecox.....	48	"	"	"	"
Viburnum davidii.....	48	"	"	"	"
Viburnum rhytidophyllum.....	44	"	"	"	"
Pachysandra terminalis.....	44	"	"	"	"
Ajuga reptans.....	42	"	"	"	"

TABLE XV

Frequency of Use:

Plant species and cultivars used by all three landscape  
architects in both 1967 and 1968 planting plans

	Number of designs in which each plant was used						Total No. of Designs
	Landscape Architect		Landscape Architect		Landscape Architect		
	A		B		C		
	1967	1968	1967	1968	1967	1968	
<u>Trees:</u>							
Acer circinatum	15	8	9	12	8	3	55
Acer ginnala	3	3	1	2	1	1	11
Acer palmatum 'Dissectum'	4	3	1	3	2	2	15
Betula papyrifera	1	4	2	1	1	4	13
Betula verrucosa	15	14	6	4	14	17	70
Magnolia x soulangeana	3	9	1	1	3	2	19
Magnolia stellata	2	2	1	1	2	3	11
Prunus yedoensis 'Akebono'	13	9	9	1	1	9	42
Rhus typhina	19	20	7	8	1	4	59
<u>Conifers:</u>							
Cedrus atlantica 'Glaucous'	1	1	1	1	6	2	12
Pinus contorta	17	12	2	1	3	1	36
Pinus mugho	20	24	9	11	25	38	127
Pinus nigra	2	4	12	11	1	4	34
Pinus sylvestris	14	12	3	1	9	26	65
<u>Deciduous Shrubs:</u>							
Chaenomeles japonica and c. speciosa	1	1	1	4	1	2	10
<u>Rhododendrons:</u>							
'Elizabeth'	5	11	3	2	15	4	40
'Pink Pearl'	1	4	1	2	4	4	16
'Purple Splendour'	9	9	1	1	1	1	22
<u>Other Broadleaved Evergreens:</u>							
Aucuba japonica (green-leaved)	3	4	3	9	4	6	29
Cotoneaster Dammeri	6	10	2	4	20	32	74
Fatsia Japonica	11	9	5	8	13	20	66
Ilex crenata 'Convexa'	6	2	4	2	13	8	35
Mahonia aquifolium	6	22	16	10	21	18	93

TABLE XV (Continued)

Plant species and cultivars used by all three landscape architects in 1967 and 1968 planting plans (contd.)

	Number of designs in which each plant was used						
	Landscape Architect A		Landscape Architect B		Landscape Architect C		Total No. of Designs
	1967	1968	1967	1968	1967	1968	
Other Broadleaved							
<u>Evergreens:</u>							
Pieris japonica	15	18	6	8	5	11	63
Pyracantha (assorted cultivars)	7	7	2	1	22	24	63
Viburnum davidii	11	16	5	10	2	4	48
Viburnum rhytidophyllum	4	2	3	2	12	21	44
<u>Ground Covers:</u>							
Ajuga reptans	7	7	1	2	5	20	42
Arctostaphylos uva-ursi	3	7	3	12	1	1	27
Hedera helix	2	6	4	2	22	26	62
Hypericum calycinum	23	22	2	2	2	1	52
Pachysandra terminalis	6	5	2	4	8	19	44
Vinca minor	7	4	8	13	8	20	60
<u>Vines:</u>							
Wisteria sinensis	1	3	2	1	6	3	16
<u>Miscellaneous:</u>							
Polystichum munitum	19	16	7	5	5	3	55
Cortaderia selloana	8	9	1	2	3	7	30
Phyllostachys aurea	8	6	8	6	1	4	33

Frequency of Use:

Other plant species and cultivars used by all three landscape architects in one or more plans in the two-year period

	Number of designs in which each plant was used						
	Landscape Architect A		Landscape Architect B		Landscape Architect C		Total No. of Designs
	1967	1968	1967	1968	1967	1968	
<u>Trees:</u>							
Acer palmatum	10	10	10	3	-	1	34
Acer platanoides (asstd. cultivars)	4	1	6	9	-	2	22
Aesculus x carnea	-	1	-	2	1	-	4
Aralia elata	12	7	-	1	6	4	30
Liriodendron tulipifera	2	7	2	4	-	1	16
Malus 'Almey'	1	-	-	1	-	2	4
Malus 'Hopa'	1	-	6	1	7	15	30
Platanus acerifolia	1	3	3	5	2	-	14
Populus nigra 'Italica'	1	1	1	-	6	1	10
Prunus serrulata 'Amanogawa'	2	2	1	-	12	2	18
Prunus serrulata 'Kwanzan'	9	10	-	1	4	4	28
Prunus cerasifera 'Atropurpurea'	8	7	3	2	1	-	21
Prunus x blireiana	2	5	1	1	1	-	10
Rhus typhina 'Lacinata'	1	2	2	1	-	4	10
Sorbus aucuparia	2	3	1	2	-	1	9
Tilia cordata	-	1	4	-	1	-	6
<u>Conifers:</u>							
Juniperus chinensis 'Pfitzeriana' (green)	2	1	1	2	-	8	14
Thuja occidentalis 'Fastigiata'	2	-	-	3	1	2	8
Thuja plicata	-	2	3	4	4	3	16
Thuja plicata 'Atrovirens'	-	1	-	1	-	11	13
Tsuga heterophylla	-	1	6	9	5	1	22
<u>Deciduous Shrubs:</u>							
Berberis thunbergii 'Atropurpurea'	2	-	1	1	3	3	10
Cornus alba 'Argenteo-marginata'	7	15	-	1	-	7	30
Cotinus coggygria	2	-	2	1	-	1	6
Euonymus nana	1	-	1	-	2	-	4
Forsythia sp. (assorted cultivars)	9	13	-	3	2	8	35
Potentilla sp. (assorted cultivars)	4	8	1	2	-	9	24
Spirea bumalda 'Froebelii'	3	4	-	1	-	1	9

TABLE XVI (Continued)

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Other plant species and cultivars used by all three landscape architects in one or more plans in the two-year period

		Number of designs in which each plant was used						
		Landscape Architect A		Landscape Architect B		Landscape Architect C		Total
								No. of
								Designs
		1967	1968	1967	1968	1967	1968	
<u>Azaleas:</u>								
R. 'Hinodegiri'		7	8	1	-	-	2	18
<u>Rhododendrons:</u>								
'Beauty of Littleworth'		8	1	-	1	3	-	13
'Blue Diamond'		1	4	1	5	-	8	19
'Blue Peter'		1	-	1	-	2	3	7
'Britannia'		2	2	-	3	14	1	22
'Bow Bells'		11	8	1	2	2	-	24
'Moonstone'		3	1	1	3	-	1	9
'Unique'		14	8	8	6	-	2	38
'Carita'		2	1	-	1	-	2	6
<u>Other Broadleaved</u>								
<u>Evergreens:</u>								
Berberis julianae		13	6	4	-	17	17	57
Choisya ternata		3	1	-	3	-	1	8
Cotoneaster 'Lofast'		2	2	1	-	9	-	14
Cotoneaster salicifolia floccosa		4	-	2	-	32	27	65
Cytisus x kewensis		5	3	1	-	1	1	10
Cytisus x praecox		19	16	6	6	-	1	48
Daphne cneorum		-	1	1	-	2	6	10
Daphne odora		-	1	-	2	-	1	4
Nandina domestica		-	1	-	5	1	1	8
Prunus lusitanica		-	2	3	2	1	1	9
Skimmia japonica		-	1	5	4	5	5	20
<u>Heathers:</u>								
Calluna 'H.E.Beale'		10	8	1	-	11	19	49
Erica 'Springwood White'		10	-	2	5	3	3	23
Erica 'Vivelli'		-	2	3	-	9	17	31
Erica x darleyensis		-	4	-	2	7	10	23
<u>Ground Cover:</u>								
Euonymus fortunei 'Gracilis'		-	3	1	-	4	5	13
Pachistima canbyi		-	1	3	-	2	2	8
Sasa pygmaea		-	1	3	1	3	5	13
Thymus serpyllum		9	6	1	-	5	6	27



Other plant species and cultivars used by all three landscape architects in one or more plans in the two-year period (contd.)

<u>Number of designs in which each plant was used</u>							
	<u>Landscape Architect A</u>		<u>Landscape Architect B</u>		<u>Landscape Architect C</u>		<u>Total No. of Designs</u>
	<u>1967</u>	<u>1968</u>	<u>1967</u>	<u>1968</u>	<u>1967</u>	<u>1968</u>	
<u>Vines:</u>							
Clematis - large flowered (assorted cultivars)	6	6	-	1	-	3	16
Clematis montana	5	1	1	-	1	1	9
Hydrangea petiolaris	2	5	1	-	1	1	10
Parthenocissus quinquefolia	1	2	3	1	-	6	13
Parthenocissus tricuspidata	2	5	6	4	-	1	18
Polygonum aubertii	6	7	-	1	2	2	18
<u>Bamboo, Grasses, Ferns:</u>							
Phormium tenax	-	2	3	1	1	6	13
Yucca filamentosa	25	23	-	1	7	10	66
Phyllostachys nigra	2	4	-	3	5	4	18
Phyllostachys bambusoides	-	2	-	4	1	1	8

TABLE XVII

Frequency of Use:

Plant species and cultivars used frequently by two  
of the three landscape architects in the two-year period

	Number of designs in which each plant was used						
	Landscape Architect A		Landscape Architect B		Landscape Architect C		Total No. of Designs
	1967	1968	1967	1968	1967	1968	
<u>Trees:</u>							
Carpinus betulus 'Fastigiata'	6	-	2	-	-	-	8
Cornus nuttalli	14	13	4	4	-	-	35
Cornus nuttalli 'Eddiei'	11	11	-	-	-	5	27
Prunus serrulata 'Shirotae'	16	10	-	-	5	-	31
Prunus 'Whitcombei'	-	-	-	1	6	3	10
Prunus subhirtella 'Autumnalis'	1	1	3	7	-	-	12
Quercus rubra	6	7	2	5	-	-	20
<u>Conifers:</u>							
Cedrus deodara	-	-	3	1	1	1	6
Juniperus horizontalis	-	1	-	-	2	9	12
Juniperus chinensis 'Pfitzeriana aurea'	25	25	-	-	16	25	91
<u>Deciduous Shrubs:</u>							
Cornus stolonifera	2	1	4	3	-	-	10
Cotoneaster franchetii	10	4	-	-	1	-	15
Eleagnus augustifolia	2	3	2	-	-	-	7
Euonymus alata	-	-	1	3	2	1	7
Hamamelis mollis	1	4	1	4	-	-	10
Hydrangea arborescens 'Grandiflora'	2	2	-	-	3	-	7
<u>AZaleas:</u>							
Kurume hybrid 'Christmas Cheer'	5	-	-	3	-	-	8
Kurume hybrid 'Coral Bells'	4	8	-	-	-	2	14
Gable hybrid 'Purple Splendour'	3	3	1	1	-	-	8
R. macrantha 'Gumpo'	2	1	5	2	-	-	10

TABLE XVII (Continued)

Frequency of Use:

Plant species and cultivars used frequently by two  
of the three landscape architects in the two-year period

	Landscape Architect A		Landscape Architect B		Landscape Architect C		Total No. of Designs
	1967	1968	1967	1968	1967	1968	
<u>Rhododendrons:</u>							
'Blue Tit'	1	4	-	-	2	-	7
'Cynthia'	-	1	-	-	7	2	10
'Gold Mohur'	1	-	-	-	-	18	19
'Jean Mary Montague'	12	14	4	3	-	-	33
'Loderi King George'	5	1	2	-	-	-	8
'Mrs. Furnival'	7	12	-	1	-	-	20
'Loder's White'	3	9	1	7	-	-	20
'Unknown Warrior'	2	1	-	-	5	19	27
'Vulcan'	-	-	-	2	1	23	26
R. williamsianum	4	-	-	-	9	7	20
<u>Other Broadleaved</u>							
<u>Evergreens:</u>							
Aucuba japonica 'Picturata'	1	3	-	-	2	15	21
Aucuba japonica 'Variegata'	9	8	-	-	5	8	30
Berberis darwinii	-	-	1	1	12	12	26
Berberis verruculosa	4	11	-	-	11	7	33
Cotoneaster microphylla	-	-	1	-	8	2	11
Cytisus 'Hollandia'	-	2	-	-	7	18	27
Eleagnus pungens 'Aureo-maculata'	-	3	-	-	2	2	7
Lavandula officinalis	-	2	-	-	9	9	20
Photinia X frazeri	-	-	-	4	1	13	18
Prunus laurocerasus 'Zabeliana'	22	26	6	2	-	-	56
Viburnum tinus	2	1	3	2	-	-	8
<u>Ground Covers:</u>							
Arenaria verna caespitosa	-	1	-	5	-	-	6
Gaultheria shallon	5	4	4	12	-	-	25
<u>Vines:</u>							
Clematis armandi	6	7	4	3	-	-	20
Hedera canariensis 'Variegata'	2	2	-	-	3	6	13
<u>Bamboo, Grasses,</u>							
<u>Miscellaneous:</u>							
Pseudosasa japonica	-	-	1	-	7	17	25

TABLE XVIII

Frequency of Use:

Plant species and cultivars used frequently and in  
quantity by one landscape architect only

LANDSCAPE ARCHITECT "A"	No. of designs in which each plant was used		Total No. of Designs	Total Quantity of Plants Used
<u>Trees:</u>	<u>1967</u>	<u>1968</u>		
Acer palmatum				
'Atropurpurea'	7	2	9	24
Betula verrucosa				
'Laciniata'	2	4	6	21
Cornus kousa	-	6	6	74
Malus 'Royalty'	5	6	11	221
Prunus serrulata				
'Miyako'	4	1	5	13
<u>Deciduous Shrubs:</u>				
Cotoneaster integerrima	2	1	3	522
Hippophae rhamnoides	3	2	5	89
Hydrangea macrophylla	18	23	41	2,021
Rosa rugosa and				
Rosa foetida (shrubs				
roses)	2	4	6	593
Forsythia 'Beatrix				
Ferrand'	8	11	19	604
<u>Azaleas:</u>				
Knaphill hybrids	3	3	6	121
Glendale hybrid 'Seashell'	4	-	4	48
R. indicum	1	3	4	66
Kaempferi hybrid				
'Palestrina'	5	7	12	124
<u>Rhododendrons:</u>				
'Anna Rose Whitney'	2	4	6	16
R. augustinii	1	3	4	21
'Cotton Candy'	5	1	6	11
'Faggetter's Favorite'	1	4	5	11
'Jock'	6	1	7	51
'Naomi' (in variety)	5	2	7	43
<u>Other Broadleaved</u>				
<u>Evergreens:</u>				
Cotoneaster salicifolia				
repens	1	3	4	232
Cytisus purpureus	1	1	2	252
Mahonia nervosa	2	1	3	108
Pyracantha coccinea				
'Orange Glow'	2	5	7	177
<u>Vines:</u>				
Wisteria floribunda	7	8	15	24

TABLE XVIII (Continued)

Frequency of Use:

Plant species and cultivars used frequently and in  
quantity by one landscape architect only

LANDSCAPE ARCHITECT "B"	No. of designs in which each plant was used		Total No. of Designs	Total Quantity Plants Used
<u>Trees:</u>	<u>1967</u>	<u>1968</u>		
Acer rubrum	6	7	13	133
Acer saccharum	3	3	6	19
Aesculus hippocastanum	1	4	5	78
Arbutus unedo	3	8	11	353
Nyssa sylvatica	4	7	11	68
Oxydendron arboreum	2	2	4	23
Prunus X yedoensis	2	2	4	52
Prunus sargentii	2	4	6	43
Quercus coccinea	4	4	8	176
<u>Conifers:</u>				
Pinus ponderosa	1	2	3	77
Sequoiadendron giganteum	1	3	4	57
Tsuga canadensis	2	4	6	1,137
Pseudotsuga menziesii	3	6	9	218
<u>Deciduous Shrubs:</u>				
Viburnum opulus 'Nanum'	-	4	4	3,761
<u>Rhododendrons:</u>				
'Gomer Waterer'	6	8	14	155
'Madame Masson'	4	5	9	61
<u>Other Broadleaved</u>				
<u>Evergreens:</u>				
Prunus laurocerasus				
'Otto Luyken'	6	3	9	2,820

TABLE XVIII (Continued)

Frequency of Use:

Plant species and cultivars used frequently and in  
quantity by one landscape architect only

LANDSCAPE ARCHITECT "C"	No. of designs in which each plant was used		Total No. of Designs	Total Quantity of Plants Used
	1967	1968		
<u>Trees:</u>				
Acer pseudoplatanus 'Worleei'	2	1	3	35
Malus floribunda	5	2	7	20
Prunus subhirtella 'Pendula'	3	4	7	28
<u>Conifers:</u>				
Thuja orientalis	10	5	15	1,120
<u>Deciduous Shrubs:</u>				
Berberis thunbergii	2	2	4	235
Buddleia davidii	2	3	5	46
Spirea X vanhouttei	3	6	9	815
Syringa amurense japonica	4	1	5	676
Cotoneaster adpressa	2	1	3	3,284
<u>Rhododendrons:</u>				
'Luzan'	-	5	5	120
R. ponticum	6	1	7	123
<u>Other Broadleaved</u>				
<u>Evergreens:</u>				
Berberis buxifolia 'Nana'	4	1	5	404
Berberis stenophylla	6	-	6	211
Berberis stenophylla 'Irwinii'	3	-	3	167
Cotoneaster watereri 'Pendula'	6	8	14	397
Cytisus X praecox 'Albus'	9	20	29	1,619
Cytisus purgans	1	15	16	379
Cytisus scoparius	4	-	4	265
<u>Ground Cover:</u>				
Hedera helix 'Spearpoint'	-	5	5	4,670
<u>Vines:</u>				
Jasminium nudiflorum	3	6	9	54

### Geographic Adaptability of Landscape Plants:

Some plant species are hardy enough for the severe prairie winter conditions or for the British Columbia Interior, yet have sufficient landscape merit to be used in the mild British Columbia Coastal area. Species and cultivars used in both Coastal and Interior British Columbia and the Prairie Provinces are listed in Table XIX.

Other plant species were specified only for the severe climatic zones where tender plants will not survive (Table XX).

### Adaptability of Plant Species to Various Types of Landscape Situations:

Landscape architects' projects have been classified in ten broad categories for analysis (Table IX). Some plants have been found useful for many types of plantings. Species and cultivars selected for six or more types of plantings are listed in Table XXI.

TABLE XIX

## PLANTS USED IN COASTAL AREAS OF BRITISH COLUMBIA AND BRITISH COLUMBIA

INTERIOR AND PRAIRIE PROVINCESTrees:

Acer ginnala	Malus 'Makamik'
Acer platanoides*	Malus 'Royalty'
Acer rubrum*	Malus sargentii
Acer saccharum	Populus nigra 'Italica'
Aesculus hippocastanum*	Prunus cerasifera 'Atropurpurea'
Betula papyrifera	Quercus palustris
Betula verrucosa	Rhus typhina
Catalpa speciosa*	Sorbus americana
Ginkgo biloba*	Sorbus aucuparia
Malus 'Almey'	Tilia cordata
Malus 'Dolgo'	Malus 'Hopa'

Conifers:

Juniperus horizontalis  
 Juniperus horizontalis 'Plumosa'  
 Juniperus chinensis 'Pfitzeriana'  
 Juniperus chinensis 'Pfitzeriana Aurea'  
 Juniperus chinensis sargentii  
 Juniperus sabina 'Tamariscifolia'  
 Picea pungens 'Glaucua'  
 Pinus contorta  
 Pinus mugho mughus  
 Pinus nigra  
 Pinus ponderosa  
 Pinus sylvestris  
 Taxodium distichum  
 Taxus cuspidata  
 Taxus cuspidata 'Nana'  
 Thuja occidentalis 'Fastigiata'  
 Thuja plicata  
 Tsuga heterophylla

Deciduous Shrubs:

Berberis thunbergii 'Atropurpurea'  
 Chaenomeles speciosa\*  
 Cornus alba 'Argenteo-marginata'  
 Cotinus coggygria 'Purpureus'\*  
 Eleagnus angustifolia  
 Euonymus nana  
 Forsythia ovata 'Tetragold'\*  
 Hydrangea arborescens 'Grandiflora'

\* Used in Coastal areas  
and British Columbia  
Interior only.



TABLE XIX (Continued)

PLANTS USED IN COASTAL AREAS OF BRITISH COLUMBIA AND BRITISH COLUMBIAINTERIOR AND PRAIRIE PROVINCESDeciduous Shrubs (Continued)

*Hydrangea paniculata* 'Grandiflora'  
*Potentilla* sp. (assorted cultivars)  
*Philadelphus* sp. (assorted cultivars)  
*Prunus triloba*  
*Rosa rugosa* and *Rosa foetida*  
*Spirea bumalda* 'Anthony Waterer'  
*Spirea vanhouttei*  
*Symphoricarpos albus laevigatus*  
*Syringa vulgaris* \*  
*Tamarix pentandra* 'Rubra' \*  
*Viburnum opulus* 'Roseum'

Broadleaved Evergreen Shrubs

*Berberis julianae* \*  
*Cotoneaster dammeri* \*  
*Daphne cneorum*  
*Eleagnus pungens* 'Aureo-maculata' \*  
*Mahonia aquifolium*

Ground Covers

*Arctostaphylos uva-ursi*  
*Euonymus fortunei* 'Gracilis'  
*Pachysandra terminalis*  
*Pachistima canbyi*  
*Sedum* sp. \*  
*Vinca minor*

Vines

*Hydrangea petiolaris* \*  
*Parthenocissus quinquefolia*  
*Parthenocissus tricuspidata* \*  
*Polygonum aubertii* \*  
*Vitis* sp. \*

Bamboo, Grasses, Ferns

*Polystichum munitum* \*  
*Cortaderia selloana* \*  
*Yucca filamentosa* \*

\* Used in Coastal Areas and  
British Columbia Interior only.

## TABLE XX

## Landscape Architects' Use of Plant Material

PLANTS USED ONLY IN BRITISH COLUMBIA INTERIOR AND PRAIRIE PROVINCESTrees:

Acer negundo 'Variegatum'	Populus tremuloides
Acer saccharinum	Prunus fruticosa
Crataegus mordenensis 'Toba'	Prunus maackii
Fraxinus americana	Salix alba 'Vitellina'
Malus niedwetzkyana	Salix pentandra
Populus simonii	Ulmus americana

Conifers:

Juniperus horizontalis	Juniperus virginiana 'Canaertii'
'Douglasi'	Picea glauca
Juniperus sabina	Picea engelmanni
Juniperus scopulorum 'Hill's Silver'	

Deciduous Shrubs:

Caragana arborescens	Sambucus racemosa
Cotoneaster acutifolia	Shepherdia argentea
Cotoneaster adpressa	Spirea arguta
Cotoneaster integerrima	Spirea bumalda 'Froebelii'
Hippophae rhamnoides	Syringa amurensis japonica
Lonicera tatarica	Syringa villosa
Prunus tomentosa	Tamarix odessana
Ribes alpinum	Viburnum cassinoides

Broadleaved Evergreen Shrubs:

Pieris floribunda

Ground Cover:

Aegopodium podagraria

Vines:

Aristolochia durior	Clematis tangutica
Celastris scandens	Clematis virginiana
Clematis paniculata	Lonicera periclymenum 'Belgica'

Bamboo, Grasses, Ferns, Miscellaneous:

Yucca glauca



[illegible]

TABLE XXI (Continued)

PLANTS USEFUL IN SIX OR MORE TYPES OF LANDSCAPE SITUATIONS

	Single-family	Multi-horiz.	Multi-vert.	Commercial	Industrial	Resorts	Parks	Public Bldgs.	Schools, Colleges	Roadsides	Total No. of Types
<u>Other Broadleaved</u>											
<u>Evergreens (Continued)</u>											
<i>Fatsia japonica</i>	x	x	x	x	x		x		x		7
<i>Ilex crenata</i> 'Aurea'	x	x		x	x			x	x		6
<i>Mahonia aquifolium</i>	x	x	x	x	x	x	x	x	x		9
<i>Photinia frazeri</i>	x	x	x	x	x			x			6
<i>Pieris japonica</i>	x	x	x				x	x	x		6
<i>Prunus laurocerasus</i>											
'Zabeliana'	x	x		x	x		x	x	x		7
<i>Pyracantha coccinea</i>	x	x	x	x	x		x	x	x		8
<i>Viburnum davidii</i>	x	x	x	x	x		x	x	x		8
<i>Viburnum rhytidophyllum</i>	x	x	x	x				x	x		6
<i>Viburnum tinus</i>	x	x	x				x	x	x		6
<u>Heather:</u>											
<i>Calluna vulgaris</i>											
'H.E.Beale'	x	x	x	x	x		x	x	x		8
<u>Ground Cover:</u>											
<i>Ajuga reptans</i>	x	x		x	x		x	x	x		7
<i>Arctostaphylos</i>											
<u>uva-ursi</u>	x	x	x	x			x	x	x		7
<i>Euonymus fortunei</i>											
'Gracilis'	x	x	x	x	x		x		x		7
<i>Gaultheria shallon</i>	x	x	x	x			x	x	x		7
<i>Hedera helix</i>	x	x	x	x	x		x	x	x		8
<i>Hypericum calycinum</i>	x	x	x	x	x		x	x	x		8
<i>Pachysandra termin-</i>											
<u>alis</u>	x	x	x	x	x		x	x	x		8
<i>Thymus serpyllum</i>	x	x	x		x		x		x		6
<i>Vinca minor</i>	x	x	x	x	x		x	x	x		8
<u>Vines:</u>											
<i>Parthenocissus</i>											
<u>quinquefolia</u>	x	x	x				x	x	x		6
<i>Parthenocissus</i>											
<u>tricuspidata</u>	x	x	x		x	x	x	x	x		8
<i>Polygonum aubertii</i>	x	x	x	x	x		x		x		7

TABLE XXI (Continued)

PLANTS USEFUL IN SIX OR MORE TYPES OF LANDSCAPE SITUATIONS

	Single-family	Multi-horiz.	Multi-vert.	Commercial	Industrial	Resorts	Parks	Public Bldgs.	Schools, Colleges	Roadsides	Total No. of Types
<u>Bamboos, Grasses,</u>											
<u>Ferns, Miscellaneous:</u>											
<i>Polystichum munitum</i>	x	x	x	x	x		x	x	x		8
<i>Cortaderia selloana</i>	x	x	x	x			x	x	x		7
<i>Phormium tenax</i>	x	x	x	x	x				x		6
<i>Yucca filamentosa</i>	x	x	x	x	x	x	x	x	x		9
<i>Phyllostachys aurea</i>	x	x	x	x			x	x	x		7
<i>Phyllostachys nigra</i>	x	x	x		x		x		x		6

## The Landscape Use of Various Categories of Plants:

### 1. Trees:

"Trees are both the most important and most permanent of all garden plant material.....For this reason, trees, long-lived and slow to mature, should be the first consideration in all landscape and garden planning." 4

Trees were used liberally in the landscape designs studied, school and university plans having the largest average of 137 trees per plan. Garden apartments and parks also included large quantities of trees, an average of 111 trees and 121 trees respectively. Only 16 trees were employed in the average single-family residence plan, and 12 trees in the average commercial project.

Nine species of trees were used by all three landscape architects in planting plans designed in 1967 and 1968 (Table XV). Sixteen additional tree species were used occasionally by all three designers (Table XVI). Only six of these 25 species could be considered large-sized trees, 50' or over: Acer platanoides, Betula papyrifera, Liriodendron tulipifera, Platanus X acerifolia, Populus nigra 'Italica', and Tilia cordata.

Many of the species in the landscape architects' list of trees are small to medium-sized trees with interesting foliage, bloom, or branching habit, for example: Rhus typhina, Rhus typhina 'Laciniata', Aralia elata ---- dramatic branching habit; Magnolia soulangeana, Magnolia stellata, Prunus serrulata 'Amanogawa', Prunus serrulata 'Kwanzan', Malus 'Almey', Malus 'Hopa' ---- attractive bloom; Acer palmatum and Acer palmatum 'Dissectum' ---- outstanding foliage patterns.

The data support the statement that the European White Birch is "probably the most frequently-planted tree in the West" <sup>17</sup> since this tree was specified for 70 landscape projects in both Coastal and Interior locations, and was sold in large quantities by the five nurseries sampled. While the nursery sales list contains Betula verrucosa and four of its cultivars 'Fastigiata', 'Laciniata', 'Tristis', and 'Youngii', the landscape architects prefer the true species and use the cultivars rarely.

A comparison of the list of best-selling trees (Table III) with the list of trees used in quantity by landscape architects (Table XIII) shows eleven of the thirty trees listed which are sold by the five nurseries and specified by three landscape architects in large quantities: Acer circinatum, Betula verrucosa, Acer platanoides 'Crimson King', Prunus serrulata 'Kwanzan', Populus nigra 'Italica', Acer palmatum, Cornus nuttallii 'Eddiei', Prunus cerasifera 'Atropurpurea', Malus 'Royalty', Malus 'Hopa', Sorbus aucuparia. Only one cultivar of Acer platanoides was used in quantity by the landscape architects, the deeply-coloured 'Crimson King'. Other cultivars 'Summershade' and 'Emerald Queen' were grown chiefly for export to Eastern Canada. The species type of Acer palmatum and Cornus nuttallii was used by the landscape architects in larger amounts than the red-leaved form 'Atropurpureum' and the variegated-leaved form 'Eddiei' of these two species, but the cultivars were sold in larger quantities.



Two tree species were employed by landscape architects in all ten types of projects (Table XXI): Cornus muttallii 'Eddiei' and Rhus typhina. Prunus serrulata 'Kwanzan' was used in nine of the ten types of projects.

Some trees were specified by landscape architects in their 1967 and 1968 plans but were not sold in mature sizes by the five nurseries sampled: (The number of trees used in the two-year period is given in brackets)

<i>Acer macrophyllum</i> (18)	<i>Malus</i> 'Cowichan' (24)
<i>Acer negundo</i> 'Variegatum' (44)	<i>Malus</i> 'Dolgo' (34)
<i>Acer saccharum</i> 'Newton Sentry' (4)	<i>Malus micromalus</i> (12)
<i>Albizia julibrissin</i> (3)	<i>Malus niedwetzkyana</i> (18)
<i>Alnus sinuata</i> (4)	<i>Nyssa sylvatica</i> (68)
<i>Alnus sinensis</i> (1)	<i>Oxydendron arboreum</i> (23)
<i>Amelanchier alnifolia</i> (13)	<i>Phellodendron amurense</i> (6)
<i>Catalpa speciosa</i> (14)	<i>Platanus orientalis</i> (56)
<i>Carya ovata</i> (1)	<i>Populus tremuloides</i> (55)
<i>Cercidiphyllum japonicum</i> (4)	<i>Prunus sargentii</i> (43)
<i>Fraxinus uhdei</i> (1)	<i>Prunus fruticosa</i> (5)
<i>Ficus retusa</i> (18)	<i>Prunus maackii</i> (7)
<i>Juglans nigra</i> (1)	<i>Prunus serotina</i> (1)
<i>Magnolia demodata</i> (4)	<i>Prunus mume</i> 'Bonita' (5)
<i>Magnolia grandiflora</i> (25)	<i>Quercus coccinea</i> (176)
<i>Magnolia grandiflora</i> 'St. Mary' (11)	<i>Quercus robur</i> (1)
<i>Magnolia salicifolia</i> (1)	<i>Salix alba</i> 'Vitellina' (22)
<i>Magnolia sieboldii</i> (1)	<i>Sorbus aria</i> (8)
<i>Malus coronaria</i> (2)	<i>Ulmus glabra</i> 'Camperdownii' (1)

Other tree species and cultivars were sold by the five nurseries sampled but were not employed by the three landscape architects in any 1967 or 1968 planting plans (The number of trees sold by five nurseries in a 12-month period is given in brackets):

<i>Acer japonicum</i> 'Aureum' (1)	<i>Gleditsia triacanthos</i> 'Shademaster' (50)
<i>Acer japonicum</i> 'Parsonsi' (1)	<i>Gleditsia triacanthos</i> 'Sunburst' (538)
<i>Acer platanoides</i> 'Drummondii' (123)	<i>Gleditsia triacanthos</i> 'Skyline' (346)
<i>Acer platanoides</i> 'Emerald Queen' (4470)	<i>Koeleruteria paniculata</i> (13)
<i>Acer platanoides</i> 'Summershade' (1140)	<i>Laburnocytisus adami</i> (2)
<i>Acer pseudoplatanus</i> 'Leopoldi' (317)	<i>Laburnum watereri</i> 'Vossi' (390)
<i>Acer rufinerve</i> (23)	<i>Magnolia soulangeana</i> 'Rubra' (20)
<i>Betula albo-sinensis</i> (125)	<i>Magnolia kobus</i> (1673)
<i>Catalpa bignonioides</i> (20)	<i>Malus echtermeyer</i> (5)
<i>Celtis occidentalis</i> (20)	<i>Malus moerlandsii</i> 'Lizet' (863)
<i>Castanea</i> sp. (4)	<i>Malus</i> 'Van Eseltine' (134)
<i>Fagus sylvatica</i> 'Asplenifolia' (10)	<i>Populus alba</i> 'Pyramidalis' (10)
<i>Fagus sylvatica</i> 'Spaethiana' (204)	<i>Prunus serrulata</i> 'Accolade' (155)
<i>Fagus sylvatica</i> 'Roseo-marginata' (12)	<i>Prunus serrulata</i> 'Shirofugen' (120)
<i>Fagus sylvatica</i> 'Pendula Aurea' (20)	<i>Prunus serrulata</i> 'Taihaku' (21)
<i>Fagus sylvatica</i> 'Riversii' (130)	<i>Prunus virginiana</i> 'Shubert' (300)
<i>Fagus sylvatica</i> 'Purpureo-pendula' (25)	<i>Quercus petraea</i> 'Columna' (10)
<i>Fagus sylvatica</i> 'Pendula' (10)	<i>Quercus robur</i> 'Fastigiata' (305)
<i>Franklinia altamaha</i> (2)	<i>Quercus suber</i> (1)
<i>Fraxinus pennsylvanica lanceolata</i> (43)	<i>Rhus glabra</i> (5)
<i>Fraxinus excelsior</i> 'Westhof Glory' (50)	<i>Robinia pseudoacacia</i> (6)
<i>Fraxinus ornus</i> (41)	<i>Sorbus aucuparia</i> 'Rossica' (888)
<i>Fraxinus holotricha</i> 'Moraine' (7)	<i>Tilia euchlora</i> (317)

Some tree species have been employed by landscape architects in only one or two planting plans throughout the two-year period. These trees are the special types suited to a particular design or location.

"It is impossible to have too great a range of plants to choose from, provided a choice is made. The qualities of plants are so complex and their cultural requirements so diverse, that even with our present vast choice it is not always easy to find the exact plant for each position." <sup>40</sup>

It is important that many species of trees are available to the designer to add variety, accent and individuality, although many types may not be used in large quantities. The following were used in one or two plans only:

<i>Acer negundo</i>	<i>Magnolia sieboldii</i>
<i>Acer negundo</i> 'Variegatum'	<i>Magnolia soulangeana</i> 'Alba'
<i>Acer macrophyllum</i>	<i>Malus baccata</i> mandshurica
<i>Acer rubrum</i> 'Schelsinger'	<i>Malus coronaria</i>
<i>Acer saccharum</i> 'Newton Sentry'	<i>Malus</i> 'Cowichan'
<i>Ailanthus altissima</i>	<i>Malus micromalus</i>
<i>Alnus sinensis</i>	<i>Malus niedwetzkyana</i>
<i>Alnus sinuata</i>	<i>Malus moerlandsii</i> 'Profusion'
<i>Amelanchier alnifolia</i>	<i>Malus purpurea</i> 'Eleyi'
<i>Amelanchier canadensis</i>	<i>Phellodendron amurense</i>
<i>Albizia julibrissin</i>	<i>Platanus orientalis</i>
<i>Betula verrucosa</i> 'Fastigiata'	<i>Populus tremuloides</i>
<i>Betula verrucosa</i> 'Tristis'	<i>Prunus serrulata</i> 'Pink Perfection'
<i>Betula verrucosa</i> 'Youngii'	<i>Prunus serrulata</i> 'Ukon'
<i>Carya ovata</i>	<i>Prunus fruticosa</i>
<i>Cercidiphyllum japonicum</i>	<i>Prunus maackii</i>
<i>Cercis canadensis</i>	<i>Prunus serotina</i>
<i>Cornus mas</i>	<i>Prunus mume</i> 'Bonita'
<i>Crataegus oxyacantha</i> 'Paul's Scarlet'	<i>Salix alba</i> 'Vitellina'
<i>Crataegus mordenensis</i> 'Toba'	<i>Salix matsudana</i> 'Tortuosa'
<i>Fraxinus americana</i>	<i>Salix pentandra</i>
<i>Fraxinus uhdei</i>	<i>Salix discolor</i>
<i>Ficus retusa</i>	<i>Sophora japonica</i>
<i>Juglans nigra</i>	<i>Sorbus aria</i>
<i>Magnolia grandiflora</i>	<i>Stewartia pseudo-camellia</i>
'St. Mary'	<i>Ulmus americana</i>
<i>Magnolia salicifolia</i>	<i>Ulmus glabra</i> 'Camperdownii'
	<i>Ulmus pumila</i>

## 2. Conifers:

Conifers made up only 5.1% of the total quantity of plants specified by the three landscape architects in the study period. An average of 16,274 coniferous shrubs and trees were used annually compared to 48,999 broadleaved evergreen shrubs, rhododendrons and azaleas included.

Two conifers were used in much larger quantities than any other: Pinus mugho mughus and Juniperus chinensis 'Pfitzeriana Aurea', an average of 3,861 Mugho Pine and 4,888 Golden Pfitzer Juniper used annually.

Mugho Pine was specified by all three landscape architects in 127 of the 229 planting plans studied (Table XIV). It was also used in all ten types of landscape situations (Table XXI) and in all climatic zones (Table XIX) and was the conifer sold in the largest quantity by the five nurseries sampled (Table III); therefore, Mugho Pine can be considered the most widely acceptable conifer for landscape use,.

Juniperus chinensis 'Pfitzeriana Aurea' was specified by only two of the three landscape architects, but it was used frequently and in large amounts in both mild and severe climates, 9,776 Golden Pfitzer Juniper included in 91 planting designs of all types in the two-year period (Table XXI). Golden Pfitzer Juniper was also a top-selling conifer (Table III). The green-needled form of Pfitzer Juniper was sold and specified in smaller quantities than the golden form,

3,043 shrubs sold and 833 specified annually.

Other conifers used frequently by all three designers were large-scale plants useful for specimen, tall screen or hedge planting: Pinus contorta (588 trees in 36 plans), Pinus nigra (841 trees in 34 plans), Pinus sylvestris (1230 trees in 65 plans), Thuja plicata (680 trees in 16 plans), Thuja plicata 'Atrovirens' (467 trees in 13 plans), and Tsuga heterophylla (922 trees in 22 plans). The number of trees and the frequency of use during the two-year period is given in brackets.

Cedrus atlantica 'Glauca', Cedrus deodara, and Thuja occidentalis 'Fastigiata' were also specified by three landscape architects in a small number of planting designs.

Pfitzer Juniper and Mugho Pine were the only low-growing types of conifers used regularly by the landscape architects. Other dwarf conifers were employed infrequently, for example, Juniperus horizontalis 'Douglasi' (594 shrubs in 2 designs), Juniperus sabina 'Tamariscifolia' (576 shrubs in 5 designs), Juniperus sabina (647 shrubs in 6 designs), Juniperus horizontalis 'Plumosa' (447 shrubs in 5 designs), Taxus cuspidata 'Nana' (457 shrubs in 2 designs).

The types of landscape plans in which large numbers of conifers were used were roadside developments, multiple-horizontal apartment complexes, and school and university plans (Table X). In terms of total quantity of conifers used, designs for multiple-horizontal housing required the largest amount (9,336 conifers) followed by

school and university landscape plans (7,833 conifers) in the two-year period.

A very large proportion of landscape plant sales were conifers, 28% of the total quantity and 42.3% of the cash value of sales of the five sample nurseries. The propagation, cultivation and sale of conifers continues to be a major part of the nursery industry in the British Columbia Lower Mainland although the professional landscape designer does not use them extensively.

The list of conifers sold by the five nurseries sampled (Table III) contains many cultivars not specified by the landscape architects in any 1967 or 1968 designs:

Spreading and Dwarf Conifers:

Thuja orientalis 'Aureo-nana'  
 Juniperus sabina 'Skandia'  
 Juniperus chinensis 'Pfitzeriana Glauca'  
 Picea glauca 'Albertiana Conica'  
 Thuja occidentalis 'Woodwardi'  
 Juniperus chinensis 'Pfitzeriana Compacta'  
 Chamaecyparis obtusa 'Nana Gracilis'  
 Juniperus sabina 'Arcadia'  
 Juniperus chinensis 'Armstrongi'  
 Juniperus chinensis 'Mint Julep'  
 Juniperus squamata 'Meyeri'

Upright, Cone, or Columnar Conifers:

Juniperus scopulorum 'Blue Haven'  
 Chamaecyparis lawsoniana 'Columnaris'  
 Thuja orientalis 'Fruitlandi'  
 Picea abies  
 Chamaecyparis lawsoniana 'Lanei'  
 Thuja occidentalis 'Holmstruppi'  
 Juniperus communis 'Hibernica'  
 Chamaecyparis lawsoniana 'Ellwoodi'

A great many more conifers not used by the three landscape architects

were sold in smaller quantities, including many species and cultivars of Chamaecyparis, Juniperus, Picea, Pinus, Thuja, and Taxus.

Some conifers were specified by the three landscape architects but were not sold by the five sample nurseries during the study period: (The number of trees used in a two-year period is given in brackets)

Cedrus libani (1)  
Juniperus chinensis sargentii (139)  
Larix occidentalis (2)  
Picea engelmanni (8)  
Picea glauca (18)  
Pinus aristata (4)  
Pinus densiflora (4)  
Taxus baccata 'Aureo-marginata' (49)  
Taxus cuspidata (59)  
Pinus pinea (17)  
Pinus ponderosa (77)  
Pinus sylvestris 'Glaucua' (1)  
Sciadopitys verticillata (1)  
Tsuga canadensis (1,137)  
Tsuga mertensiana (32)

### 3 Deciduous Shrubs:

Deciduous shrubs made up a large proportion of the plants specified for landscape use in the British Columbia Interior and the Prairie Provinces. Many shrubs were used for projects in the severe climatic zones only, and were never used in coastal British Columbia. Examples are: Cotoneaster acutifolia, C. adpressa, C. integerrima, Sambucus racemosa, Spirea bumalda 'Froebelii', Tamarix odessana, and others.

A considerable number of deciduous shrubs were found to be useful in Coastal areas as well as the Interior and Prairie regions (Table XIX). Five of these shrubs used frequently by all three

landscape architects: Cornus alba 'Argenteo-marginata' (1,710 shrubs in 30 designs), Forsythia sp. (assorted cultivars) (730 shrubs in 35 designs), Potentilla sp. (assorted cultivars) (7,106 shrubs in 24 designs), Berberis thunbergii 'Atropurpurea' (1,235 shrubs in 10 designs) and Chaenomeles sp. (assorted cultivars) (48 shrubs in 10 designs). Chaenomeles and Forsythia were used in Coastal and Interior British Columbia but were not used in the Prairie Provinces.

The five deciduous shrubs discussed above can be considered the shrubs of their type most widely acceptable by landscape architects for use in mild and severe climates. Forsythia, Variegated Dogwood and Potentilla were specified for a wide variety of landscape situations (Table XXI). The use of deciduous barberries cannot now be recommended because they have been found to be an alternate host of the black stem rust of wheat. <sup>14</sup>

Other deciduous shrubs used occasionally by all three designers were Cotinus coggygria, Euonymus nana and Spirea bumalda 'Froebeli'. Two designers made frequent use of Cornus stolonifera, Hamamelis mollis, and Cotoneaster franchetii, and one designer used Hydrangea macrophylla in a large number of planting plans.

Although Viburnum opulus 'Nanum', Cotoneaster adpressa, and Hydrangea macrophylla were specified by only one landscape architect these shrubs were used in large quantities (Table XIII).

The average number of deciduous shrubs used for various types of landscape plans followed a similar pattern to that of coniferous shrubs: roadsides, multiple-horizontal housing and school and university plans having the largest average number of shrubs per plan, 872, 558, and 372 shrubs respectively. In the same manner, the largest quantity of



deciduous shrubs was specified for multiple-horizontal housing developments (13,390 shrubs) followed by school and university plans (8,180 shrubs) in the two-year period.

#### 4. Broadleaved Evergreen Shrubs:

"The broadleaved evergreen shrubs as a group are more valuable to gardeners in this region than any other single classification of plant material. They have not only the fleeting beauty in flower and fruit possessed by most other trees and shrubs but, also, the varying pattern, colour and texture of their evergreen foliage are a constant delight throughout the year." 6

#### Azaleas:

Landscape Architects A and B used several types of azaleas in their planting plans but Landscape Architect C used them sparingly. The Kurume azalea 'Hinodegiri' was the only cultivar specified by all three designers, a total of 655 plants used in 18 designs in the two-year period. Azaleas specified in quantity by two of the three landscape architects were Kurume hybrids 'Christmas Cheer' (141 plants in 8 plans), 'Coral Bells' (223 plants in 14 plans), 'Snow' (530 plants in 4 plans). Two designers also employed assorted cultivars of Exbury hybrids (366 plants in 9 plans), Gable hybrid 'Purple Splendour' (172 plants in 8 plans), Macrantha hybrid 'Gumpo' (659 plants in 10 plans) and assorted Glendale hybrids (576 plants in 8 plans).

The largest quantity of azaleas were used in planting designs for school and university grounds (2,282 azaleas in the two-year period). Designs for single-family residences employed 1,408 in the two-year period, and all other types of projects used smaller quantities.

The average number of azaleas for each park design ranked highest --- 131 per plan. School designs used an average of 104 azaleas per plan, high-rise developments averaged 42 per plan, garden apartments 38 per plan, and single-family residences averaged 16 per plan. A very small number of azaleas were used in commercial, industrial, resort and public building plantings and none were used in town squares.

Azaleas were used in projects in the Lower Mainland, Victoria, other parts of Vancouver Island and the Upper Coast, but were not used in the British Columbia Interior or the Prairie Provinces.

#### Rhododendrons:

More than half (132) of the 229 planting plans designed by the three landscape architects in the two-year study period included rhododendrons, a tribute to their popularity and adaptability. Rhododendrons specified were chiefly hybrid cultivars. Rhododendron 'Elizabeth', a bright red low-growing shrub was specified in the largest quantity and was used by all three designers in both 1967 and 1968 plans, Landscape Architect A using it in 16 plans, Landscape Architect B in five plans, and Landscape Architect C in 19 plans. Two other rhododendron cultivars 'Purple Splendour' and 'Pink Pearl' were also used consistently by three landscape architects but in smaller quantities. Other rhododendrons used by three designers were 'Beauty of Littleworth', 'Blue Diamond', 'Blue Peter', 'Brittania', 'Bow Bells', 'Carita', 'Moonstone', 'Unique'.

Two of the three landscape architects employed Rhododendron 'Blue Tit', 'Jean Mary Montague', 'Unknown Warrior', and R. williamsianum. Some rhododendron hybrids were favorites of one landscape architect.

Landscape Architect A specified 'Mrs. Furnival' in 20 planting plans and 'Naomi' in eight planting plans. Other designers used these cultivars only once. Landscape Architect B was the only designer to use 'Gomer Waterer' and 'Madame Masson', specifying them in 14 plans and nine plans respectively. Landscape Architect C featured 'Cynthia' in nine plans, 'Gold Mohur' in 18 plans, 'Unknown Warrior' in 24 plans, and 'Vulcan' in 23 plans, while other landscape architects used these cultivars rarely.

Rhododendrons were used in every type of project except resorts, golf courses and town squares. The largest quantity of rhododendrons was used in planting designs for single-family residences in the two-year period (2,674 rhododendrons in 90 plans). However, the average number of rhododendrons per plan was highest for park designs (122 rhododendrons per plan) followed by garden apartment designs (56 rhododendrons per plan).

Rhododendrons were used in Coastal British Columbia and in one location in the British Columbia Interior but were not used in the Prairie Provinces.

Names of rhododendrons sold by the five nurseries sampled were not always available in the sales records; however, of the named varieties listed the cultivar 'Scarlet Wonder' was sold in the largest quantity, followed by 'Elizabeth' and the hardier R. ponticum.

Un-named rhododendrons were sold chiefly in the size range 18"- 24" (196 plants sold), 8" - 10" (195 plants sold), and 15"-18" (169 plants sold).

### Other Broadleaved Evergreens:

When broadleaved evergreens are listed according to quantities used in 229 landscape architects' plans (Table XIII) Cytisus X praecox, Prunus laurocerasus 'Zabeliana', Mahonia aquifolium and Cotoneaster dammeri are found to be the plants used in the largest amounts. The same four species, along with rhododendrons and azaleas are sold in the largest quantities by the five nurseries sampled (Table III). These four shrubs constitute 49.9% of the quantity of broadleaved evergreens (exclusive of rhododendrons and azaleas) used in 229 landscape architects' plans, and 38.8% of the annual sales of broadleaved evergreens. Cytisus X praecox, Prunus laurocerasus 'Zabeliana', Mahonia aquifolium, and Cotoneaster dammeri can be considered the types most suitable for mass planting since they are specified and sold in large quantities.

C. dammeri and M. aquifolium have been used by all three landscape architects during the two-year period, Landscape Architect A using it in 16 plans, Landscape Architect B using it in six plans, and Landscape Architect C using C. dammeri in 31 plans in 1968 and 20 plans in 1967. Mahonia aquifolium was employed in 28 plans in the two-year period by Landscape Architect A, 28 plans by Landscape Architect B, and 37 plans by Landscape Architect C.

Prunus laurocerasus 'Zabeliana' was used by two designers only. Landscape Architect A specified it in 22 plans in 1967 and 27 plans in 1968 and Landscape Architect B used it six times in 1967 and twice in 1968. Landscape Architect C did not use Zabel's Laurel in any of his designs.

Cytisus X praecox was used only once by C but was specified in 35 plans by A and in 12 plans by B in the two-year period. Landscape Architect C preferred the cultivar Cytisus X praecox 'Albus', specifying it in 29 plans during 1967 and 1968.

Other broadleaved evergreens used in large quantities were Berberis julianae, Cotoneaster salicifolia floccosa, Prunus laurocerasus 'Otto luyken', and Viburnum davidii. Berberis julianae has been the preferred evergreen barberry species used by the three landscape architects, and was also the top-selling barberry (table III). Landscape Architect C used 2,871 Berberis julianae in 34 plans in two years, while A used 1,086 and B only 165. Cotoneaster salicifolia floccosa was a favorite plant of Landscape Architect C; 31 of his designs in 1967 and 28 designs in 1968 included this plant. Landscape Architect A used C. salicifolia floccosa in four plans, and B used it in two plans.

Prunus laurocerasus 'Otto Luyken' was employed by Landscape Architect B only, but it was specified in very large quantities, a total of 2,820 plants in nine designs. All three landscape architects however, used Viburnum davidii regularly throughout the study period, A selecting it for use in 25 plans, B using it in 15 plans, and C in 21 plans.

Shrubs used frequently but in smaller quantities by the three landscape architects were Aucuba japonica, Fatsia japonica, Ilex crenata 'Convexa', Pieris japonica, Pyracantha coccinea and Viburnum rhytidophyllum.

Aucuba japonica and its cultivars 'Variegata' and 'Picturata' were included in planting designs by all three landscape architects, B preferring the standard green-leaved Aucuba and A and C using both green and variegated forms. Nine hundred and two Aucubas were used in the two-year period, the majority of the plants (407) the cultivar 'Variegata', the familiar Gold Dust Plant.

Fatsia japonica, a bold-patterned large-leaved evergreen shrub was used singly or in small groups in many designs. Landscape Architect A employed 70 Fatsia plants in 20 plans, B used 206 Fatsia in 13 plans and C used 358 Fatsia in 33 plans.

The holly that resembles a boxwood, Ilex crenata 'Convexa' was used in 34 planting designs by all three landscape architects, the standard Ilex crenata was used eight times, and the cultivars 'Golden Gem', 'Green Thumb' and 'Helleri' used in 15 plans.

Pieris japonica, the attractive lily-of-the-valley shrub, was selected for use in 63 planting designs, its cultivars 'Rosea' or 'Flamingo' in three designs, and the variegated form in six designs. Pieris japonica was also high on the list of top-selling broadleaved evergreens, indicating its wide popularity.

Viburnum rhytidophyllum was included in planting designs by all three landscape architects, most frequently by C (33 plans). A and B employed V. rhytidophyllum in six and five planting plans respectively.

Pyracantha coccinea was used many times as a wall shrub, the cultivar 'Lalandii' specified most frequently. 'Orange Glow' was used by Landscape Architect A seven times but Landscape Architects B and C chose the species type or the cultivar 'Lalandii'. Forty-four planting plans drawn by Landscape Architect C included Pyracantha coccinea or its cultivar 'Lalandii'. A used P. coccinea in seven plans and B in three plans.

Broadleaved evergreens used occasionally by three designers were as follows: Choisya ternata (149 shrubs in 8 plans), Cotoneaster 'Lofast' (2,232 shrubs in 14 plans), Daphne cneorum (1,962 shrubs in 8 plans), Daphne odora (326 shrubs in 4 plans), Nandina domestica (65 shrubs in 8 plans), Prunus lusitanica (386 shrubs in 9 plans), Skimmia japonica (749 shrubs in 20 plans).

Additional species employed in quantity by two of the three landscape architects: Berberis verruculosa (1,799 shrubs in 33 plans), Lavandula officinalis (926 shrubs in 20 plans), Photinia X frazeri (638 shrubs in 18 plans), Viburnum tinus (431 shrubs in 8 plans). The frequency of use and the total number of shrubs used in the two-year period is given in brackets.

The plants mentioned in the above discussion which have been chosen for frequent use during the study period by two or three landscape architects can be considered the most adaptable and pleasing representatives of their class, the broadleaved evergreens.

The average number of broadleaved evergreens specified per plan was high for school and university plans (921 shrubs per plan), multiple-horizontal housing developments (809 per plan), public buildings (782 per plan) and parks plans (774 per plan). The largest quantity of broadleaved evergreen shrubs was specified for school and university plans (a two-year total of 20,255 plants) followed closely by horizontal apartment developments (19,422 plants). Single-family housing also required a large quantity of broadleaved evergreens for landscape development (13,807 plants in two years).

Many broadleaved evergreens were used in a wide variety of landscape situations (Table XXI). Cytisus X praecox and Mahonia aquifolium were specified for nine of the 10 types of projects analysed, and Berberis julianae, Cotoneaster dammeri, Pyracantha coccinea, and Viburnum davidii were specified for eight of the 10 project types.

The following shrubs were sold by the five nurseries sampled but were not specified by the three landscape architects in 1967 or 1968: (The number of shrubs sold in a twelve-month period in brackets)

Aucuba japonica 'Serratifolia' (17)  
 Buxus sempervirens (286)  
 Berberis candidula (6)  
 Cytisus X praecox 'Allgold' (10)  
 Cytisus scoparius 'Killarney Red' (26)  
 Cytisus scoparius 'Killarney Salmon' (31)  
 Cytisus decumbens (21)  
 Eleagnus X ebbingei (12)  
 Genista sp. (assorted cultivars) (184)  
 Hedera helix and Hedera colchica (shrub form) (26)  
 Ilex aquifolium 'Aureo-marginata' and 'Silvary' (53)  
 Ilex crenata 'Hetzi' (70)  
 Leucothoe fontanesiana (152)  
 Mahonia repens (22)  
 X Osmarea burkwoodii (7)  
 Pyracantha coccinea 'Tiny Tim' (10)  
 Spartium junceum (188)



Broadleaved evergreen shrubs specified by the three landscape architects which did not appear in the nursery sales records:

*Andromeda polifolia* (8)  
*Arctostaphylos columbiana* (6)  
*Ceanothus griseus* and *Ceanothus X delilianus* 'Gloire de Versailles' (3)  
*Cotoneaster apiculata* (30)  
*Cytisus scoparius* 'Lydia' (204)  
*Cytisus canariensis* (25)  
*Daboecia cantabrica* (108)  
*Vaccinium ovatum* (138)

The number of shrubs specified in the two-year period is given in brackets.

##### 5. Heathers:

Heathers were specified for eight of the 10 types of landscape projects. The largest quantities of heathers were used for multiple-horizontal housing developments (6,742 plants) and single-family housing (6,683 plants). Horizontal apartment projects averaged 281 heather plants per plan, and school and university designs averaged 128 heather plants per plan. Heathers were used in Coastal British Columbia only, not in the Interior or Prairie Provinces.

Four heather cultivars were specified in larger quantities than any other: *Calluna vulgaris* 'H.E. Beale' (1,854 plants specified annually), *Erica carnea* 'King George' (1,244), *Erica carnea* 'Vivelli' (1,146) and *Erica carnea* 'Springwood' (1,137).

## 6. Ground Covers and Vines:

Five ground cover plants were used very frequently by all three landscape architects: Hedera helix, Vinca minor, Hypericum calycinum, Pachysandra terminalis and Ajuga reptans. All were specified in more than 40 of the 229 planting designs studied. Hedera helix, Hypericum calycinum, Pachysandra terminalis and Vinca minor were used in eight of the 10 types of landscape projects and Ajuga reptans was used in smaller amounts in seven of the 10 types.

The five ground cover plants discussed above were also the species used in the largest quantities along with two other plants: Arctostaphylos uva-ursi and Gaultheria shallon. Three designers used Arctostaphylos uva-ursi in 27 designs for seven different types of projects, and Gaultheria shallon was used by only two designers for 25 projects of seven different types. Of the seven frequently-used ground cover plants, only three were used in cold climates: Arctostaphylos uva-ursi, Pachysandra terminalis, and Vinca minor.

The list of ground cover plants sold in large quantities (Table III) lists six of the seven species discussed. Gaultheria shallon was sold in smaller quantities than the other plants.

Other ground covers used by three landscape architects were Euonymus fortunei 'Gracilis' (2,618 plants in 13 designs), Pachistima canbyi (5,332 plants in eight designs), Sasa pygmaea (1,284 plants in 13 designs) and Thymus serpyllum (6,411 plants in 27 designs). E. fortunei 'Gracilis' was specified for seven of the 10 types of landscape

projects and T. serpyllum was specified for six types. P. canbyi and S. pygmaea were used in fewer than six types of projects.

Arenaria verna caespitosa was specified in quantity (6,208 plants) by two designers for only six planting plans and Hedera helix 'Spearpoint' was employed by one designer in five planting plans.

Some climbing vines were also used as ground cover plants as well as coverings for walls or trellises. Vines specified by three landscape architects were: Clematis (assorted large-flowered cultivars) (120 plants in 16 designs), Clematis montana (17 plants in 9 designs), Hydrangea petiolaris (39 plants in 10 designs), Parthenocissus quinquefolia (304 plants in 13 designs), P. tricuspidata (419 plants in 18 designs) and Wisteria sinensis (40 plants in 16 designs).

Hedera canariensis was used in quantity by two designers only ( 3,753 plants in 13 designs) and Clematis armandi was specified by A and B only (282 plants in 13 designs).

A quantity of hardy, small-flowered Clematis were specified by A and C for projects located in the Prairie Provinces. Lonicera periclymenum 'Belgica' was used once by C and Jasminium nudiflorum was used nine times by C. Wisteria floribunda was specified by Landscape Architect A in 15 designs.

Only three climbing plants were specified for more than six of the 10 types of landscape projects: Parthenocissus quinquefolia, P. tricuspidata, and Polygonum aubertii

Vines and ground covers sold by the five sample nurseries which were not used in any landscape architects' plans in 1967-1968

were as follows: Hedera colchica (assorted variegated cultivars),  
Jasminum officinale, Parthenocissus quinquefolia 'Engelmannii',

Ground covers and vines specified by landscape architects which were not sold by the five nurseries sampled: Clematis paniculata,  
Clematis tangutica, Clematis virginiana, Aegopodium podagraria,  
Gaultheria procumbens, and Wisteria floribunda.

#### 7. Bamboos, Grasses, Ferns, Yucca, Miscellaneous Plants:

Plants of this category used frequently by the three landscape architects include Bamboo of various types, Pampas Grass, Sword Fern, and Yucca.

Yucca filamentosa was specified by three landscape architects for 66 of the 229 planting designs in 1967-1968. It was used in fairly large quantities in nine of the 10 types of landscape projects.

Sword Fern was used in eight of the 10 types of projects, 15,671 ferns specified for 55 designs in the two-year period.

The bamboo favoured by the landscape architects was Phyllostachys aurea, 1,527 Golden Bamboo specified for 33 designs of seven different types. The bamboo Pseudosasa japonica was used in 25 designs by two landscape architects. A smaller quantity of Phyllostachys nigra was specified by all three designers for 18 planting plans of six different types. Phyllostachys bambusoides was used occasionally in small amounts (50 plants in 8 designs).

All three designers employed Pampas Grass, Cortaderia selloana in seven different types of landscape projects. A total of 198 Pampas Grass were used in 30 planting plans. Pampas Grass was also the top-selling plant in the miscellaneous category, 2,038 sold by the five nurseries studied.

Phormium tenax was specified by three designers in 13 plans. Other grasses, ferns, and miscellaneous plants used occasionally were: Blechnum spicant, Phalaris arundinacea picta, Miscanthus sinensis, Gunnera chilensis, Typha latifolia, Sasa palmata, Yucca glauca.

## DISCUSSION

### Nursery Sales:

Nursery plant production in British Columbia has been increasing steadily since 1955 when the first survey was carried out by the Horticulture Branch, British Columbia Department of Agriculture. Landscape plants constituted 62% of the value of plants sold in 1955 and increased to 74% of the value of sales by 1966-67, as production of fruit trees and fruit tree rootstocks declined. Conifers continue to make up a large proportion of the value of landscape plants sold in British Columbia, 34% in 1955, and 38% in the 1966-67 survey.

The five nurseries sampled in this study accounted for approximately 38% of the total production of plant material in the British Columbia Lower Mainland for a 12-month period ending in 1968, an estimate based on the percentage of the total acreage of nursery stock grown. However, the projected data from the five nurseries sampled show a higher proportion of broadleaved evergreens and heathers, and a lower proportion of trees, deciduous shrubs, roses, azaleas, rhododendrons, ground covers and vines than the British Columbia Department of Agriculture estimates for a similar time period in 1967. The cash value of trees and conifers in the sample is higher than the Department of Agriculture estimates indicating that more large-sized and high value trees and conifers are included in the sample than in the sales for the industry as a whole. Sales of roses, azaleas and rhododendrons in the sample are very low in comparison with government sales totals.

This may indicate that shipments from nurseries specializing in roses, azaleas, or rhododendrons, make up a large part of the total sales of these groups of plants. All azaleas listed by the British Columbia Department of Agriculture may not be destined for landscape use, but some may be used for greenhouse pot plant production.

Data from four of the five nurseries studied were compiled to determine the destination of shipments of nursery stock from British Columbia Lower Mainland nurseries. It was found that over half of all plants sold (58.9%) were purchased by customers in the Lower Mainland area. Shipments to the Prairie Provinces constituted the largest percentage of the value of plant material sold outside the Lower Mainland (13.6%). Sales to Vancouver Island and the Upper Coast Region accounted for a further 11.9% of the total value. Exports to Ontario and the United States totalled 11.3% of the value, and shipments to British Columbia Interior customers was 4.4% of the total. These figures include landscape plants, fruit trees, and lining-out stock of all types.

Purchasers of nursery plant material within the Lower Mainland area have been divided into eight broad categories according to their type of business operation:

1. Large Growers.....Growers whose sales are chiefly at the wholesale level.
2. Small Landscape Nurseries..Plants sold chiefly at the retail level.
3. Landscape Contractors ....Includes both large and small contractors and garden maintenance firms.

4. Retailers.....Garden Centre type operations  
not affiliated with chain stores.
5. Retailers-Landscapers.....Garden Centre sales along with  
landscape contracting.
6. Government Agencies.....Schools, parks, public buildings  
for all levels of government.
7. Chain and department  
Stores.....Several large food and department  
store chains which purchase plants  
for shipment throughout Western Canada.
8. Wholesale Distributors....Plants purchased for re-sale to  
retail outlets.
9. Miscellaneous Sales..... All unidentified customers of  
the four nurseries sampled.

In the analysis of distribution of nursery stock in the British Columbia Lower Mainland it was found that sales to other large growers constituted the largest proportion of the total sales of plant material (17.9%). This figure is significant because it shows the extent of specialization and interdependence of the industry. It also indicates that estimates of nursery plant production are too high when they are based on nursery sales figures. At least 17.9% of the value of plants sold by Lower Mainland nurseries have been traded twice at the wholesale level, thus they appear in the wholesale sales records of two nurseries. It is difficult to determine the number of plants which are traded more than two times; however, it seems reasonable to estimate that 20% to 25% of all plants grown are bought and sold within the nursery trades industry in the Lower Mainland two or more times before reaching their ultimate planting site. These figures include fruit trees, landscape plants and lining-out stock.



The value of shipments to retailers, to chain stores, to small nurseries, to wholesale distributors, plus an estimated half of the value of shipments to retailers-landscapers, are plants destined for the retail trade. The value of these categories together account for 17.6% of the total sales. Shipments to landscape contractors plus an estimated half of the shipments to retailers-landscapers together make up 16.7% of the value of total sales.

It can be seen that the quantities of plants sold to large growers, to landscape contractors, and to the retail trade in the Lower Mainland are roughly equal in value:

Large Growers:	\$78,749.	17.9%
Retailers:	\$77,376.	17.6%
Landscape Contractors:	\$73,562.	16.7%
<hr/>		
Total	\$229,687.	52.2%

Together, the large growers, the landscape contractors and the retailers within the Lower Mainland purchased just over half of the total value of plant material sold by the four nurseries sampled.

The garden centre appeared to be the major retail outlet purchasing nursery plants, rather than the chain store,<sup>18</sup> however it is possible that a large-scale supplier of plant material to chain stores was not included in the sample. Three of the four nurseries sampled made shipments to chain stores, but all four shipped plants to retailers.

Exports of plant material outside the province of British Columbia make up almost one-quarter of the value of total sales. Shipments to other parts of the province, chiefly Vancouver Island, account for an additional one-sixth of the total sales. Sales to government agencies and miscellaneous sales make up the balance.

Plants specified by landscape architects are purchased from the wholesale nurseryman by the landscape contractor for installation at the site. Thus the landscape architects' choice of plant species directly affects approximately 16.7% of the total value of plant sales. However, some nurseries sell a much larger proportion of their plant production to contractors, for example, 23.4% of Grower No.2's sales and 43.6% of the sales of Grower No.4 were made to landscape contractors. In contrast, Grower No.1 and Grower No.3 each sell less than 1% of the value of their plants to landscape contractors.

Some nurseries, therefore have a much greater interest in understanding the landscape architects' plant requirements, while other nurseries specialize in supplying the needs of different types of customers. It must be noted that all wholesale nurseries studied participated in the inter-industry trade in plants, each one selling from 5.7% to 25.6% of production to other growers. With this segment of his sales in mind, each nurseryman can grow those plants which are in heavy demand by the landscape contractor and sell them to other growers who trade directly with the contractors.

Distribution figures determined in this survey can only be a small indication of the whole picture, since the nurseries are a highly variable group.

Many problems were encountered in gathering data from nursery sales records. It was necessary in most cases to compile information from sales invoices, a tediously slow process. Many growers were not included in this study because they could not supply any sales information other than total dollar value of sales. It is clear that inventory methods used by most nurserymen in the Lower Mainland would not permit any large-scale listing of plant supplies. The true value of the whole industry can only be understood when each individual operator accurately assesses the nature and value of his own nursery business. However, this study has shown that statistical sampling methods can be used successfully to show general trends in the industry when complete figures are not available.

### Landscape Architects' Plant Requirements

The quantity of plants specified in 1968 by three landscape architects was 55% higher than the quantity specified in 1967. Can this increase be expected to continue? Unfortunately no data on plant usage prior to 1967 is available for comparison to establish a trend. However, Landscape Architect C estimates, on the basis of total dollar revenue, that landscape architecture projects have been increasing at the average rate of 42% annually over the past five years.

If the volume of design work being done by landscape architects is increasing by 42% it must be concluded that plant material requirements will also increase by a minimum of 42% annually. The figures for 1967 and 1968 indicate that plant requirements increased by 55% from 1967 to 1968. An estimate of future increases would probably fall between the two percentage figures.

All types of plant material did not show increases in quantity used in 1968 compared to 1967. Trees, conifers and azaleas declined from 1967 to 1968; however, there was a marked increase in the number of ground cover plants used (69% greater number in 1968 than in 1967), and in deciduous shrubs (60% greater number used in 1968 than in 1967). Rhododendrons and other broadleaved evergreen shrubs also showed increases in quantities specified (43% and 23% respectively). Quantities of heathers, vines, and miscellaneous plants also showed increases.

Comparison of Nursery Plant Production with  
Landscape Architects' Plant Requirements

The number of plants specified by three landscape architects (average of two years 1967-68) for projects located in the Lower Mainland British Columbia was compared to British Columbia Department of Agriculture estimates of total production, fall 1966 and spring 1967, for nurseries in the Lower Mainland (Table XXII).

While the landscape architects' requirements for trees and conifers are a very small part of estimated production (2.6% and 5.3% respectively) the quantities of broadleaved evergreens and ground covers specified make up a very large part of estimated production (58.7% and 69.1% respectively).

These figures indicate that shortages are likely to occur in the supply of broadleaved evergreen shrubs and ground covers which will have to be made up by increased production or by increased importation. Trees and conifers, on the other hand, are being produced in large quantities for export or for the retail trade and are not being used in large amounts by the landscape architects.

Landscape Architects' Project Types --  
Quantities of Plants Specified for each Type of Project

Landscape architects were responsible for many types of designs in 1967-68. Of the 229 projects for which detailed planting plans were drawn, a large number (90) were single-family residential sites; however, the greatest quantity of plant material was specified for

TABLE XXII

## COMPARISON OF NURSERY PLANT PRODUCTION

WITH LANDSCAPE ARCHITECTS' PLANT REQUIREMENTS

Plant Type	B.C. Dept. of Agriculture Estimates of Sales - 1966/67 Lower Mainland	3 Landscape Architects' Average Annual Usage Lower Mainland	Landscape Architects' % of Sales
Shade and Flowering Trees:	145,083	3,701	2.6%
Conifers:	204,611	10,828	5.3%
Deciduous Shrubs:	55,753	6,122	11.0%
Azaleas:	24,793	2,842	11.5%
Rhododendrons:	12,049	2,795	23.2%
Other Broadleaved Evergreens:	58,939	34,614	58.7%
Ground Cover:	222,775	154,020	69.1%
Vines:	6,725	2,450	36.4%
Heather:	28,101	7,854	36.4%
Bamboo, Grasses, Ferns, Miscellaneous:	-	8,566	-
TOTAL	758,829	233,792	30.8%

school and university campus developments (23.2% of the total). Single-family residences used an additional 21.4% and garden apartment developments used 20.9% of the total quantity of plant material specified. Considerably smaller quantities of plants were used for the other seven types of landscape projects; therefore, it can be concluded that schools and universities, single-family homes and garden-type apartments are the large-quantity consumers of nursery plant material.

The calculation of the average numbers of plants used for various types of projects has given the landscape architect a useful tool in estimating his future plant requirements. In terms of the average number of plants specified for each type of project, parks plans head the list with 7,858 plants per plan. Only five parks were included in the work of the three landscape architects in private practice since many parks are designed by landscape architects employed directly by the various parks authorities. However, if all parks plans had been included in this study, the quantity of plant material specified for parks use would probably have been very high since parks have potentially large plant requirements.

School and university plans also include a large number of plants, an average of 6,814 per plan. When the average number of plants used for school designs is compared with the average plant usage for parks, it is found that more trees, conifers, deciduous shrubs, broadleaved evergreen shrubs and heathers are used for schools,

but more azaleas, rhododendrons, ground covers, ferns and bamboos are used for parks, but neither type of plan includes an appreciable number of vines.

The average number of plants specified for multiple-horizontal housing projects is 5,601, while multiple-vertical housing projects average 4,254 plants per plan. When the pattern of plant use for the two types of apartment developments is studied it is found that all types of plants except azaleas and ground covers are used in much smaller quantities for the vertical-type apartment. Since many of the gardens designed for high-rise buildings are built over concrete garage roofs, or are in small areas, it can readily be understood that fewer plants will be used, and that the species selected will be chiefly low-growing ground cover types. Multiple-horizontal housing developments, however, allow a much greater part of the site to be developed for outdoor living areas, thus plant requirements will be much higher.

Landscape designs for commercial buildings, including service stations, office buildings and retail stores used a small number of plants in comparison to industrial buildings such as warehouses or factories: 960 plants per plan compared to 2,446 plants per plan. The average single-family residence also used a comparatively small quantity of plant material (1,532 plants) but, since there were a great many residential properties designed by the three landscape architects



the total number of plants required for single-family homes was very large.

#### Frequency of Use of Various Plants by Landscape Architects

An analysis of the number of designs in which various plants were used can show those species favoured by the three landscape architects. Of the 26 plants specified for more than 40 of the total of 229 planting designs completed during the two-year period, 12 were broadleaved evergreens, five were ground covers, three were conifers, three were trees, one a heather, and two were miscellaneous-type plants. With two exceptions (Zabel's Laurel and Golden Pfitzer Juniper) all of the 26 plants were used by three designers.

It can be seen that broadleaved evergreens and ground covers are the two plant groups favoured by the landscape architects, and that within these two groups a few species are in particularly heavy demand.

Designers habitually using a certain plant will probably continue to use it in the future until some major change in landscape style occurs. If a plant is used routinely by all three landscape architects the demand for that plant will probably be more stable than the demand for plants used by only one designer. For this reason, those plant species and cultivars listed in Table XV which were used regularly by three landscape architects can be expected to be in increasing demand in quantities proportional to the increase in volume of design work.

The demand for other plants used less frequently by three designers (Table XVI) or by only one or two designers (Tables XVII and XVIII) will probably not increase as rapidly. Some plants, particular favourites of one designer, can be in heavy demand when they are used frequently. For example, Landscape Architect A specified 2,021 Hydrangea macrophylla in 41 planting designs, and Landscape Architects B included 2,094 Cotoneaster salicifolia floccosa in 59 planting plans in the two-year period. Although these plants were used chiefly by one designer, they were required in large quantities. However, if the single landscape architect changed his planting style, the demand for these plants would decline sharply.

Plants found to be useful for many types of landscape situations will probably continue to be in demand for landscape projects designed by landscape architects. Species listed in Table XXI, all plants which have been employed in six or more types of planting plans can be considered the "framework" of landscape architects' planting designs, and other plants not so widely adaptable can be considered "special purpose plants." Five species were selected for all 10 types of landscape plantings: Cornus nuttallii 'Eddiei', Rhus typhina, Juniperus chinensis 'Pfitzeriana Aurea', Pinus mugho mughus, and Pinus sylvestris. Six other plants were specified for nine of the 10 types of plantings: Prunus serrulata 'Kwanzan', Cornus alba 'Aureo-marginata', Potentilla sp., Cytisus X praecox, Mahonia aquifolium, and Yucca filamentosa.

A large number (22) of other species were employed in eight of the 10 types of plantings: Betula verrucosa, Cornus nuttallii, Platanus X acerifolia, Prunus serrulata 'Shirotae', Prunus yedoensis 'Akebono', Quercus rubra, Pinus nigra, Forsythia sp., Hydrangea macrophylla, 'Kurume' Azalea, Rhododendron 'Jean Mary Montague', Berberis julianae, Cotoneaster dammeri, Pyracantha coccinea, Viburnum davidii, Calluna vulgaris 'H.E.Beale', Hedera helix, Hypericum calycinum, Pachysandra terminalis, Vinca minor, Parthenocissus tricuspidata, Polystichum munitum.

Forty-three additional plant species were used in six or seven of the 10 types of landscape situations.

Similarly, some plants have been found to be adaptable to a wide range of climatic conditions. Fifty-seven plant species were used in planting designs in both Coastal British Columbia and Prairie locations. An additional 22 species were used in both Coastal and Interior parts of British Columbia. The demand for plants suitable for many geographic locations will be greater than the demand for plants restricted to a narrow climatic zone.

Data compiled from Tables XIV, XV, XVI, XVII and XIX show some plants universally specified by landscape architects for a wide variety of project types and geographic locations. (Table XXIII)

TABLE XXIII

Some Plants Specified by Landscape Architects  
for a Wide Variety of Project Types and Geographic Locations

	<u>Used by Three Landscape Architects</u>	<u>Used in Coastal, Interior &amp; Prairie</u>	<u>Total No. of Project Types</u>	<u>Total No. of Designs</u>
<i>Betula verrucosa</i>	yes	yes	8	70
<i>Rhus typhina</i>	yes	yes	10	59
<i>Juniperus chinensis</i> 'Pfitzeriana Aurea'	only 2	yes	10	91
<i>Pinus mugho mugho</i>	yes	yes	10	127
<i>Pinus sylvestris</i>	yes	yes	10	65
<i>Vinca minor</i>	yes	yes	8	60
<i>Pachysandra</i> <i>terminalis</i>	yes	yes	8	44

It has been apparent in this analysis that the landscape architects have made frequent use of a comparatively short list of plants, but a wide variety of other landscape plants should be available for occasional use. Some species, chiefly broadleaved evergreens and ground covers, have been specified in very large quantities for mass-planting effects. It is probable that the designers are specifying the kinds of plants most readily available, and the nurserymen, in turn are propagating the types most frequently specified, thus creating a cause-and-effect relationship which restricts the supply of plants to a few well-known species.

The introduction of new landscape plants to the short list of frequently-used species will require close cooperation and understanding between the landscape architects and the nurserymen. To avoid sterile repetition, a deliberate effort should be made by both designers and growers to bring new and interesting plants into landscape schemes.

This report suggests that a liaison committee between the British Columbia Society of Landscape Architects and the British Columbia Nursery Trades Association should carry out testing programs for new plants, and should circulate descriptions of promising species, both old and new, to all landscape architects and designers in the British Columbia Coastal region. Such a Plant Information Service could be subsidized by the two organizations, or be financed by individual subscriptions. Its aim would be to promote the best use of plants in the British Columbia landscape.

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