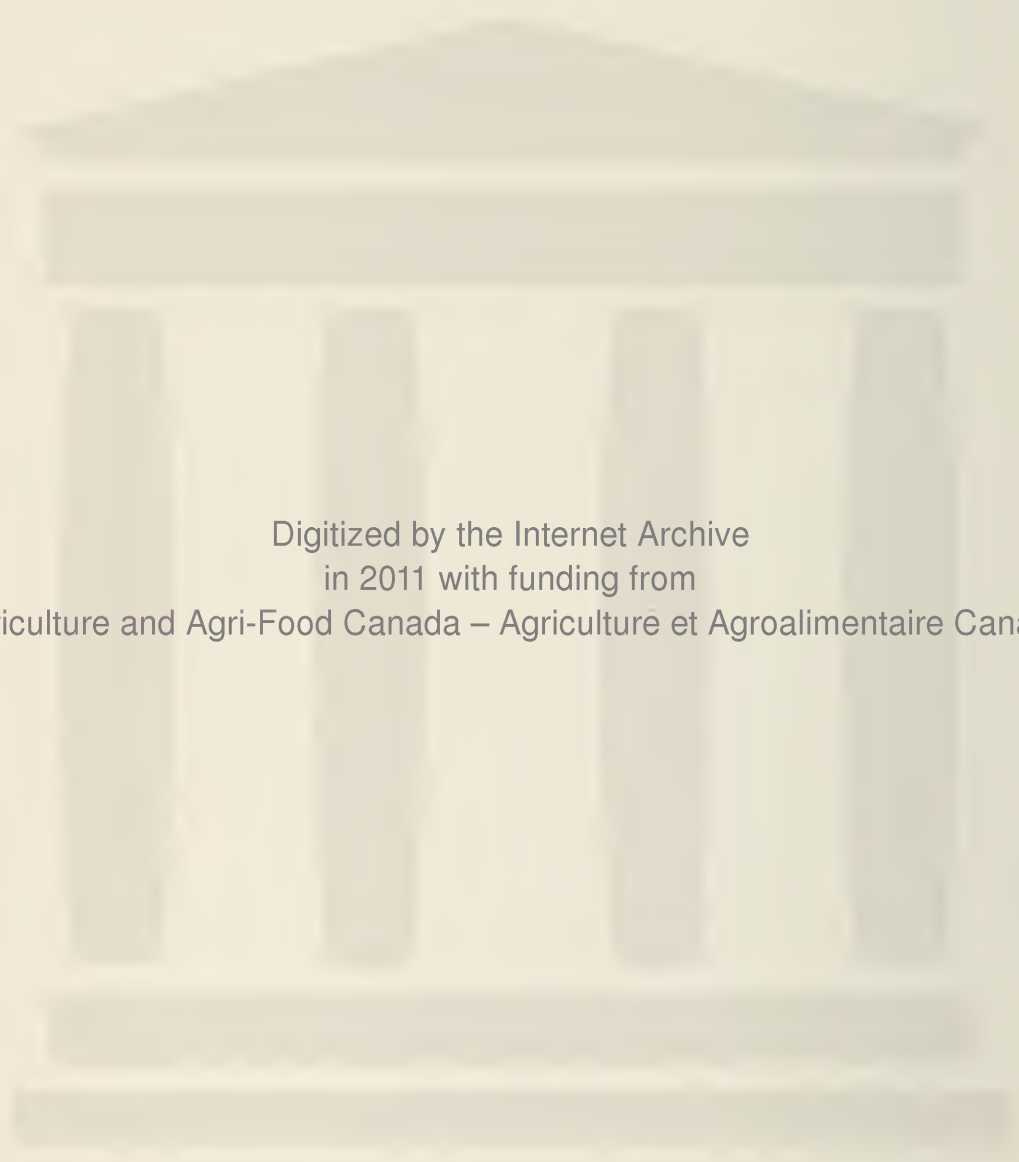


Ornamental SHRUBS for Canada



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ORNAMENTAL SHRUBS FOR CANADA



Syringa × *prestoniae* 'Isabella'.

This book is dedicated to the memory of Miss Isabella Preston (1881-1965), a member of the staff of the Central Experimental Farm, Ottawa, from 1920 to 1946. Miss Preston became world renowned for her introductions of new hybrids of such diverse ornamentals as lilies, Siberian irises, hardy roses, lilacs and crab apples. *Syringa* × *prestoniae* 'Isabella', shown here, is one of her many hardy lilac hybrids. Miss Preston also developed many of the first Rosybloom crab apples.

Ornamental Shrubs for Canada

LAWRENCE C. SHERK and ARTHUR R. BUCKLEY
Ornamental Plant Section
Plant Research Institute

RESEARCH BRANCH
CANADA DEPARTMENT OF AGRICULTURE
OTTAWA, ONTARIO

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Price \$3.50

Catalogue No. A53-1286

Price subject to change without notice

CONTENTS

	PAGE
Introduction	1
Setting Out Shrubs	4
Annual Care	6
Pruning	7
Diseases	13
Insect Pests	20
The Use of Pesticides	23
Shrubs with Attractive Fruits	25
Shrubs for Special Purposes	27
Shrubs of Different Heights	31
Recommended Plants	37
Some Helpful Publications	167
Index	168
Hardiness Maps	at the end of the book

ACKNOWLEDGMENTS

Many people have been generous with their assistance in the preparation of this book. Mr. L. Laking, Director of the Royal Botanical Gardens, Hamilton, Ontario, read much of the manuscript and made many helpful suggestions. Mr. C. E. Ouellet, of the Plant Research Institute, prepared the new hardiness map for Canada with the assistance of L. C. Sherk and the Meteorological Service, Department of Transport, and the Data Processing Service, Canada Department of Agriculture. Dr. H. S. Thompson, of the Scientific Information Section, Central Experimental Farm, prepared the section on diseases; Mr. H. V. Tonks, Experimental Farm, Saanichton, British Columbia, wrote the section on insects; and the section on the use of pesticides is the combined work of Dr. Thompson and Mr. Tonks. The authors wish to thank these contributors as well as their colleagues in the Plant Research Institute who offered valuable comments, and the many amateur and professional horticulturalists from across Canada who provided much useful information for various parts of the text.

Special thanks are also extended to the following for providing illustrations: Mr. A. Craigmyle, Victoria, B.C., pages 3, 68, 124; Mr. R. Forster, Vineland, Ontario, pages 126, 128; Gottscho-Schleisner Inc., Jamaica, N.Y., pages 56, 80; Mr. N. Jerry, London, Ontario, pages 53, 87, 93, 122; Mr. A. T. Lightfoot and Mr. G. S. Swain, Kentville, N.S., page 125; Mr. B. O. Mulligan, Seattle, Washington, pages 58, 98, 113, 115, 142, 158; Mr. J. V. Seversen, Vancouver, B.C., pages 50, 76, 88, 95, 123; Professor T. Sykes, Guelph, Ontario, page 160; Professor J. C. Taylor, Guelph, Ontario, page 139; bio-Graphic Unit, Canada Department of Agriculture, Ottawa, Ontario, Frontispiece, pages 38, 43, 44, 47, 54, 60, 72, 75, 78, 82, 84, 85, 90, 91, 100, 104, 106, 118, 137, 150, 151, 155, 159. One of the authors, Mr. A. R. Buckley, provided the following: pages 41, 62, 65, 66, 67, 70, 71, 74, 83, 96, 103, 111, 116, 120, 145, 149, 162, 163, 165.

INTRODUCTION

Today more Canadians than ever before are buying their own homes. They are also devoting more time and money to developing gardens around these homes. This increasing interest in gardening has led to a need for a wider variety of plants that will make the gardens attractive throughout the year. Most of the new houses are of the one-storey suburban type and they call for their own particular kinds of woody plants. Large trees and shrubs are no longer needed or desirable when homes are only fifteen or twenty feet high. These new homes require low-growing shrubs or tall accent plants and screening plants that can be kept within a small space. Larger trees and shrubs, however, still have their place around apartment and office buildings, factories and bigger homes, and on farms and in parks.

In recent years nurserymen and plant breeders have selected and developed many new shrubs to meet the need for more attractive, compact ornamental shrubs that require little maintenance. However, many of these new shrubs are not generally used because home owners neither know of them nor ask for them. Only the old reliables are known and asked for.

Collections of the better ornamental shrubs may be found in the plantings of various botanical gardens, colleges, research stations and public parks. These places should be visited so that suitable types of plants can be seen.

Climate

Because of the wide range of climate and soils across Canada, shrubs that are indispensable in one part of the country, for example, the prairies, are of only secondary importance elsewhere. Other shrubs that are hardy in the milder areas will not survive in colder climates. A greater variety of plants will grow in coastal British Columbia than in the rest of the country. Parts of southern Ontario and the Maritimes have the next greatest potential because of mild winters. People living in these areas should take advantage of the wider range of plants that can be grown in their gardens. The prairies and northern areas have the greatest limitation on kinds of ornamental plants that will survive. To help in selecting plants for specific areas a hardiness map, in two sections, is included at the end of this book. The individual listings also give some idea of the hardiness of a shrub in the various parts of Canada.

Uses

Boundary plantings give privacy within the grounds and screen unsightly objects. These plantings should not be an element by themselves but a definite part of the whole garden development.

Some shrubs should be placed as individual specimen plants or accent points to lend emphasis to particular features of the design. Such shrubs stand alone and are seen in detail. Select plants that have a neat and pleasing habit of growth and have some particularly attractive feature such as bloom, varicolored foliage, ornamental fruit, structure, texture or fragrance. Do not scatter shrubs indiscriminately as individual specimen plants. These shrubs must not detract from the desired garden picture, which may be the home itself, some structural element of it, or the landscape planting.

Shrubs in the foundation planting not only provide a setting for the house but help to extend the foundation. Such plantings of shrubs also help to display the house and give an impression of permanence. A single row of shrubs at the base is not required. Shrubs at each corner, however, tie the vertical lines of the house to the horizontal lines of the ground and soften the upright lines.

In the garden around the house, plantings can be used to separate various areas. Here they act as partitions between the parts of the garden, and as a background for displays of herbaceous plants, or to enclose a patio or outside fireplace.

The feature most people look for in ornamental shrubs is a spectacular show of flowers. This is unfortunate as many of the best flowering shrubs, such as the lilac, mock-orange and spirea, are of interest for only a short period. Other features that extend the period of interest are colorful fruit, attractive foliage, good autumn color, interesting twigs and bark, and evergreen foliage for winter appeal. Be careful, too, that all the flowering shrubs selected do not come into flower at the same time.

Buying

Most people get their shrubs from a local nursery or garden center where the plants can be seen before they are bought. Many ornamental shrubs are also sold through the mail. However, by selecting the plants personally the buyer is surer of the quality of the material. In addition, local firms usually supply only those plants that have proved hardy in the areas where the firms are located. Reliable mail-order firms will, however, provide advice on the hardiness of specific plants in a given area. Each year many people are disappointed with the plants they receive in reply to advertisements that appear in magazines. What is advertised as a large number of shrubs for a very small price often consists only of one-year-old seedlings or newly rooted cuttings. It is always best to patronize a firm with a known reputation for quality and service. If there are any defects in an order notify the nursery immediately as the company will not make replacements unless the imperfection is reported promptly.

Formerly most shrubs were sold while dormant and with bare roots, either in the early spring or late fall. Now, however, with plants grown in various kinds of containers: peat and tar paper pots, tin cans, plastic cans and other media, shrubs can be purchased throughout most of the growing season as well.

Evergreen shrubs, both needle- and broad-leaved, are usually sold balled and burlapped (B & B). These plants are dug with a ball of earth around the roots in order to retain as many of the fine feeding roots as possible. Evergreens should be transplanted in the spring or in August, September or October, depending on the part of the country. Late summer or early fall planting allows the shrubs to establish new roots before freeze-up, and so gives the plant a better chance of surviving the winter. Plants set out in the spring will be well established before the onset of winter.



A garden near the seashore, Victoria, British Columbia.

Native Shrubs

Many native shrubs growing in the woods or fields can also be moved to the garden if they are transplanted when young. However, even young plants of some species are often difficult to reestablish successfully. As these shrubs have not been root-pruned, in being dug they will lose many of their fine fibrous roots, which, by readily absorbing water and nutrients, would aid in their reestablishment. If the shrubs are root-pruned, at least one season before moving, they will have greater chances for survival, as the plants will have formed new fibrous roots within the ball of the earth to be taken with the plants. Many of the native shrubs have very specialized soil, light and moisture requirements, and these must often be closely duplicated in the garden if the shrubs are to be moved successfully.

Heeling In

As soon as plants with bare roots arrive they should be unpacked and placed upright in a trench where the soil is moist if they are not to be planted immediately. Cover the roots with earth and pack the earth firmly to exclude air. If the roots appear dry, dip them in water or thin mud before heeling in.

Deciduous shrubs are usually tied in bundles, with the roots bare except for the moist moss packing. Untie the bundles and place the shrubs separately in the trench, but pack them closely to conserve space. Shrubs that are balled and burlapped should be heeled in as they are. If the ball of earth is dry on arrival, dip it in water for a few minutes. Never leave plants lying around with their roots exposed to the sun or wind. Once the fibrous roots have dried out the shrubs are useless. A few minutes of sun or wind on these bare roots may prove fatal.

SETTING OUT SHRUBS

Preparing the Soil

Shrubs repay amply when they are properly fertilized, but they are often neglected because most of them appear to be getting enough nutrients from the average soil to keep them growing in a more-or-less healthy condition. As shrub plantings are usually permanent, the best method of making sure of fertility is to prepare the soil properly before the shrubs are planted. For each plant dig a large hole. Mix in a layer of well-rotted manure or, if manure is not available, a layer of year-old leaf mold or peat moss, supplemented with a balanced commercial fertilizer. If the soil is a heavy clay, improve the texture by working in a quantity of cinders, sand or peat moss. Very poorly drained land should have agricultural tile lines installed. As a last resort, only shrubs that will grow in poorly drained soil should be used.

Dig a hole large enough to accommodate the roots when they are spread out in their natural manner of growth and deep enough so that rich, loose earth may be placed in the bottom to cover the manure or other materials placed in the hole.

Pruning at the Time of Planting

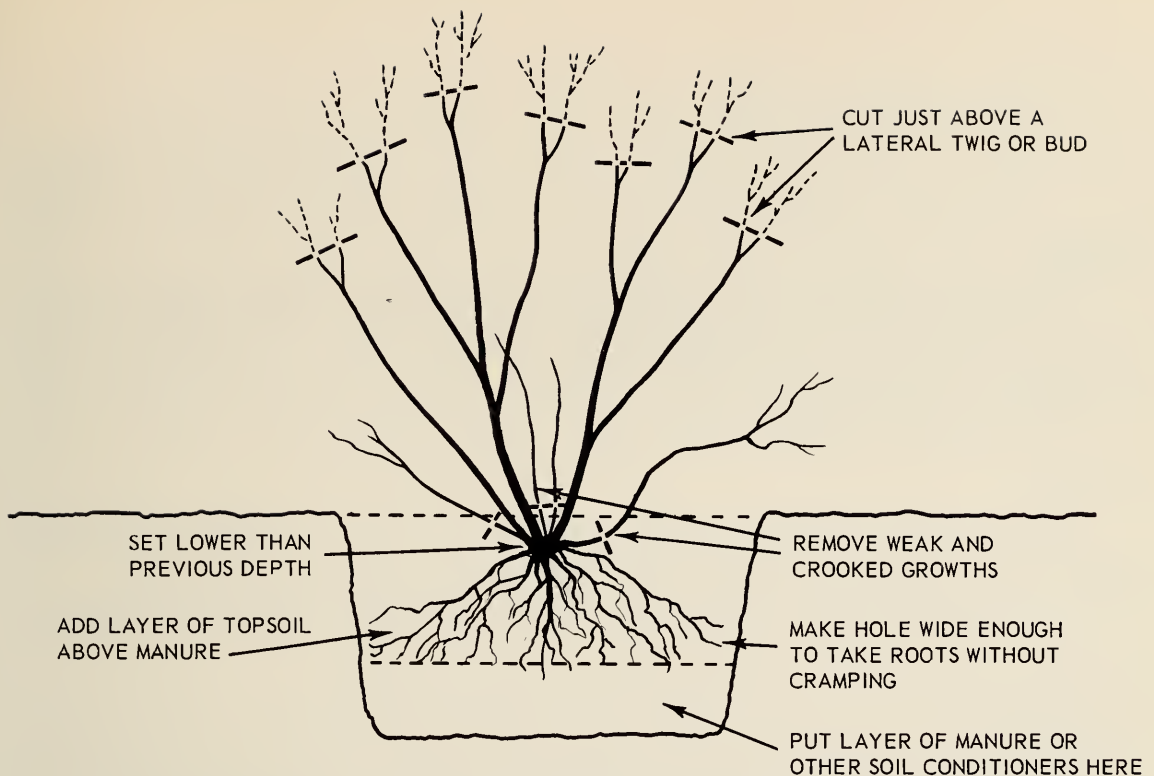
At the time of planting cut off any broken roots or those that have dried out. When planting in the spring, make up for the reduction in the root system by selective pruning of the top. Thin out the top by removing the weaker branches and, with deciduous shrubs, any that cross or rub against another.

If the shrub has been well grown, this minor pruning is all that will be necessary, but if it is tall and 'leggy' cut back each remaining branch to a point just above a leaf bud or side branch that points outward. Take care to remove branches close to the main branch so that no ugly stub is left as an entry point for disease and decay. Evergreen shrubs need only to have damaged parts removed. Fall-planted shrubs should not have the tops pruned until spring, when the full extent of any winter injury will be evident.

Planting

After pruning a bare-root plant, set it in the hole about an inch deeper than it grew formerly, with the roots spreading out in a natural position. As the topsoil is filled in around the roots, shake the shrub gently up and down to work the soil around each root. If the soil is light, flood the hole with water after the roots are covered with loose earth. This will help to carry soil down to fill up all air pockets. After the water has seeped away, fill the remainder of the hole with soil and tramp it down firmly. Do not water heavy clay soils until after the hole is filled and tramped down. Otherwise it will bake when it dries out and become impervious to water and air.

When planting balled and burlapped shrubs, simply untie the burlap and pull it away from around the top of the ball of soil after the plant has been placed in a properly prepared hole. The burlap does not need to be removed because it soon disintegrates when covered with soil.



Container-grown shrubs can be planted with the container if it is made of peat or tar paper which readily break up in the soil. Tin or plastic cans or plastic-coated paper pots, however, must be carefully removed so that the ball of soil does not fall apart. Simply cut down the sides in three or four places and bend back sections of the container. Then lift out the shrub with its ball of soil and roots and place it in the hole. A type of molded fiber pot is also used for containers. If the roots have not grown into the fiber, the pot should also be cut off as the plant may not get sufficient water after it is planted.

Watering and Mulching

Water the shrubs regularly until they are well established and cultivate by lightly stirring up the surface of the bed. Avoid deep cultivation, which might cut many of the fine feeding roots.

Mulches reduce the need for constant cultivation, watering and weeding. They are particularly valuable for fall plantings as they help not only to hold moisture in the soil but to maintain a more even soil temperature. Mulches are especially necessary around broad-leaved and narrow-leaved evergreens. They help the soil to retain a supply of moisture, which these plants need because they transpire even during the winter, especially on bright sunny days. This transpiration, without a source of replacement in the soil, is the main cause of desiccation and winter burning of evergreens. Select a suitable and neat material that is conveniently and cheaply available. Peat moss, though somewhat expensive, or peat moss and garden compost, are ideal mulches. Other mulching materials that may be used are: ground bark from lumber or pulp companies, buckwheat hulls, ground corncobs, leaves, pine needles, hay, straw, spent hops and black polyethylene film. Sawdust is also good, but the earth over which it is applied should be previously fertilized. If rodents are apt to be a problem under the mulch, leave a small clean area around the base of the shrub and paint or spray the basal stems of the shrubs with one of the mice and rabbit repellants available from most hardware or garden centers.

ANNUAL CARE

Watering

Water in dry weather, and in the fall before freeze-up. Do it thoroughly and in such a way that the water soaks slowly into the soil. A surface sprinkling is of little or no benefit. Be sure to give evergreen shrubs a thorough soaking in the fall before the ground becomes frozen.

Weeding

Weeding around shrubs is best done by hand, as many shrubs have fine feeding roots near the surface. These roots are often cut off when a hoe is used. If no mulch has been used, an occasional light cultivation will help to keep the weeds out.

Fertilizing

Fertilizers make plants grow more vigorously. Remember this when fertilizing foundation plantings, hedges, or other groups of shrubs whose growth should be limited. The most important plant food elements supplied by fertilizers are: nitrogen, phosphorus and potassium (N, P, K). The composition of a fertilizer is usually indicated by numerical amounts of these elements, respectively. For example, 5-10-5 means that the fertilizer is made up of 5 parts of nitrogen, 10 parts of phosphoric acid and 5 parts of potash.

A fertilizer used for shrubs should not be high in nitrogen, one containing 5 to 10 parts of available nitrogen is satisfactory. The amount of fertilizer to be applied depends on the size of the shrub. For small shrubs, up to 4 feet high and as much across, 3 to 4 pounds of a 5-10-5 (or half this amount of a 10-10-10, because it contains twice as much nitrogen) to 100 square feet is a good quantity to use. Proportionately larger amounts are needed for larger shrubs. Apply these general fertilizers early in the growing season.

A new type of fertilizer now available contains nitrogen in a slow-release form called urea formaldehyde. Applied in the early spring it gives a small but steady supply of nitrogen to the plant over an extended period of time. Late-fall applications can also be given and the fertilizer will be available to the plant when growth starts in the spring.

Liquid or instant-soluble fertilizers given at the recommended rates, although more expensive than dry ones, provide a quick and safe way to fertilize shrubs and are especially useful for new plantings, as fertilizing and watering can be done in one operation. A convenient method of fertilizing and watering very large and old shrubs is by an injection needle. This is a pointed hollow steel tube attached to a garden hose. The fertilizer in a cartridge form is placed in the tube and dissolved as the water passes over it. The injector is pushed as deep as 12 inches into the soil at spots 12 to 18 inches apart directly below the perimeter of the shrub.

In applying any type of fertilizer, care should be taken not to get any of it on the leaves or stems as it may burn them. Always apply water to dry fertilizers unless it rains soon after application.

Soils vary greatly in their degree of acidity or alkalinity, which is designated by the symbol pH. The scale runs from 1 to 14, the number 7 denoting the pH of neutral soil. Soils having a pH above this number are increasingly alkaline or basic to about pH 8.5 or more; values below pH 7.0 denote soils increasingly acidic, pH 3.5 being very acid. Most plants prefer an almost neutral soil with a pH of 6 to 7.5. Strongly acid or alkaline soils are not suited for the growth of most plants. However, some, such as rhododendrons, azaleas and other ericaceous plants need a definitely acidic soil with a pH of 4.5 to 5.5. Most provincial departments of agriculture or agricultural colleges will test your soil for pH value and nutrient content. To change the pH, add lime to increase the pH value, or aluminum sulphate, powdered sulphur or peat moss to make the soil more acid.

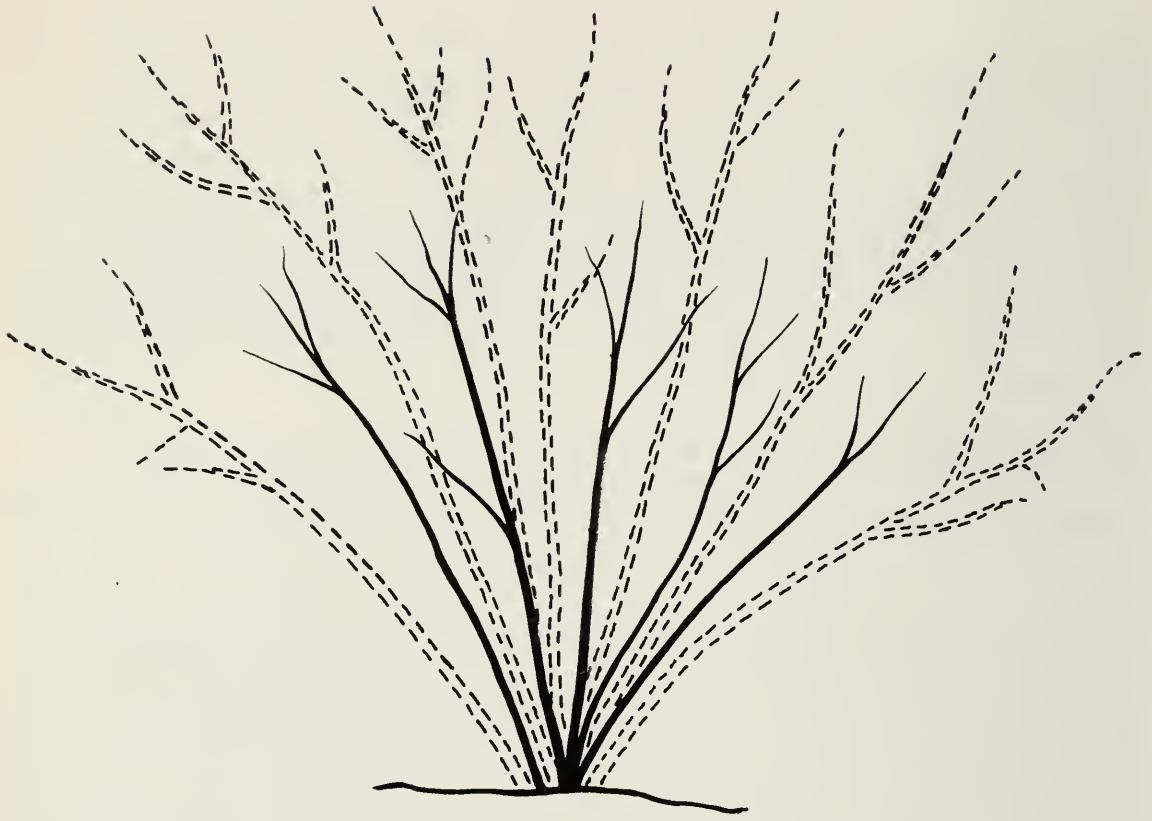
Winter Protection

It is best to buy plants of proven hardiness in your particular area. Winter-hardiness is not always governed by genetic or inherent factors but may be affected by cultural conditions. Improper soil, poor drainage or air circulation, winter exposure to sun and drying winds, and excessive application of fertilizers may cause winter injury or even the death of ornamental shrubs. Be sure that shrubs are planted in the type of soil they need, and that poor drainage is corrected. Shrubs on the borderline of hardiness should not be planted in frost pockets. Nitrogenous fertilizers applied after early summer may stimulate late growth, which often does not harden off sufficiently to survive the winter. Most broad- and needle-leaved evergreens dry out readily when exposed to winter sun and winds. Browning of arbovitae during the winter is due to the inability of the plant to take up from the soil moisture which is needed to replace that lost through exposure to drying winds and the warm sun of early spring. With broad-leaved and needle-leaved evergreens, especially fall-planted specimens, be sure that there is enough moisture in the soil before it freezes. Adequate mulches help to retain moisture. If dwarf evergreens are planted in exposed locations protect them with burlap or wooden screens. Shrubs that may be damaged by heavy loads of snow should be protected by wooden shields. Certain chemical sprays known as antitranspirants are very helpful in reducing transplanting shock but their usefulness as winter protectants has not yet been fully proved.

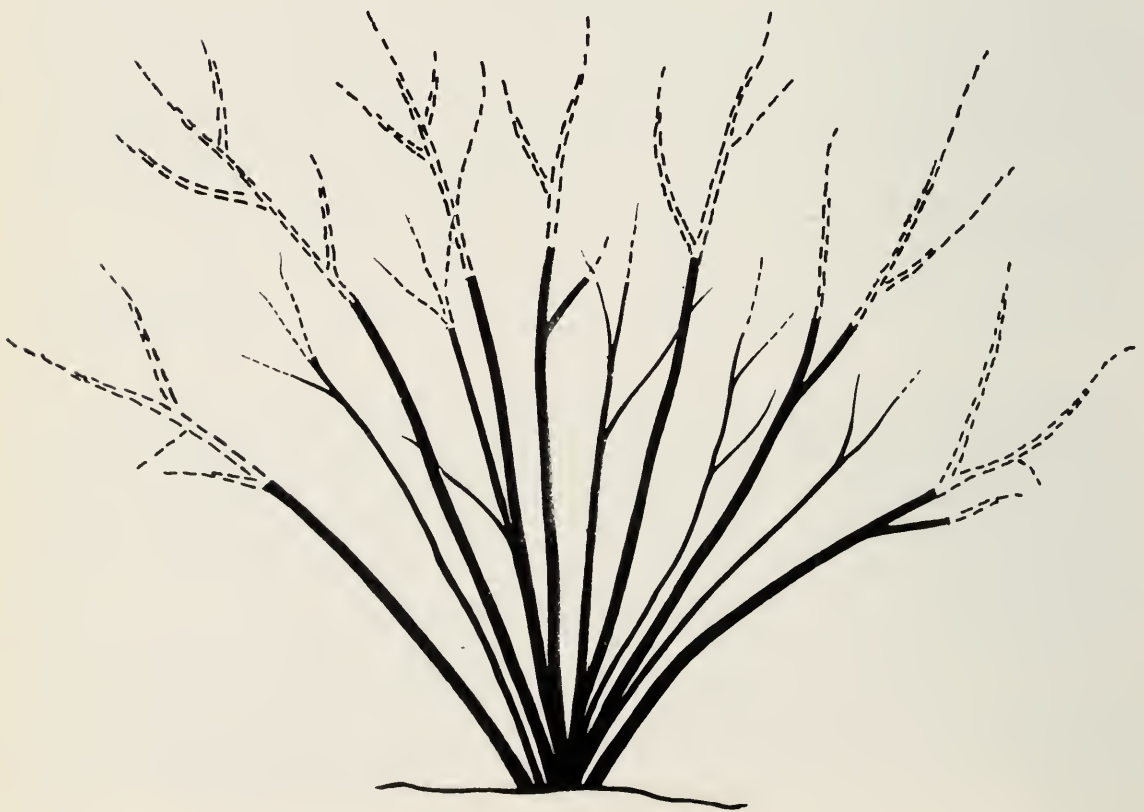
PRUNING

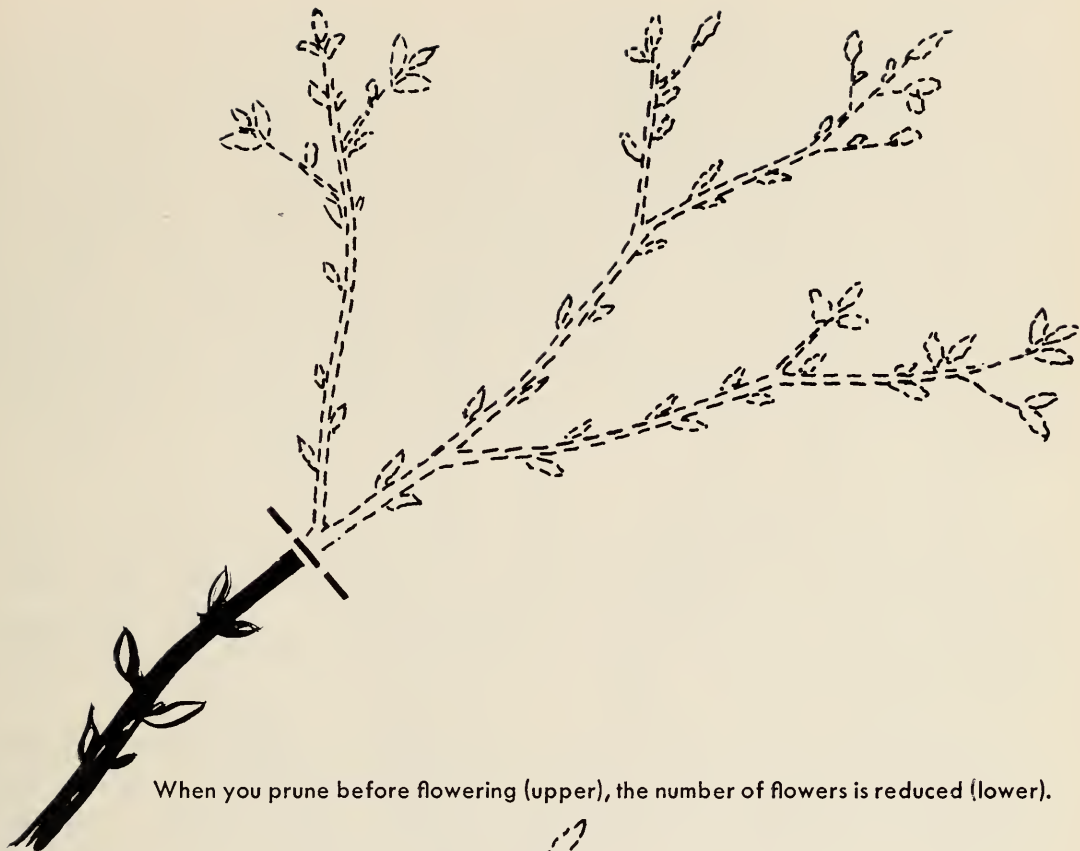
The pruning of established shrubs for general maintenance and that of old shrubs for rejuvenation differs considerably from the pruning of young shrubs at the time of planting. The main objectives of pruning are to remove dead or diseased wood, to produce a graceful, well-balanced shrub of proper height, and to open up the shrub to allow sufficient light and air into the center, thus inducing growth of healthy wood and the production of flower buds.

These objectives can never be attained by clipping the tips of the branches to form a neat, rounded ball. Except in trimming a hedge to produce thick bushy growth, the branch tips of most shrubs should rarely be clipped. A branch or two may have to be cut back to give the shrub a balanced shape, but this should always be done by cutting back to a lateral branch, or a bud that points outward.



The correct (upper) and incorrect (lower) methods of pruning most shrubs.





When you prune before flowering (upper), the number of flowers is reduced (lower).



Maintenance

Flowering shrubs may be divided into two main groups: those that bear their flowers on growth of the current season and those that flower from terminal or axillary buds formed on growth of the previous season. The first group contains late-flowering shrubs such as hydrangea, sorbaria and genista. Prune these in spring. First remove all dead and weak wood close to the ground or to the parent branch from which this wood springs and thin out by removing the oldest wood, leaving only a few of the healthiest canes. Cut back the remaining canes to a point just above the second or third bud on last season's growth. This will induce the production of strong new growth and, consequently, large blooms. Other late-flowering shrubs such as rose of sharon, smokebush, vitex, ceanothus, and witch-hazel do not need such severe pruning but should be given a regular renewal pruning. (See next section.)

The second group contains most of the flowering shrubs. Prune them only every few years to keep them within bounds and thin them out to prevent them from growing leggy. For general maintenance, prune these shrubs immediately after flowering, which will induce lots of young healthy wood and consequently full bloom the following season. Pruning young wood in the fall or spring reduces the number of flowers.

In general, removing a few old branches close to the ground will keep this latter class of shrub in fairly good shape. Remove only branches that will not harm the shape of the shrub and do not leave a stub. Cut off most suckers from the roots, leaving only two or three to grow up to take the place of the old branches. Remove all suckers on grafted or budded shrubs, such as named varieties of lilacs or flowering crab apples.

Some shrubs of this group, such as the hybrid mock-oranges and weigelas, produce heavier crops of bloom if the old wood that has just flowered is cut back each year to a point where new growth is evident.

Rejuvenation

A more drastic pruning treatment is required for old shrubs that have been neglected for a number of years. Such pruning is more effective when done in the spring. Severe reduction of branches later in the season seems to have a weakening effect, so that the shrub takes long to recover. Cut out one third or more of the old branches close to the ground, and cut back the remaining old branches to a point just above the lowest lateral branch. This will force all growth into young wood and will result in the production of a quantity of suckers from the roots and adventitious shoots from the lower part of the old branches. Thin out these shoots and so help them to develop as normal branches.

The following spring or summer, remove half or more of the remaining old branches close to the ground, and a year later remove the rest of the old branches. You will then have a shrub consisting entirely of new wood, except for a few short trunks at the base. Thin out this young wood to form a well-balanced shrub.

Shrubs with attractive winter twigs, such as the red-stemmed dogwood and willow, should be severely pruned each spring to force the growth of vigorous brightly colored suckers.



What to remove when pruning an old established shrub.



Evergreens

Evergreens used in foundation plantings should have an annual trimming in the spring when growth begins. Take care, however, not to trim them too formally. The informal, upright or spreading junipers need frequent pruning to keep them within bounds. Cut the long branches just above a vigorous side shoot on the second- or third-year wood. Make the cut so that the side shoot will overlap the pruning cut. Do not have all the branches the same length as this will destroy the desired informal effect. Be careful not to cut away too much.

True dwarf mugo pines may be kept low by annual pruning. To do this, shorten the new growths or "candles" by one half to two thirds before the needles start to expand.

Keep pyramidal and global evergreens in their desired shape by giving them a light clipping or shearing in May and August.



As soon as rhododendron flowers have faded cut them off at the place shown.

Broad-leaved evergreens need very little pruning, except for the removal of straggly growth and winter-injured or dead wood or to keep them from strangling nearby plants. Mahonia, when grown in Eastern Canada, should be cut back severely in the spring to a new side shoot if it has suffered winter injury; by this means you will remove the dead foliage and promote bright, vigorous new shoots. Broad-leaved evergreens such as aucuba and laurel, which do well in British Columbia, may need old stems pruned out to help the plants make new shoots from the ground.

Rhododendrons and azaleas that can be grown in the east need very little pruning. Remove faded flower heads to prevent the formation of seeds from mature plants and prune them a little to improve their shape. Remove long, straggly branches immediately after flowering. At the same time, give plants that have become leggy a severe pruning. Pruned at this time they will have the longest possible period to grow and harden before winter.

DISEASES

General measures to prevent or eradicate disease and the symptoms and control of different kinds of diseases that affect shrubs are given in this chapter.

A gardener usually thinks of disease control in terms of spraying or dusting the plant with a fungicide. However, there are other ways to prevent or control a disease. These include cultural practices to maintain good growing conditions and sanitary measures to keep diseases in check and prevent their spread.

A disease may be introduced into the garden by planting newly acquired infected plants. Therefore, examine all new plants carefully and plant only healthy ones. Space the plants so that they have room to develop and good air movement between and around them. High humidity, which favors disease development, is reduced by the movement of air around the plants.

Plants that are vigorous are less susceptible to disease than weak ones. For this reason keep plants in a good state of vigor by proper planting, feeding, watering and cultivating. Around shrubs and hedges avoid deep cultivation that might injure the feeding roots near the soil surface.

Microorganisms that cause disease are called pathogens. Many of them enter or infect a plant through dead or weak wood. Therefore, remove this kind of wood. Pathogens may also infect plants through wounds. For this reason, cover wounds with a good wound dressing. The wounds made during the trimming of a hedge, except any large ones caused by the removal of a branch, are too small and too numerous to be treated with a wound dressing. Avoid wounding the trunk or main stems of shrubs with garden tools.

Most of the diseases of shrubs are caused by fungi. These diseases are favored by moisture but they are not as dependent on high moisture levels as diseases caused by bacteria. Bacterial diseases may be important in wet years, in humid or wet locations or in gardens kept wet by frequent watering. Diseases may be spread by fungal spores and bacteria either by splashing water or by insects. The spores of fungi may also be carried by wind or in air currents. There is little you can do to control air currents or rain but you can lessen the spread of spores and bacteria by watering with a soaker instead of an overhead sprinkler. By controlling insects in the garden you will cut down on the spread of diseases carried by them. Complete control should not be expected because diseases may be carried by insects coming into the garden from other areas.

The organisms that cause root rots and wilts usually live in the soil. Therefore, do not transfer infested soil on tools, boots or plant material to clean soil in other areas. Disinfect the garden tools used in the infested soil by dipping them in 70 percent denatured alcohol or in a 5 percent formaldehyde solution. The area from which diseased shrubs are removed should not be replanted with susceptible plants for 4 or 5 years, in which time most pathogens in the soil will have died out or have been reduced to very low levels.

Gather and destroy fallen leaves, twigs and other plant debris under and around the shrubs because if any of these plant parts are diseased they may harbor the pathogen. Remove and destroy infected plant parts as soon as they are noticed.

If diseases other than cankers (see p. 17) are well advanced before they are found it may be practical to remove only the most severely infected plant parts and to treat the rest with a fungicide. Destroy diseased plant material by burning or burying it. In the city, where this may not be possible, dispose of the diseased plant material with the trash collection. Do not put diseased material on the compost pile.

Diseases may also be spread to healthy plants by the pruning tools. Disinfect the tools in the same way as advised for tools used in handling infested soil. A pathogen may also be spread to a healthy plant by the hands, so wash them with soap and water after handling a diseased plant.

Sanitation is often the only measure needed for disease control in the home garden. Sometimes, however, it is not enough and all three measures of control, good cultural practices, sanitation and a fungicide, are needed. Fungicides are used to protect plants against infection with a disease prevalent in the area, to protect a plant against further infection after the removal of diseased tissue or plant parts, to control a disease that has occurred in the garden in previous years but was not completely eradicated, to control a disease that spreads rapidly, and to control a disease that is well advanced before it is noticed. Most fungicides are protectants, that is, they protect the plant by preventing the pathogen from entering it. However, some fungicides are eradicants and they destroy the pathogen after infection has occurred. Eradicants that are most familiar to the gardener are those used to control powdery mildews. These fungi are killed after infection has occurred because they are mainly on the surface of the plant.

The diseases that affect shrubs may be grouped according to their symptoms or their causes. Generally the control measures for all of the diseases in each group are the same. Common diseases of shrubs and their control are given in the following paragraphs.

Leaf Spots

Diseases that cause leaf spots are the most common ones affecting shrubs. The spots are usually more or less circular with light-brown or grayish centers and dark-brown, reddish-brown or purplish borders. Some of these spots have concentric zones of different appearance and they are called zonate leaf spots. The dead center of some spots may fall out leaving holes and this type of spot is referred to as shot-hole. If the spots are numerous or if they enlarge they may join together to form diseased areas that are irregular in size and shape. The disease is then usually referred to as a blotch rather than a spot. Severely infected leaves may fall prematurely.

Leaf spot may also be a symptom of a group of diseases called anthracnose, which are caused by a specific group of fungi. Anthracnose is a common disease of *Ribes alpinum*. The leaf spots caused by this disease on this host are reddish brown to dark brown or purplish and masses of pinkish spores may be seen in the center of the lesion.

Ornamental shrubs on which leaf spots are common include *Amelanchier*, *Caragana*, *Crataegus*, *Daphne*, *Prunus*, *Rhododendron*, *Ribes*, *Spiraea*, *Ulmus* and *Viburnum*.

Control Many of the leaf-spot diseases that affect shrubs may be controlled by sanitation alone. If a fungicide is required for control of the disease, use zineb, ferban, captan, folpet or a copper one such as Bordeaux mixture. Apply the

fungicide at weekly intervals until the disease is checked. To control a disease that spreads rapidly start applying the fungicide as soon as possible, preferably as soon as the disease is noticed. If the disease is prevalent in the neighborhood or has occurred in the garden in previous years, start applications of a fungicide early, before or as soon as infection is noticed. To control some leaf-spot diseases it is necessary to start fungicide applications as the leaves are opening. Therefore, if spraying or dusting at the right intervals with the proper concentration of the right fungicide did not give adequate control in the previous year, start applications of the fungicide when the leaves are opening and make 3 applications at intervals of 10 to 14 days. Keep the shrubs under close observation and if new infections develop repeat applications of fungicide at 7- to 10-day intervals until control is achieved.

To control anthracnose of *Ribes alpinum* start spraying the plants with maneb or folpet as soon as the disease is noticed. Direct the spray to obtain good coverage of both surfaces of the leaves. Add a spreader sticker to the spray so that it will adhere to the leaves. Make three applications of the spray at 14-day intervals. If new infections develop repeat applications of the fungicide until the disease is controlled. Sanitation is also very important in the control of this disease.

Powdery Mildews

These diseases can be recognized by the white or grayish growth of the powdery mildew fungi on the leaves or stems. The mildew may be present as distinct spots or it may cover large areas or all of the leaf. Older mildew spots may be brown in the center. The dark, round fruiting bodies of the perfect stage of the fungus may be found on the infected leaves.

Shrubs commonly infected with mildew include *Cornus*, *Crataegus*, *Hydrangea*, *Lonicera*, *Prunus*, *Ribes*, *Rosa* and *Syringa*.

Control Spray or dust the plants with dinocap or spray with cycloheximide. Sulphur dust or spray may be used to protect plants from mildew. Do not use dinocap when the temperature is near 85°F or sulphur at 80°F or higher because they may cause injury to the plants. Spray only when the foliage will dry quickly.

Blight

The symptoms of a blight consist of the sudden wilting, browning and death of large leaf areas or of the entire leaf, or of young twigs, flowers or fruits. The dead areas on the leaves are not definitely delimited. No precise separation can be made between an extended leaf blotch and blight. In addition to being caused by fungi or bacteria, blights may also be caused by some unfavorable environmental or cultural condition. Fire blight, caused by a bacterium, is a common disease of a number of shrubs.

The symptoms of leaf blight of *Lonicera* differ from the general symptoms of blights. The leaves on infected plants have a whitish bloom; they are thickened, deformed, and curled, and they finally become brown.

Shrubs on which blights are more commonly found include *Amelanchier*, *Cornus*, *Crataegus*, *Hydrangea*, *Lonicera*, *Malus*, *Prunus* and *Syringa*.

Control Sanitation is very important in the control of blights. Gather and burn blighted twigs, diseased leaves and fruits, and plant debris on the ground. Cut

blighted twigs well back from the discolored tissue and disinfect pruning tools between cuts. Prune the shrubs to allow good air circulation through them. Cover the wounds with a good wound dressing. If a fungicide is required for the control of a blight, use one of those listed for the control of leaf spots.

However, these fungicides, with the exception of copper, are ineffective in controlling fire blight. This disease is best controlled by pruning out and destroying the infected plant parts in the manner described above. The bacteria causing fire blight may infect the flowers and cause a blossom blight. Spraying the shrubs with copper or an antibiotic such as streptomycin will help control this phase of the disease. Start spraying after some of the flowers are open and repeat applications at 7- to 10-day intervals until full bloom is over. Avoid overfertilizing shrubs susceptible to fire blight because this stimulates rapid succulent growth, which is particularly subject to infection. Rapidly growing plants are more susceptible than those making only moderate growth.

If sanitation and pruning to open up the shrubs to allow air circulation between the branches have not been successful in controlling blights of *Syringa*, spray the plants with zineb, maneb or Bordeaux mixture 2 or 3 times at 8- to 10-day intervals starting when the leaves begin to unfold. Keep the plants under observation after spraying is discontinued and resume spraying as soon as new infections are seen. Avoid overfertilizing. The fungus causing one of the blights of lilac also attacks *Rhododendron* so these two ornamentals should not be interplanted.

Rusts

The gardener often refers to any disease that causes reddish-brown spotting as rust but this name is properly used only for those diseases caused by a specific group of fungi. Rusts can grow only on a living plant. Many of them require two different kinds of host plants to complete their life cycle and different spore forms are produced on each host. Other rusts have all of their spore forms on one host.

The symptoms of rust are yellow, orange, reddish-brown or brown spores in powdery pustules or gelatinous tendrils. The spores may be found on the leaves, particularly on the lower surface, on fruits or on the stem. Stems may be cankered, swollen, distorted, or galled, fruits may be deformed and ruined, and leaves may wither and die prematurely. Any discoloration of the host tissue is yellowish. Severely infected plants may be stunted.

Shrubs more commonly infected with rust include *Amelanchier*, *Berberis*, *Chaenomeles*, *Crataegus*, *Juniperus*, *Mahonia*, *Malus*, *Rhamnus*, *Ribes* and *Rosa*.

Control Collect and burn infected leaves and fruits when they are first seen. Prune out and destroy infected branches showing rust cankers, galls or swellings. Dust or spray the plants with zineb or ferbam. Spray plants of *Malus* and *Crataegus* with ferbam at 10-day intervals starting when the buds begin to open. To control rusts of *Chaenomeles* (Japanese quince) spray the plants with ferbam or zineb at weekly intervals during May and early June. If possible, remove and destroy the alternate host for the rust.

Juniperus species are the alternate hosts for a group of rusts that infect many plants that are mainly in the rose family, including *Amelanchier*, *Chaenomeles* (Japanese quince), *Crataegus*, *Malus*, and *Sorbus* (mountain-ash). A few plants in other families, such as *Philadelphus*, are also susceptible to these rusts. A number of species of *Juniperus* used for ornament are alternate hosts for trellis rust, which is

an important disease of *Pyrus communis*, the commercial pear. At the present time this disease is established in Canada only in British Columbia.

Many species of *Rhamnus* are the alternate hosts for crown rust, which is very destructive to oats. *R. frangula* and *R. purshiana* are resistant to the race of the rust that infects oats but they are alternate hosts of races of this same rust that infect some grasses. Therefore, these two species of *Rhamnus* may often become infected with rust and so growing them as ornamentals is not recommended.

Species of *Ribes* are the alternate hosts of the white pine blister rust. This rust is very destructive to pines and the two hosts should not be planted near each other. Some pistillate clones of *Ribes alpinum* are susceptible to this rust but at least one staminate clone is immune.

The common barberry, *Berberis vulgaris*, is the alternate host of the serious stem rust disease of wheat, but some of the cultivated barberries are highly resistant to this rust.

Cankers

Cankers are lesions caused by bacteria or fungi on stems or branches. They are usually sunken or depressed. As they enlarge, the central part becomes more noticeably sunken and it may crack to form an open wound. Cankers are usually light brown or dark brown to black. They are generally lighter or darker than the surrounding healthy bark, although some of them are about the same color. The fruiting bodies of the causal fungus may be found on the cankered area; they appear as small elevations or pustules that are usually dark brown or black. The fruiting bodies of the fungus causing necrotic canker of *Ulmus pumila*, a common disease of this shrub, are pinkish pustules. They are the diagnostic characteristic of this disease. A canker may enlarge enough to girdle the stem or branch, resulting in the wilting, browning and death of the plant parts about it.

Shrubs on which cankers are commonly found include *Cornus*, *Rosa* and *Ulmus*.

Control Prune out diseased plant parts and destroy them, preferably by burning. On larger branches or stems the canker may often be cut out. Cut off the branch or stem if it is girdled by the canker or if it is so small that removing the canker would not leave enough healthy tissue to support the plant parts above it. Make the cuts well beyond the edge of the diseased area and include all discolored wood. Disinfect the pruning tools between cuts. Avoid wounding the shrubs because many of the pathogens that cause cankers enter the plant through wounds. Apply wound dressing to protect wounds and severed ends except very small ones. Keep the plants vigorous by following good cultural practices, including fertilizing, pruning and watering during droughts.

Wilts

Wilting is the result of a temporary or permanent loss of water in the leaves. Wilting may occur as a symptom of an injury, or of a disease such as a canker, on the stem or branch. Such injury may interfere with the movement of water to the leaves and the wilting may be wrongly attributed to a wilt disease. The presence of a disease or injury on the stem or branch that may result in wilting can easily be determined by a close examination of the plant. Wilting may also be caused by

insufficient moisture in the soil or too rapid a loss of it from the plant, but this condition can be remedied by the addition of water to the soil.

Wilt diseases are caused by fungi or bacteria that invade the water-conducting vessels in the stems and roots. In one type of wilt the vessels may become plugged by the growth of the organism or by gummy substances produced by it. Instead of plugging the vessels, or in addition to it, the pathogen may produce toxic substances that cause wilting and these are carried in the sap stream. If a stem is cut off, dark discolored areas in the region of the water-conducting tissues may be seen. The second type of wilt is caused by the rotting of the roots or the portion of the stem below ground.

Other symptoms that accompany wilting are a yellowing followed by browning, curling, drying and eventual falling of the leaves. Sometimes the leaves wilt so rapidly that they curl, dry and fall before they yellow. Infected plants eventually die.

A wilt disease of *Berberis* is of common occurrence. Wilt diseases are not often found on other shrubs but they occur occasionally on some, including *Hydrangea*, *Ligustrum*, *Rhododendron*, *Spiraea*, *Syringa* and *Viburnum*.

Control Sanitation is very important in controlling these diseases. Remove and destroy infected plants and all plant refuse on the ground. The pathogens causing wilts are usually soil borne. Avoid transferring infested soil to other areas where healthy plants, particularly of the same kind, are growing. Disinfect the tools used in removing the plant and in working the soil where the disease occurred. Practice a long rotation in which no plants susceptible to the disease are included. In this respect it is important that the cause of the disease be determined so that non-susceptible plants may be selected for planting in the infested soil. Instructions for obtaining a diagnosis of a plant disease are given on page 19. Keep plants in vigorous growth by means of good cultural practices including fertilizing and watering. Provide good soil drainage.

Nonparasitic Diseases

These disorders result from the action of some unfavorable cultural practice or environmental factor such as drought, too much water, overfeeding, underfeeding, improper soil acidity, too high or too low a temperature, gases or fumes produced by industrial processes, and toxic spray materials applied to the plant. Some of the common disorders are described briefly.

Leaves that have holes in them and appear tattered when they open in the spring were likely injured by frost after the buds began to swell. Leaves may also be tattered by high winds.

High temperatures and drying winds may cause leaves to brown at the tips and along the edges. The browning may extend back between the veins and finally the entire leaf may shrivel and brown. The leaves often wilt before they begin to brown. This condition is called scorch but it may also be referred to as a blight. New succulent growth is particularly susceptible to scorch. Leaves on the new growth of hydrangeas may become scorched by the sun when the temperature exceeds 90°F. Symptoms similar to scorch may also be produced by death of the roots, injury, lack of water or some physiological factor or by a disease or injury of the stem that interferes with water movement to the upper part of the plant.

The browning of evergreens during the winter is caused by the sun and drying winds at a time when the ground is frozen and the plant is unable to absorb water from the soil. Browning may also occur if the plants are near a highway or street where salt is splashed on them by passing vehicles or snow laden with salt is pushed against them by plows.

Plants growing in unfertile soil often have pale-yellow leaves and they may be stunted and spindly.

Burning of foliage by fungicides may occur if the gardener is not careful in preparing the spray used on the plants. These materials have been tested for possible injury to plants. Some of them have been found to cause injury to some plants and, of course, they should not be used on them. Others may cause injury to plants in certain environments. This information is included on the label by the manufacturer. Burning caused by a fungicide may also occur if unusually hot weather follows its application.

The careless use of weed killers will result in injury to plants. The stems may be twisted, thickened and deformed and the leaves may be deformed. In severe cases the plant may be killed.

Control To control nonparasitic diseases determine the cause of the disorder and rectify it.

To prevent browning of evergreens by sun and wind during the winter provide the plants with plenty of water in the fall and shade and shelter them with wooden covers or with burlap.

When using a fungicide and when preparing a spray, follow exactly the manufacturers' directions on the package.

When using a weed killer take every precaution to avoid spraying garden plants or to prevent drift of the material onto them. Do not use a sprayer that is used for a weed killer to apply fungicides to plants, regardless of how well it has been washed.

Occasionally you may have a disease that you are unable to identify or for which you do not know the proper control measures from the very general descriptions given above. To obtain a diagnosis of a disease and measures for its control or advice concerning a specific disease contact the nearest research laboratory or experimental farm or station. Specimens of diseased material are, of course, required. Select specimens that show typical symptoms. Write a description of the symptoms, the way the disease starts and the conditions under which the plant is growing, and include any special or unusual treatment the plant may have received. If the specimens are sent by mail to the laboratory, enclose this information in the covering letter and pack the specimens so that they will arrive in good condition. Pack leaves flat between several thicknesses of newspaper or preferably between blotting paper. Wrap soft stems in newspaper but simply place woody ones in a box with enough newspaper around them to keep them from rattling about. Pack larger structures such as fruits or roots, from which all soil has been removed, in a cardboard box with crumpled or shredded newspapers. Allow moisture on the surface of specimens to dry before packing them. Specimens that are dry on the surface will remain in good condition if they are placed in a plastic bag for shipping, provided they are not in transit for too long and it is not too hot. Do not pack specimens in waxed paper. Indicate clearly your name and address on the parcel and on the accompanying letter.

INSECT PESTS

Insect pest control is essential to preserve the health and beauty of ornamental shrubs. Insect damage can often be prevented by good cultural practices, but it may also be necessary to use insecticides. For this purpose there are many effective preparations available. In most cases, however, only a few general-purpose pesticides are needed to control the common insect pests of ornamental shrubs.

It is not possible to include a complete list of insect pests or insecticides. For advice on those not mentioned here consult your local agricultural representative, agricultural college or the nearest research station of the Canada Department of Agriculture.

Some of the common pests of ornamental shrubs are chewing insects, which feed on leaves and other plant parts. The feeding of others, the sucking insects, may cause stunting, discoloration and distortion of infested parts. Many sucking insects also carry plant diseases. Others may inject toxins into plants. Nearly all of them excrete onto the leaves and twigs a sugary, sticky liquid called honeydew. A very unsightly black fungus often grows in this honeydew. The fungus persists for a long time, even after the insect infestations are controlled, but eventually it weathers off.

Ants

These insects sometimes become a nuisance on shrubs. They do not feed on plants but are attracted by honeydew. The presence of numerous ants may indicate an infestation of sucking insects.

Control where necessary with dusts or sprays of chlordane or aldrin applied to the soil around the bases of shrubs.

Aphids

These small, soft-bodied sucking insects cluster in masses on tender growth and on the undersides of leaves. Growth is stunted and leaves are curled and discolored.

Spray with malathion, diazinon, dimethoate or lindane. Dimethoate is a systemic insecticide, which is absorbed into the plant sap so that sucking insects are poisoned as they feed. This material has not been fully tested on all plant species. For plants not listed on the dimethoate label, treat only a small area first to see if the plant tolerates this chemical. Treat the plants when aphids are first noticed. Applications may have to be repeated because of reinfestation by winged aphids from untreated areas.

Borers

Several species of borers may attack ornamental shrubs. These insects tunnel in the branches, trunks, or roots or beneath the bark. Infested shrubs may be killed.

Shrubs kept in vigorous condition are less subject to borer attack. Spray the trunk and main branches of infested shrubs with DDT or lindane before adult beetles emerge, usually in May or June. Timing of applications is important. Treatments may have to be repeated.

Caterpillars

Various caterpillars feed on ornamental shrubs. Tent caterpillars and fall webworms may build large unsightly nests of webbing and can defoliate plants very quickly. The small yellowish, greenish or brown caterpillars of several species of leaf rollers web terminal leaves together and feed within these small nests. Infested plants may be partially defoliated or leaves may be skeletonized, giving the shrub a brown, scorched appearance. Growth of young plants is retarded because of damage to the terminals.

Treatment must be applied early before caterpillars become well established. Sprays of DDT or malathion are effective for most species, but some leaf rollers are better controlled with carbaryl or TDE (DDD). Two or three treatments may be needed at intervals of two weeks. If the nests are small and if there are only a few of them, simply cut off the branches and destroy them.

Lacebugs

The body surface of these small, flat, oval or rectangular sucking insects is often lacelike in appearance. Immature lacebugs are dark and often covered with long spines. Feeding damage appears as pale spots on the upper leaf surface and small dark pellets of excrement on the lower surface.

Lacebugs can be controlled with malathion sprays in the spring.

Leafhoppers

Adult leafhoppers are small, slender, wedge-shaped sucking insects. The adults jump and fly, and all stages have the peculiar habit of running sidewise when disturbed. They cause pale whitish or yellowish stippling on the leaves.

Most leafhoppers are controlled with sprays of malathion, diazinon, DDT or dimethoate. Use the same precautions for dimethoate as advised under aphids. Some leafhoppers have more than one generation a year and treatments may have to be repeated in late summer.

Leaf Miners

The larvae of some species of small flies and moths mine in the tissues between the upper and lower leaf surfaces. This feeding causes damage varying from long serpentine trails to large unsightly blotches of dead tissue.

Sprays of diazinon, lindane, DDT or dimethoate in April or May just before the leaves are fully expanded are effective for most leaf miners, but exact timing depends on the species present. Dimethoate may also be applied as a painted band on the trunk of the tree. Use the same precautions for dimethoate as given for aphid control.

Mealybugs

These are small, flattened, elongate, oval sucking insects covered with white powdery wax. This wax often forms a series of short filaments around the margin of the body. Mealybugs feed on all parts of the plant above and below ground.

Spray infested plants with malathion or diazinon. Repeat the treatment in three or four weeks.

Mites

Spider mites, or red spiders, are very small creatures scarcely visible to the unaided eye. They may be red, greenish or yellow. They cause a bronze or yellowish russeting or fine grayish-white stippling on the leaves. Some species also produce a very fine webbing on infested surfaces.

Eriophyid mites are microscopic in size. They are known variously as gall mites, blister mites, bud mites or russet mites according to their habits. Some live freely on the surfaces of leaves and twigs. Others cause dense felty masses on leaves. Many form odd-shaped galls with an opening on the upper surface of the leaf. The pear leaf blister mite is a common example of this group of pests.

Spider mites can be controlled with miticides such as dicofol, tetradifon or Aramite.* Apply sprays thoroughly to the undersides of leaves. Two or three treatments may be necessary at 10-day intervals. Further applications may be required later in the season if mite infestations build up.

Eriophyid mites can be controlled with sprays of diazinon, malathion or carbaryl. Apply treatments when damage first appears in the spring.

Root Weevils

Adult root weevils feed on leaves, making the leaf edges ragged and scalloped. The small grayish or yellowish-white curved grubs feed on the roots and girdle plants near the crowns.

Aldrin granules mixed in the soil when new shrubs are being planted help to prevent root damage for three or four years. Sprays of aldrin, malathion, chlordane or DDT will control adult weevils in established plantings. Apply spray to the foliage and on the ground around shrubs. Treat in early spring when overwintered adults appear, and repeat applications in late June or early July.

Scales

These oval, flat, elongated or nearly globular sucking insects may become thickly encrusted on leaves and stems of infested plants. Because of their appearance and habits they have little resemblance to other insects.

Soft scales are either naked or partly or entirely covered with wax. Antennae and legs are usually present, but many species become stationary when fully developed. Most soft scales excrete large quantities of honeydew.

Armored scales have a thick protective shell on the upper surface. Unlike soft scales they lose their legs and antennae after the first molt. Armored scales produce very little honeydew but some species inject a toxin into plants.

Soft scales are controlled with sprays of malathion, carbaryl or dimethoate. Use the same precautions for dimethoate that are given under aphids. Two or three sprays are necessary at intervals of three or four weeks. Start treatments early in the spring when new growth appears.

Armored scales are controlled with malathion or diazinon sprays. Apply the sprays at the same timing recommended for soft scales.

*This brand name is used here because there is no official common name for the active ingredient it contains.

Scales may also be controlled by oil emulsion sprays applied while the plants are still dormant in early spring. Do not apply a dormant spray when the temperature is below 40°F or when there is danger of freezing temperatures during the day or two after application.

Thrips

These very small, slender insects are common on leaves and flowers. Because of their size and habits they are not readily seen unless plant parts are examined closely. Immature stages are yellowish or orange. The winged adults are usually brown or black. Feeding by thrips causes silvery or blackening of infected parts, and distortion of leaves and blooms.

Many species of thrips feed on grasses and weeds. They move to cultivated crops when native vegetation begins to dry up. Because of this constant migration control treatments may have to be applied often. Malathion, DDT or dimethoate sprays are effective. Use the same precautions for dimethoate that are mentioned under aphids. Dimethoate should be effective for two or three weeks, but malathion or DDT may have to be applied weekly. Start treatments when damage is first noticed.

Whiteflies

The body and wings of adult whiteflies are covered with fine whitish powdery wax. They are very small sucking insects. Immature stages resemble scale insects.

Spray with malathion, diazinon or dimethoate when infestation is first noticed. Use the same precautions for dimethoate that are given for aphids. Applications may have to be repeated because of reinfestation by winged adults from untreated areas.

THE USE OF PESTICIDES

A pesticide may be applied to the plant as a spray or a dust. There is really no answer to the question of whether one is better than the other. Use will depend on what the gardener wishes to accomplish, the number of plants to be treated, the time available and other considerations including his own preference.

Many spray materials, especially insecticides, are available both as wettable powders and as liquid emulsifiable concentrates. Wettable powders are less likely to damage sensitive plants, but they require continuous thorough agitation in the spray tank and may leave unsightly residues. Emulsifiable materials give more uniform coverage than wettable powders and leave little visible residue. Dusts are more convenient than sprays because they are more easily and quickly applied and no measuring or mixing is required. However, sprays adhere better, last longer and give better coverage on stems and on the undersurface of leaves. Most sprays do not leave an unsightly deposit on the plant and are considered better for plants in or near bloom.

If a dust is used, apply a thin even film and puff the dust upwards and through the plant to cover the stems and the undersurfaces of the leaves. Dust will best adhere

to a plant when it is wet with dew or after a rain. However, the dust accumulates in the water drops and forms visible spots or blotches of residue when the drops dry. These spots may be unsightly and objectionable. Therefore, it is better to dust ornamentals when they are dry or nearly so. A dust should always be applied when the air is calm. When a spray is to be used read the label on the package carefully and follow the directions given for its preparation. Accurately measure the amounts of pesticide recommended. Do not guess the quantities because too weak a spray is ineffective and one that is too strong causes injury. Mix the spray well before using it. Spray the plant at a time when it will dry quickly and when air is relatively calm. Early morning or early evening is a good time for either spraying or dusting. Use a fine misty spray and wet the foliage evenly. Direct the spray up into the plant to wet the lower surfaces of the leaves and the stem. Wet all surfaces until the spray begins to run off. Good coverage of the plant is essential for effective control. Add a spreader-sticker to sprays used on leaves that are glossy or upright, or for insects that have a waxy coating, so that the spray will spread out and adhere and not run off in drops. There are a number of spreader-stickers on the market.

Mixtures of fungicides and insecticides for the control of diseases and insects are available and they are a great convenience.

Take special note of any precautions on the label regarding conditions under which the pesticide may cause injury or of plants on which it is not safe to use at all. If there is any doubt, determine the plant tolerance by treating a small area first. If no injury appears within two weeks, treatment may be made on a larger area. To avoid injury it is advisable not to spray during the hot part of the day.

Do not let pesticides drift onto nearby edible crops or fish ponds. Plants in bloom should not be treated because of the risk of killing bees.

Both fungicides and insecticides are poisonous and must be treated accordingly. Take proper precautions when using them. Never breathe dusts or spray mists. Clean up any spilled pesticide and wash the area well so that no deposit is left. Do not work with them around food. Wash your hands and face before smoking or eating and promptly wash off any pesticide accidentally spilled on the body. Keep packages of pesticides tightly closed, labeled and stored in a place out of reach of irresponsible adults, children and pets. For applying a fungicide or an insecticide do not use a sprayer that has previously been used for a weed killer. Traces of weed killer that persist in the sprayer in spite of repeated washings cause injury to many plants.

Protect plants with a fungicide before or just after a wet period and during humid periods because most disease infections occur during these times. If rain washes a pesticide away, apply it again.

The best type of equipment for applying sprays depends on the size and number of shrubs to be treated. For large shrubs or extensive plantings a good power sprayer will be most effective. Smaller hand-operated equipment such as compressed-air sprayers are adequate for small or medium shrubs. Because of their very limited capacity the small plunger-type sprayers are generally inadequate, except for spot treatments or very small shrubs.

SHRUBS WITH ATTRACTIVE FRUITS

Most shrubs are grown for the beauty of their flowers, but many have fruits of great ornamental value. The following lists provide groupings of shrubs according to the color of the fruit, the most attractive being red, blue and purple. Also included are shrubs with fruits that provide food for birds and shrubs having sexes on separate plants, a very important matter when the shrubs are grown especially for their fruits.

Shrubs with colorful fruits

RED FRUITS

Acer ginnala
Arbutus unedo
Arctostaphylos uva-ursi
Aucuba japonica
Cornus mas
Cotoneaster — many
Crataegus — many
Euonymus europaea
Euonymus fortunei vegeta
Ilex aquifolium — selections
Ilex cornuta 'Burfordii'
Ilex verticillata
Lonicera — many
Malus — many
Nandina domestica
Pernettya mucronata
Photinia serrulata
Photinia villosa
Prunus glandulosa
Prunus tomentosa
Pyracantha — many
Rosa — many
Sambucus racemosa
Shepherdia canadensis
Skimmia japonica
Stranvaesia davidiana
Taxus — many
Viburnum — many

BLUE FRUITS

Berberis julianae
Berberis verruculosa
Chionanthus virginicus
Clerodendrum trichotomum
Cornus amomum
Fatsia japonica
Juniperus communis
Mahonia aquifolium
Mahonia bealii
Symplocos paniculata

BLACK FRUITS

Acanthopanax — many
Ilex crenata
Ilex glabra
Ligustrum — various
Osmanthus heterophyllus 'Ilicifolius'
Ribes sanguineum
Sambucus nigra
Viburnum lentago
Viburnum prunifolium
Viburnum tinus

PURPLE FRUITS

Aronia prunifolia
Berberis candidula
Callicarpa japonica
Prunus × *cistena*
Prunus laurocerasus

YELLOW FRUITS

Elaeagnus angustifolia
Hippophae rhamnoides
Pyracantha crenulata 'Flava'
Stachyurus praecox
Viburnum opulus 'Xanthocarpum'

WHITE FRUITS

Cornus alba 'Sibirica'
Cornus racemosa
Cornus stolonifera
Sorbus koehneana (white and red)
Symphoricarpos albus laevigatus

Shrubs with fruits that attract birds

<i>Aronia arbutifolia</i>	<i>Mahonia aquifolium</i>
<i>Aronia melanocarpa</i>	<i>Malus arnoldiana</i>
<i>Cornus alba</i>	<i>Malus floribunda</i>
<i>Cornus alternifolia</i>	<i>Malus sargentii</i>
<i>Cornus mas</i>	<i>Myrica</i>
<i>Cornus racemosa</i>	<i>Prunus</i> — various cherries
<i>Cornus rugosa</i>	<i>Pyracantha</i>
<i>Crataegus</i>	<i>Rhus</i> — various sumacs
<i>Daphne mezereum</i>	<i>Ribes alpinum</i>
<i>Elaeagnus angustifolia</i>	<i>Ribes aureum</i>
<i>Elaeagnus multiflora</i>	<i>Rosa multiflora</i>
<i>Euonymus</i> — various	<i>Rubus</i> — various
<i>Gaultheria</i>	<i>Sambucus</i>
<i>Hypericum prolificum</i>	<i>Shepherdia argentea</i>
<i>Ilex opaca</i>	<i>Shepherdia canadensis</i>
<i>Ilex verticillata</i>	<i>Symphoricarpos</i> — various
<i>Juniperus communis</i> — selections	<i>Taxus</i>
<i>Juniperus virginiana</i> — selections	<i>Thuja occidentalis</i>
<i>Ligustrum vulgare</i>	<i>Vaccinium corymbosum</i>
<i>Lindera benzoin</i>	<i>Viburnum</i> — various
<i>Lonicera</i> — various	

Shrubs with sexes on separate plants

Some groups of shrubs are dioecious; that is, certain plants are staminate and have only male, or pollen-bearing, flowers, whereas others are pistillate and have only female flowers, which produce the fruit and seeds. The pistillate plants do not bear fruit if there is no staminate plant reasonably close by. One staminate plant is usually enough to ensure a good number of fruits on nearby female plants. If you buy holly, yew or myrica plants, whose fruits are a desirable feature, be sure of the sexes.

Some dioecious shrubs

<i>Acer</i> — many species	<i>Nemopanthus</i>
<i>Aucuba</i>	<i>Rhus</i>
<i>Chionanthus</i>	<i>Ribes</i>
<i>Comptonia</i>	<i>Ruscus</i>
<i>Cotinus</i>	<i>Salix</i>
<i>Hippophae</i>	<i>Shepherdia</i>
<i>Ilex</i>	<i>Skimmia</i>
<i>Juniperus</i>	<i>Taxus</i>
<i>Lindera</i>	<i>Zanthoxylum</i>
<i>Myrica</i>	

SHRUBS FOR SPECIAL PURPOSES

Colorful foliage provides a main or added attraction in shrubs and usually lasts longer than the flowers. The following lists include shrubs with leaves other than green and those with showy fall foliage. Colorful twigs are also of interest, especially during the winter, when color in the garden is lacking. Also included are shrubs with fragrant flowers and those with fragrant leaves.

As an aid to the gardener who has to grow plants under various difficult situations, shrubs for moist, acid, dry or sandy soils, places near the seashore, shady areas, and difficult city conditions are included.

Shrubs for use as ground covers and for different height limits are also grouped together to help the gardener who wants to know what range of material is available for use in specific locations.

These lists should also be used along with the recommendations made in the section headed "Recommended Plants," as a shrub may have some other quality that will limit its use under certain conditions.

Shrubs with colored foliage

GRAY FOLIAGE

Amorpha canescens
Chrysothamnus nauseosus
Elaeagnus angustifolia
Elaeagnus commutata
Elaeagnus multiflora
Elaeagnus umbellata
Hippophae rhamnoides
Lavandula officinalis
Salix exigua
Senecio greyii
Shepherdia argentea
Tamarix pentandra
Zenobia pulverulenta

BLUE-GREEN FOLIAGE

Chamaecyparis lawsoniana 'Allumii'
Chamaecyparis lawsoniana 'Ellwoodii'
Juniperus scopulorum 'Blue Haven'
Juniperus squamata 'Meyeri'
Lonicera korolkowii 'Zabelii'
Rosa rubrifolia

WHITE VARIEGATED FOLIAGE

Cornus alba 'Argenteo-marginata'
Euonymus fortunei 'Emerald Gaiety'
Ilex aquifolium 'Argenteo Marginata'
Kerria japonica 'Picta'

RED FOLIAGE

Acer palmatum 'Rubrum'

PURPLE FOLIAGE

Acer palmatum 'Atropurpureum'
Corylus maxima 'Purpurea'
Cotinus coggygia 'Purpureus'
Cotinus 'Royal Purple'
Malus × *purpurea* 'Eleyi'
Malus 'Royalty'
Prunus cerasifera 'Atropurpurea'
Prunus × *cistena*
Prunus virginiana 'Shubert'
Weigela florida 'Foliis Purpuriis'

YELLOW FOLIAGE

Calluna vulgaris 'Aurea'
Chamaecyparis lawsoniana 'Lane'
Chamaecyparis pisifera 'Filifera Aurea'
Cornus alba 'Spaethii'
Elaeagnus pungens 'Maculata'
Juniperus chinensis 'Pfitzeriana Aurea'
Juniperus communis depressa 'Aureo-spica'
Ligustrum ovalifolium 'Aureo-marginata'
Ligustrum vulgare 'Aureum'
Philadelphus coronarius 'Aureus'
Physocarpus opulifolius 'Luteus'
Sambucus canadensis 'Aurea'
Sambucus racemosa 'Plumosa Aurea'
Thuja occidentalis 'Lutea'
Thuja orientalis 'Aurea Nana'
Weigela florida 'Variegata'

Shrubs with colorful fall foliage

RED FOLIAGE

Acer ginnala
Cornus alba
Enkianthus campanulatus
Euonymus alata
Euonymus europaea
Euonymus sachalinensis
Fothergilla monticola
Rhododendron vaseyi
Rhus — various sumacs
Ribes aureum
Rosa nitida
Rosa rugosa
Vaccinium — various
Viburnum dentatum
Viburnum lantana
Viburnum prunifolium

REDDISH-PURPLE FOLIAGE

Leucothoe fontanesiana
Nandina domestica
Viburnum acerifolium
Viburnum dilatatum
Viburnum lentago
Viburnum trilobum

YELLOW FOLIAGE

Amelanchier — many
Fothergilla major
Hamamelis — various
Lindera benzoin

Shrubs with colorful twigs

GREEN TWIGS

Cytisus — most
Euonymus europaea
Itea virginica
Jasminum nudiflorum
Kerria japonica
Poncirus trifoliata

RED TWIGS

Acer palmatum
Cornus alba 'Sibirica'
Cornus stolonifera
Rosa acicularis
Rosa blanda
Rosa multiflora
Rosa setigera
Rosa virginiana
Salix alba 'Chermesina'
Vaccinium corymbosum
Viburnum opulus 'Nanum'

YELLOW TWIGS

Cornus stolonifera 'Flaviramea'
Salix alba 'Vitellina'

GRAY TWIGS

Acanthopanax sieboldianus
Buddleia alternifolia
Clethra alnifolia
Cornus racemosa
Elaeagnus umbellata
Lonicera morrowii
Lonicera tatarica
Neillia sinensis
Prinsepia sinensis
Viburnum opulus
Viburnum sargentii
Viburnum trilobum
Zenobia pulverulenta

Shrubs with fragrant flowers

Abelia × *grandiflora*
Carpenteria californica
Choisya ternata
Clethra alnifolia
Daphne — various
Elaeagnus — various
Epigaea repens
Halimodendron halodendron
Kalmia latifolia
Lavandula officinalis
Magnolia kobus stellata

Philadelphus — many
Ribes odoratum
Rosa — many
Skinmnia japonica
Syringa vulgaris — many cultivars
Viburnum × *burkwoodii*
Viburnum × *carlcephalum*
Viburnum carlesii
Viburnum farreri
Vitex agnus-castus

Shrubs with fragrant foliage

Artemisia — many
Calycanthus — many
Choisya ternata
Comptonia peregrina
Juniperus — various
Laurus nobilis

Lavandula officinalis
Lindera benzoin
Myrica — various
Rhus aromatica
Teucrium chamaedrys
Vitex agnus-castus

Shrubs for moist soils

Alnus — various
Aronia arbutifolia
Cephalanthus occidentalis
Comptonia peregrina
Cornus alba
Cornus stolonifera
Dirca palustris
Ilex glabra
Ilex verticillata
Kalmia latifolia
Ledum groenlandicum
Lindera benzoin
Rhododendron calendulaceum
Rhododendron canadense

Rhododendron nudiflorum
Rhododendron vaseyi
Salix caprea
Salix discolor
Salix purpurea
Taxus canadensis
Thuja occidentalis
Vaccinium — various
Viburnum cassinoides
Viburnum dentatum
Viburnum lantanooides
Viburnum opulus
Viburnum trilobum

Shrubs for acid soils

Calluna vulgaris — selections
Cytisus — many
Empetrum nigrum
Enkianthus campanulatus
Epigaea repens
Fothergilla — various
Ilex — various

Kalmia — various
Ledum groenlandicum
Leucothoe — various
Pieris — various
Rhododendron — various
Vaccinium — various

Shrubs for dry or sandy soils

Acanthopanax — many
Acer ginnala
Amorpha — various
Arctostaphylos uva-ursi
Atriplex — various
Baccharis halimifolia
Caragana — many
Chaenomeles speciosa
Cistus laurifolius
Comptonia peregrina
Cytisus — many
Elaeagnus angustifolia
Genista — many
Hippophae rhamnoides
Indigofera — various
Juniperus communis — selections

Juniperus horizontalis
Juniperus virginiana — selections
Kolkwitzia amabilis
Lespedeza bicolor
Ligustrum — many
Myrica — various
Physocarpus opulifolius
Potentilla fruticosa — selections
Rhus glabra
Rhus typhina
Rosa rugosa — selections
Rosa setigera
Shepherdia canadensis
Tamarix — various
Vitex agnus-castus
Yucca — various

Shrubs for places near the seashore

Arctostaphylos uva-ursi
Aronia arbutifolia
Atriplex — various
Baccharis halimifolia
Calluna vulgaris — selections
Chamaecyparis pisifera
Cistus — various
Clethra alnifolia
Comptonia peregrina
Cornus stolonifera
Cotoneaster — many
Cytisus — many
Elaeagnus — various
Escallonia — various
Gaultheria shallon
Halimodendron halodendron
Hebe traversii
Hibiscus syriacus — selections
Hippophae rhamnoides
Ilex glabra
Ilex opaca — selections
Juniperus communis — selections

Juniperus horizontalis — selections
Ligustrum amurense
Lonicera morrowii
Lonicera tatarica
Myrica pensylvanica
Pinus mugo mughus
Potentilla fruticosa — selections
Prunus maritima
Rhus — various sumacs
Rosa multiflora
Rosa rugosa — selections
Rosa spinosissima
Shepherdia canadensis
Spartium junceum
Spiraea — many
Syringa vulgaris — selections
Tamarix — various
Taxus cuspidata — selections
Ulex europaeus
Vaccinium corymbosum
Viburnum cassinoides
Viburnum dentatum

Shrubs for shady places

Abelia × *grandiflora*
Acanthopanax sieboldianus
Acer spicatum
Andromeda polifolia
Aucuba japonica
Berberis verruculosa
Buxus — various
Camellia japonica — selections
Comptonia peregrina
Cornus alba
Cornus racemosa
Cornus stolonifera
Epigaea repens
Euonymus fortunei vegeta
Euonymus nana
Fatsia japonica
Gaultheria shallon
Hamamelis — various
Hypericum — many
Ilex — many
Kalmia — many
Leucothoe — various
Mahonia — various
Myrica — various

Nandina domestica
Osmanthus heterophyllus 'Ilicifolius'
Photinia serrulata
Photinia villosa
Pieris — various
Pyracantha — many
Rhododendron — various
Rhodotypos scandens
Ribes — many
Ruscus aculeatus
Skimmia japonica
Sorbaria sorbifolia
Stephanandra incisa
Symphoricarpos — many
Taxus — various
Thuja — many
Tsuga — various
Vaccinium — various
Viburnum cassinoides
Viburnum dentatum
Viburnum lantanoides
Viburnum lentago
Viburnum prunifolium
Viburnum tinus

Shrubs for difficult city conditions

- | | |
|--|---|
| <i>Acanthopanax sieboldianus</i> | <i>Malus</i> — many |
| <i>Acer ginnala</i> | <i>Philadelphus coronarius</i> |
| <i>Amorpha fruticosa</i> | <i>Physocarpus opulifolius</i> |
| <i>Aralia</i> — various | <i>Pieris</i> — various |
| <i>Aucuba japonica</i> | <i>Potentilla fruticosa</i> — selections |
| <i>Caragana arborescens</i> | <i>Pyracantha coccinea</i> 'Lalandii' |
| <i>Cornus alba</i> | <i>Rhus</i> — various sumacs |
| <i>Cornus stolonifera</i> | <i>Ribes alpinum</i> |
| <i>Elaeagnus angustifolia</i> | <i>Ribes odoratum</i> |
| <i>Euonymus</i> — many | <i>Rosa multiflora</i> |
| <i>Forsythia</i> — various | <i>Rosa rugosa</i> — cultivars |
| <i>Hamamelis</i> — various | <i>Spiraea</i> × <i>vanhouttei</i> |
| <i>Hibiscus syriacus</i> — selections | <i>Symphoricarpos</i> — various |
| <i>Hippophae rhamnoides</i> | <i>Syringa</i> × <i>prestoniae</i> — selections |
| <i>Hydrangea</i> — various | <i>Syringa vulgaris</i> — selections |
| <i>Ilex crenata</i> | <i>Taxus baccata</i> — selections |
| <i>Juniperus chinensis</i> 'Pfitzeriana' | <i>Taxus cuspidata</i> — selections |
| <i>Ligustrum</i> — various | <i>Viburnum lantana</i> |
| <i>Lonicera</i> — many | <i>Viburnum opulus</i> |

SHRUBS OF DIFFERENT HEIGHTS

The following lists include the shrubs grouped under their normal height limits, when growing under ideal conditions and without pruning. Many of these, however, under difficult conditions, such as are found on the prairies, do not reach the indicated heights. For shrubs to use on the prairies, the range of height listed with the individual shrubs in the section headed "Recommended Plants" should be consulted and the minimum height used as a guide.

Shrubby ground covers

- | | |
|---|---|
| <i>Arctostaphylos uva-ursi</i> | <i>Gaultheria humifusa</i> |
| <i>Bruckenthalia spiculifolia</i> | <i>Genista pilosa</i> |
| <i>Calluna vulgaris</i> | <i>Genista sagittalis</i> |
| <i>Cotoneaster adpressa praecox</i> | <i>Hypericum calycinum</i> |
| <i>Cotoneaster conspicua</i> 'Decora' | <i>Hypericum hookerianum</i> 'Hidcote' |
| <i>Cotoneaster dammeri</i> | <i>Hypericum</i> × <i>moserianum</i> |
| <i>Cotoneaster dammeri</i> 'Skogholm' | <i>Juniperus chinensis sargentii</i> |
| <i>Cotoneaster</i> 'Lofast' | <i>Juniperus horizontalis</i> 'Douglasii' |
| <i>Cotoneaster microphylla</i> 'Cochleata' | <i>Juniperus horizontalis</i> 'Plumosa' |
| <i>Cotoneaster</i> × <i>watereri</i> 'Autumn Fire' | <i>Juniperus horizontalis</i> 'Wapiti' |
| <i>Cytisus</i> × <i>beanii</i> | <i>Juniperus sabina</i> 'Tamariscifolia' |
| <i>Cytisus decumbens</i> | <i>Leiophyllum buxifolium</i> |
| <i>Cytisus purpureus</i> | <i>Mahonia repens</i> |
| <i>Daboecia cantabrica</i> | <i>Pachistima canbyi</i> |
| <i>Daphne cneorum</i> | <i>Pachysandra terminalis</i> |
| <i>Daphne</i> 'Leila Haines' | <i>Rosa multiflora</i> |
| <i>Erica carnea</i> | <i>Rosa rugosa</i> 'Max Graf' |
| <i>Euonymus fortunei</i> | <i>Vaccinium vitis-idaea minus</i> |
| <i>Forsythia</i> × <i>intermedia</i> 'Arnold Dwarf' | <i>Xanthorrhiza simplicissima</i> |

Shrubs 1 to 3 feet high

- Amorpha nana*
Andromeda glaucophylla
Andromeda polifolia
Aronia melanocarpa
Atraphaxis
Berberis buxifolia 'Nana'
Berberis candidula
Buxus microphylla
Calluna vulgaris
Caragana aurantiaca
Caryopteris × *clandonensis* 'Blue Mist'
Ceanothus americanus
Chaenomeles japonica
Cistus hybridus 'Silver Pink'
Cistus obtusifolius
Cornus hessei
Cornus stolonifera 'Kelseyi'
Cotoneaster adpressa
Cotoneaster conspicua 'Decora'
Cotoneaster horizontalis
Cotoneaster microphylla 'Cochleata'
Cytisus × *kewensis*
Cytisus purgans
Cytisus purpureus
Daphne × *burkwoodii*
Daphne collina
Daphne giraldii
Daphne mantensiana 'Manten'
Daphne mezereum
Erica carnea
Erica cinerea
Erica tetralix
Erica vagans
Euonymus nana
Fothergilla gardenii
Genista tinctoria
Hebe 'Autumn Glory'
Hedera helix 'Arborescens'
Hydrangea arborescens 'Grandiflora'
Hypericum hookerianum 'Hidcote'
Hypericum kalmianum
Hypericum 'Sungold'
Ilex crenata — selections
Jasminum beesianum
Juniperus — various
Kalmia angustifolia
Kalmia polifolia
Lavandula officinalis
Ledum groenlandicum
Mahonia aquifolium
Mahonia nervosa
Pernettya mucronata
Picea abies — dwarf selections
Pinus mugo 'Pumilio'
Potentilla fruticosa — selections
Rhododendron — various
Rhus aromatica
Rosa — various
Skimmia × *foremanii*
Spiraea albiflora
Spiraea × *bumalda* 'Anthony Waterer'
Spiraea menziesii 'Dropmore'
Spiraea 'Rosabella'
Spiraea 'Summersnow'
Symphoricarpos × *chenaultii*
Symphoricarpos 'Hancock'
Taxus cuspidata 'Nana'
Thuja occidentalis 'Little Champion'
Viburnum opulus 'Nanum'
Xanthorrhiza simplicissima

Shrubs 3 to 6 feet high

- Abelia* 'Edward Goucher'
Abelia grandiflora
Abeliophyllum distichum
Amelanchier humilis
Amorpha canescens
Artemisia abrotanum
Atriplex — various
Aucuba japonica 'Nana'
Berberis julianae
Berberis triacanthophora
Berberis verruculosa
Buxus sempervirens
Callicarpa japonica
Caragana brevifolia
Caragana sinica
Ceanothus — various
Chaenomeles — various
Chamaecyparis obtusa
Chamaedaphne calyculata
Chrysothamnus graveolens
Cistus × *hybridus*
Cistus laurifolius
Comptonia peregrina
Cornus alba 'Argenteo-marginata'
Cornus alba 'Spaethii'
Corylopsis — various
Cotoneaster acutifolia
Cotoneaster ambigua
Cotoneaster divaricata
Cytisus nigricans
Cytisus × *praecox*
Cytisus scoparius — selections
Daphne odora
Deutzia — various

Diervilla lonicera
Diervilla sessilifolia
Dirca palustris
Escallonia — various
Exochorda ‘The Bride’
Forsythia ovata ‘Tetragold’
Fothergilla monticola
Fuchsia magellanica
Gaultheria shallon
Hebe buxifolia
Hebe cupressoides
Hebe traversii
Hydrangea macrophylla
Hydrangea macrophylla ‘Intermedia’
Hydrangea quercifolia
Indigofera species
Itea virginica
Juniperus — various
Kalmia latifolia
Kerria japonica
Lespedeza japonica
Leucothoe fontanesiana
Ligustrum delavayanum
Lonicera — various
Mahonia aquifolium
Myrica gale
 × *Osmarea burkwoodii*
Pachistima myrsinites
Paeonia suffruticosa
Perovskia atriplicifolia
Philadelphus — various
Physocarpus bracteatus
Picea abies — selections
Picea omorika ‘Nana’
Pieris floribunda

Potentilla davurica — selections
Potentilla fructicosa — selections
Prunus glandulosa
Prunus laurocerasus ‘Otto Luyken’
Prunus laurocerasus ‘Zabeliana’
Prunus maritima
Prunus × *skinneri* ‘Baton Rouge’
Prunus tenella
Rhododendron — various
Rhodotypos scandens
Ribes alpinum
Ribes aureum
Robinia hispida
Rosa — various
Rosmarinus officinalis
Sarcococca humilis
Sarcococca ruscifolia
Senecio greyii
Skimmia japonica
Sorbaria sorbifolia
Spiraea — various
Stephanandra incisa
Symphoricarpos ‘Mother of Pearl’
Symphoricarpos orbiculatus
Tamarix odessana
Taxus baccata ‘Repandens’
Taxus canadensis
Taxus cuspidata — selections
Taxus × *hunnewelliana*
Thuja occidentalis — selections
Ulex europaeus
Viburnum — various
Weigela — various
Zenobia pulverulenta

Shrubs 6 to 10 feet high

Acanthopanax species
Acer palmatum — selections
Aesculus parviflora
Amelanchier alnifolia
Amorpha fruticosa
Arctostaphylos columbiana
Aronia arbutifolia
Aronia prunifolia
Artemesia tridentata
Aucuba japonica
Berberis darwinii
Berberis × *stenophylla*
Buddleia alternifolia
Buddleia davidii — selections
Calycanthus floridus
Camellia — various
Caragana arborescens ‘Lorbergii’
Caragana frutex
Carpenteria californica

Choisya ternata
Clethra alnifolia
Colutea persica
Cornus — various
Corylus americana
Corylus avellana ‘Contorta’
Corylus cornuta
Corylus maxima ‘Purpurea’
Cotinus ‘Royal Purple’
Cotoneaster acutifolia
Cotoneaster dielsiana
Cotoneaster franchetii
Cotoneaster lucida
Cotoneaster multiflora
Cotoneaster tomentosa
Cytisus battandieri
Deutzia × *lemoinei*
Deutzia ‘Montrose’
Deutzia scabra ‘Pride of Rochester’

Elaeagnus × *ebbingei*
Elaeagnus multiflora
Enkianthus campanulatus
Eucryphia glutinosa
Euonymus alata
Euonymus sachalinensis
 × *Fatsyhedera lizei*
Fatsia japonica
Forsythia — various
Fothergilla major
Fothergilla monticola
Garrya elliptica
Halimodendron halodendron
Hamamelis vernalis
Hibiscus syriacus
Hydrangea aspera sargentiana
Hydrangea paniculata 'Grandiflora'
Ilex aquifolium — selections
Ilex cornuta 'Burfordii'
Ilex opaca — selections
Ilex serrata
Ilex verticillata
Juniperus — various
Kolkwitzia amabilis
Lespedeza bicolor
Ligustrum — various
Lonicera — various
Lyonia ligustrina
Mahonia bealii
Malus sargentii
Myrica cerifera
Nandina domestica
Neillia sinensis
Nemopanthus mucronatus
Olearia haastii
Philadelphus — various
Phillyrea vilmoriniana
Physocarpus opulifolius
Picea abies 'Gregoryana Veitchii'
Picea abies 'Ohlendorffii'
Picea glauca albertiana 'Conica'
Pieris forrestii
Pieris japonica
Pinus mugo mughus
Pinus sylvestris 'Watereri'
Pittosporum tenuifolium
Pittosporum tobira
Prinsepia sinensis
Prunus × *cistena*
Prunus × *nigrella* 'Muckle'
Prunus tomentosa
Prunus triloba 'Multiplex'
Pyracantha — various
Rhododendron — various
Rhus glabra
Ribes sanguineum
Robinia kelseyi
Rosa — various
Rubus coreanus
Rubus deliciosus
Rubus odoratus
Salix gracilistyla
Salix purpurea 'Gracilis'
Sambucus nigra
Sambucus racemosa
Shepherdia canadensis
Sorbaria aitchisonii
Sorbus koehneana
Spartium junceum
Spiraea × *brachybotrys*
Stachyurus praecox
Syringa — various
Taxus baccata — selections
Taxus cuspidata — selections
Taxus × *media* — selections
Thuja occidentalis — selections
Tsuga canadensis 'Pendula'
Vaccinium ovatum
Viburnum — various
Vitex agnus-castus
Weigela 'Feerie'

Shrubs 10 to 15 feet high

Acer palmatum — selections
Amorpha fruticosa
Baccharis halimifolia
Camellia japonica — selections
Caragana arborescens
Ceanothus thyrsiflorus
Cephalanthus occidentalis
Cercis canadensis
Chamaecyparis pisifera — selections
Chionanthus virginicus
Clerodendrum trichotomum
Clethra acuminata
Corylus avellana
Cotinus coggygria
Cotoneaster frigida
Cotoneaster henryana
Cotoneaster salicifolia floccosa
Cotoneaster × *watereri* 'Cornubia'
Crataegus chrysoarpa
Crataegus × *mordenensis* 'Toba'
Crataegus succulenta
Elaeagnus commutata
Elaeagnus pungens
Elaeagnus umbellata
Eucryphia × *nymansensis*
Euonymus atropurpurea

Euonymus phellomana
Euonymus sachalinensis
Exochorda giraldii wilsonii
Ficus carica
Hamamelis virginiana
Hippophae rhamnoides
Holodiscus discolor ariaefolius
Hydrangea bretschneideri
Ilex — various
Juniperus — various
Laurus nobilis
Ligustrum amurense
Ligustrum vulgare
Lindera benzoin
Lonicera korolkowii 'Zabelii'
Lonicera maackii
Magnolia kobus stellata
Magnolia sinensis
Malus × *micromalus*
Osmanthus heterophyllus 'Illicifolius'

Parrotia persica
Photinia villosa
Rhododendron — various
Rosa setigera
Salix caprea
Salix × *erdingeri*
Sambucus canadensis 'Aurea'
Sambucus pubens
Shepherdia argentea
Stewartia ovata
Symplocos paniculata
Syringa — various
Tamarix parviflora
Tamarix pentandra
Taxus — selections
Thuja occidentalis — selections
Vaccinium corymbosum
Viburnum — various
Vitex negundo 'Heterophylla'

Shrubs over 15 feet high

Acer campestre
Acer circinatum
Acer ginnala
Acer spicatum
Acer tataricum
Alnus — species
Amelanchier canadensis
Amelanchier × *grandiflora*
Aralia elata
Aralia spinosa
Arbutus unedo
Caragana arborescens
Cercis chinensis
Cercis siliquastrum
Chamaecyparis lawsoniana — selections
Chamaecyparis pisifera — selections
Cornus alternifolia
Cornus mas
Cornus officinalis
Crataegus crus-gallii
Crataegus phaenopyrum
Elaeagnus angustifolia
Euonymus europaea
Euonymus sanguinea
Ilex aquifolium — selections
Ilex opaca — selections

Juniperus virginiana
Magnolia — various
Malus — various
Photinia serrulata
Poncirus trifoliata
Prunus cerasifera 'Atropurpurea'
Prunus laurocerasus
Prunus lusitanica
Prunus padus
Prunus persica
Prunus virginiana 'Shubert'
Rhododendron — various
Salix acutifolia
Salix alba 'Chermesina'
Salix discolor
Salix pentandra
Stewartia pseudo-camellia
Stranvaesia davidiana
Syringa amurensis japonica
Taxus baccata 'Fastigiata'
Taxus cuspidata 'Capitata'
Taxus × *media* 'Hatfieldii'
Thuja occidentalis
Viburnum lentago
Viburnum sieboldii
Viburnum tinus

RECOMMENDED PLANTS

The following shrubs have been selected for their superior landscape value in the various areas of Canada. The climate in which they may be grown ranges from that of the mild Vancouver-Victoria region to the intense cold of Canada's North. Some shrubs may not seem worth including, but many of little value in certain areas may be very useful in other parts of the country because of their hardiness or other special adaptive features.

Extensive botanical descriptions have not been attempted. Only brief horticultural accounts pointing out the specific merits, attractions or uses are given.

Also included are the scientific name, and common name, if there is one, and the plant's height and hardiness. The names are in accordance with the international codes of botanical and horticultural nomenclature. Many of the names have been checked with the draft copy of the new *Hortus Third*, through the cooperation of the staff of the Bailey Hortorium, Cornell University, Ithaca, N.Y.

In addition to the scientific and common names, many cultivar names are also given. A cultivar is a plant that has originated and persisted under cultivation. These are plants that in the past have been known as varieties, forms, etc. In the following section cultivars are in single quotation marks, for example, 'Pfitzeriana,' which is a cultivar of *Juniperus chinensis*. Cultivar names are listed under the species to which they belong, except when they cannot be assigned to a particular species, as in *Malus* 'Almey.'

The term variety is now usually reserved for a botanical division of a species. In this book varieties are set in the same type as the species name. For example, in *Euonymus fortunei vegeta*, *vegeta* is a variety of *Euonymus fortunei*.

Hybrids are treated as species and are designated by the sign \times between the generic name and the specific epithet, as in *Spiraea* \times *vanhouttei*, the Vanhoutte spirea. In most cases, hybrids, like cultivars, must be propagated by cuttings, grafts, or other vegetative means.

The heights given are the maximum usually expected under ideal cultural conditions. For many, a range is given, as "8-15 feet" for *Lonicera maackii*. The minimum height is the one to be expected in areas where the plant is growing at the limit of its hardiness range, which for *L. maackii* is the prairies. The maximum is the height to which the plant will grow in more favorable climates. In a few cases noted in the text, as, for example, in *Caragana arborescens*, the reverse is true, especially with a plant that produces its best growth in areas of low rainfall.

Hardiness is one of the most important factors to consider in selecting shrubs for any particular area. New shrubs or those unknown to a gardener present a

problem if their survival is uncertain in the particular area under consideration. All shrubs in this book have been given a hardiness rating based on the experience of horticulturists at the Plant Research Institute and others across Canada. Some of these ratings are not final; further testing will undoubtedly show that some plants can be grown in zones colder than the one indicated.

Many factors affect the hardiness of a plant in a given area. The minimum temperature during the winter is the most important element in plant survival. Other important factors are the length of the frost-free period, summer rainfall, snow cover and wind. Some low-growing tender shrubs, such as flowering quinces, mahonia, azaleas and rhododendrons, survive in areas with a more severe climate than that indicated for them if there is a dependable deep snow cover throughout the coldest months.



The fall color of *Acer ginnala*.

Soil also influences plant survival, but soil constituents can often be amended to overcome a difficulty. Low rainfall, too, can be counteracted by irrigation, but this is often laborious. Very little can be done with an overabundance of rain or with a very dry atmosphere. The latter, more than low temperatures, is often the cause of failure in growing plants such as rhododendrons.

A plant hardiness zone map for the populated areas of Canada is included at the end of this book.* For easy reference, the map is divided into two foldout sections, one for Eastern Canada and one for Western Canada. Readers should locate

*This map is also available separately from the Information Division, Canada Department of Agriculture, Ottawa, Ontario.

their own area on the map and so establish the zones in which a shrub is to be grown. Each shrub has a zone rating, which indicates that the shrub can be grown in that zone and in zones that are milder. An exception is made for rhododendron species and cultivars, for which the familiar hardiness ratings of the American Rhododendron Society are used. An explanation of these ratings is given on page 127. Zones have sometimes been divided into *a* and *b* sections, the *b* area representing the mildest part of the zone.

Small areas with microclimates often exist within a zone. These are colder or milder than the surrounding area. Experience will help to establish where these are. They are usually too small to locate on the hardiness map or have not been recorded. Sharp changes in elevation, as found in mountainous or hilly regions, will also result in a change from one zone to another over too short a distance to be accurately indicated on the map.

Indicator Shrubs

The following are representative plants listed under the coldest zone in which they will normally survive and grow. Such plants may serve as indicators of what can be grown in each zone.

Zone 9a	<i>Cryptomeria japonica</i> 'Elegans' <i>Laurus nobilis</i> <i>Pieris forrestii</i>
Zone 8	<i>Aucuba japonica</i> <i>Pernettya mucronata</i> <i>Viburnum tinus</i>
Zone 7	<i>Buxus sempervirens</i> <i>Hypericum hookerianum</i> 'Hidcote' <i>Prunus laurocerasus</i>
Zone 6	<i>Acer palmatum</i> <i>Deutzia gracilis</i> <i>Forsythia</i> × <i>intermedia</i> 'Spectabilis'
Zone 5	<i>Cotinus coggygria</i> <i>Forsythia ovata</i> <i>Viburnum carlesii</i>
Zone 4	<i>Hydrangea paniculata</i> 'Grandiflora' <i>Philadelphus</i> 'Bouquet Blanc' <i>Taxus cuspidata</i>
Zone 3	<i>Euonymus alata</i> <i>Rhus typhina</i> <i>Spiraea</i> × <i>arguta</i> *
Zone 2	<i>Caragana arborescens</i> <i>Cornus alba</i> 'Sibirica' <i>Cotoneaster integerrima</i>
Zone 1	<i>Amelanchier alnifolia</i> <i>Cotoneaster lucida</i> <i>Pinus mugo mughus</i>

**Spiraea* × *arguta* is actually preferable to *Spiraea* × *vanhouttei*, which is given as an indicator on the map included with this book.

ABELIA

Abelia

Attractive shrubs with deciduous or evergreen simple leaves and numerous white or pink flowers in summer. Best when planted in a sunny yet protected location.

Abelia 'Edward Goucher' 5' Zone 7

Semievergreen with lavender-purple flowers from July to September.

Abelia × **grandiflora** 3-5' Zone 7 Glossy Abelia

The hardiest abelia, valued for its excellent foliage and intense pink flowers from July to September. Suitable for hedges in areas as mild as coastal British Columbia, where it is completely hardy. Grows best in a warm, sunny location.

ABELIOPHYLLUM

Abelialeaf

Abeliophyllum distichum 5' Zone 5b Korean Abelialeaf

An interesting shrub noted for its white flowers, which appear in dense clusters in mid-April, at the same time that forsythias are in bloom.

ACANTHOPANAX

Medium-sized shrubs, some having prickly stems, with compound leaves that give a subtropical effect. Some species have shiny black fruits. Withstand shade and city conditions.

Acanthopanax senticosus 6-10' Zone 3 Five-leaved Aralia

A tall, upright, foliage shrub.

Acanthopanax sessiliflorus 7' Zone 2

An arching shrub, lower growing than *Acanthopanax senticosus* and hardy on the prairies.

Acanthopanax sieboldianus 6-9' Zone 5

Most ornamental of the acanthopanax species. Ideal for shady areas.

ACER

Maple

Usually large trees, but several species are shrubby.

Acer campestre 20-30' Zone 5b Hedge Maple

Vigorous large shrub or treelike shrub. Ideal as a clipped hedge. Not dependably hardy at Ottawa.

Acer circinatum 10-30' Zone 6 Vine Maple

Shrublike maple, native to British Columbia. Good red to orange fall color. Useful in areas where native.

Acer ginnala 10-20' Zone 2 Amur Maple

Vigorous treelike shrub. Attractive red fruits in summer, followed by brilliant scarlet fall color.

Acer palmatum 5-15' Zone 6 Japanese Maple

Low, shrubby maple. Many selections with leaves variously dissected and with leaf colors green to red. Care should be taken to see that plants obtained are grafted, true to name, and not seedlings.

SELECTIONS

'Atropurpureum'—Foliage brilliant purplish red throughout the season.

dissectum—Green threadlike leaves.

'Ornatum'—Only cultivar hardy at Ottawa. Leaves finely cut, deep red, turning to bronze green in midsummer. Slow growing.

'Osakazuki'—A form with bright-scarlet leaves in autumn.

'Rubrum'—Leaves deep red, later turning nearly green.

Acer spicatum 15-25' Zone 2 Mountain Maple

Shrubby tree, native from Labrador to Saskatchewan. Best in cool, damp, shady places. Has showy greenish-yellow flowers in upright spikes and bright-red autumn color.

Acer tataricum 15-20' Zone 2b Tatarian Maple

Shrubby small tree with bright-red fall color.

AESCULUS

Buckeye

Aesculus parviflora 8-12' Zone 4b Bottlebrush Buckeye

A large, moundlike shrub, spreading slowly by suckers. Valued for its white flowers in large pyramidal clusters, which appear in July when few shrubs are in flower.



Aesculus parviflora.

ALNUS

10-40'

Alder

Several shrubby species are native to Canada, *Alnus rugosa* and *A. crispa* in Eastern Canada, and *A. sinuata* and *A. tenuifolia* in the West. Under ideal conditions these species may reach the size of small trees. These alders, with their coarse foliage, are suitable only for use in very wet, boggy or shady places where most other shrubs do not survive.

Alnus glutinosa 'Imperialis' 15-20' Zone 4b Royal Alder
A very distinct alder with very deeply cut leaves. Attractive when a number are planted in groups in wet, shady areas where other shrubs do not grow.

AMELANCHIER Serviceberry, Shadbush
Mostly large shrubs, several of which are native to Canada. Interesting because of their abundant white flowers in early spring, preceding the foliage. Fruits are red to black, and some are edible. Certain species are noted for their vivid yellow to orange fall color.

Amelanchier alnifolia 6-10' Zone 1 Saskatoon, Serviceberry
Native to Western Canada. A very variable species adapted to a wide range of cultural conditions. The pure-white flowers appear in early May and they are followed by blue-black edible fruits.

SELECTIONS

'Pembina'—A selection with large, fairly sweet, full-flavored fruits.

'Smoky'—A sweet-fruited selection from the Experimental Farm, Beaverlodge, Alberta.

Amelanchier canadensis 25' Zone 4 Shadblow
Native to Canada only in Nova Scotia. Plants sold as shadblows are often not true *Amelanchier canadensis* but *A. laevis*. The masses of white flowers in early spring are short-lived. Brilliant yellow to red autumn color.

Amelanchier × **grandiflora** 20' Zone 4 Apple Serviceberry
A hybrid of *Amelanchier canadensis* and *A. laevis*. A very attractive, large and vigorous flowering shrub. The flowers are the largest of all amelanchiers but they last only a few days. They are soon followed by salmon-pink berries, which, even before fully ripe, attract many birds.

Amelanchier humilis 3-5' Zone 5b Low Serviceberry
A low shrub, spreading by stolons and similar to *Amelanchier stolonifera*. Flowers in dense clusters, followed by sweet, black fruit.

AMORPHA Indigo
Several low-growing species, all native to North America. Members of pea family, with spikes of blue or purplish-blue flowers in early summer.

Amorpha canescens 4' Zone 2b Leadplant
Subshrubby species with purplish-blue flowers and orange anthers. Its silvery-gray foliage provides a striking contrast to other shrubs in the border. Grows well on poor, dry soils.

Amorpha fruticosa 2-10' Zone 2b False Indigo
Large, vigorous shrub suited only for hot, dry situations. Particularly useful on the prairies, where it grows only to two feet. Flowers purplish-blue in late June.

Amorpha nana 1-2' Zone 2b Dwarf Indigo
Highly desirable shrub for foundation planting. A dense, dwarf bush with very dainty, small pinnate foliage. Not presently known to be available in Canada.

ANDROMEDA Rosemary
These are low evergreen shrubs with hard-textured evergreen leaves and pink flowers. They require acid, boggy conditions to survive in cultivation. Native in northern Canada.

- | | | | |
|---|-----|--------|-----------------|
| Andromeda glaucophylla | 18" | Zone 2 | Downy Andromeda |
| More robust and less graceful than <i>Andromeda polifolia</i> . | | | |
| Andromeda polifolia | 12" | Zone 2 | Bog Rosemary |
| Attractive little evergreen shrub with pink flowers. | | | |

ARALIA

Shrubs of various sizes with large leaves that present a subtropical effect. The stems are clothed with long and very formidable spines, which can prove injurious if planted too near a pathway.

- | | | | |
|---------------------|-------|--------|-----------------------|
| Aralia elata | 5-25' | Zone 5 | Japanese Angelicatree |
|---------------------|-------|--------|-----------------------|

Although hardy at Ottawa, this species has reached only 8 feet after 50 years. A striking species worth planting in the shrub border.

- | | | | |
|-----------------------|--------|--------|----------------------|
| Aralia spinosa | 10-25' | Zone 6 | Devil's-walkingstick |
|-----------------------|--------|--------|----------------------|

A large shrub of unusual shape with several very spiny stems, long pinnate leaves and large terminal clusters of white flowers in August. Presents a decidedly exotic appearance and may be used to good advantage in a large garden.



Aralia elata in flower.

ARBUTUS

- | | | | |
|----------------------|--------|---------|-----------------|
| Arbutus unedo | 10-25' | Zone 8b | Strawberrytrees |
|----------------------|--------|---------|-----------------|

An interesting evergreen shrub, sometimes reaching tree size. Suitable for use only in the mildest parts of British Columbia. Orange-red strawberrylike fruits follow the flowers, which appear during the winter and remain for several months. The bright-red inner bark is attractive. Requires an acid soil, and a sunny location.

ARCTOSTAPHYLOS

Arctostaphylos alpina Zone 2 Black Bearberry

A low, arctic, ericaceous plant, suitable for use in a cool, boggy garden.

Arctostaphylos columbiana 8' Zone 7b Hairy Manzanita

A native of the milder areas of British Columbia. This evergreen shrub with gray-green foliage, red-brown bark, and clusters of shiny brown fruits should be used more often than it is, in sunny, well-drained sites in coastal British Columbia. Only small plants can be successfully moved.

Arctostaphylos uva-ursi Zone 1 Bearberry

A low evergreen ground cover native to the coldest parts of Canada. Ideal for use on very poor soils, rocky soils, and sandy slopes where few other plants grow. The pleasing pink flowers are followed by very conspicuous red berries. Easily propagated from seed, layers or softwood cuttings and should be much more widely used.



Winter foliage color of *Arctostaphylos uva-ursi*, the bearberry.

ARONIA

Chokeberry

A group of vigorous shrubs, native to North America, of particular interest for their neat, rosy or white flowers and conspicuous fruits.

Aronia arbutifolia 8' Zone 4b Red Chokeberry

A very elegant, vigorous shrub if pruned carefully. The white or reddish flowers are followed by large numbers of red fruits that often persist through the winter. 'Brilliantissima,' with brilliant red foliage in the autumn, is offered by some Canadian nurseries.

Aronia melanocarpa 3' Zone 4b Black Chokeberry

Ideal for naturalistic or woodland plantings. Has black fruit.

Columbia. The bamboos that can be grown in British Columbia are not always evergreen, as the stems and leaves may be killed during a cold winter. However, if the roots are protected the plants recover rapidly and put up new shoots. All bamboos require a deep, rich, moist soil and protection from winds. They should be mulched in the fall with a well-rotted manure or compost. For other bamboos see also *Phyllostachys*, *Pseudosasa*, and *Sasa*.

BERBERIS

Barberry

Evergreen and deciduous shrubs widely used for hedges and foundation planting. Many species, including the common barberry, *Berberis vulgaris*, act as alternate hosts for black stem rust of wheat and are being eradicated from wild areas and gardens. Other susceptible species, which should be removed, are *B. amurensis* and *B. poiretii* and the cultivars 'Cardinal', 'Humber Red' and 'Sheridan Red'. As of April 1, 1966, movement into and within Canada of all deciduous barberries including the popular Japanese barberry, *B. thunbergii*, has been banned to prevent the introduction of other new races of the black stem rust. Because of this, the planting of any deciduous barberries cannot now be recommended.

Only those evergreen barberries that are known to be immune are recommended here. These are hardy in the milder areas such as southern Ontario and parts of the Maritimes and British Columbia. Most have orange or yellow flowers followed by purple fruit.

Berberis buxifolia 'Nana' 2' Zone 6b Dwarf Magellan Barberry

A low-growing barberry, suitable for use as a small hedge.

Berberis candidula 2' Zone 6b Paleleaf Barberry

Another low-growing, evergreen barberry, with leaves distinctly paler underneath.

Berberis darwinii 4-7' Zone 7 Darwin Barberry

An attractive evergreen barberry for use in coastal British Columbia. The yellow flowers in pendant racemes are attractive in spring.

Berberis julianae 4-6' Zone 6b Wintergreen Barberry

One of the hardiest evergreen barberries, suitable for use in southern Ontario. The foliage is dense and leathery.

Berberis linearifolia 8' Zone 7b

A tall evergreen barberry for use in coastal British Columbia.

Berberis × stenophylla 8' Zone 6b Rosemary Barberry

Another tall graceful specimen barberry.

Berberis triacanthophora 4' Zone 6b Threespine Barberry

A low-growing dense barberry well armed with long, sharp spines.

Berberis verruculosa 4' Zone 6 Warty Barberry

A dense, compact barberry with leaves white underneath in contrast to the bright green of the upper side of the leaves. This species and *Berberis × hybridogagnepainii* 'Chenault' are probably the hardiest for use in southern Ontario. The Chenault barberry cannot be recommended, as it may carry black stem rust.

BRUCKENTHALIA

Bruckenthalia spiculifolia 10" Zone 7b Spike-heath

A low, evergreen heatherlike shrub with spikes of small pink flowers in June. Suitable for rock gardens in British Columbia where there is acid soil.

BUDDLEIA

Buddleia alternifolia 10' Zone 5 Fountain Buddleia

Hardest of the buddleias, with wide-spreading and arching branches. Produces numerous clusters of lilac-colored flowers along the branches in mid-June. As the blooms are borne on growth of the previous year, this buddleia should be pruned after flowering, and not in the spring when the others are pruned.



Buddleia alternifolia.

Buddleia davidii 5-8' Zone 5b Butterflybush

Kills to the ground each year in most of Canada, but can be grown successfully as a herbaceous plant. Produces spikes of flowers, slightly honey-scented, in many colors from August until frost.

SELECTIONS

'Burgundy'—Rich wine red.

'Charming'—Pink.

'Dubonnet'—Dark wine.

'Empire Blue'—Aster blue.

'Fascinating'—Soft orchid pink.

'Ile de France'—Dark purplish blue.

'Peace'—Pure white.

'Purple Prince'—Imperial purple.

'Royal Red'—Rich reddish purple.

'White Profusion'—White (3').

BUXUS

Boxwood

Compact broadleaf evergreen shrubs useful for foundation plantings and low hedges in the milder regions of Canada. Stand clipping very well.

Buxus microphylla 4' Zone 5 Littleleaf Box

The hardest of the boxwoods is the variety *koreana* of this species. It can survive temperatures as low as -30°F , but as it may be damaged by the weight of

heavy snow and by the winter sun and winds, it should be protected from these elements by a wooden or burlap screen. Best grown in shade or part shade in a soil that is not too wet.

SELECTIONS

The following are three new cultivars of the Korean boxwood that have been selected for color and hardiness in southern Ontario (Zone 6).

'Pin Cushion'—A low-growing flat type.

'Tall Boy'—An upright, more open form.

'Winter Beauty'—Forms a broad pyramid with small dark-green foliage.

Buxus sempervirens 5-10' Zone 7 English Box

Hardy in coastal British Columbia. Very good as a specimen, foundation or hedging plant. Many selections are cultivated.

SELECTIONS

'Broman'—A selection of 'Suffruticosa' and said to be hardy in the mildest parts of southern Ontario.

'Suffruticosa'—The true edging boxwood, ideal for very low hedges.

CALLICARPA

Callicarpa japonica 4' Zone 6b Japanese Beautyberry

An upright shrub of interest chiefly for its unusual purple fruits, which remain on the shrub for several weeks, including a period after the leaves have fallen. A vigorous spring pruning induces good growth and fruiting.

CALLUNA

Calluna vulgaris 18" Zone 6 Heather

The common heather of Great Britain with its many selections is hardy in the milder areas of Canada, especially when given its required soil conditions. The soil must be acid and of low fertility or the plants become leggy and die. The soil must not be allowed to dry out, but need not be boggy. A hard spring pruning and plenty of sun during the summer assure the best bloom. Properly grown heathers form dense mats only 6-12" high and their white to red flowers from August to November are very ornamental.

SELECTIONS

'Alba Plena'—Double, white, spreading habit.

'Atrorubens'—Deep crimson.

'Aurea'—Golden-yellow foliage.

'Camla'—Double, pink.

'County Wicklow'—Double, shell pink, vigorous grower.

'David Eason'—Deep red.

'H. E. Beale'—Double, pink, long spikes.

'J. H. Hamilton'—Double, salmon pink.

'Mrs. Ronald Gray'—Lavender-pink, prostrate habit.

'Nana'—Purple.

'Searlei'—White, late flowering.

'Searlei Aurea'—Golden foliage.

'Tib'—Double, crimson.

CALYCANTHUS

Calycanthus floridus 8' Zone 5 Carolina Allspice

A native of the southeastern United States, this shrub is hardy at Ottawa. Its reddish-brown flowers in May and glossy foliage, which is aromatic when crushed, are its chief merits.

CAMELLIA

Camellia

Fall- to spring-flowering evergreen shrubs, hardy only in the mildest parts of British Columbia but often planted in tubs and grown indoors during the winter in other areas. Flowers white to red. Growth is best in a rich, well-fertilized soil, with additional top dressing each year after flowering.

Camellia 'Apple Blossom' 10' Zone 8b

An attractive, single, pink and white hybrid.

Camellia 'Donation' 10' Zone 8b

A large-flowered, semidouble, pink hybrid.

Camellia japonica 10-15' Zone 8b Common Camellia

There are several hundred selections of this early spring-flowering species grown in various parts of the world. Ideal for shaded locations with a north or northwest exposure. Need good soil of pH 6.0 or less.

SELECTIONS

'Ake-bono'—Semidouble, deep rose pink.

'Amabilis'—Single, white.

'Are-jishi'—Dark salmon rose, peony form.

'Berenice Boddy'—Semidouble, light pink.

'Cheerful'—Double, light red.

'Daikagura'—Rose pink, blotched white, peony form.

'Donckelari'—Semidouble, rich red with white markings.

'Ecstasy'—Double, clear pink.

'Elegans'—Very large anemone form, carmine rose.

'Elisabeth'—Double white.

'Finlandia'—Semidouble, white.

'H. A. Downing'—Semidouble, rose red, veined dark red.

'Kishu-tsukasa'—Double, deep rose pink and white.

'Lady Clare'—Large semidouble, soft pink.

'Lady Vansittart'—Semidouble, white, striped with rose pink.

'La Reine'—Semidouble, rose crimson.

'Leucantha'—Semidouble, white.

'Mathotiana'—Large double, scarlet.

'Monjisu Red'—Double, solid cherry red.

'Nagasaki'—Large semidouble, rose pink marbled white.

'Prof. C. S. Sargent'—Dark red, peony form.

'Somegawa'—Large double, red striped pink.

'Tricolor'—Large semidouble, bright pink, white markings.

'Tricolor Red'—Large semidouble, red.

Camellia sasanqua 10' Zone 8b Sasanqua Camellia

The fall- and winter-flowering camellia with attractive, semidouble flowers. Best grown as a wall shrub. Flowers white to pink.



Camellia japonica 'Cheerful.'

SELECTIONS

'Kenko'—Large single, white flushed pink.

'Meigetsu'—Single, white, pink on edges.

'Mine-no-yuki'—Large, white, peony form.

'Togo-no-tzuki'—Very large single, white.

Camellia × williamsii 10' Zone 8b

A rather new group of hybrids with some of the best camellias.

SELECTIONS

'Mary Christian'—Single, deep clear pink.

'J. C. Williams'—Single, rose pink.

CARAGANA

Peashrub

A group of shrubs noted particularly for their attractive yellow flowers and for their ability to grow in poor soils and withstand very low temperatures.

Caragana arborescens 12-18' Zone 2 Siberian Peashrub

This rapid-growing plant makes an excellent screen or windbreak, especially on the prairies, where it reaches its maximum height. Main assets are hardiness and ability to withstand drought. It is a coarse shrub and there are many better alternatives for milder areas.

SELECTIONS

'Lorbergii'—A graceful form to 8 feet, more desirable for planting as a specimen shrub. Leaves deeply cut and fernlike. This cultivar is unusually floriferous and rarely sets seed.

'Pendula'—Weeping Peashrub. A selection grafted high on the species to form a pendulous standard.

Caragana aurantiaca 3' Zone 2 Pygmy Peashrub

This is the correct Latin name for the plants usually sold in Canada as *Caragana pygmaea*, a species not known to be in cultivation at present. The plants form a dense mound and are suitable for use as dwarf hedges. They are quite hardy on the prairies; however, they are very susceptible to spider mites in dry climates.

Caragana brevifolia 4' Zone 2 Short-leaved Caragana

A graceful, fine-leaved species, ideal for use as a dwarf, hardy hedge. As it is not troubled by spider mites, it makes a more attractive plant than the susceptible *Caragana aurantiaca*. The short-leaved caragana grows well on the dry prairies, but is not satisfactory in wet areas.

Caragana frutex 6-8' Zone 2 Shrubby Caragana

A densely branched, full shrub with darker green leaves than those of *Caragana arborescens*. This species is also drought- and cold-resistant and thrives in a variety of soils. This is a more ornamental shrub than *C. arborescens*. 'Globosa' is a new slow-growing, compact form, reaching 3 to 4 feet in height, and 30 inches in spread. Ideal for use as a low hedge.

Caragana sinica 4' Zone 4 Chinese Peashrub

A most ornamental species with rather thick dark-green, glossy leaves. The flowers, golden-yellow with a trace of bronze or rose and darkening with age, appear in early June and remain for three weeks.

CARPENTERIA

Carpenteria californica 7' Zone 9a Tree-anemone

An attractive tender evergreen for training on a sunny wall in the mildest areas of British Columbia. Produces clusters of roselike, white flowers, 2 to 3 inches across in June and July.

CARYOPTERIS

Caryopteris × clandonensis 3' Zone 6 Bluebeard

Late-flowering subshrubs of interest for their deep-blue flower spikes from August until frost. Require a severe pruning almost to the base in spring to keep them compact and to give the best bloom.

SELECTIONS

'Blue Mist'—With powdery-blue flowers.

'Heavenly Blue'—With darker blue flowers.

CEANOTHUS

New Jersey Tea, California Lilac

A group of evergreen and deciduous flowering shrubs noted for their profuse display of blue, pink and white flowers. Two species are native to Eastern Canada, and two to British Columbia, but these four are of little ornamental value, and are suited for use only in native gardens.

Ceanothus americanus 3' Zone 4b New Jersey Tea

Native to Ontario. Suited only to poor soils where better shrubs do not grow. Small white flowers in upright clusters in mid-June. *Ceanothus ovatus* is similar, but has a better, more dense habit of growth.

Ceanothus × delilianus 3-10' Zone 7b

Many favorite selections are included under this hybrid. Ideally suited to training on walls. They produce a profusion of flowers if pruned severely each year, preferably in late autumn in mild climates.

SELECTIONS

'Gloire de Versailles'—Pale blue.

'Henri Defosse'—Deepest blue.

Ceanothus gloriosus 6-12" Zone 8b Point Reyes Creeper

A low-growing species with hollylike, leathery leaves and lavender-blue flowers in late April. Useful as a ground cover in dry, sunny locations in coastal British Columbia.

Ceanothus × pallidus 2-4' Zone 7

SELECTIONS

'Carmen'—Rose.

'Marie Simon'—Pink.

Ceanothus thyrsiflorus 4-10' Zone 9a Blueblossom

Hardier than most evergreen ceanothus, this species does well trained on a wall in the mildest areas of British Columbia but could be replaced by *Ceanothus griseus*, a lower-growing species, less susceptible to scale. Flowers of both are an attractive rich blue. Other California species and new cultivars can be tried in the mildest parts of British Columbia.



Cercis canadensis 'Alba' in flower.

CEPHALANTHUS

Cephalanthus occidentalis 8-12' Zone 4b Buttonbush
Native in Eastern Canada, this shrub is suited only to use in wet soils. Produces its creamy-white blossoms in late July when shrubs in flower are few.

CERCIS

Redbud, Judastree

Small shrublike trees noted for their attractive display of small pealike flowers, which appear before the leaves in early spring.

Cercis canadensis 10-15' Zone 6 Redbud

This, the hardiest species, flowers at Ottawa after most winters. However, it appears to be much more tender when young. Because of this, newly planted specimens need protection and a protected location. Its masses of rosy-pink blooms all along the stems make it a truly showy shrub when in flower. The white-flowered cultivar 'Alba', occasionally seen in botanic gardens, and difficult to propagate, should be more widely planted.



Flowers of *Cercis canadensis*.

Cercis chinensis 15-25' Zone 7 Chinese Redbud

Not quite as hardy as the above species, but also valuable for its clusters of rosy-purple flowers.

Cercis siliquastrum 20' Zone 8 Judastree

Produces clusters of rosy-lilac flowers in May. Hardy only in the mildest parts of British Columbia.

CHAENOMELES

Flowering Quince

A group of low-growing, flowering shrubs, better known as cydonia or japonica. They are grown for their bright-colored flowers, which, however, are often hidden by the foliage.

Chaenomeles × californica 7' Zone 7b

These hybrids of *Chaenomeles cathayensis* and *C. × superba* are known as the California group. They are noted for the abundance, size and bright color of the

flowers. They are, however, not as hardy as the other flowering quinces and are of value only for coastal British Columbia. One cultivar, 'Clarke's Giant,' is noted for its large deep, bright-red flowers, which appear over an extended blooming period. However, its habit is somewhat straggly.

Chaenomeles japonica 3' Zone 5b Japanese Quince

This red-flowered species is lower growing than *Chaenomeles speciosa* and hardier as its low height allows for better snow cover. The variety *alpina* with orange flowers is probably the best. The plants are seldom over 12 inches high.

Chaenomeles speciosa 4' Zone 5b Flowering Quince

The many selections of this species have been more widely planted than those of any other. They were formerly used extensively as hedge plants but are used now mainly in foundation plantings or for training against a sunny wall. Often listed as *Chaenomeles lagenaria*.

SELECTIONS

'Nivalis'—White flowers.

'Rubra'—Deep-crimson flowers.

'Spitfire'—Upright growing, deep crimson-red flowers. Six feet.

Chaenomeles × superba 4-5' Zone 5b

Most of the better new cultivars are from this group, which originated as a hybrid between *Chaenomeles japonica* and *C. speciosa*.

SELECTIONS

'Coral Sea'—Pale coral-pink flowers.

'Crimson and Gold'—Flowers bright-red with a crimson center.

'Hollandia'—A taller cultivar to 6 feet, with scarlet-red flowers.

CHAMAECYPARIS

False Cypress

Usually large, cone-bearing, evergreen trees, but there are many dwarf cultivars. In Eastern Canada they do best when planted in a sheltered position with a well-drained, yet moist soil.

Chamaecyparis lawsoniana Zone 7b Lawson's False Cypress

Various selections are available. Hardy only in the mildest parts of Canada. As they are highly susceptible to phytophthora root rot, extensive use of Lawson selections cannot now be recommended.

SELECTIONS

'Allumii'—Scarab Cypress. Best of the bluish, conical types; ideal for foundation plantings.

'Ellwoodii'—Blue-green foliage; compact, columnar to 8 feet.

'Fletcheri'—Blue-green foliage; somewhat taller than the preceding.

'Lane'—Golden yellow; erect.

'Minima Glauca'—Blue-green, dwarf, globe form.

Chamaecyparis nootkatensis Zone 6 Nootka False Cypress

Larger conifer, native to coastal British Columbia. 'Compacta' is a dwarf compact type.

Chamaecyparis obtusa Zone 7b Hinoki False Cypress

Many dwarf types suited for use in rock gardens or foundation plantings.

SELECTIONS

'Crippsi'—A narrowly pyramidal type reaching 12 feet, foliage golden yellow.

'Nana'—A dark-green, dwarf type, very slow growing, to 15 inches across.

'Nana Gracilis'—An excellent slow-growing, dwarf, upright cultivar, suitable for rock gardens. Ultimate height 4 feet. Reasonably hardy in the mildest areas of southern Ontario.



Chionanthus virginicus in flower.

Chamaecyparis pisifera

Zone 4b

Sawara False Cypress

This species is a large tree and should not be used in foundation plantings. Even the cultivar 'Filifera' has reached 60 feet at Ottawa, and requires extensive pruning to keep it in bounds. The species does, however, make a good hedge.

SELECTIONS

'Filifera Aurea'—A dwarf globe form with golden thread foliage.

'Filifera Nana'—A dwarf form suited for use in foundation plantings.

'Plumosa'—Has reached 20 feet at Ottawa, so is too large for most foundation plantings.

'Plumosa Aurea'—A golden form, slower growing and more suited to use in foundation plantings.

'Squarrosa'—Zone 5. A form with fine feathery green foliage, which has reached a height of 20 feet at Ottawa. It is suited for use as a specimen plant but not for foundation plantings.

CHAMAEDAPHNE

Chamaedaphne calyculata 4' Zone 2 Leatherleaf

An evergreen shrub native to bogs of the Northern Hemisphere. Suited to rock gardens or bog gardens where it can be given acid soil with peat moss and leaf mold. Produces an abundance of white flowers each year.

CHIONANTHUS

Chionanthus virginicus 10-30' Zone 5b Fringetree

Attractive large shrub bearing a profusion of white flowers in loose panicles in early June. The sexes are separate, and plants of both are needed to obtain the clusters of dark-blue fruits. Does not leaf out until very late in the spring.

CHOISYA

Choisya ternata 6' Zone 9a Mexican Orange

Evergreen shrub with fragrant flowers and aromatic foliage. Stands only a few degrees of frost. Requires pruning to produce a nicely shaped plant. Hardy only in the mildest areas of British Columbia. Must not be watered during the growing season.

CHRYSOTHAMNUS

Chrysothamnus graveolens 5' Zone 3 Greenplume Rabbitbush

Suited to dry alkaline soils, which are needed to produce the showy display of yellow flowers in late summer.

Chrysothamnus nauseosus 3' Zone 7 Rubber Rabbitbush

Native to drier areas of British Columbia. Suited for use only in very dry places. Yellow flowers set off against the gray foliage.

CISTUS

Cistus × hybridus 5' Zone 9a White Rock-rose
A group of low-growing tender evergreen shrubs with showy white, pink to red flowers that resemble single roses. They prefer well-drained limestone soils with full sun. As they are not easy to move, only container-grown plants should be used. Most will stand very little frost, and can only be grown in the mildest areas of British Columbia.

Cistus × hybridus 5' Zone 9a White Rock-rose

Flowers white with a yellow flush at the base of the petals, in early summer. Also known as *Cistus* × *corbariensis*. 'Silver Pink' is a dwarf type to 2 feet, with delicate pink flowers and silver-gray foliage.

COLUTEA

Bladder-senna

Of use only in dry areas and poor soils where other plants do not flourish. However, it does flower in late summer and produces interesting bladderlike fruits.

Colutea arborescens 8-10' Zone 5 Common Bladder-senna

A vigorous shrub with yellow pealike flowers. Can be kept neat by pruning each year.

Colutea persica 7' Zone 5 Persian Bladder-senna

Smaller shrub than the preceding and much neater in habit. Flowers yellow; leaves glaucous blue.

COMPTONIA

Comptonia peregrina 4' Zone 2 Sweet-fern

Reported to be hard to transplant, this attractive shrub, native to Eastern Canada, has survived moving at Ottawa when given a moist peaty soil, free of lime. A graceful shrub with leaves much like a fern, and a fragrance similar to that of bay leaves.

CORNUS

Dogwood

A group of shrubs attractive at more than one season of the year. Although the flower clusters are not individually attractive, they often give a pleasing mass effect. Many dogwoods have colorful fruit, most have very good fall leaf color, and several have very good twig coloration during the winter.

Cornus alba 8' Zone 2 Tatarian Dogwood

A large deciduous shrub, quite thick and of no particular merit except possibly for screening purposes.

SELECTIONS

'Argenteo-marginata'—Variegated Dogwood. Often listed under the name 'Elegantissima'. It is one of the most effective shrubs with variegated leaves. This selection is not as vigorous as the species and reaches only 6 feet, but it grows in almost any type of soil.

'Coral Beauty'—A new cultivar with brilliant red winter twigs.

'Sibirica'—Siberian Dogwood. Much more ornamental than the species, as it does not grow as rampant and has very vivid red bark, which is quite showy in the winter.

'Spaethii'—Spaeth's Cornel. A yellow-variegated selection often considered the best of all yellow-variegated shrubs; has vivid red bark, especially showy in winter.

Cornus alternifolia 15-30' Zone 3b Pagoda Dogwood

Often a small tree. Attractive with its horizontal branches, which form flat spreading tiers. It has blue-black fruits on red stems, and interesting striped bark.

Cornus amomum 9' Zone 4b Silky Dogwood

Native in Eastern Canada. Of value only for use in naturalistic gardens.

Cornus hessei 18" Zone 5 Hesse Dogwood

Valuable because of its neat, dwarf habit and very dark green leaves. Extremely slow growing, an invaluable plant for use in foundation planting.

Cornus mas 10-24' Zone 5b Cornelian-cherry

A large, sturdy shrub, ideal for use as a specimen plant or in a large shrub border. It is one of the earliest shrubs to flower in the spring, the flowers appearing



Winter twigs of *Cornus alba* 'Coral Beauty.'

in early April before the leaves. The fruits are edible, but they provide no ornamental interest as they are hidden by the foliage. This species is not reliably hardy at Ottawa.

Cornus officinalis 10-25' Zone 6 Japanese Cornel

Similar to *Cornus mas*, but considered superior because of its exfoliating bark.

Cornus racemosa 6-10' Zone 2b Gray Dogwood

A vigorous native shrub, suitable for screening or for use as a large ground cover. Withstands severe pruning, so can readily be pruned to keep within bounds. Has gray bark and red-stemmed white fruit.

Cornus rugosa 10' Zone 3 Roundleaf Dogwood

A large shrub or small tree, with showy trusses of white flowers followed by light-blue fruits.

Cornus stolonifera 7' Zone 1b Red Osier Dogwood

Particularly valued for its brilliant red twigs in winter. As it spreads by stolons, it is especially valuable in erosion control.

SELECTIONS

'Flaviramea'—Attractive in winter with its yellow twigs.

'Kelsey' (Zone 4b) — A dwarf type reaching only 24 inches.

CORYLOPSIS

Corylopsis pauciflora 6' Zone 7b Winter-hazel

A most delightful early spring flowering shrub with light-yellow bell flowers in March or April. It grows best in a soil of peat and sand. Hardy only in the mild areas of British Columbia. Other species of interest are *Corylopsis glabrescens*, *C. sinensis* and *C. spicata*, the first being hardy in the mildest areas of southern Ontario.

CORYLUS

Hazel

Large shrubs planted chiefly for their edible nuts.

Corylus americana 10' Zone 2b American Hazel

Native from Saskatchewan to southern Ontario, this species is planted mainly as food for wildlife.

Corylus avellana 15' Zone 5 European Hazel

A large shrub of interest chiefly for its slender pendulous catkins, which burst into soft-yellow cascades in the spring, and for its edible nuts. The cultivar 'Contorta,' the corkscrew hazel, is an unusual shrub to 8 feet with its branches curiously curled and twisted. The selection 'Fusco-rubra' is not as attractive as *Corylus maxima* 'Purpurea.'

Corylus cornuta 10' Zone 2b Beaked Hazel

A hazel native in Eastern Canada and Manitoba, and of interest for naturalizing only.

Corylus maxima 'Purpurea' 10' Zone 6 Purple Hazel

A tall shrub with attractive purple foliage, which is brought out best when grown in full sun.

COTINUS

Smoketree

Cotinus coggygria 12' Zone 5 Smoketree

This large shrub is attractive because of the smokelike effect created by the pink hairs formed on the fruit stalks. Should be more widely grown, especially its selec-

tions, as it does well in most soils and requires no special care. The cultivar 'Purpleus' has young leaves and fruiting bloom that are purple. This species is often incorrectly listed as *Rhus cotinus*.

Cotinus 'Royal Purple' 8' Zone 5

Flowers and "bloom" are a deep purple-black. A superb new selection.

COTONEASTER

Cotoneaster

Shrubs of very diverse habit, ranging from the prostrate species, *Cotoneaster dammeri*, to large species 15 feet high. They are valued chiefly for their foliage and bright berries that last well into the winter. Best grown in full sun.

Cotoneaster acutifolia 4-10' Zone 2 Peking Cotoneaster

A large shrub with arching branches and black fruits in the fall.



Cotinus coggygria, the smoketree.

Cotoneaster adpressa 2' Zone 4b Creeping Rockspray

A most attractive shrub for planting where a dwarf close-set shrub is desired, in such places as the front of foundation plantings or in the rock garden. Short rigid branches, small green leaves and vivid red berries make this a useful species. *Praecox* is a slightly more vigorous variety, handsome and ornamental with cranberrylike fruits from August to November.

Cotoneaster ambigua 6' Zone 5

Has a distinctive vase shape. Fruit black.

- Cotoneaster bullata** 'Floribunda' 6' Zone 6 Vilmorin Cotoneaster
In fruit, the most brilliant scarlet of all cotoneasters. This selection has larger clusters of fruits than the species and leaves 1½ to 3 inches long.
- Cotoneaster conspicua decora** 2-3' Zone 7 Necklace Cotoneaster
A semiprostrate type with short ascending branches, small evergreen leaves, and brilliant scarlet berries that remain attractive well into winter. A good ground cover.
- Cotoneaster dammeri** Zone 4 Bearberry Cotoneaster
A prostrate shrub with slender stems that trail close to the ground. Quite useful as an evergreen ground cover and in the rock garden. Fruits are bright red. 'Skogholm' is a more vigorous selection reaching 15 inches and covering an area very rapidly.
- Cotoneaster dielsiana** 8' Zone 3 Diel's Cotoneaster
An exceedingly graceful shrub with arching branches and red fruits in fall. Ideal as a specimen plant or for foundation planting.
- Cotoneaster divaricata** 6' Zone 5 Spreading Cotoneaster
Similar to the preceding, but not quite as good a specimen plant.
- Cotoneaster franchetii** 5-10' Zone 7 Franchet Cotoneaster
A large half-evergreen shrub with grayish foliage and attractive coral-red fruits in fall. Becomes straggly in rich soil.
- Cotoneaster frigida** 12-18' Zone 8 Himalayan Cotoneaster
The largest of the cotoneasters. Hardy in mildest areas only. Has bright-red fruits in large conspicuous clusters.
- Cotoneaster henryana** 12' Zone 8 Henry Cotoneaster
A graceful shrub with arching branches, half-evergreen foliage and red fruits in fall. The dark-green narrow leaves are 3 to 4 inches long.
- Cotoneaster horizontalis** 3' Zone 6 Rockspray
An ideal plant for most small gardens. Very attractive where its branches can rest against a wall or in a rock garden against rocks. Has bright-red berries in fall.
- Cotoneaster integerrima** 3-6' Zone 2 European Cotoneaster
A very hardy cotoneaster, more spreading than *Cotoneaster acutifolia*. This species has grayish-green foliage and bright-red fruits that are retained well into the winter. A good shrub for foundation planting.
- Cotoneaster** 'Lofast' 8" Zone 6
A new low-growing cultivar, which roots as it spreads. Ideal for covering banks.
- Cotoneaster lucida** 5-9' Zone 1 Hedge Cotoneaster
One of the best black-fruited cotoneasters. Its dense bushy habit and glossy green leaves make this species a good hedge plant.
- Cotoneaster microphylla** 'Cochleata' 2' Zone 7b Small-leaved Cotoneaster
This is the smallest-leaved cotoneaster. It is valuable for use in rock gardens and in the front of foundation plantings. Fruits red.
- Cotoneaster multiflora** 8' Zone 5b Showy Cotoneaster
The only cotoneaster attractive in flower as well as in fruit. Has a very wide spreading habit and red fruits.
- Cotoneaster salicifolia floccosa** 10-15' Zone 7 Willowleaf Cotoneaster
This plant forms a very graceful shrub with long pendulous branches and highly colored large red fruits. It is half-evergreen in cold areas but evergreen in the mildest areas.

Cotoneaster tomentosa 9' Zone 4b

An attractive shrub with arching branches, round leaves, woolly beneath, and pink flowers followed by large dark-red fruit that start to color up in August.

Cotoneaster × watereri 12' Zone 8

A number of very useful selections belong to this hybrid species.

SELECTIONS

'Autumn Fire'—Has large willowlike leaves, and large clusters of red fruits in autumn; its branches take root and form an evergreen ground cover about 18 inches high.

'Cornubia'—Vigorous upright evergreen shrub with large clusters of bright-red berries.

'Pendula'—Vigorous shrub, or standard, with pendulous branches.

CRATAEGUS

Hawthorn

Small spiny trees or shrubs, many species of which are native to North America. Some have attractive white or pink flowers, followed by showy bright-red fruits that often remain on the stems well into the winter. Some make interesting small street trees. A few are quite hardy and have some merit for use as large shrubs or small trees in the colder areas of Canada. Hawthorns are, however, often attacked by fire blight, also by juniper rust if planted near junipers.

Crataegus chrysoarpa 6-15' Zone 2 Fireberry

A dense upright shrub or small tree with shiny, dark-green leaves and abundant white flowers followed by masses of bright-red fruits. Very hardy.

Crataegus crus-galli 10-25' Zone 2b Cockspur Hawthorn

A small tree, or a large shrub in the colder areas. Produces a good display of white flowers in mid-June and bright-red fruits in the fall. Useful as a hedge.

Crataegus × mordenensis 'Toba' 15' Zone 3

A new hybrid originated at Morden, Manitoba. Has pale-pink, double flowers, darkening with age, and bright-red fruits that persist well into the winter. Can be grown either as a small tree or a large shrub.

Crataegus phaenopyrum 15-25' Zone 5 Washington Hawthorn

A good small street tree, or large shrub if grown with several stems. Its scarlet fruits and scarlet and orange leaves in the autumn are very colorful.

Crataegus succulenta 15' Zone 2 Fleshy Hawthorn

An attractive upright species with large bright-red, fleshy fruits. Very hardy.

CRYPTOMERIA

Cryptomeria japonica 'Elegans' 12' Zone 9a

An attractive conifer with a bushy habit. The foliage is a feathery light green, turning to a deep rosy red in autumn. For use only in the mildest areas of British Columbia but can be expected to kill back when the temperatures go lower than 10° F.

Cryptomeria japonica 'Jindai-sugi' 7' Zone 7

An attractive, compact, dwarf bush, dense and flat-topped. Foliage a rich green throughout the year.



Cotoneaster horizontalis in fruit.

CYTISUS

Broom

An interesting group of showy shrubs that flower freely each year even in the poorest, dry sandy soils. As they are difficult to transplant, only container-grown plants should be used. Flowers pealike.

Cytisus albus 18" Zone 7 Portuguese Broom

The only white-flowered, low-growing broom. Hardy to zero temperatures.

Cytisus battandieri 10' Zone 7 Moroccan Broom

A tall shrub with gray leaves having a silky sheen. The bright-yellow flowers appear in erect 5-inch racemes in July.

Cytisus × beanii 'Golden Carpet' 12" Zone 5 Golden Carpet Broom

This selection, described here for the first time, is much hardier than *Cytisus × beanii* (Zone 7) and has a more compact habit and deeper yellow flowers. Its masses of golden-yellow flowers in late May or early June make it one of the showiest



Cytisus × beanii 'Golden Carpet' in flower.

brooms at Ottawa. Because it forms a mass 5 feet in diameter and only 1 foot high, it is useful for planting as a ground cover on sunny sandy slopes or banks.

Cytisus decumbens 12" Zone 2 Prostrate Broom

A prostrate shrub covered with yellow flowers in late spring. Ideal for the rock garden.

Cytisus 'Hollandia' 6' Zone 6b

A shrub with a bushy upright habit; flowers purplish-red with pink shades. *Cytisus* 'Zeelandia' has lilac-pink flowers with reddish wings and is not quite as hardy.

Cytisus × kewensis 18" Zone 7

A low-growing, spreading broom with sulphur-yellow flowers in May. Ideal for large areas in the rock garden or for trailing over walls.

Cytisus nigricans 6' Zone 3b Spike Broom

One of the most striking of all shrubs in the Plant Research Institute Arboretum. It is covered in July with long terminal racemes of lemon-yellow flowers. If not killed back by low temperatures, this plant should be pruned back hard during late winter.

Cytisus × praecox 5' Zone 6 Warminster Broom

A beautiful shrub with sulphur-yellow flowers produced in abundance in late May. Not reliably hardy at Ottawa.

SELECTIONS

'Albus'—White flowers.

'Allgold'—A new selection with uniform bright golden-yellow flowers.



Cytisus nigricans in flower.

Cytisus purgans 3' Zone 6 Provence Broom

A shrub of dense habit with upright branches. Has deep golden-yellow flowers in mid-May. Prefers a sunny location.

Cytisus purpureus 18" Zone 5b Purple Broom

Produces a mass of purple flowers in May. Ideal as a ground cover, or as a specimen in front of the foundation planting.

Cytisus scoparius 6' Zone 7b Scotch Broom

This, the most common broom, native to Europe and a naturalized pest in British Columbia, has attractive yellow flowers in May, and green stems in winter.

SELECTIONS

- 'Burkwoodii'—Carmine with brown-red wings.
- 'Daisy Hill Splendens'—Cream, carmine wings.
- 'Dragonfly'—Deep yellow with brown wings.
- 'Golden Sunlight'—Large bright-yellow flowers; spreading habit.
- 'Goldfinch'—Cream with dark-red wings, golden keel.
- 'Jubilee'—Red.
- 'Killarney Salmon'—Cream with salmon-pink wings.
- 'Maria Burkwood'—Light rose, red wings.
- 'Moonlight'—Sulphur-yellow flowers.
- 'Newry Gold'—Deepest golden yellow, upright habit.
- 'Queen Mary'—Flowers brown and red.
- 'Red Wings'—Deep velvety-red flowers.



Cytisus × *kewensis* in flower and *Cotoneaster microphylla* 'Cochleata,' draped over a wall in Victoria, British Columbia.

DABOECIA

Daboecia cantabrica 18" Zone 7b Irish Heath

Small, ericaceous shrub, attractive with its tiny, bright, white, pink or purple flowers, which appear throughout the summer. Best in a rock garden with a peaty soil and with some winter protection.

SELECTIONS

- 'Alba'—White.
- 'Atropurpurea'—Purple.
- 'Pallida'—Rose pink.

DAPHNE

Daphne

Small, attractive shrubs with fragrant flowers produced in terminal heads or axillary clusters. Most require a soil with abundant lime.

Daphne × burkwoodii 3' Zone 5 Burkwood's Daphne

Evergreen of dense, rounded habit, with tubular, fragrant flowers borne in terminal clusters in early June. The white flowers turn pink with age. Grows easily on its own roots and should not require grafting. The cultivar 'Silveredge' has variegated leaves; the taller 'Somerset' has mauve-pink flowers.

Daphne cneorum 12" Zone 2b Rose Daphne

A very precise evergreen trailing shrub, very useful as a ground cover. It has rosy-pink flowers that cover the entire plant. Needs snow cover on the Prairies.

Daphne collina 18" Zone 7b

A dwarf rounded shrub with dark glossy leaves and a profusion of fragrant pink flowers in spring.

Daphne giraldii 2' Zone 2b Giralddi Daphne

One of the hardiest, this species has slightly fragrant, yellow flowers in late May.

Daphne 'Leila Haines' 6" Zone 7

A new cultivar similar to *Daphne cneorum* but more compact, with darker foliage and a mass of deep-rose flowers in early spring.

Daphne × mantensiana 'Manten' 2' Zone 6b Manten's Daphne

An attractive evergreen daphne hybrid developed in a British Columbia nursery. This cultivar has fragrant, orchid-purple flowers in late spring and again from August until the first frosts.

Daphne mezereum 3' Zone 3 February Daphne

The earliest shrub to flower at Ottawa. It is an attractive, erect-branched shrub with purplish or violet flowers produced all around the stems in early April. As its vivid red fruits are poisonous, small children should be kept away from them. The cultivar 'Alba' is a more vigorous plant with glistening white flowers.

Daphne odora 3-4' Zone 8 Winter Daphne

A very fragrant early spring blooming daphne with rosy-purple flowers; foliage evergreen. Satisfactory only in the mildest areas of British Columbia.

DEUTZIA

Deutzia

Asiatic shrubs grown chiefly for their spring flowers, as they have no ornamental fruits and lack good autumn color. Deutzias should be selected for hardiness, profusion of bloom, shape and height of the plant. They should be pruned each year to keep them in good condition. Flowers are mostly white, although some have a touch of pink.

Deutzia gracilis 5' Zone 6 Slender Deutzia

Valuable for its dense, compact habit, slender arching branches, and good show of white flowers in late May.

Deutzia × hybrida 'Mont Rose' 7' Zone 6b

New showy hybrid with mauve-pink flowers.

Deutzia × kalmiaeflora 6' Zone 5b Kalmia Deutzia

Flowers white, carmine outside.

Deutzia × lemoinei 7' Zone 5 Lemoine Deutzia

One of the hardiest; flowers every year at Ottawa. Flowers white. 'Compacta' is more compact and dwarf.

Deutzia × *magnifica* 6' Zone 6 Showy Deutzia
Double white flowers in mid-June.

Deutzia parviflora 6' Zone 4 Mongolian Deutzia
Very hardy, this species bears its flowers in flat clusters, making a very good alternative to the spireas.

Deutzia × *rosea* 4' Zone 6
Flowers pinkish outside. 'Campanulata' has white flowers 1 inch across. The flowers of 'Carminaea' are purplish outside; 'Eximea', the best of these, has larger flower clusters and flowers pinkish outside.



Daphne × *burkwoodii*.

Deutzia scabra 'Plena' 6' Zone 6 Fuzzy Deutzia
Has double flowers, suffused with purple. One of the last deutzias to flower. Another selection 'Pride of Rochester' has double, white flowers.

DIERVILLA

Bush-honeysuckle

Adapted to use as ground covers and for holding soil banks as they spread by stolons.

Diervilla lonicera 4' Zone 2 Honeysuckle Diervilla

Native from Newfoundland to Saskatchewan, and of value only because of its hardiness. Flowers are yellow and ineffective.

Diervilla sessilifolia 4' Zone 4 Southern Bush-honeysuckle

Superior to the above species, this one produces masses of sulphur-yellow flowers, but is of little value other than for erosion control or for use in naturalistic settings.



Daphne mezereum 'Alba' in flower.

DIRCA

Dirca palustris 6' Zone 4 Leatherwood

Native shrub forming a neat plant. Ideal for shady areas or for naturalizing. Very slow growing. Noted for its very tough, flexible, almost unbreakable shoots.

ELAEAGNUS Oleaster

Distinctive shrubs with bright silvery scales that cover the branches, fruits and leaves of most species. Several are ideally suited to dry areas.

Elaeagnus angustifolia 20' Zone 2b Russian Olive

Large treelike shrub, outstanding because of its very striking silver foliage. Perfectly hardy, the Russian olive grows in any kind of soil. The brown shredding bark is also ornamental in the winter.

Elaeagnus commutata

12'

Zone 2

Silverberry

A native shrub with striking silver foliage, small yellow flowers, and a very heavy scent. The silvery leaves provide an excellent contrast in a shrub border. It should not, however, be grown in a small garden because it may sucker freely.



Elaeagnus angustifolia.

Elaeagnus × ebbingei

9'

Zone 7b

A new hybrid from Holland, a tall shrub with an upright, spreading habit. The large evergreen leaves, silvery beneath, make it a very attractive shrub.

Elaeagnus multiflora 9' Zone 5b Cherry Elaeagnus

A vigorous shrub with interesting red fruits, the size of cherries, in early summer. Foliage an attractive contrast of silver and green.

Elaeagnus pungens 12' Zone 7b Thorny Elaeagnus

An attractive evergreen for milder climates. The leaves are silvery beneath, and the flowers are very fragrant. Grows well in difficult situations. The cultivar 'Maculata', also listed as 'Aureo-maculata', has leaves with a large yellow blotch in the middle.

Elaeagnus umbellata 8-12' Zone 5 Autumn-olive

A hardy species with leaves silvery beneath, fragrant flowers and scarlet, silver-flecked fruit. Often listed incorrectly as *Elaeagnus argentea*.

ELSHOLTZIA

Elsholtzia stauntonii 5' Zone 5b

A subshrub of interest only for its spikes of lilac-purple flowers in late summer and early fall.

EMPETRUM

Empetrum nigrum 12" Zone 1 Crowberry

A low ericaceous plant native to Canada's North. This low evergreen shrub can be used in rock gardens if moved carefully. It requires an acid, boggy soil.

ENKIANTHUS

Enkianthus campanulatus 8-15' Zone 5 Redvein Enkianthus

This is the hardiest species of this genus of ericaceous, acid-soil plants. The yellowish, bell-shaped flowers appear just before the leaves and produce a good display. The autumn color is a brilliant scarlet. An attractive shrub not used enough in gardens. Two other species, *Enkianthus deflexus* and *E. perulatus*, (Zone 7), are not as hardy, but where they can be grown, they are preferable because of their larger flowers and even better fall color.

EPIGAEA

Epigaea repens 3" Zone 2 Mayflower, Trailing Arbutus

This attractive ground cover, the floral emblem of Nova Scotia, has fragrant, light-pink flowers. It is very difficult to transplant from the wild, but nursery-grown plants may be transplanted successfully. The plants need a moist, acid soil, good drainage and some shade. The foliage is best in heavy shade, but there are more flowers in light shade. In transplanting, the top 6 inches of garden soil should be replaced by a mixture of two parts oak or pine leaf mold, one part peat moss and one part sand. Mulch the plants in fall with three or four inches of oak leaves or pine needles.

ERICA

Heath

These ericaceous, usually low-growing plants are valued for their bright spring and summer flowers. The winter-flowering types are hardy only in the mildest parts of Canada. Heaths prefer a light or sandy soil, free of limestone and preferably acid. They are best used in rock gardens or in the front of a foundation planting.

Erica carnea

12"

Zone 6

Spring Heath

These dwarf evergreen plants are in bloom from January to May. The flowers are white and pink to red.

SELECTIONS

- 'Aurea'—Golden foliage, pink flowers.
- 'James Backhouse'—Large pink flowers.
- 'Praecox Rubra'—An early red.
- 'Queen Mary'—Deep pink, early.
- 'Ruby Glow'—Deep pinkish-red.
- 'Snow Queen'—Compact, pure white.
- 'Springwood'—Pure white.
- 'Springwood Pink'—Light pink.
- 'Vivellii'—Vivid carmine red.
- 'Winter Beauty'—Deep pink, the earliest.



Flowers of *Enkianthus campanulatus*.

Erica cinerea

18"

Zone 7

Scotch Heath

These summer-flowering heathers are sometimes hard to grow but they respond to a heavy pruning immediately after flowering and to a mulch of leaf mold and sand.

SELECTIONS

- 'Alba'—Pure white.
- 'Atrorubens'—Crimson.
- 'C. D. Eason'—Deep rose.
- 'Fulgida'—Scarlet.
- 'Mrs. Dill'—Bright cerise.

- Erica × darleyensis** 3' Zone 8 Darley Heath
 A winter-flowering, vigorous species useful only in the mildest areas of British Columbia. Flowers rosy lavender.
- Erica tetralix** 18" Zone 5 Crossleaf Heath
 A good summer-flowering species, and probably the hardiest. Prefers a moist, peaty soil. Flowers soft pink.
- Erica vagans** 2-3" Zone 7 Cornish Heath
 A good summer-flowering species.

SELECTIONS

- 'Lyonesse'—Pure white.
 'Mrs. D. F. Maxwell'—Deep cerise rose.
 'St. Keverne'—Salmon pink (18").



Epigaea repens in flower.

- ESCALLONIA** 4-8' Zone 8b Escallonia
 Evergreen flowering shrubs of value only in the mildest areas of British Columbia. Their chief merit is their summer flowers. Pruning after flowering produces the best compact, free-flowering plants. They prefer a sunny, well-drained location, which should not receive additional waterings during the summer. Many of the following Donard hybrids from Ireland should grow well in coastal British Columbia.

SELECTIONS

- 'C. F. Ball'—Vivid red. 'Iveyi'—White, late flowering.
 'Donard Radiance'—Dark-pink flowers. 'Peach Blossom'—Peach pink.
 'Donard Seedling'—Apple-blossom pink. 'Pride of Donard'—Rich, light red.
 'Donard Star'—Rose pink.

EUCRYPHIA

Eucryphia glutinosa 6' Zone 9a

An interesting semievergreen Chilean shrub. Large white flowers with golden stamens in August and attractive red and gold leaves in the fall. Hardy only in a sheltered location in the mildest areas of British Columbia. Grows best in a well-drained, acid soil.

Eucryphia × nymansensis 10' Zone 9a

An attractive upright evergreen shrub noted for its profuse display of large fragrant white flowers in August. Hardy only in the mildest areas of British Columbia.



Erica carnea 'Aurea' as a ground cover.

EUONYMUS

A diverse group ranging from trailing plants to small trees. They are valued chiefly for their showy fruits and autumn colors. The colorful seeds usually hang from a crimson capsule. Some are attractive, low evergreen shrubs.

DECIDUOUS SELECTIONS

Euonymus alata 4-9' Zone 3 Winged Spindletree

A large treelike shrub that produces a spectacular show of crimson foliage in the fall. The curiously winged bark is also attractive in winter. The cultivar 'Compacta' makes a specimen shrub to 4 feet or an excellent hedge, requiring very little pruning.

Euonymus atropurpurea 10-15' Zone 3b Burningbush, Wahoo

Native in southern Ontario, this large shrub is sometimes planted for its brilliant scarlet fall color, and showy fruits.

Euonymus bungeana 15' Zone 5

A good rapid-growing specimen shrub with abundant attractive fruits in the fall. 'Pendula' is a selection with graceful pendulous branchlets and large hanging clusters of fruit.

Euonymus europaea 15-20' Zone 4 Spindletree

Attractive as a large shrub or small tree, this species has large bright-red fruits that persist for a long period. 'Aldenhamensis' (Zone 3b) is a form with brilliant pink fruits larger than those of the species and with longer stalks, which make the pendulous fruit conspicuous.

Euonymus nana 2-3' Zone 2 Dwarf Euonymus

A low shrub with narrow, dark-green leaves that turn deep purple in the fall. A good plant for the rock garden or for growing in front of taller shrubs.

Euonymus phellomana 12' Zone 5

An attractive shrub with corky-winged twigs and showy red fruits.

Euonymus sachalinensis 6-8' Zone 5 Sakhalin Spindletree

A large shrub with attractive foliage and fruits.

Euonymus sanguinea 12-20' Zone 5

A species with handsome foliage and showy red fruits with yellow-coated seeds.

EVERGREEN SELECTIONS

Euonymus fortunei Zone 5 Wintercreeper

Most of the cultivars may be classed as ground covers or vines, but several make very interesting, compact shrubs with evergreen foliage.

SELECTIONS

'Colorata'—An attractive ground cover with green leaves one to three inches long that turn purplish red in the autumn and remain so through the winter.

Emerald Cultivars (Zone 6)—These make very good, dense mound plants for foundation plantings or rock gardens. They are:

'Emerald Beauty'—Bushy, low.

'Emerald Charm'—Upright columnar form to 4 feet.

'Emerald Cushion'—Low, wide form.

'Emerald Gaiety'—Low, spreading, with variegated leaves.

'Emerald Leader'—Upright and bushy, to 4 feet.

'Emerald Pride'—Dwarf, almost as broad as tall, to 4 feet.

'Sarcoxie'—A dense upright shrub, attractive with its dark evergreen leaves.

vegeta—Useful only as a vine or ground cover in areas as cold as Ottawa; it does, however, become shrubby in milder climates. Its bright-green foliage and attractive fruits make it an interesting and colorful plant.

Euonymus japonica 8-12' Zone 8b Evergreen Euonymus

An evergreen shrub with leaves to 3 inches. Useful as a specimen or for hedges only in the mildest areas of British Columbia.

EXOCHORDA

Exochorda giraldii wilsonii 15' Zone 4 Wilson Pearlbush

More floriferous and upright than other pearlbushes, this is the best of all the selections. Its ornamental white flowers, in May, however, do not last long enough to make this large shrub of sufficient interest to have a place in a small garden.



The corky twigs of *Euonymus alata*.

Exochorda 'The Bride' 6' Zone 5
A new cultivar with a graceful, somewhat drooping habit.

FATSHEDERA

× **Fatshedera lizei** 6' Zone 8 Fatshedera

A handsome foliage shrub of loose habit, hardy outdoors only in the mildest areas of British Columbia. There is also a variegated selection, with golden-edged leaves.

FATSIA Fatsia

Fatsia japonica 8-12' Zone 8b Japan Fatsia

This plant, one of the parents of the above intergeneric hybrid, is valued for its large leaves, which give a tropical effect. It grows best in shade and must be well protected in all but the mildest climates.

FICUS Fig

Ficus carica 16' Zone 7b Common Fig

The cultivated fig is often tried as a novelty, but can only be successfully grown out of doors in British Columbia. Plants in tubs can be put out of doors in the summer but must be protected from temperatures below 20°F.

FORSYTHIA Forsythia

A favorite shrub where it can be grown. A harbinger of spring with its profusion of yellow flowers at a time when few other plants are in flower. However, temperatures of -10°F kill the flower buds, but not the branches, of most forsythias. *Forsythia ovata* is the only one whose flower buds are reliably hardy at Ottawa, and they survive lower temperatures.

Forsythias should be planted where they will have plenty of room to grow and where they will not have to be mutilated by extensive pruning. A regular removal of older wood every four or five years, after flowering, is all that is needed to keep the plants growing and flowering well.

Forsythia 'Beatrix Ferrand' 9' Zone 6b

A vigorous upright shrub with the largest flowers of all forsythias. The number of flowers is increased if the plant is not fertilized too often or grown in too rich a soil.

Forsythia europaea 7' Zone 5b Albanian Forsythia

The least ornamental forsythia, forming a rather lanky, loose shrub. Next to *Forsythia ovata*, this is the hardiest.

Forsythia × intermedia 'Arnold Dwarf' 3' Zone 5

A low-growing forsythia suitable for use as a ground cover. However, it rarely flowers.

Forsythia × intermedia 'Lynwood' 9' Zone 6

An excellent selection with its bright-yellow flowers evenly distributed along the stems. Usually listed as 'Lynwood Gold.'

Forsythia × intermedia 'Spectabilis' 9' Zone 6

Has the deepest yellow flowers of all the forsythias. An excellent cultivar for specimen planting.

Forsythia × intermedia 'Spring Glory' 9' Zone 6

Flowers are light yellow. This forsythia makes a better display than *Forsythia × intermedia* 'Primulina,' the other light-colored one.

Forsythia 'Karl Sax' 8' Zone 6

A new cultivar, exceptionally free-flowering, with large light-yellow flowers. Similar to 'Beatrix Ferrand' but reported to be somewhat hardier.

Forsythia ovata 4-6' Zone 5 Early Forsythia

The first to bloom and also the hardiest. This is the only forsythia that flowers regularly at Ottawa. It should be used only in areas where others are not flower-bud hardy. 'Tetragold' is a new selection with deeper yellow flowers, larger than those of the species and opening wider. Both are similar in habit, forming a rounded bush.

Forsythia suspensa sieboldii 9' Zone 6 Weeping Forsythia

A shrub with very slender branchlets that often trail on the ground and root at the tips. It is ideal for covering steep slopes or for trailing over arbors and trellises. The flowers, borne singly, are a bright yellow.

Forsythia viridissima koreana 8' Zone 6 Korean Forsythia

The only forsythia with any fall color, the leaves turning reddish. It has little else to recommend it over the others.



Fothergilla monticola in flower.

FOTHERGILLA

Fothergilla

These ornamental shrubs are among the best for both flowers and autumn color, but they do not survive in areas as cold as Ottawa.

Fothergilla gardenii 3' Zone 6 Dwarf Fothergilla

The lowest-growing fothergilla; ideal for use in foundation plantings or shrub borders. The flowers are white, the fall color brilliant yellow.

Fothergilla major 9' Zone 6 Large Fothergilla

A taller-growing species which, where hardy, should be used much more often than it is. The flowers, in spikes to 2 inches long, are white, the fall color a brilliant yellow to scarlet.

Fothergilla monticola 6' Zone 6 Alabama Fothergilla

A habit more spreading than other species of fothergilla makes this species ideal for use in foundation plantings. The leaves turn a brilliant scarlet in autumn.

FRANKLINIA

Franklinia alata 15-30' Zone 7 Franklinia

Interesting shrub or small tree with conspicuous white flowers, similar to single camellias in late summer and having brilliant red and orange fall color when grown in full sun.

FUCHSIA

Fuchsia magellanica 5' Zone 8 Magellan Fuchsia

The only hardy fuchsia, this native of South America can be grown out of doors in the mildest areas of British Columbia and should be treated as a herbaceous perennial. It usually dies back to the ground each winter but grows again and provides a profuse number of red and violet flowers during the summer. Of use only in the rock garden or perennial border. 'Riccartonii' is a selection quite similar to the species.

GARRYA

Garrya elliptica 8' Zone 8 Silk-tassel Bush

An attractive evergreen shrub native to the northwestern United States and hardy in the mildest areas of British Columbia. Of interest for its catkins, which appear early in the year. Best in a sunny, sheltered location with acid soil. *Garrya wrightii* is a hardier species.

GAULTHERIA

Wintergreen

Low-growing evergreen shrubs, suitable for foundation plantings or rock gardens. Require a moist, sand or peat soil and partial shade. Several are native to Canada.

Gaultheria humifusa 4" Zone 6 Alpine Wintergreen

A low evergreen plant native to British Columbia and suited for use as a ground cover in shaded areas in native gardens.

Gaultheria miqueliana 12" Zone 7 Miquel Wintergreen

Low evergreen shrub with showy white berries in fall.

Gaultheria shallon 3-10' Zone 7 Salal, Shallon

A common evergreen shrub in the fir forests of coastal British Columbia, where its usual height is 3 feet. The attractive foliage is used extensively in the florist industry. The shrub bears showy white flowers in June followed by purple edible fruit. Salal should be used more than it is, in foundation plantings and shrub borders.

GENISTA

Rarely seen in gardens, these attractive shrubs have a definite place, especially in poor soils in full sun. They should be moved when small, as most are difficult to transplant once they have grown large. Flowers are pealike.

Genista hispanica 1' Zone 7 Spanish Gorse

A good, low-growing species covered with yellow flowers in June. It looks evergreen in winter. A naturalized weed on Vancouver Island.

Genista lydia 2' Zone 3b

A slow and low-growing genista, ideal for rockeries and small gardens. Yellow flowers in May and June.

Genista pilosa 1' Zone 5 Silkleaf Woadwaxen

Ideal ground cover on poor, dry soils. A mass of bright-yellow flowers in May.



Flowers and foliage of *Gaultheria shallon*.

Genista sagittalis 12" Zone 3

A prostrate-growing species, with pure-yellow flowers in June and July.

Genista tinctoria 3' Zone 3 Dyer's Greenweed

The hardiest species, for use in the rock garden or on sandy soil. Has bright golden-yellow flowers in early June. 'Plena' is a dwarf form with double flowers.

HALIMODENDRON

Halimodendron halodendron 6' Zone 2b Salttree

This drought-resistant shrub is recommended for use on the prairies on dry limestone soils, or near the seashore, where it withstands salt spray. Fragrant pale-

purple flowers, produced at the end of June, stand out well against the gray foliage. Grafting on *Caragana* is often used to prevent suckering or to produce an attractive pendulous standard.

HAMAMELIS

Witch-hazel

Small trees and shrubs that flower in early October, winter or early spring at a time when flowers are extremely scarce. These flowers have thin, strap-shaped, twisted petals, light yellow to deep golden. Several new hybrids with new colors will soon be available for milder areas.

Hamamelis × intermedia 'Jelena' 15' Zone 6b

A new hybrid with very large, coppery-orange flowers. 'Ruby Glow,' another new witch-hazel, has sparkling bronze-red flowers in very early spring.



Genista tinctoria in flower.

Hamamelis mollis 10-25' Zone 6b Chinese Witch-hazel

Unexcelled for winter effects, this shrub flowers from December to February in mild areas and in March and April in southern Ontario. The fragrant flowers are a rich golden color.

Hamamelis vernalis 10' Zone 6b Vernal Witch-hazel

Yellow flowers, opening on warm days over a period from December to March.

Hamamelis virginiana 10-15' Zone 4b Common Witch-hazel

A large shrub native to southern areas of Ontario, Quebec and Nova Scotia, and extremely attractive in flower in late fall after its leaves drop. The leaves also give a good display of yellow color. The last shrub to bear fall flowers in Eastern Canada.

HEBE

An interesting group of evergreen shrubs mostly native to New Zealand and often listed under the name *Veronica*. Hebes have an attractive, stiff, formal habit, and white, pink to purple flowers during the summer. Hebes are especially useful for planting near the seashore, and in dry sunny locations. Most are hardy only in the milder areas of British Columbia.

Hebe 'Autumn Glory' 18" Zone 8b

A low-growing edging shrub with intense violet-blue flowers over a long period during the summer.



Flowers of *Hamamelis virginiana*, witch-hazel.

Hebe buxifolia 4' Zone 8b

A larger hebe with leaves similar to the common boxwood and one-inch spikes of white flowers during the summer.

Hebe cupressoides 5' Zone 8b

An unusual shrub with small scalelike leaves, very similar in appearance to the cypress. Has pale-mauve flowers in small terminal clusters in July. 'Nana' is a very attractive dwarf form to 18 inches.

Hebe traversii 5' Zone 8b

An attractive shrub with its small, narrow, evergreen leaves and 3-inch clusters of white flowers from July onwards.

HEDERA

Hedera helix 'Arborescens' 3' Zone 6b Shrubby Ivy

The shrubby adult form of the common climbing ivy. Suitable for use as a small shrub in foundation planting in areas as mild as southern Ontario.

HIBISCUS

Hibiscus syriacus 8-12' Zone 6 Rose of Sharon

Grown chiefly for its flowers, which appear in late summer when few shrubs are in flower. It has no interesting fruit or autumn color. Heavy pruning in spring forces larger flowers; a light pruning gives more but smaller flowers.

SELECTIONS

- 'Admiral Dewey'—Double white.
- 'Ardens'—Double light purple.
- 'Blue Bird'—A new attractive blue.
- 'Celestial Blue'—Single blue.
- 'Duc de Brabant'—Double purplish pink.
- 'Hamabo'—Pale pink, with crimson blotch.
- 'Jeanne d'Arc'—Double white, late.



Fruit of *Hippophae rhamnoides*, common sea-buckthorn.

- 'Lady Stanley'—Double white, streaked pink.
- 'Leopoldii'—Pinkish white.
- 'Monstrosus'—Single white, maroon blotch.
- 'Rubis'—Single red.
- 'Violet Claire'—Double violet.
- 'Woodbridge'—Single red, large.

HIPPOPHAE

Hippophae rhamnoides 10-15' Zone 2b Common Sea-buckthorn

A very distinct, large shrub with narrow silvery leaves and brightly colored orange berries in late fall. It is especially effective in masses in large gardens for special winter display. It does particularly well on seashores and on the prairies. As the sexes are separate, at least one male plant is needed to ensure fruit.

HOLODISCUS

Holodiscus discolor ariaefolius 12' Zone 5 Oceanspray

Native to British Columbia, this attractive shrub is seldom seen in gardens. Of interest as a summer-flowering shrub, its pyramidal, creamy-white blooms being quite conspicuous. A good background shrub.

HYDRANGEA

Hydrangea

A group of coarse, deciduous shrubs with showy flowers, white, pink or blue, in midsummer. Where hardy, most are easily grown.

Hydrangea arborescens 'Grandiflora' 3' Zone 3b Snowhill Hydrangea

A very lovely shrub with large clusters of pure-white, sterile flowers that last from July to September. Occasionally the flower heads are so heavy that they may need to be staked. Very easily grown, it requires only an annual pruning back. 'Annabelle' is a little-known selection with compact habit of growth and flowering, more pleasing than that of 'Grandiflora.'

Hydrangea aspera sargentiana 9' Zone 7b Sargent Hydrangea

An outstanding, large, spreading shrub. It should be grown in sheltered spots such as shrub borders or woodlands as it needs protection from sun and wind. The leaves are large and velvety, the inflorescence large and bluish with white flowers around the edge. Hardy only in the mild areas of British Columbia.

Hydrangea bretschneideri 12' Zone 3b

A large, vigorous shrub with spreading branches and a broad round habit. Flowers white, from June well into July.

Hydrangea macrophylla 4-6' Zone 6b House Hydrangea

This common florists' pot plant is hardy outdoors in the east in only the mildest areas. Flowers are produced by the terminal buds of the previous year's growth and when these are winterkilled no flowers result. There are many white, pink and blue selections. A change in the pH value of the soil can alter the color of the flowers. An acid soil produces blue flowers, a neutral or alkaline soil pink flowers.

SELECTIONS

'Blue Wave'—An attractive showy form, with blue flowers when grown in acid soil.

'Intermedia' (Zone 6)—Usually listed as *Hydrangea serrata* 'Acuminata.' An attractive hydrangea, with flowers that give a lacy appearance. The small clear-blue central flowers are surrounded by larger brilliant crimson ones, in July and August.

'Mariesii'—A showy pink form with small fertile flowers surrounded by a row of very large sterile flowers.

Hydrangea paniculata 'Grandiflora' 5-8' Zone 3b Peegee Hydrangea

A coarse overplanted shrub valued chiefly for its rapid growth and summer flowers. Winterkills on the prairies but still recovers enough to make an attractive,

- Hypericum calycinum** 12" Zone 7 St. John's-wort
 A good ground cover for areas of semishade and sandy soil. Produces its yellow flowers over an extended part of the summer.
- Hypericum hookerianum 'Hidcote'** 3' Zone 7
 A new *Hypericum* with very large, golden-yellow flowers from July to October.
- Hypericum kalmianum** 3' Zone 3 Kalm St. John's-wort
 This hardy species, a native of Ontario and Quebec, is quite attractive with its bright-yellow flowers in July. It is useful for massing on moist or normal soils.
- Hypericum × moserianum** 2' Zone 8 Goldflower
 For the milder areas of British Columbia. A low ground cover that flowers throughout most of the summer. Spreads by underground runners.



Flowers of *Hypericum hookerianum* 'Hidcote.'

- Hypericum patulum henryi** 3' Zone 7 Henry St. John's-wort
 A semievergreen *Hypericum* with showy large yellow flowers in July.
- Hypericum prolificum** 3' Zone 5 Shrubby St. John's-wort
 Forms dwarf, compact bushes, which thrive in dry sandy areas. The showy flowers continue in bloom over a period of several weeks starting in late July.
- Hypericum 'Sungold'** 2-3' Zone 7
 A new cultivar similar to 'Hidcote' but somewhat lower growing.

ILEX

Holly

Unfortunately the evergreen hollies, which everyone knows so well, are not hardy in most of Canada. None have survived the winters at Ottawa. Many, however, can be grown with ease in parts of British Columbia, and a few can be grown in the milder areas of the Maritimes and southern Ontario. Some will survive in areas outside their normal range if planted in protected locations or if given special

protection in the winter, especially in the Maritimes.

As the sexes are on separate plants in most species, specimens of both sexes are needed to ensure that berries are produced. Some, however, will produce fruit without pollination. Hollies grow well in any good garden soil that is well drained.

Ilex aquifolium 10-30' Zone 7 English Holly

Selections of this species are grown in parts of British Columbia for commercial production of cut holly for Christmas. The English holly grows best in the moist climate of British Columbia and parts of Nova Scotia.

Many plants varying in leaf size, shape, and color have been named over the years, but very few are grown today.

SELECTIONS

'Aureo Marginata'—Leaves edged with yellow.

'Bleeg'—A superior selection for cut holly.

'J. C. van Tol'—Self-fertile, large orange-red berries.

'Pyramidalis'—Self-fertile with large, red berries, habit pyramidal.

'Silvary'—Leaf margin silver.

Ilex cornuta 'Burfordii' 9' Zone 7b Burford Holly

Where hardy, this cultivar makes a very attractive evergreen specimen or hedge plant. It has lustrous dark-green leaves and large, bright-red berries. Female plants of this holly produce fruits without pollination.

Ilex crenata 15' Zone 6 Japanese Holly

A small-leaved evergreen species, low-growing and with black berries. Where hardy, it is ideal for foundation plantings and for use as a small hedge.

SELECTIONS

'Convexa'—Low, spreading form to 7 feet with small boxwoodlike leaves. One of the most useful for the mildest parts of southern Ontario, growing to 4 feet there.

'Golden Gem'—Same habit as 'Convexa' but with bright yellowish leaves the year round.

'Green Thumb'—Low growing, dense plant with small, dark-green leaves.

'Latifolia' (Rotundifolia)—Bushy, upright growth, dark-green leaves.

'Stokes'—One of the hardiest. A dense, dwarf plant, cushion-shaped and with very small leaves.

Ilex glabra 4-18' Zone 5b Inkberry

The only evergreen holly native to Canada, the inkberry is found wild in certain parts of Nova Scotia. Its lustrous, dark-green leaves and small black berries give it a certain attractiveness. Greater use of it could be made.

Ilex 'Nellie R. Stevens' 5-8' Zone 7

A new, dense, female hybrid of *Ilex cornuta* 'Burfordii' and *I. aquifolium*, highly recommended for use in southern Ontario. Leaves dark, four-pointed.

Ilex opaca 6-25' Zone 7 American Holly

Selections of this species can be tried in southern Ontario. Here they should be given the protection of an eastern or northern exposure and mulched heavily just before the fall freeze-up. *Ilex opaca* is useful in the moist coastal areas of Nova Scotia and it grows to tree size in milder areas in British Columbia.

The leaves are dull green, not lustrous like those of English holly. The berries are bright red and obtained only when a male plant is nearby.

In southern Ontario the following selections, all females, can be tried: 'Cardinal,' 'Christmas Carol,' 'Hedge Holly,' and 'Yule,' with 'Ed Thomas' and 'Rake Pond' as pollinators.

Ilex pedunculosa 4-20' Zone 7 Longstalk Holly

One of the hardiest evergreen hollies, making a small, compact shrub in southern Ontario. The berries are bright red and borne on stalks one inch long.



Holly foliage. Left to right, (top) *Ilex aquifolium* 'Bleeg,' *Ilex aquifolium* 'Aureo Marginata'; (bottom) *Ilex aquifolium*, *Ilex aquifolium* 'Silvary,' *Ilex crenata* 'Convexa.'

Ilex pernyi 10-20' Zone 7 Perny Holly

A compact pyramidal species for milder areas of British Columbia and the mildest parts of southern Ontario. The leaves are similar to those of *Ilex cornuta*, but smaller; the berries are red.

Ilex serrata 8' Zone 5

A deciduous holly similar to *Ilex verticillata* but not as large. Very attractive with its bright-red berries in autumn.

Ilex verticillata

5-8'

Zone 3b

Winterberry

A deciduous holly native to Eastern Canada. The attractive red berries remain on the plants well into the winter, long after the leaves have fallen. Plants of both sexes are needed.

INDIGOFERA

3-5'

Zone 5b

Indigo

Leguminous shrubs valued for their flowers, which are attractive for several weeks during the summer. The plants may winterkill but as they flower on the current season's growth, flowers are still produced. *Indigofera gerardiana* has killed back to the ground every year at Ottawa but still bears its purplish-rose flowers in summer. Other species are: *I. amblyantha*, *I. kirilowii*, and *I. potaninii*.



Holly foliage. Left to right, (top) *Ilex pernyi*, *Ilex opaca*;
(bottom) *Ilex pedunculosa*, *Ilex crenata* 'Latifolia.'

ITEA**Itea virginica**

4'

Zone 6

Sweetspire

An attractive small shrub with fragrant, white flowers during the summer. It requires good soil and ample water.

JASMINUM

Jasmine

A group of winter- or summer-flowering shrubs and vines. Many are noted for their strong fragrance and are often grown as greenhouse or house plants.

Jasminum beesianum 3-5' Zone 8 Rosy Jasmine

A pink, summer-flowered, fragrant jasmine for the mildest areas of British Columbia. Forms a shrub to 3 feet or climbs to 6 feet.

Jasminum nudiflorum 10-15' Zone 6b Winter Jasmine

This is the hardiest of the jasmines. It can be grown in southern Ontario if trained on a sunny south-facing wall, where it flowers during mild spells in February and March. Grown similarly in milder areas it flowers throughout the winter. The flowers are a bright yellow.

Jasminum parkeri 12" Zone 8

An attractive small shrub for use in a sunny location in the rock garden. Has fragrant yellow flowers in June and July.

JUNIPERUS

Juniper

A versatile and variable genus of conifers, very useful in foundation plantings and as ground covers and specimen plants. They prefer a sunny, open location and a light soil. Most upright and spreading types require an annual pruning if they are to be kept within the narrow limits of a foundation planting. The hardy junipers used on the prairies must be protected from the early spring sun.

Juniperus chinensis Zone 5 Chinese Juniper

Many types of diverse habits.

SELECTIONS

'Ames'—An upright type of compact growth with light-green foliage.

'Blaauw'—An attractive, upright, vase-shaped form with thick bluish-green adult foliage.

'Fairview'—A trim little pyramidal evergreen, with closely set branches and light-green foliage.

'Iowa'—A compact, upright type with silvery-green foliage.

'Keteleeri'—A fast-growing pyramidal form with light-green foliage.

'Maney' (Zone 3b)—A bushy, upright form with silver foliage.

'Mountbatten'—A compact, pyramidal type of rapid growth. Requires light trimming. Foliage silver green.

'Obelisk'—A good, slow-growing, pyramidal form with grayish-green foliage.

'Olympia'—Pyramidal form, foliage light green.

'Pfitzeriana'—A wide-spreading type, very fast growing. Must be given sufficient room in a foundation planting. Requires occasional severe pruning to keep within bounds.

'Pfitzeriana Aurea' (Zone 2b)—A gold-tipped form.

'Pfitzeriana Nana'—A slower-growing selection.

'Pfitzeriana Old Gold'—A very compact type with golden foliage.

'Plumosa'—A fairly low growing type, with a spreading habit to 3 feet.

'Pyramidalis'—Spiny Greek Juniper. A slow-growing form with spiny bluish needles. Usually listed as *J. excelsa* 'Stricta.'

sargentii (Zone 3)—Attractive prostrate evergreen, ideal for ground cover on slopes. Foliage bluish.

'Spartan'—Upright, with dark-green foliage.

Juniperus communis

Zone 2b

Common Juniper

A species native to North America, having several different forms.

SELECTIONS

depressa — A low, native variety with narrow stems ascending from a procumbent base. Rarely exceeds 4 feet.

depressa 'Aureo-spica' — A form with yellow foliage.

'Hibernica' (Zone 6) — Irish Juniper. A dense, upright form, not as hardy as the others.

'Prostrata'—Hornibrook Juniper. A neat, graceful, spreading type. Makes a mass less than a foot high, spreading to several feet in diameter.

'Pencil Point'—A very narrow, somewhat, pencil-like evergreen.

saxatilis (Zone 2)—Mountain Juniper. A dense, low variety, excellent for dry, sandy soils in full sun.

'Suecica' (Zone 6)—Swedish Juniper. A narrow, columnar form to 10 feet with recurving branch tips.



A single plant of *Juniperus chinensis* 'Pfitzeriana.'

Juniperus horizontalis

Zone 2

Creeping Juniper

A native creeping juniper, of which there are several forms.

SELECTIONS

'Douglasii'—Waukegan Juniper. A creeping form with long branches and bluish-green leaves that turn purplish in winter. Ideal for use as a ground cover on banks and open spaces.

'Glauca'—Bar Harbor Juniper. Similar to above, but has glaucous-blue foliage that does not change color in winter.

'Plumosa'—Andorra Juniper. A low-growing shrub with spreading branches developing into a flattened top. Foliage gray green in summer, conspicuously purple in winter.

'Wapiti'—A rapid-growing form, dark green and spreading, and selected at Beaverlodge, Alberta.

Juniperus sabina Zone 2 Savin Juniper

A low, spreading species with upright branches producing a vase shape. On prairies, will burn if exposed to winter sun.

SELECTIONS

'Arcadia'—A low, spreading, yet compact type, with light-green leaves.

'Blue Danube'—Bushy, spreading form with bluish foliage.

'Hicksii'—Spreading type with deep-green leaves.

'Skandia'—Flat-growing form, ideal for use as a ground cover.

'Tamariscifolia'—Tamarix Juniper. A prostrate form with feathery, dark-green foliage. Grows to a height of 2 feet.

Juniperus scopulorum Zone 2 Western Red-cedar

A juniper native to western North America, several selections of which are in cultivation.

SELECTIONS

'Blue Heaven'—Forms a loose pyramid with very attractive steel-blue foliage.

'Hill's Silver'—A broad pyramidal type with silvery-blue foliage.

Juniperus squamata 'Meyeri' Zone 5 Meyer Juniper

An erect, many-branched shrub with unusual bluish-gray foliage. Not recommended for planting in the drier areas of Eastern Canada, where it is subject to attack by the red spider.

Juniperus virginiana Zone 3 Red-cedar

The native red-cedar of Ontario. There are several attractive cultivated forms.

SELECTIONS

'Blue Mountain'—A compact pyramidal form with blue-gray foliage.

'Burkii'—A pyramidal type becoming too large and straggly with age.

'Canaertii' (Zone 2b)—Loosely pyramidal, this form produces an abundance of glaucous-blue fruits, which are very attractive against the dark-green foliage.

'Glauca'—Grows to tree size.

'Grey Owl' (Zone 2b)—A fast-growing type with a dense spreading habit.

'Hetzii'—Similar to 'Grey Owl.' 'Hetzii' is usually listed under *Juniperus chinensis*.

'Hillii'—A very fine, closely branched type that makes a good pyramidal tree to 20 feet high.

'Hill's Dundee'—A narrow, compact, pyramid with bluish-gray foliage turning plum colored in autumn.

'Reptans'—A low-growing form with widely spreading, pendant branches.

'Skyrocket'—A narrowly upright form with threadlike branches. Foliage light blue-green.

KALMIA

Mountain-laurel

Broad-leaved evergreens, several of which are native to the colder regions of Canada. All require an acid soil.

Kalmia angustifolia 3' Zone 1 Sheep-laurel

Native to northeast North America, this low shrub requires acid, boggy conditions to succeed. If eaten in large quantities, this shrub is poisonous to livestock.

Kalmia latifolia 5-10' Zone 5b Mountain-laurel

An attractive evergreen shrub with white to pink flowers in large clusters during May and June. Requires an acid soil and should be given shade. Ideal for naturalizing.

Kalmia polifolia 2' Zone 1 Bog-laurel

Low, straggling evergreen shrub, native to bogs across northern Canada. Flowers rose purple. Requires acid, boggy conditions to succeed in cultivation.



Flowers of *Kalmia latifolia*.

KALMIOPSIS

Kalmiopsis leachiana 12" Zone 7

Low evergreen shrub, native to Oregon. Of possible use in rock gardens in mild climates. Requires light shade and an acid soil.

KERRIA

Kerria japonica 4-6' Zone 5 Kerria

A deciduous shrub noted particularly for its showy yellow flowers in spring and for its bright-green twigs in winter. Suited for use in the front of shrub plantings and in partial shade. May require frequent renewal prunings.

SELECTIONS

'Picta'—A silver-variegated form, dwarfed in habit.

'Pleniflora'—Has double flowers, which remain effective much longer than the single flowers.

KOLKWITZIA

Kolkwitzia amabilis

10'

Zone 5b

Beautybush

A very attractive, large deciduous shrub, with a height of 10 feet and a spread of 6 to 8 feet when grown as a specimen. It has distinct, heavily textured leaves, abelialike, pink flowers, and very hairy seed capsules. 'Rosea' is a new selection with deeper pink flowers.



Kolkwitzia amabilis, the beautybush.

LAURUS

Laurus nobilis 12-15' Zone 9a Laurel, Bay

This, the well-known laurel, is often grown in tubs, kept closely trimmed and used in formal plantings. Grows best in a rich, well-drained, peaty soil. Can be grown out of doors only in the mildest areas of British Columbia or elsewhere in Canada if taken indoors before heavy frosts.

LAVANDULA

Lavandula officinalis 1-3' Zone 7 Lavender

A highly desirable, fragrant shrub, ideal for use as a dwarf, clipped hedge or in the rock garden. The foliage is gray, the flowers white, pink or lavender. Prefers a sunny location with light soil. 'Munstead' is a cultivar with dark-lavender flowers.

LEDUM

Ledum groenlandicum 3' Zone 1 Labrador Tea

A northern bog plant with evergreen leaves and clusters of white flowers in May. Suited only to acid, boggy soils.

LEIOPHYLLUM

Leiophyllum buxifolium 18" Zone 6 Box Sand-myrtle

A low, slow-growing, ericaceous shrub with evergreen leaves, of use only for mass plantings on acid soils. Foliage completely covered by the clusters of small white flowers in May.

LESPEDEZA

Bush-clover

Leguminous subshrubs valued chiefly for their late-summer flowers. Do best in a light sandy soil. As they flower on the current season's growth, they can be cut to the ground in early spring without preventing subsequent flowers.

Lespedeza bicolor 10' Zone 4 Shrub Bush-clover

Has small clusters of rosy-purple flowers in early August.

Lespedeza japonica 16' Zone 6 Japanese Bush-clover

Has white flowers in October.

Lespedeza thunbergii 16' Zone 5

Has reddish-purple flowers in late September.

LEUCOTHOE

Leucothoe fontanesiana 3-5' Zone 6 Drooping Leucothoe

Often listed as *Leucothoe catesbaei*. A graceful, arching shrub with evergreen leaves and small racemes of white flowers in June. Ideally suited for planting with other ericaceous shrubs. As it spreads by suckers it does not make a good specimen plant. Leaves turn an attractive bronze in autumn. 'Rainbow' is a cultivar with leaves variegated white, pink and green.

LIGUSTRUM

Privet

A group of shrubs which, although not unusually attractive, are particularly useful for formal hedges and some for use in foundation plantings. The white flowers and black fruits provide some interest.

Ligustrum amurense 12' Zone 5 Amur Privet

One of the best plants for making an attractive deep-green formal hedge. Plants may occasionally be partly winterkilled at Ottawa but they soon recover and fill any gaps.

Ligustrum delavayanum 3-4' Zone 8 Evergreen Privet

Often listed as *Ligustrum ionandrum*. A low-growing privet with shiny evergreen leaves. Suited only for use in the milder areas of British Columbia.



Leucothoe fontanesiana in flower.

Ligustrum × ibolium 10' Zone 6 Ibolium Privet

An excellent hedge plant with attractive green leaves.

Ligustrum japonicum 10' Zone 9a Japanese Privet

An evergreen privet of borderline hardiness even in the mildest areas of British Columbia. The attractive foliage is a dark glossy green. 'Rotundifolium' is a very slow growing type with round and curled leathery leaves.

Ligustrum obtusifolium 8' Zone 5b Border Privet

An ornamental privet with an effective profusion of short, terminal, nodding clusters of white flowers. It has a graceful habit, and dark-green undulating leaves. Regel's privet, the variety *regelianum*, grows about 6 feet high, is more compact than the species and has a much denser habit. Its horizontal, spreading branches give it a very neat appearance, making it useful in foundation plantings where there is shade.

Ligustrum ovalifolium 10' Zone 7 California Privet

A very effective hedge plant with lustrous green leaves. Not recommended for areas with zero temperatures. 'Aureo-marginata' is a golden variegated form that makes a good loose hedge. Often listed under the name 'Aureus.'

Ligustrum tschonoskii 6' Zone 5 Sharpleaf Privet

A fast-growing species, which has been reported to make an extremely fine, hardy hedge in the Montreal area.

Ligustrum × vicaryi 3-10' Zone 6 Vicary Golden Privet

Handsome with its golden foliage throughout the entire season.

Ligustrum vulgare 10-15' Zone 5b Common Privet

Other privets are much more satisfactory for use as hedges and specimens than this species. Some of its selections, however, have special attractions.

SELECTIONS

'Atrovirens'—Has darker green foliage.

'Aureum'—The golden leaves present a striking appearance until July, when the strong sun may burn them and give the plant a rather untidy appearance.

The golden privet is most effective when it bears a lot of new growth so it should be pruned every spring.

'Lodense'—A good form for use as a low hedge. It is sometimes winterkilled at the tips during very severe winters at Ottawa.

'Pyramidale'—Has a pyramidal habit with upright-growing branches. Much narrower than the species. This cultivar should not be called Polish privet, which does not differ from the species.

LINDERA

Lindera benzoin 12' Zone 5b Spicebush

An attractive shrub found in the moist woods of southern Ontario. The small, spicy flowers appear in early spring before the foliage, which is highly aromatic when crushed. Fall color is a brilliant golden yellow, which sets off the attractive red berries on the female plants. Best grown on moist soils. Often incorrectly listed as *Benzoin aestivale*.

LOISELEURIA

Loiseleuria procumbens 8" Zone 2 Alpine-azalea

A low, ericaceous shrub, native to northern Canada. Good for the rock garden but needs moist acid soil. Best planted only in areas where the summers are not very hot.

LONICERA

Honeysuckle

A large group of vigorous shrubs and vines, several of which are among the best flowering shrubs for the colder areas of Canada. Most of the species recommended produce a good display of flowers and attractive fruits and prefer a sunny location with a soil that is not overly wet.

Lonicera × amoena 'Arnoldiana' 8' Zone 3b Arnold Honeysuckle

A good selection with a profusion of bluish-white flowers and graceful arching branches. Ideal for the small home garden.



Lonicera korolkowii 'Zabelii,' Zabel's honeysuckle.

Lonicera × bella 'Atrorosea' 6' Zone 2 Belle Honeysuckle

A graceful bush honeysuckle with a profusion of large white flowers edged with pink in late May and showy red fruits in June and July. 'Dropmore' is a hardy hybrid produced at Dropmore, Manitoba. It has a graceful and pendulous habit, and bears many flowers and fruits. Flowers deep pink.

Lonicera coerulea edulis - 4' Zone 2

A compact variety ideal for ornamental plantings. Produces a profusion of yellowish-white flowers followed by oblong, dark-blue fruits, which are edible. The foliage has an attractive bluish tint.

Lonicera fragrantissima 6' Zone 6 Winter Honeysuckle

This half-evergreen species, the first honeysuckle to flower, has fragrant white flowers in mid-April. Unfortunately the early red berries are usually half hidden by the new foliage.

Lonicera involucrata 4' Zone 1 Bearberry Honeysuckle

A loose, straggly, native shrub, useful mainly in native gardens. The flowers are yellow, the fruits purplish black and enclosed by bright-red bracts.

Lonicera korolkowii 'Zabelii' 12' Zone 2 Zabel's Honeysuckle

A very striking shrub with its graceful habit and bluish-green leaves. The deep-rose flowers are followed by an abundance of red berries in July and August. One of the best honeysuckles.

Lonicera maackii 8-15' Zone 2b Amur Honeysuckle

One of the tallest honeysuckles. The fragrant white flowers appear in late May after most other honeysuckles have finished flowering. The bright-red fruits last until late in October. The variety *podocarpa* (Zone 4) has a more spreading habit.

Lonicera morrowii 6' Zone 4 Morrow Honeysuckle

A vigorous shrub of spreading habit. Creamy-white flowers are followed by a profusion of dark-red berries in midsummer. Useful for planting when groups of large vigorous shrubs are desired; ideal for covering slopes.

Lonicera myrtillus 6' Zone 6

A rather neat shrub with a dense, compact habit. The flowers are pinkish white and fragrant, the fruits orange red. Not reliably hardy at Ottawa.

Lonicera nitida 5' Zone 8 Box Honeysuckle

An evergreen species, suitable for use as a low clipped hedge only in the mildest areas of British Columbia.

Lonicera pileata 3-4' Zone 7 Privet Honeysuckle

A low spreading evergreen species, similar in appearance to a small-leaved privet. Valued for its horizontal branching and glossy semievergreen leaves. Not satisfactorily hardy in southern Ontario.

Lonicera spinosa albertii 4' Zone 2 Albert Thorn Honeysuckle

A very graceful shrub with arching branches and blue-green, narrow leaves. The fragrant, rosy-lilac flowers are followed by purplish-red berries. Because of its spreading habit, this species is ideally suited to foundation planting. This variety is thornless.

Lonicera tatarica 9' Zone 2 Tatarian Honeysuckle

The most common of all honeysuckles grown in Canada. A very vigorous and extremely hardy shrub that seems tolerant of all soils and full sun or deep shade.

The abundant flowers vary in color from white to pink and are followed by yellow or red fruits.

SELECTIONS

'Alba'—Pure-white flowers.

'Arnold Red' (Zone 3)—A new honeysuckle with a compact habit. Its dark-red flowers, darkest of all honeysuckles, are followed by dark-red berries.

'Beavermor'—Flowers bright red, fruit an attractive bright orange.

'Hack's Red'—A new cultivar with dark-red flowers.

'Latifolia'—Deep-pink to red flowers.

'Rosea'—Flowers rosy pink outside and light pink inside.

Lonicera xylosteum 4-8' Zone 2 European Fly Honeysuckle

A large shrub with yellowish-white flowers, followed by showy bright-red fruits. 'Claveyi,' Clavey's dwarf honeysuckle, is a new, densely branched, dwarf selection, ideal for use as a low hedge. Its flowers are creamy-white.

LYONIA

Lyonia ligustrina 10' Zone 5 Maleberry

An ericaceous shrub useful for naturalizing on moist, peaty soils. A deciduous shrub with attractive clusters of white flowers in May and June.

MAGNOLIA

Magnolia

Deciduous and evergreen trees and shrubs noted particularly for their showy flowers and large glossy leaves. Magnolias have fleshy roots that break off easily when they are transplanted. Deciduous magnolias should be moved early in the growing season when they are in flower, so that any root injury will heal quickly.

Magnolia grandiflora 15-20' Zone 9a Southern Magnolia

This well-known evergreen magnolia of the southern United States can be grown in Canada only in the most sheltered locations in coastal British Columbia. The fragrant white flowers, often 10 inches in diameter, appear from early June to September.

Magnolia kobus borealis 15-50' Zone 5

Probably the hardiest of all magnolias. Specimens have made good growth at Ottawa and have begun to flower very well after 10 years in the garden. Flowers large, white, with 6 to 9 petals.

Magnolia kobus 'Merrill' 30' Zone 5 Merrill Magnolia

This hybrid of *Magnolia kobus stellata* and *M. kobus* is a vigorous grower and plants begin to flower while still quite young. The flowers are white, 3 inches in diameter with 15 petals, and appear in late April before the leaves.

Magnolia kobus stellata 8-20' Zone 5b Star Magnolia

A dense shrub, flowering profusely even when very small. In areas with late frosts, a northern exposure delays flower opening, thus reducing frost injury. One of the most floriferous of all the magnolias. Flowers with 12 to 18 white sepals and petals.

Magnolia liliflora 'Nigra' 9' Zone 6

The darkest magnolia, with flowers a rich purple outside and light purple inside. Often found incorrectly listed as a variety of *Magnolia soulangiana*.

Magnolia salicifolia 15-25' Zone 6 Anise Magnolia

A distinct magnolia with its small 4-inch leaves, and its upright habit. Plants often flower when quite young; fragrant white flowers 5 inches across.

Magnolia sieboldii 25' Zone 7b Oyama Magnolia

This species produces its white flowers, 4 to 5 inches across, over a period of several weeks in June. Its habit of growth, however, is weak and open. Not as good as other magnolias.

Magnolia sinensis 15' Zone 8 Chinese Magnolia

A large-leaved shrub. The flowers in June are inverted, cup-shaped, and white with red centers. Suited only to the milder areas of British Columbia.



Flowers of *Magnolia kobus stellata*, the star magnolia.

Magnolia × soulangiana 15-25' Zone 5b Saucer Magnolia

This hybrid is perhaps the best known and showiest of all hardy magnolias. The plants start to flower while still very young, and the flower buds can withstand temperatures as low as -25°F . Flower buds are, however, often injured by late

spring frosts. Plants eventually cover an area up to 20 feet in diameter, so they should be used with foresight on small properties.

SELECTIONS

'Alba'—An early-white, also known as 'Alba Superba.'

'Alexandrina'—A large-flowered, early selection with flowers rose purple outside, pure white inside.

'Brozzonii'—Largest flowers of all saucer magnolias to 10 inches in diameter, pinkish white.

'Lennei' (Zone 6)—A late selection, flowers rose purple outside, white inside.

'Rubra'—A vigorous grower with globular rose-purple flowers. Often listed as 'Rustica.'

Magnolia virginiana 10-50' Zone 7b Sweet-bay

An attractive species with very fragrant white flowers in May. It is a native of the southern United States and may be grown in the milder areas of British Columbia.

Magnolia wilsonii 20' Zone 8 Wilson Magnolia

This magnolia has inverted white flowers in May, often with additional ones in August. The flowers are very fragrant.



Mahonia aquifolium in flower.

MAHONIA

Mahonia aquifolium 3-6' Zone 5 Oregon Grape

This attractive broad-leaved evergreen, native in British Columbia, makes an excellent large ground cover in sun or shade. The hollylike leaves, the clusters of

yellow flowers in May and, later, clusters of bluish-black fruit are all attractions that make this shrub deserving of wider use. In colder climates, the leaves turn brown when exposed to wind and sun and present an unsightly appearance. If these are pruned out in early spring, they are soon replaced by vigorous glossy new growth.

Mahonia bealii 8' Zone 8 Leatherleaf Mahonia

This striking evergreen shrub has large, leathery leaves up to 16 inches long, dull bluish-green and held stiffly horizontal. The fragrant lemon-yellow flowers appear in March. Hardy only in the milder areas of British Columbia.

Mahonia nervosa 18" Zone 7

Another mahonia native to British Columbia. The leaves and flower clusters are larger than those of *Mahonia aquifolium* but the leaves are not as lustrous.

Mahonia repens 12" Zone 3 Creeping Mahonia

An attractive rock-garden evergreen, also native to British Columbia. The foliage, however, is not as lustrous as that of *Mahonia aquifolium*.

MALUS

Crab Apple

Most crab apples are grown as small trees, but occasionally they can be used where large shrubs are desired in the shrub border or as lawn specimens. As most of them, however, are rather irregular in habit of growth, and those that bear fruit are untidy, they are better used in conjunction with other shrubs where they are not conspicuous except when in bloom or fruit. The period of bloom of many crab apples may not exceed three days in hot weather, so, in making a selection, one must consider foliage and fruit as well as flowers. The following selections include the better ones for the different parts of Canada. Some are very hardy and adapted for use on the prairies. However, in other parts of Canada these are better replaced by less hardy selections. Most of these listed can be bought either as shrubs or as standards to make very fine, small flowering trees.

Malus 'Almey' 20' Zone 2b

One of Canada's centennial trees. Flowers large, bright red with white marking at the base. A cultivar that retains its orange-red fruits long into the winter. The unfolding leaves are purplish but they become bronze green as they mature.

Malus 'Arctic Dawn' 25' Zone 2b

One of the very few crab apples hardy at Beaverlodge, Alberta, where it was originated, and of considerable value for that area. Flowers are light pink, followed by dark-purple fruits.

Malus × arnoldiana 20' Zone 5 Arnold Crab Apple

A graceful crab apple with ruby-red flower buds, and pink flowers that fade to white. Fruits are yellow and red.

Malus × atrosanguinea 20' Zone 5 Carmine Crab Apple

A showy hybrid with rosy-purple flowers that do not fade to white. The dark-green foliage and persistent dark-red fruits are also attractive.

Malus baccata 15-30' Zone 2b Siberian Crab Apple

This species becomes a tree in milder climates, but on the prairies it makes an attractive large shrub. It has profuse fragrant, white flowers, followed by small, bright-red and yellow fruits in the fall.



Malus 'Almey' in flower and fruit.

Malus 'Dolgo' 30' Zone 2b

A vigorous grower, especially hardy on the prairies. The flowers, white and fragrant, are followed by bright-red fruits, which appear early, in August. The fruits make excellent jelly.

Malus 'Dorothea' 20' Zone 4

An attractive, semidouble hybrid with clear pink flowers, and then bright-yellow fruit during the fall. Unlike many crab apples, which flower only every other year, this one flowers well every year.

- Malus floribunda** 25' Zone 5b Japanese Crab Apple
A reliable species that every spring produces an abundance of pink flowers that later fade to white. These are followed by a profusion of small yellow and red fruits.
- Malus 'Golden Hornet'** 20' Zone 4b
A new crab apple with white flowers followed in early autumn by a profusion of bright golden yellow fruits.
- Malus 'Hopa'** 30' Zone 2b
One of the very best in the Ottawa area. The mauve-pink flowers are produced in profusion all along its branches and they are followed by fairly large orange-red and red fruits that are useful for jelly. It has an excellent habit and beauty of foliage, flowers and fruits, and should be considered ideal for planting in the small home garden.
- Malus 'Katherine'** 20' Zone 4
A type with unusually large, double, light-pink flowers fading to white followed by small reddish fruit. However, it often flowers only in alternate years.
- Malus 'Makamik'** 30' Zone 2b
A late crab apple with deep rosy-red flowers and purplish-red fruits. One of the best rosybloom crab apples for floral display and autumn fruits.
- Malus × micromalus** 15' Zone 4 Midget Crab Apple
Pinkish, fragrant flowers entirely cover the dense, thick branches. A very showy crab apple. Flowers every other year.
- Malus × moerlandsii 'Liset'** 20' Zone 4
An attractive selection with bright purplish-red flowers followed by small, glossy-red fruits. The leaves are purplish, later turning to green.
- Malus × moerlandsii 'Profusion'** 20' Zone 4
Very prolific in bloom, this crab apple has red to purplish-red flowers, which later turn to purplish pink. The fruits are small, red and glossy. The leaves are purplish, later turning bronzy green.
- Malus 'Prince Georges'** 20' Zone 5
A selection with very double light-pink flowers 2 inches across, and with a compact habit. Flowers annually.
- Malus × purpurea 'Aldenhamensis'** 20' Zone 3b
An attractive crab apple in foliage, flower and fruit. The flowers are purplish red, and last over a longer period than most crab apples. Foliage is dark reddish-green, sometimes slightly bronze. 'Eleyi' is similar with wine-red flowers, bright-red fruit, and purplish-red foliage.
- Malus 'Red Jade'** 15' Zone 5
A new crab apple with attractive pendulous branches. Flowers white; fruit bright red, remaining on the plant late in the year.
- Malus 'Royalty'** 20' Zone 2b
The second centennial tree. A recent introduction from Sutherland, Saskatchewan. The foliage is an excellent lustrous purplish red and remains so throughout the summer. Flowers are deep pink.
- Malus 'Rudolph'** 25' Zone 2b
A hardy crab apple from Dropmore, Manitoba. The flower buds are dark ruby, the flowers deep rose when open.

Malus sargentii 10' Zone 5 Sargent's Crab Apple
An excellent dwarf specimen with a spread much greater than its height. It has a profusion of pure-white flowers and then deep-red fruits.

Malus × scheideckeri 20' Zone 5
An extremely attractive specimen in spring with its carmine-striped, whitish, semidouble flowers, which are formed in bottle-brush fashion around each stem. Fruits yellow to orange.

Malus 'Sissipuk' 35' Zone 3b
The leaves and large rose-colored flowers of this Rosybloom selection appear later than the others and so extend the season of bloom of the crab apples. The dark-red fruits are very bitter and persist on the tree all winter.

Malus × soulardii 'Red Tip' 20' Zone 5
An attractive crab apple with single, deep-pink flowers, 1½ inches in diameter.

Malus 'Strathmore' 25' Zone 2b
This hybrid with deep-rose flowers and a narrow, upright habit was originated in Alberta. Its foliage, which is reddish all summer, turns to scarlet in the fall. A very desirable crab apple.

Malus 'Sundog' 30' Zone 2b
A hardy cultivar with a most attractive columnar habit and an abundance of large pink flowers.

Malus × zumi calocarpa 20' Zone 4 Redbud Crab Apple
One of the best for ornamental fruits, with small bright-red fruit often remaining well into the winter. Flower buds pink, followed by fragrant, white flowers.

MYRICA

Myrica cerifera 10' Zone 7 Wax-myrtle
Of interest for its attractive gray berries and evergreen foliage. Plants of both sexes are needed to ensure fruit formation. Suited for coastal areas in Nova Scotia and British Columbia.

Myrica gale 4' Zone 2 Sweet Gale
A low-growing native shrub found along the shores of rivers and suited to planting in wet, sandy areas. The wood and leaves are aromatic when crushed.

Myrica pensylvanica 8' Zone 2 Bayberry
This interesting species has gray berries that are covered with wax and are used in making bayberry candles. The gray fruits are conspicuous in winter. Grows best in poor, sandy soils. As the sexes are separate, both must be planted for fruit.

NANDINA

Nandina domestica 8' Zone 8b Nandina
An attractive evergreen shrub having finely dissected leaves that turn red in the fall and bright-red berries that remain long into the winter. Hardy only in the mildest areas of British Columbia.

NEILLIA

Neillia sinensis 6' Zone 5b Chinese Neillia
A graceful shrub with spreading branches and spirelike clusters of pink flowers in late May. Not reliably hardy at Ottawa.

NEMOPANTHUS

Nemopanthus mucronatus 10' Zone 3 Mountain-holly

An erect, much-branched shrub native to moist areas from Newfoundland to northern Ontario. Ornamental red fruits are produced in the summer. Of use mainly for planting in naturalistic areas similar to its native habitat.

OLEARIA

Olearia haastii 8' Zone 8b New Zealand Daisybush

An evergreen shrub with daisylike, white flowers; native to New Zealand. Useful for its summer flowers in dry, sunny areas in the mildest parts of British Columbia.

OSMANTHUS

Osmanthus delavayi 6' Zone 8

An attractive, evergreen dwarf shrub with glossy, dark-green leaves, and small, fragrant white flowers in early spring. Does well in the full sun.

Osmanthus heterophyllus 'Ilicifolius' 12' Zone 7b Holly Osmanthus

An upright, compact plant with evergreen hollylike leaves. An excellent shrub for use as a hedge or specimen plant in the milder areas of British Columbia. Flowers white, quite small and fragrant. The attractive foliage grayish and leathery.

OSMAREA

× **Osmarea burkwoodii** 6' Zone 8

An intergeneric hybrid of *Osmanthus* and *Phillyrea*. Attractive with its lustrous evergreen leaves and small fragrant flowers in April. *Osmarea* has a spreading habit and is suited to both specimen and hedge plantings in the mildest areas of British Columbia.

PACHISTIMA

Pachistima canbyi 12" Zone 2b Canby Pachistima

A low-growing, neat, dwarf shrub with small evergreen leaves, suitable for use as a ground cover in semishady areas.

Pachistima myrsinites 4' Zone 6 Myrtle Pachistima

A low-growing, spreading shrub with evergreen leaves, native to British Columbia. Suitable for use in cool, moist areas that do not receive too much sun.

PACHYSANDRA

Pachysandra terminalis 8" Zone 3 Japanese Spurge, Pachysandra

An excellent evergreen ground cover, ideal for use in shady places. *Pachysandra* creeps by underground stolons, quickly covering an area and maintaining a uniform height. Avoid hot dry locations. It needs some winter protection to survive on the prairies, but is reliably hardy at Ottawa.

PAEONIA

Paeonia suffruticosa 5' Zone 6 Peony

Shrubby peonies with white, pink, red or yellow flowers in late May. They do not die down to the ground like the herbaceous peonies, but make small shrubs.

They need a rich, well-drained soil with some lime added. Windy locations should be avoided. An extensive collection has been developed at the Royal Botanical Gardens in Hamilton, Ontario. Most cultivars of the tree peony do quite well in areas with a similar or milder climate.

SELECTIONS

'Comtesse de Tuder'—Double salmon.

'Reine Elizabeth'—Double rose-red.

'Souvenir de Ducher'—Clear violet.

'Souvenir de Maxime Cornu'—Flowers nodding, double, yellow with red markings, a hybrid of *Paeonia suffruticosa* and *P. lutea*.

PARROTIA

Parrotia persica 12-30' Zone 7 Persian Parrotia

A large shrub or small multistemmed tree of interest chiefly for its brilliant scarlet to orange and yellow leaves in fall and its flaky gray and white bark. Of use as a background or specimen shrub in a sunny, well-drained location.

PERNETTYA

Pernettya mucronata 30" Zone 8 Chilean Pernettya

An attractive dwarf shrub with evergreen leaves, quite showy with its large masses of fruit. The flowers are white or red, the fruit white, pink or red according to the selection. Most types are self-sterile, so two different cultivars should be planted to ensure good fruit set. Best grown in full sun, in an area where they can be contained as they sucker badly.

SELECTIONS

'Alba'—White fruits.

'Bell's Seedling'—Red berries, self-fertile.

'Coccinea'—Red fruits.

'Pink Bell'—Pink berries, self-fertile.

Pernettya tasmanica 4" Zone 8

An interesting species forming a prostrate mat with white flowers followed by large bright-red berries.

PEROVSKIA

Perovskia atriplicifolia 3-5' Zone 5 Silver-sage

A subshrub and member of the mint family, silver-sage is of interest because of its late, deep-lavender flowers from August until frosts. The gray foliage also has the attractive mint scent. Must be treated as a herbaceous perennial as it dies to the ground each winter.

PHILADELPHUS

Mock-orange

A large group of deciduous shrubs, valued for their white and often fragrant flowers. However, they have neither ornamental foliage or attractive fruit. They are easy to grow and need only the occasional renewal pruning. As mock-oranges vary greatly in height, care should be taken in selecting one of the size desired. Double-flowered types are of special interest as they retain their petals for a longer period than the single-flowered ones.

Philadelphus 'Albatre' 5' Zone 4

A small, attractive form suited for the home garden. The flowers are pure white, fully double and very fragrant.

Philadelphus 'Avalanche' 5' Zone 4

A single white, extremely fragrant cultivar with fine arching branches.

Philadelphus 'Bouquet Blanc' 5' Zone 4

A selection that forms a perfectly symmetrical mound of pure-white flowers well distributed over the entire plant.



Philadelphus 'Dame Blanche.'

Philadelphus coronarius 6-8' Zone 3 Sweet Mock-orange

A large, neat specimen with single flowers, white and very fragrant. Adapted to planting in dry areas. 'Aureus,' a compact selection with golden leaves, does best when planted in full sun.

Philadelphus 'Dame Blanche' 5' Zone 4

Excellent all-round cultivar with mass-bloom effect and symmetrical outline.

Philadelphus 'Enchantment' 6' Zone 4

White flowers, fully double with fringed petals.

- Philadelphus 'Galahad'** 4' Zone 3
A very fragrant and free-flowering cultivar developed at Dropmore, Manitoba, for the prairies.
- Philadelphus × lemoinei 'Innocence'** 6' Zone 4
A showy cultivar, upright in habit, and covered with bloom during the flowering season. However, at Ottawa it flowers at its best only once in every two or three years because of its inability to produce sufficient new wood.
- Philadelphus lewisii 'Waterton'** 4-6' Zone 2b
One of the hardiest mock-oranges, this selection was made in the Waterton Lakes area of Alberta, where it is native. It has a neat, bushy habit and flowers well spaced over the shrub.
- Philadelphus 'Manteau d'Hermine'** 4' Zone 4
A low-growing cultivar with creamy-white double flowers. One of the better dwarf types.
- Philadelphus 'Mont Blanc'** 4' Zone 4
A single, white, heavily scented cultivar with a nicely mounded shape.
- Philadelphus 'Patricia'** 4' Zone 3
A hybrid originated at Dropmore, Manitoba. Flowers creamy-white, fragrant and of medium size. Foliage deep green, with a thick branching habit.
- Philadelphus × polyanthus 'Atlas'** 6-8' Zone 5
A selection with extremely large, white single flowers.
- Philadelphus 'Purity'** 5' Zone 3
A striking cultivar 5 feet high and 8 feet wide with pure-white, fragrant flowers. Although the dark-green leaves are thick, they are completely hidden by the abundant bloom. Originated at Dropmore, Manitoba.
- Philadelphus × purpureo-maculatus 'Belle Etoile'** 6' Zone 4
Flowers fragrant, single and white, the center tinged maroon.
- Philadelphus schrenkii** 6' Zone 2b Manchurian Mock-orange
A vigorous grower, hardy on the prairies. Has medium-sized fragrant flowers in early June, before most others come into flower.
- Philadelphus 'Silver Rain'** 3' Zone 5
A new, dwarf cultivar with single, wide-open, pure-white flowers produced in profusion. Often listed as 'Silver Showers.'
- Philadelphus 'Silvia'** 4' Zone 3b
A shapely plant with pendulous branches, originated at Morden, Manitoba. Flowers pure-white and double.
- Philadelphus × virginalis** 9' Zone 3b Virginal Mock-orange
The well-known mock-orange, much overplanted in gardens. It is now being superseded by newer selections with similar fragrant flowers but of much dwarfer and neater habit.
- Philadelphus × virginalis 'Minnesota Snowflake'** 7' Zone 5
A cultivar with large green leaves and fully double flowers 1½ to 2 inches across. Suited for use as a lawn specimen, especially if it can be underplanted to hide the naked stems that eventually show.

PHILLYREA

Phillyrea vilmoriniana 9' Zone 8 Lanceleaf Phillyrea

An attractive shrub with spreading branches, shiny, narrow pointed evergreen leaves, small white flowers in dense clusters and red fruits, which turn black. Hardy only in the milder areas of British Columbia.



Fruit and foliage of *Photinia serrulata*.

PHOTINIA

Photinia × **frazeri** 'Birmingham' 10' Zone 8 Photinia

A new evergreen hybrid with brilliant red, young foliage on bright-red stems. Older leaves are thick and leathery and dark glossy green.

Photinia serrulata 15-30' Zone 7b Chinese Photinia

An attractive, tall shrub with large evergreen leaves. The new leaves are bright crimson. Has large flat heads of white flowers in May, followed by small, bright-red

berries. Prefers a well-drained soil that does not receive too much water during the summer. Hardy only in the milder areas of British Columbia.

Photinia villosa 15' Zone 5b Oriental Photinia

A rather shapely shrub with thick leathery dark-green leaves that turn to brilliant red in the fall, and bright-red fruits that persist well into the winter. Not reliably hardy at Ottawa.

PHYLLOSTACHYS

Phyllostachys aurea 15' Zone 7 Golden Bamboo

A stiffly erect bamboo with yellowish stems to 15 feet. Leaves green to 5 inches long. This is a creeping type, which can be readily maintained as a confined clump. Reasonably hardy in the milder areas of British Columbia.

PHYSOCARPUS

Ninebark

Physocarpus bracteatus 6' Zone 5 Twinpod Ninebark

A large, shapely shrub that merits more attention than it has received. It is especially effective in spring when it displays its extra-fine foliage and its attractive, spirelike flowers.

Physocarpus opulifolius 5-8' Zone 2b Ninebark

A tall-growing rather common shrub that seems to thrive in any soil. It is attractive in early spring when its unfolding leaf buds are as yellow as most forsythias. In June its pinkish-white flowers have some attraction. They are followed by seed pods that turn to crimson in summer and provide good material for floral arrangements. Best used as a background or as a filler with other shrubs.

SELECTIONS

'Luteus'—Continues its early-spring golden color for a longer period than the species, especially if grown in full sun.

'Nanus'—A dwarf form with smaller leaves.

PICEA

Spruce

Picea abies Zone 2b Norway Spruce

Selected forms of the Norway spruce that are slow growing, and maintain a dwarf, compact shape without pruning. Ideal for use in foundation plantings, rock gardens or cemeteries. There are many names in the literature and in nursery catalogues. Some of the more reliable ones follow:

SELECTIONS

'Echiniformis'—A very dwarf, flat-topped form, the needles long and sharp.

'Gregoryana Veitchii'—A faster-growing, less compact type with a moundlike form.

'Nidiformis'—A broad slow-growing form with a top like an inverted cone or bird's nest.

'Ohlendorffii'—Slowly forms a conical pyramid to 8 feet.

'Procumbens'—A prostrate form with horizontal branches, short, bright-yellow branchlets and light-green pointed leaves.

'Repens'—A low-growing form with branches prostrate or slightly arching.

Picea glauca albertiana 'Conica' 10' Zone 4 Dwarf Alberta Spruce

A perfect dwarf, conical form with very dense foliage. Must be protected

from winter sun by a screen of burlap around the whole plant and at least a foot away from the nearest twigs.

Picea omorika 'Nana' 5' Zone 3b Dwarf Serbian Spruce

A dwarf form, growing to a height of only 3 to 5 feet. An excellent type for formal planting in small home gardens.

Picea pungens 40-80' Zone 2 Colorado Spruce

A fast-growing, hardy coniferous tree varying greatly in the color of its foliage, seedlings ranging from green to blue. The blue Colorado spruce is *Picea pungens* 'Glauca.' Several very good blue forms have been selected and are propagated vegetatively. Among these are 'Hoopsii,' 'Koster' and 'Moerheimi.'

The seedling forms are faster growing than the grafted selections. However, all soon exceed the dimensions needed in foundation plantings. They should only be used as specimens in a place where sufficient space allows them to develop their full spread of 15 feet when their proportionate height is 40 or 50 feet.



Flowers and foliage of *Pieris floribunda*.

PIERIS

Pieris

Attractive evergreen, ericaceous shrubs. The flowers, drooping in upright, terminal clusters, are somewhat similar in appearance to those of lily-of-the-valley.

Pieris floribunda 6' Zone 5 Mountain Pieris

An erect, rounded shrub having new evergreen foliage an attractive bronzy-green. This is a handsome evergreen that grows well in either alkaline or acid soil.

Pieris 'Forest Flame' 7' Zone 8

A new hybrid of the mountain and Chinese pieris. Of interest for its brilliant-red young leaves. Hardier than *Pieris forrestii*.

Pieris forrestii 9' Zone 9a Chinese Pieris

A less hardy species, suitable for use only in the mildest areas of British Columbia. The young leaves are brilliant red.

Pieris japonica 9' Zone 5b Japanese Pieris

An excellent broad-leaved evergreen. The flower clusters are pendulous, the mature foliage a lustrous dark green, and the new growth a rich bronze color. Flowers best in a sunny location.



Spring pruning of the new growths of *Pinus mugo mughus*, the mugho pine.

PINUS

Pinus mugo mughus 8' Zone 1 Pine Mugho Pine

An attractive low-growing shrub for foundation plantings. The new growths, however, must be pruned each spring, one half or more being cut off before the needles begin to expand. The buyer should make sure that the nurseryman has propagated his material asexually and not by seed from the wild species *Pinus mugo*, which soon grows to 8 feet or more. 'Pumilio' is a slow-growing selection with smaller needles.

- 'Jackman's Variety' (Zone 2b) — Type with a strong upright habit, and large, golden-yellow flowers, 3 feet.
- 'Klondike' (Zone 3) — Flowers larger and deeper yellow than most others. Dwarf habit, 2 feet.
- 'Moonlight' (Zone 2b) — Flowers pale yellow from July till frost, 3 feet.
- 'Mount Everest' (Zone 3) — A vigorous grower with pure-white flowers, 4 feet.
- 'Primrose Beauty' (Zone 3) — Flowers large and creamy-yellow, habit semi-spreading, 2 feet.
- 'Sutter's Gold' (Zone 3) — A very low growing type with bright-yellow flowers, 18 inches.
- 'Tangerine' (Zone 2b) — Flowers a deep orange turning to golden yellow. Color best in a rich moisture-retaining soil, 18 inches.



Potentilla parvifolia 'Farreri,' the Gold Drop potentilla.

Potentilla parvifolia 3-4' Zone 2

A species with finer foliage than *Potentilla fruticosa*.

SELECTIONS

- 'Farreri' (Gold Drop)—A dwarf cultivar with bright golden-yellow flowers from early June to October, 3 feet.
- 'Katherine Dykes' — Flowers light yellow, habit semispreading, 4 feet.

PRINSEPIA

Prinsepia sinensis 4-10' Zone 2b Cherry Prinsepia

A hardy shrub with bright-green leaves, inconspicuous yellow flowers and small reddish fruit. The cherry prinsepia makes a good thick hedge and as such has merit for use on the prairies.

PRUNUS

A group of spring-flowering trees and shrubs. Most are quite spectacular in flower, some have attractive foliage and bark, and some have ornamental fruits. This genus also includes such fruit trees as the cherries, plums and peaches. Several species are also native to various parts of Canada and are especially important as sources of food for wildlife.

Prunus cerasifera 'Atropurpurea' 10-20' Zone 5b Pissard Plum

A very attractive purple-leaved plum, which can be grown as a large shrub or trained into a small tree with a single trunk. The purple color is most intense when the shrubs are grown in full sun.

Prunus × **cistena** 5-7' Zone 4 Purpleleaf Sand Cherry

An attractive shrub valued for its purple foliage and its single white flowers followed by dark-purple fruits.

Prunus glandulosa 5' Zone 5 Dwarf Flowering-almond

A very valuable low shrub for planting under windows or at the front of shrub borders. It flowers profusely each year, making a spectacular display. However, branches often die from fire blight and these must be cut out immediately if the spread of the disease is to be prevented. The following selections are best:

'Alboplena'—With double, white flowers.

'Sinensis'—With double, pink flowers.

Prunus laurocerasus 6-30' Zone 7 Cherry-laurel

An evergreen shrub with shiny, leathery, dark-green leaves. A vigorous grower in British Columbia, the cherry-laurel must be heavily pruned to prevent it from crowding and starving adjacent plants. Plants are offered for sale in southern Ontario but they are not reliably hardy and often winterburn very badly.

SELECTIONS

'Latifolia'—With large, glossy leaves. Can be tried in southern Ontario. Often listed as 'Macrophylla.'

'Otto Luyken'—A compact selection with rather small leaves that are pointed and very shiny.

'Reynvaanii'—Foliage deep green.

'Schipkaensis'—A dark-green hardier form.

'Zabeliana'—A narrow-leaved form with a more spreading habit to 4 or 5 feet. Can be tried in southern Ontario.

Prunus lusitanica 10-60' Zone 7b Portugal Laurel

A useful, fairly large shrub for gardens in the milder areas of British Columbia. Leaves evergreen and glossy, flowers white followed by spikes of purple cherrylike fruits. Plants grow to tree size only in the southern United States.

Prunus maritima 6' Zone 4 Beach Plum

A dense rounded bush with white flowers in early May followed by edible purple fruits. An interesting shrub that grows well by the seashore.

Prunus × nigrella 'Muckle' 10' Zone 2 Muckle Plum

A new shrubby plum originated in Manitoba. It is especially impressive with its abundant bright flowers, purplish-pink in color. It has never produced fruit and is thought to be sterile.

Prunus padus 10-40' Zone 2 European Bird Cherry

Although a tree in milder areas, this cherry is used as a large shrub on the prairies, where it grows to 20 feet. Of special interest as one of the first shrubs to leaf out in the spring. The small white flowers are borne in drooping clusters 3-6 inches long.



Prunus glandulosa 'Alboplena,' the dwarf flowering almond.

Prunus persica 15-20' Zone 6b Flowering Peach

There are several selections of the common peach that are grown chiefly for their ornamental flowers. However, they require considerable pruning and spraying in order to produce a good display. They must be sprayed to control borers and other pests of commercial peaches and they must be pruned heavily after flowering to force good growth of new flowering wood for the next season.

SELECTIONS

'Cardinal'—Double flowers, rich madder-rose with a crimson sheen.

'Iceberg'—Double, pure white.

'Clara Meyer'—Flowers double, pink.

'Pink Charming'—Large double flowers, deepest rose-pink.

'Purpurea'—Leaves reddish-pink.

- Prunus** × **skinneri** 'Baton Rouge' 6' Zone 2
 Small shrub with deep-rose flowers. Very free flowering and very effective when in flower. Quite hardy on the prairies.
- Prunus tenella** 3-4' Zone 2 Dwarf Russian Almond
 A neat wide-spreading shrub with deep rosy-red flowers in early May. A very effective, very early flowering shrub. 'Fire Hill' is a new selection with a more erect habit, and rosier crimson flowers.
- Prunus tomentosa** 8' Zone 2 Manchu Cherry
 A serviceable shrub, good as a specimen plant or for use as a flowering hedge. Flowers light-rose, later fading to white, followed by bright, edible cherries. Quite hardy on the prairies.
- Prunus triloba** 'Multiplex' 6-10' Zone 2b Flowering-almond
 A very popular shrub with large double flowers, rosy-pink, in early May. Should only be grown on its own roots.
- Prunus virginiana** 'Shubert' 12-20' Zone 2 Shubert Choke Cherry
 Grown as a large shrub or small tree. Of interest for its leaves which are green at first and turn deep purple as the season progresses.

PSEUDOSASA

- Pseudosasa japonica** 5-15' Zone 7b Metake or Arrow Bamboo
 Also known as *Arundinaria japonica*. This is a fairly compact bamboo that spreads slowly by underground rhizomes. To be grown only in a confined area where it will not overrun its allotted space.

PYRACANTHA

Firethorn

A group of shrubs valued chiefly for their profuse berries, which are retained well into the winter. They are also attractive in May with masses of small white flowers. They can be grown as specimen plants in foundation plantings or they can be trained to grow on sunny walls, a method that displays their fruit to the best advantage. None are reliably hardy at Ottawa, but *Pyracantha coccinea* 'Lalandii' and 'Kasan' do very well in southern Ontario in sheltered locations. Many are susceptible to fire blight but some of the newer selections are more resistant. Scale can also be a problem in some areas.

- Pyracantha atalantoides** 18' Zone 7b Gibb's Firethorn
 A tall-growing species with bright-red berries that remain on the shrub longer than those of most firethorns. Hardy only in the milder areas of British Columbia.
- Pyracantha coccinea** 6' Zone 6 Scarlet Firethorn

The following selections of this *Pyracantha* are the most reliable for use in the milder areas of Eastern Canada.

SELECTIONS

- 'Kasan'—The hardiest firethorn and one that does very well in southern Ontario, especially when trained against a sunny wall. It produces a brilliant show of orange berries, which are retained well into the winter.
- 'Lalandii'—Not quite as hardy but an excellent slender-growing plant for training on walls. Showy orange-red berries.
- 'Orange Glow'—A new selection with abundant orange-red fruits and greater resistance to disease.



Pyracantha coccinea 'Kasan' in fruit, Hamilton, Ontario.

Pyracantha crenulata 'Flava' 10' Zone 8

A tender firethorn with yellow fruits. Hardy only in the milder areas of British Columbia.

Pyracantha crenulata rogersiana 10' Zone 8

A good variety where hardy. Covered with small white flowers in June, orange-red fruits in the fall.



Fruit of *Pyracantha* 'Rosedale.'

Pyracantha 'Eddie's Coral' Zone 7b

A hybrid originated in British Columbia. A vigorous grower with lustrous leaves and a profusion of coral-red fruits, which remain on the plant most of the winter.

Pyracantha 'Oxford' Zone 8

A tender cultivar, the most resistant to fire blight. Fruit yellow-orange.

Pyracantha 'Rosedale' Zone 8

A tender selection which has the darkest red berries of all firethorns. A vigorous grower.

RHAMNUS

Buckthorn

A large group of trees and shrubs of little ornamental value except for some species that may be utilized as hedge plants and screens. Many species, however, harbor the crown rust of oats, and are not only undesirable in rural areas but are prohibited plants in many sections of Canada.

RHODODENDRON

Rhododendron, Azalea

The usefulness of rhododendrons and azaleas as garden subjects varies greatly from one part of the country to another. The greatest variety and number of species and hybrids can be grown in the mild coastal areas of British Columbia. Many different kinds are already being grown there, but there are many more species and hybrids now widely grown in Europe that should be tried in British Columbia. Some areas of the Maritimes, especially coastal areas in Newfoundland, Nova Scotia and Prince Edward Island, have a climate suitable for growing a fairly wide variety of the hardier kinds. Rhododendrons and azaleas can also be grown in the milder areas of Ontario and in the interior of British Columbia, provided special attention is given to location and soil conditioning. A few varieties can be grown in Ottawa if given the correct soil and if planted in protected locations. The rest of Canada, however, has too cold a winter for growing rhododendrons satisfactorily. At the re-



A planting of rhododendrons and azaleas in Victoria, British Columbia.

search stations at Vineland Station, Ontario, and Kentville, Nova Scotia, rhododendrons are being tested and bred for hardiness in their respective areas. Extensive new plantings have also been introduced to the arboretum at the Royal Botanical Gardens in Hamilton, Ontario.

Uses

Rhododendrons are attractive throughout the year, their evergreen foliage being especially interesting during the winter. Many of the deciduous azaleas have brilliant foliage colors in the autumn. Both rhododendrons and azaleas produce very profuse displays of flowers during the spring. They are especially useful for foundation plantings and in milder areas for large mass shrub borders. In areas

with cold, dry winter winds and hot summers they should be planted where they are protected from the prevailing winds and receive some shade for most of the day during both winter and summer. In Ontario, an east-facing location is best. Avoid low-lying areas, where there are frequent frosts.

Soils

An acid soil with a lot of humus is a necessity for all rhododendrons and a decided benefit to azaleas. A soil of pH 4.5 to 6.0 is ideal. The soil must be properly prepared before planting. As the roots are close to the surface the soil must not be disturbed after planting. For acid, sandy soils, work 6 inches of peat moss into the top 6 to 8 inches of soil. If the soil is decidedly alkaline or a heavy clay, remove the top 18 inches, break up the subsoil, and place 3 inches of drainage material in the trench. Fill the rest of the hole with a mixture of acid peat and an acid woods soil



A planting of rhododendrons in Yarmouth, Nova Scotia.

containing plenty of humus. If the drainage is exceedingly poor, tile may have to be put in at the base of the excavation. Raised beds of acid peat and soil may be used in areas with poor drainage or heavy clay soils.

Planting

Rhododendrons should be planted in early spring before growth starts but may be satisfactorily planted later if they are well watered. Never plant rhododendrons or azaleas deeper than they were in the nursery. After planting, firm the soil well to prevent any settling. Water the plants thoroughly and apply a mulch of acid peat, rotted oak leaves, pine needles or well-rotted sawdust.

Annual Care

Test the soil every 2 or 3 years to be sure that the correct level of acidity is being maintained. If need be, add aluminum sulphate or ammonium sulphate to the soil as directed by the manufacturer. Fertilizers specially formulated for rhododendrons are now available. Avoid fertilizing with nitrogen after June as this stimulates late growth, which may result in winter injury.

If there is little rain during the summer, the plants should be watered thoroughly once a week. If possible, avoid using hard water, which contains a lot of calcium, but rather use collected rain water. In hot, dry weather a light overhead sprinkling is also helpful. Perforated hoses are ideal for this purpose. Watering should cease in early September so that the plants can harden off. Like all evergreen plants, rhododendrons should have one thorough watering before the ground freezes to give the plants water for use during the winter and in early spring.



A planting of rhododendrons at Vineland, Ontario.

Rhododendrons and azaleas need very little pruning. It is only necessary to prune out dead and diseased branches and those that give the plants an unbalanced appearance. Young and vigorous growth can be encouraged in old plants by a severe pruning, which must be done early in spring before growth starts. Faded flower heads should also be cut off so that the energy of the plants is directed into the formation of new flower buds rather than unwanted seeds.

RECOMMENDED RHODODENDRONS

The following species and cultivars are presently being successfully grown in the designated areas.

Eastern Canada

The hardiest rhododendrons may be grown in the following regions: most of Nova Scotia, southern New Brunswick and parts of Prince Edward Island and Newfoundland, and southern Ontario as far north as Ottawa as indicated by the hardiness ratings. Names of plants for the milder sections of the Maritimes were kindly supplied by Mr. G. Swain, Research Station, Kentville, Nova Scotia, and those for southern Ontario by Mr. R. Forster, Horticultural Experiment Station, Ontario Department of Agriculture, Vineland Station, Ontario.

In the lists that follow, the symbol ** indicates superior selections. The hardiness rating system is that used by the American Rhododendron Society, as follows:

H-1 hardy to -25°F	H-5 hardy to $+15^{\circ}\text{F}$
H-2 hardy to -15°F	H-6 hardy to $+25^{\circ}\text{F}$
H-3 hardy to -5°F	H-7 hardy to $+32^{\circ}\text{F}$
H-4 hardy to $+5^{\circ}\text{F}$	

<i>Species</i>	<i>Hardiness rating</i>	<i>Height</i>	<i>Period of bloom</i>	<i>Flower color</i>
<i>R. brachycarpum</i>	H-2	6-8'	June	cream, pink
<i>R. carolinianum</i> **	H-1	4-5'	mid-May	pale pink
<i>R. catawbiense</i>	H-1	6-8'	early June	lilac, purple
<i>R. dauricum</i>	H-2	4-5'	April, May	lavender rose
<i>R. degronianum</i>	H-3	2'	late May	soft pink
<i>R. desquamatum</i>	H-3	3'	mid-May	mauve rose
<i>R. fargesii</i>	H-3	4'	early June	rose, pink
<i>R. fauriei</i>	H-3	3'	late June	white or yellowish with pink flush
<i>R. ferrugineum</i>	H-2	2'	late June	rose, crimson
<i>R. hirsutum</i>	H-1	3-4'	early June	pink
<i>R. impeditum</i>	H-2	18"	April, May	mauve, purplish blue
<i>R. insigne</i>	H-3	3'	mid-June	pinkish white
<i>R. macrophyllum</i>	H-2	5'	early June	rose pink
<i>R. maximum</i> **	H-1	6-15'	late June	pale to deep pink
<i>R. minus</i>	H-2	6-8'	June	rose, white
<i>R. mucronulatum</i> **	H-2	4-6'	late April	rose
<i>R. oreodoxa</i>	H-3	4-8'	late May	pink
<i>R. smirnowii</i> **	H-2	5-8'	late May	rose pink

<i>Cultivars</i>	<i>Hardiness rating</i>	<i>Height</i>	<i>Flower color</i>
'America'**	H-1	5'	dark red
'Blue Peter'	H-2	4'	light lavender-blue
'Caractacus'	H-1	4'	purplish red
'Caroline'**	H-2	4'	orchid lavender (late May)
'Catawbiense Album'**	H-1	5-7'	white
'Catawbiense Grandiflorum'**	H-2	6-7'	lilac
'Charles Dickens'	H-1	3'	purplish crimson-red
'Conewago'	H-3	3'	rose magenta

'Cunningham's White'	H-2	4'	white
'Everstianum'***	H-2	4-6'	rose white
'Fastuosum Plenum'	H-2	6'	lilac
'Goldsworth Yellow'	H-3	6'	creamy yellow
'LaBars' White'	H-2	4'	white
'Lee's Dark Purple'	H-2	4'	deep purple
'Mrs. C. S. Sargent'***	H-1	5'	rose pink
'Nova Zembla'	H-2	5'	dark red
'Parson's Gloriosum'	H-1	5'	light pink
'Pioneer'***	H-2	3'	rose pink (early May)
'Praecox'	H-3	3'	rose lilac (mid-May)
'Purple Splendour'	H-2	4'	deep rich purple, dark blotch
'Ramapo'***	H-2	2'	bright light-violet (early May)



Rhododendron 'Caroline'.

'Roseum Elegans'***	H-2	5'	rose pink
'Van Weerden Poelman'***	H-2	4'	crimson
'Windbeam'	H-3	3'	white to pink (late May)

Most of these cultivars flower from mid- to late June.

The following new Shammarello hybrids from Ohio are a considerable improvement over the old Ironclads listed above. They are not yet generally available but should soon be listed by Canadian nurseries. They are being successfully grown in Vineland and Hamilton, Ontario, and are suitable for use in areas with similar or milder climates.

<i>Cultivars</i>	<i>Hardiness rating</i>	<i>Height</i>	<i>Period of bloom</i>	<i>Flower color</i>
'Cheer'***	H-2	4'	mid-May	light pink
'Elie'***	H-2	5'	mid-May	deep pink
'Holden'***	H-2	4'	late May	rosy red
'Rocket'***	H-2	5'	late May	coral pink
'The General'***	H-2	5'	late May	crimson
'Tony'***	H-2	4'	mid-May	cherry red

Interior British Columbia

All species and cultivars listed under Eastern Canada may be grown in the areas of interior British Columbia where the climate is similar and the soil is acid.

Coastal British Columbia (Victoria, Vancouver and immediate area)

The following list was compiled by Dr. J. Neill, Division of Plant Science, University of British Columbia, Vancouver, British Columbia, and the Vancouver (B.C.) Chapter of the American Rhododendron Society.

<i>Species</i>	<i>Approximate</i>		<i>Flower color, comments</i>
	<i>Hardiness rating</i>	<i>eventual height</i>	
BEFORE APRIL 1			
<i>R. arboreum</i>	H-5	30'	white to crimson
<i>R. barbatum</i>	H-4	30'	bright red
<i>R. dauricum</i>	H-2	6'	lavender rose
<i>R. flavidum</i>	H-4	3'	pale yellow
<i>R. leucapsis</i> **	H-3	2'	white
<i>R. lutescens</i>	H-3	15'	bright yellow
<i>R. moupinense</i>	H-4	4'	white rose
<i>R. mucronulatum</i>	H-2	8'	rose
<i>R. strigillosum</i> **	H-4	12-20'	scarlet

Depending on the weather, many of the above group may flower any time from January to April and so should be planted in a location where they are protected from late frosts.

EARLY APRIL

<i>R. bureavii</i> **	H-4	8'	white, rose, good foliage plant
<i>R. calophytum</i> **	H-3	20'	white, pink
<i>R. ciliatum</i>	H-4	6'	white
<i>R. fargesii</i> **	H-3	10'	rose, pink
<i>R. macabeum</i> **	H-4	20'	deep yellow, leaves 12" × 6"
<i>R. mallotum</i> **	H-4	20'	dark crimson, leaves have cinnamon indumentum
<i>R. pemakoense</i> **	H-3	6-18"	lilac pink
<i>R. racemosum</i>	H-3	2-6'	pink
<i>R. sinogrande</i>	H-4	30'	pink, leaves up to 30" × 10"

LATE APRIL

<i>R. arizelum</i>	H-3	20'	yellow, large leaf
<i>R. augustinii</i> **	H-3	15'	blue lilac
<i>R. bullatum</i>	H2-4	8'	scented white
<i>R. campanulatum</i> var. <i>aeruginosum</i> **	H-2	low growing	purple, new foliage turns blue
<i>R. campylocarpum</i>	H-3	4-12'	yellow, white
<i>R. davidsonianum</i>	H-3	10'	white rose, dark pink; an outstanding form
<i>R. desquamatum</i>	H-3	12'	mauve rose
<i>R. fictolacteum</i> **	H-4	25'	white, large leaf
<i>R. forrestii</i>	H-3	12"	bright scarlet
<i>R. mollyanum</i> **	H-3	25'	pink
<i>R. oreotrepes</i>	H-3	8'	mauve, purple
<i>R. saluenense</i>	H-3	4'	pinkish, purple
<i>R. scintillans</i>	H-4	2'	lavender blue
<i>R. sperabile</i>	H-3	6'	crimson, tubular
<i>R. tephropeplum</i>	H-3	6'	carmine rose
<i>R. williamsianum</i> **	H-3	5'	pink

EARLY MAY

<i>R. aberconwayi</i>	H-3	5-7'	white, saucer-shaped
<i>R. fortunei</i>	H-4	15'	pink-lilac, fragrant
<i>R. glaucophyllum</i>	H-3	4'	pale rose, leaves aromatic
<i>R. haematodes</i>	H-3	4'	scarlet
<i>R. imperator</i>	H-3	12"	pink, rose
<i>R. lacteum</i>	H-4	10-15'	yellow
<i>R. orbiculare</i>	H-3	10'	rose
<i>R. radicans</i>	H-3	6"	purple, one of the smallest
<i>R. russatum</i>	H-3	4'	purple
<i>R. sargentianum</i>	H-3	12"	lemon yellow, white
<i>R. souliei</i>	H-3	12'	white rose
<i>R. wardii</i> **	H-3	6-12'	creamy yellow
<i>R. xanthocodon</i>	H-4	15'	yellow

LATE MAY

<i>R. cinnabarinum</i>	H-4	15'	cinnabar red, tubular
<i>R. concatenans</i>	H-4	8'	apricot yellow
<i>R. lepidostylum</i>	H-3	30"	pale yellow
<i>R. smirnowii</i>	H-2	10'	rose pink, good foliage
<i>R. venator</i>	H-3	8'	scarlet
<i>R. yakusimanum</i> **	H-3	4'	white, rose, good foliage

JUNE

<i>R. makinoi</i>	H-3	8'	soft pink, leaves have white indumentum
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EARLY AUGUST

<i>R. auriculatum</i>	H-3	15'	white
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Cultivars, with flower color, and fragrance if present, arranged according to period of bloom. Most of these are available at local nurseries in Vancouver, Victoria and the northwestern Pacific states.

<i>Cultivars</i>	<i>Hardiness rating</i>	<i>Height in 10 years</i>	<i>Flower color, comments</i>
BEFORE APRIL 1			
'Bric-a-brac'**	H-3	5'	pure white
'Christmas Cheer'	H-3	5'	pink
'Praecox'	H-3	3'	rose lilac
EARLY APRIL			
'Bluebird'	H-4	2'	blue
'C. B. van Nes'***	H-4	4'	scarlet
'Cilpinense'***	H-4	2'	pale shell-pink
'David'***	H-4	5'	red
'Elizabeth'***	H-4	3'	deep red, blooms again in fall
'Snow Lady'***	H-3	3'	pure white
LATE APRIL			
'Alice Street'***	H-4	3'	deep yellow
'Brocade'***	H-4	2'	pink, frilled
'Carita'***	H-4	3'	pale primrose and apricot
'Humming Bird'	H-3	2'	pink shaded vermilion
'Unique'***	H-4	3'	pale yellow tinged peach
'White Olympic Lady'***	H-4	3'	white
EARLY MAY			
'Anna Rose Whitney'***	H-3	6'	deep pink
'Beauty of Littleworth'	H-3	6'	pure white with throat flecked red
'Blue Peter'	H-2	5'	light lavender-blue
'Bow Bells'***	H-3	3'	pink, good foliage
'C.I.S.'	H-4	3'	apricot, deeper at throat
'Cotton Candy'***	H-4	4'	large conical pink truss
'Damaris'*** (Logan form)	H-4	3'	deep yellow
'Faggetter's Favourite'	H-3	6'	cream, flushed pink
'Gold Mohur'***	H-4	3'	buff yellow
'Grosclaude'***	H-4	3'	blood red, leaves have cinnamon indumentum
'Jan Dekens'	H-3	4'	frilled pink
'Jean Mary Montague'***	H-3	3'	bright red, frilled
'Lady Chamberlain' (in variety)	H-5	4'	rose to salmon, tubular
'Loderi King George'*** (and all Loderi group)	H-4	5'	blush white, fragrant
'Loder's White'	H-4	3'	pinkish mauve, fading to white

'Marcia'***	H-3	3'	one of best deep yellows
'May Day'***	H-4	3'	glowing red, good foliage plant
'Moonstone'	H-3	2'	cream, ivory and pink, companion plant to 'Bow Bells'
'Mrs. A. T. de la Mare'***	H-3	5'	white with green blotch, fragrant
'Mrs. Betty Robertson'***	H-3	3'	butter yellow with red flare
'Mrs. Furnival'***	H-3	3'	pink with crimson blotch
'Mrs. G. W. Leak'	H-4	5'	pink with red blotch
'Mrs. Horace Fogg'***	H-4	4'	neuron rose
'Mrs. W. C. Slocock'	H-3	4'	apricot pink, shaded yellow
'Naomi'*** (in variety)	H-3	4'	pink shaded yellow and mauve, fragrant
'Pink Pearl'	H-3	4'	pink
'Rainbow'	H-4	4'	carmine with light center
'Souvenir of W. C. Slocock'	H-4	2½'	primrose yellow
'Susan'***	H-3	3'	lavender blue
'Temple Belle'	H-3	2'	soft pink

LATE MAY

'Albatross'***	H-3	5'	white, scented
'Angelo'***	H-4	5'	white with green blotch
'Brittania'***	H-3	3'	red
'Day Dream'***	H-4	4'	biscuit yellow
'Fabia' (in variety)	H-4	3'	salmon, double calyx
'Lady Clementine Mitford'***	H-3	3'	peach pink
'Margaret Dunn'	H-3	3'	apricot flushed shell pink
'Purple Splendour'***	H-2	4'	deep rich purple with dark blotch

JUNE

'Azor'	H-4	5'	clear pink with brown flecks at base
'Goldsworth Orange'	H-3	4'	orange
'King of Shrubs'***	H-4	3'	yellow and rose
'Nereid'	H-4	2'	salmon orange
'Vulcan'***	H-3	3'	glowing red

JULY

'Polar Bear'	H-3	5'	pure white, fragrant
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RECOMMENDED AZALEAS

The following lists contain preferred azaleas that are hardy in the various areas where the climate is favorable. Most species and cultivars can be had from Canadian nurseries. Current hybridizing is continually providing better and hardier azaleas, but growers should make sure of hardiness in a definite area unless they

are willing to risk disappointment. The problem of hardiness also occurs with many azaleas sold by color as unnamed seedlings.

The hardiness ratings are not final and represent only the coldest zones in which the individual selections are presently being grown. The zones are those on the Map of Plant Hardiness Zones in Canada. Future trials may show that some of the selections are hardier than the ratings given.

DECIDUOUS

SPECIES

<i>Species</i>	<i>Zone</i>	<i>Height</i>	<i>Period of bloom</i>	<i>Flower color, comments</i>
<i>R. arborescens</i>	6	9'	June	white, fragrant
<i>R. calendulaceum</i>	6	9-12'	late May	yellow to orange, fragrant
<i>R. canadense</i>	4	3'	late May	rose purple
<i>R. × fraseri</i>	5	6'	early May	lavender pink
<i>R. indicum</i>	8	6'	late May	red to scarlet
<i>R. japonicum</i>	6	6'	late May	rose red to yellow
<i>R. kaempferi</i> ¹	6	6-9'	June	orange red
<i>R. mucronatum</i> ¹	6	6-8'	early May	pure white
<i>R. nudiflorum</i>	5	6'	late May	light pink
<i>R. prunifolium</i>	8	7'	August	crimson
<i>R. reticulatum</i>	8	5-10'	late April	rose purple
<i>R. roseum</i>	5b	6-9'	late May	bright pink
<i>R. schippenbachii</i>	5	6-12'	April-May	rose pink, fragrant
<i>R. vaseyi</i>	6	6-9'	April-May	light rose
<i>R. viscosum</i>	5	6-12'	June-July	white with pink, fragrant
<i>R. yedoense</i>	6	4-6'	late May	reddish violet
<i>poukhanense</i> ¹				

¹Evergreen in the mildest areas.

CULTIVARS

Ghent. A group of the older hybrids noted for their hardiness. They are 5 to 10 feet high and bloom in late May.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color, comments</i>
'Bouquet de Flore'	6	orange red with yellow blotch
'Byron'	6	white tinged red, double
'Coccinea Speciosa'	6	orange red
'Corneille'	8	pink, double
'Daviesi'	6	pale yellow to white
'Fanny'	6	violet red
'Gloria Mundi'	6	orange with yellow blotch, frilled
'Nancy Waterer'	6	golden yellow
'Narcissiflora'	6	yellow, double
'Pallas'	6	orange red
'Rembrandt'	8	mottled red

Mollis. An older group noted for large flowers of brilliant color in late May. Plants grow to a height of 6 feet.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color</i>
'Apple Blossom'	8	soft pink
'Comte de Gomer'	8	violet red with orange yellow blotch
'Dr. Jacobi'	8	deep red
'Dr. Reichenbach'	6	salmon orange
'Frans van der Bom'	8	salmon orange
'Hortulanus H. Witte'	6	yellowish orange
'Koster's Brilliant Red'	6	reddish orange

Occidentale. A group with delicately colored, fragrant flowers in late May. Plants grow to a height of 8 feet.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color, comments</i>
'Exquisite'	8	pale pink with golden blotch
'Irene Koster'	8	pure pink, fragrant
'Magnifica'	8	rose with orange blotch

Exbury and Knap Hill. A race of hardy azaleas released since 1945. They are noted for their large and often fragrant trusses of bright flowers in late May. Some are dwarf, spreading to 4 feet; others are 7 to 8 feet high.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color, comments</i>
'Balzac'	8	orange red, fragrant
'Berry Rose'	6	orange red with yellow blotch
'Brazil'	6	orange
'Devon'	8	orange red
'Fawley'	6	white, flushed pink
'Firefly'	8	rose crimson with orange blotch
'Gibraltar'	6	orange
'Golden Dream'	6	golden yellow
'Golden Oriole'	8	yellow with deep-tangerine blotch
'Harvest Moon'	8	yellow, frilled
'Hotspur Red'	6	orange with yellowish orange blotch
'Hugh Wormald'	6	yellow with yellowish orange blotch
'J. J. Jennings'	6	deep red, large
'Knap Hill Apricot'	8	yellow, apricot
'Peregrine'	6	orange
'Persil'	8	white with pale-yellow blotch
'Royal Lodge'	8	red
'Scarlet Pimpernel'	6	red
'Seville'	6	orange
'Toucan'	6	pale cream, scented
'Tunis'	8	red with orange blotch
'White Swan'	6	white, large

EVERGREEN

Most of the evergreen azaleas in the following lists are suited only to the mild climate of coastal British Columbia. Some of the Kaempferi and Gable Hybrids,

however, are hardy in the mildest areas of Nova Scotia and southern Ontario.

Kurume. Most of these originated in Japan during the nineteenth century. They are widely sold by florists as pot plants, but out of doors they are reliably hardy only in the mild sections of coastal British Columbia and in localities where there is enough snow to cover them throughout the winter. Their habit varies from spreading to upright to a maximum of 6 feet. Most flower in early May.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color, comments</i>
'Adonis'	8	white, frilled, hose-in-hose
'Aladdin'	8	dark red
'Diana'	8	salmon pink, hose-in-hose
'Helena'	8	rose pink, semidouble
'Hino-crimson'	8	deep crimson-red
'Hinodegiri'	8	crimson red
'Hi-no-mayo'	8	pinkish red
'Ima-shojo' (Christmas Cheer)	8	deep red, small
'Sakata Red'	8	orange red
'Sherwood Red'	8	orange red
'Ward's Ruby'	8	red

Kaempferi. A group of azaleas that are evergreen in mild climates but deciduous and hardy in areas as cold in winter as Toronto. They grow upright to a height of 6 to 8 feet and flower in May.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color, comments</i>
'Anny'	8	orange red
'Favorite'	6	deep pink, frilled
'Fedora'	6	violet red
'John Cairns'	6	orange
'Kathleen'	6	rosy red
'Orange Beauty'	8	scarlet orange
'Red Pimpernel'	6	orange red
'Wilhelmina Vuyk' (Palestrina)	6	ivory white

Gable. A group of the hardiest evergreen azaleas of variable heights, and flowering from early to late May.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color, comments</i>
'Cameo'	8	shell pink, hose-in-hose
'Cameroon'	6	red
'Claret'	8	dark red
'Corsage'	8	lavender, fragrant
'Elizabeth Gable'	6	red
'Forest Fire'	8	rose, small, hose-in-hose
'James Gable'	8	red, hose-in-hose
'Louis Gable'	6	violet red, semidouble
'Mildred Mae'	6	reddish violet
'Purple Splendour'	6	reddish violet, hose-in-hose
'Rosebud'	8	violet rose, double, hose-in-hose
'Springtime'	6	violet red
'Stewartstonian'	8	bright clear red

Glenn Dale. A diverse group developed by the United States Department of Agriculture. The plants grow 5 feet high.

<i>Cultivars</i>	<i>Zone</i>	<i>Flower color, period of flowering</i>
'Buccaneer'	8	brilliant orange-red, mid-April
'Zulu'	8	mallow purple, late April

RHODOTYPOS

Rhodotypos scandens 6' Zone 6 Jetbead

An attractive, low shrub, useful as a filler in shrub borders or foundation plantings. The white flowers are followed by shiny black fruits, which remain on the plant throughout the winter.

RHUS

Sumac

A diverse group of shrubs native to Canada. Of interest chiefly because of their showy fruit and the brilliant fall color of their foliage. Of use mainly for dry places and for naturalizing over large areas, especially on hillsides where they can be seen to good advantage and where their habit of suckering presents no problem.

As the sexes are often on separate plants, only those plants whose flowers have both sexes should be propagated vegetatively for planting. Poison sumac and poison-ivy are also members of this genus.

Rhus aromatica 3' Zone 3 Fragrant Sumac

A low-growing shrub spreading by suckers. Useful for planting in front of taller shrubs, and as cover for slopes. Fall color a brilliant orange and scarlet.

Rhus copallina 20' Zone 5 Shining Sumac

A shrub of unusual fall beauty with its reddish-purple leaves and scarlet fruits. The foliage is a lustrous green, which makes this sumac useful for specimen planting.

Rhus glabra 6-10' Zone 2b Smooth Sumac

An excellent shrub for mass plantings, especially on slopes or large sites, but not good for small properties as they often sucker badly. Fall color a brilliant red, the fruits a bright scarlet.

Rhus typhina 10-25' Zone 3 Staghorn Sumac

Can be used where a short-lived small tree is desired or for mass planting where space is not limited and where a high screen is desired. Suckers are often a problem in gardens. Attractive in summer with its crimson fruits and in fall with its scarlet to orange leaves. 'Laciniata' is a lower-growing form to 8 feet with attractive finely-cut leaves, and rich orange autumn color.

RIBES

Currant, Gooseberry

Although this genus contains many plants of economic importance, such as gooseberries and, red, white and black currants, it does not provide many of ornamental value. Many species of *Ribes* serve as alternate hosts of white pine blister rust, a destructive disease of five-needle pines. Because of this disease, and a general lack of ornamental value, only the following species are recommended.

Ribes alpinum 4-7' Zone 2 Alpine Currant

This is one of the best deciduous shrubs for use in hedges. It is also good for shady places and on the prairies, where it is quite hardy. As female plants of this

species are alternate hosts for the white pine blister rust, only male plants should be propagated and used.

Ribes aureum 6' Zone 2 Golden Currant

A good shrub for sun or shade with showy, fragrant, golden flowers in early spring.

Ribes odoratum 6' Zone 2 Buffalo Currant

A most attractive shrub for growing in sun or shade. It produces an abundance of showy, fragrant, golden flowers during early spring and has splendid color in the fall.

Ribes sanguineum 8' Zone 7 Winter Currant

This plant, native to British Columbia, is an attractive shrub with its small clusters of red flowers in mid-May.



Fall color of *Rhus typhina*.

ROBINIA

Robinia hispida 3' Zone 5 Rose-acacia

A low shrub with attractive hanging clusters of pealike, pink flowers in early June. Of use only for retaining soil on slopes where it has plenty of space as it spreads extensively by suckers. Often sold as a grafted standard, which shows the drooping shape to better advantage and eliminates the suckers.

Robinia kelseyi 9' Zone 6 Kelsey Locust

An attractive shrub with pendulous clusters of rose-colored flowers in late May.

ROSA

Shrub Rose

Over hundreds of years the garden rose of today has been perfected from its wild shrubby ancestors into the most popular ornamental plant in the world.

Thousands of cultivars of the hybrid teas, hybrid perpetuals, polyanthas, floribundas and grandifloras have been developed. As these groups are described in Canada Department of Agriculture Publication 908, *Garden Rose Growing*, they are not included in this publication.

Shrub roses are exceedingly attractive. They flower later than many other shrubs and the blooms usually last longer. Fine combinations of color can be had by proper selection for foliage and wood, as well as for bloom and fruits. This type of rose should be used much more than it is at present. The various species of shrub roses are especially effective in mass planting. Many make excellent specimen plants, and several make very effective hedge plants. Many are very valuable garden ornamentals because of their hardiness. Shrub roses require very little attention other than an occasional renewal pruning to remove any dead or old wood. They are not troubled by pests and diseases to the same extent as other garden roses.

Rosa acicularis 3' Zone 1 Prickly Rose

The floral emblem of Alberta. Flowers bright rosy-pink, followed by waxy pear-shaped red fruits. Very hardy.

Rosa 'Betty Bland' 6' Zone 2

Produces many double, light-pink flowers in June. Branches bright red.

Rosa 'Blanche Moreau' 6' Zone 5

A very fine moss rose; a vigorous shrub with creamy-white double flowers intermittently through the summer.

Rosa blanda 6' Zone 2 Meadow Rose

A hardy rose with very large rose-pink flowers in great profusion. Fruits are red.

Rosa canina 8' Zone 4 Dog Rose

A hardy rose, often used as a rootstock for modern roses, and one that should be used more in Canada as a rootstock because the roots (Zone 2b) are much hardier than those of *Rosa multiflora*, the one mainly used at present.

Rosa damascena 'Versicolor' 6' Zone 4 York and Lancaster Rose

An historic old rose named in 1551. Flowers semidouble, with white- and rose-colored flowers as well as bicolors all on the same plant. Requires a good soil.

Rosa 'Dr. Merkeley' 3' Zone 2b

A low-growing, hardy rose with fragrant, pink double flowers in July.

Rosa eglanteria 6' Zone 5 Sweet Brier Rose

A rose with a good branching habit, and one adapted for use as a hedge. Foliage dark green, and very fragrant, especially after a rain. Flowers bright pink, fruit orange-red. Two cultivars are 'Goldbush' with double yellow flowers and 'Magnifica' with fragrant, semidouble carmine flowers.

Rosa foetida 'Bicolor' 3-8' Zone 2b Austrian Copper Rose

An old rose known before 1600. Single flowers, coppery-red.

Rosa foetida 'Persiana' 5' Zone 2b Persian Yellow Rose

A striking shrub with globular, fully double, deep-yellow flowers.

Rosa gallica 'Scarlet Glow' 4' Zone 3b French Rose

A new cultivar of a very old rose. Single, scarlet flowers, 5 inches across.

Rose 'Haidee' 5' Zone 2

A hybrid from Dropmore, Manitoba. Flowers a clear pink in June and July followed by large, dark-red fruit.

- Rosa** × **harisonii** 6' Zone 2 Harison's Yellow Rose
 An old favorite; a semidouble golden-yellow rose.
- Rosa hugonis** 7' Zone 5b Father Hugo Rose
 An excellent, free-flowering species covered with single yellow flowers in late May. A vigorous shrub.
- Rosa** 'La Noblesse' 5' Zone 4
 An attractive cabbage rose, with very fragrant, clear-pink flowers and bluish-gray foliage. Flowers abundantly.
- Rosa laxa** 6' Zone 2b Turkestan Rose
 A hardy, vigorous species with small single white flowers in June, and a few throughout the rest of the summer.



Rosa hugonis.

- Rosa** 'Micmac' 4' Zone 2
 A most attractive, neat shrub, useful as an accent or specimen plant. Flowers small and white, foliage a contrasting purplish red.
- Rosa multiflora** 8' Zone 5b Japanese Rose
 Although used mainly as understock for budding roses, this species has a definite use for hedges and for erosion control in areas not as cold as Ottawa. Flowers small and white but produced profusely and followed by small red fruits. A vigorous shrub with long reclining branches.
- Rosa** 'Nevada' 6' Zone 4
 A fairly large shrub, very floriferous, with large, single, creamy-white flowers.

- Rosa nitida** 18" Zone 2 Bristly Hedge Rose
An extremely attractive, dwarf species with very glossy, bright-green leaves that turn crimson in the fall, red-tinted stems and bright rosy-red flowers.
- Rosa pendulina** 3' Zone 4 Alpine Rose
A vigorous shrub with very deep pink flowers, followed by blood-red, bottle-necked fruits about an inch long.
- Rosa pimpinellifolia** 'Frühlingsgold' 8' Zone 3 Spring Gold Rose
A vigorous, arching shrub with large semidouble, creamy-yellow flowers in early June.
- Rosa** 'Prairie Youth' 8' Zone 2b Spring Gold Rose
One of the loveliest of all shrub roses, with semidouble, salmon-pink flowers fading to white in the center. Flowers intermittently throughout the summer.
- Rosa rubrifolia** 6' Zone 2b Redleaf Rose
An extremely valuable garden shrub with red-tinted, bluish-green foliage and small deep rose-red flowers followed by bright-red fruits. Very hardy.
- Rosa rugosa** 3-6' Zone 3 Rugosa Rose
One of the best known and most useful of the shrub roses. Many fine variations of this rose have been developed through hybridization. Some of these are among the hardiest of all shrub roses. Many have a distinct roughened foliage. Start to flower in June or July and most continue intermittently throughout the summer.

SELECTIONS

- 'Agnes' (Zone 2)—Pale amber-yellow flowers in great profusion.
'F. J. Grootendorst'—Double red, fringed flowers.
'George Will'—Large double flowers, deep-pink color.
'Grootendorst Supreme'—Deepest red flowers; more compact habit.
'Hansa' (Zone 2)—Flowers fragrant, large and dark red. Very hardy.
'Mme. Georges Bruant'—Double white flowers; fragrant.
'Max Graf'—A trailing form with single pink flowers.
'Mrs. John McNab' (Zone 2)—Double white flowers.
'Pink Grootendorst' (Zone 2)—Fine shell-pink flowers; fringed.
'Schneezwerg'—A fragrant, double white selection.
'Therese Bugnet' (Zone 2)—Large, soft-pink, double flowers; fragrant.
'Wasagaming' (Zone 2)—Produces an abundance of cabbage-type, double flowers of a lavender-pink color.

- Rosa setigera** 12' Zone 3 Prairie Rose
A rambling shrub requiring plenty of room. Its single rose flowers appear in late July and August.
- Rosa spinosissima altaica** 6' Zone 2 Altai Rose
A very free flowering and handsome rose with small, neat foliage and large creamy-white flowers in June.
- Rosa virginiana** 6' Zone 5 Virginia Rose
A good native rose, attractive throughout the year with pink flowers in spring, good summer foliage, colorful autumn leaves and fruits and red twigs in winter.

ROSMARINUS

- Rosmarinus officinalis** 6' Zone 8 Rosemary
A favorite aromatic shrub with lustrous dark-green foliage. Spikes of small blue

flowers in early spring in mild weather. For compact growth this species is best planted in a sunny area and in dry soil. Hardy only in the mildest areas of British Columbia.

RUBUS

Raspberry

Rubus coreanus 8' Zone 5 Korean Raspberry

A handsome species, grown chiefly for its ornamental stems, which are blue-white, and its graceful pinnate foliage.

Rubus deliciosus 7' Zone 3b Boulder Raspberry

A very graceful shrub with large, solitary, white flowers, 1½ inches in diameter, on slender arching branches.

Rubus odoratus 8' Zone 3 Flowering Raspberry

A bold native shrub, with arching branches and fragrant, purple flowers, 2 inches in diameter, over a period of several weeks in July. Best naturalized in an area of partial shade and moist soil.

RUSCUS

Ruscus aculeatus 2-4' Zone 8 Butcher's-broom

A low, spreading evergreen shrub with leathery, pointed leaves, and bright-red fruits in the fall, if both male and female plants are near each other. Grows well in shade, or in dry, sunny locations.

SALIX

Willow

A diverse group of trees and shrubs, many of which are native to Canada. Many are moisture-loving plants and are ideally suited for use in wet areas. Others make excellent, fast-growing windbreaks, especially for the prairies.

Only a very few of Canada's native willows are presently being used in gardens. This is unfortunate as there are many attractive willows, especially in the north. Some of the shrubby species, which should be tried, are: *Salix alexensis*, *S. argyrocarpa*, *S. humilis*, *S. interior*, *S. lasiandra*, *S. lucida*, *S. lutea*, *S. myrtillifolia*, *S. pellita*, *S. pulchra*, *S. pyrifolia*, *S. scouleriana*, *S. syrticola* and *S. vestita*.

Salix acutifolia 20' Zone 3 Sharpleaf Willow

A most satisfactory willow for shelterbelt planting in Western Canada. Its leaves are long, narrow and sharp-pointed, the branches an attractive reddish-brown.

Salix alba 'Chermesina' 40' Zone 3 Redstem Willow

Forms a tree if left to grow naturally but it is usually grown as a large shrub. Valuable for its winter effect. It is cut close to the main stem each spring to induce the new bright-red shoots. 'Vitellina' has yellow twigs when grown as a shrub.

Salix caprea 15' Zone 5 Goat Willow

One of the best of the ornamental pussy willows because of its very large, bright-yellow catkins, which are conspicuous in early spring. The pistillate form is more attractive than the staminate one.

Salix discolor 20' Zone 3 Pussy Willow

A large shrub of interest for its catkins in early spring. Best on moist soils.

Salix × **erdingeri** 25' Zone 5

An attractive hybrid willow growing in the Plant Research Institute Arboretum. Very handsome in early spring with its very large and showy, silvery-gray catkins.

Salix exigua 6-18' Zone 2b Coyote Willow

A shrub or small tree native to the prairies. The long narrow leaves are an attractive silver-gray color. Forms thickets, spreading by suckers, unless kept under control.

Salix gracilistyla 9' Zone 5b Bigcatkin Willow

One of the earliest willows to flower; conspicuous because of its large catkins.

Salix pentandra 25' Zone 1b Bay Willow, Laurel Willow

A handsome willow with very dark, lustrous-green leaves and shiny brown twigs. Catkins golden-yellow in spring. Useful for screen or boundary planting.

Salix purpurea 'Gracilis' 8' Zone 2b Arctic Willow

A slender-twigged, shrubby willow, with attractive blue-gray, narrow leaves. Widely used for medium-sized hedges, and suitable for use in foundation plantings or shrub borders. Very hardy.



Sarcococca humilis.

SAMBUCUS

Elder

A group much neglected as ornamentals, yet containing several species and selections with very refined and distinctive foliage. Some are showy in flower and some have attractive and unusual fruits. Elders grow well in shade or sun and in moist to dry soils. As most are large shrubs they are not suited for use in small areas.

Sambucus canadensis 'Aurea' 12' Zone 3 Golden American Elder

A highly ornamental form with attractive golden foliage. Best when grown in full sun. 'Maxima' is a selection with large flower heads over 12 inches across.

Sambucus nigra 10' Zone 4 European Elder

A weedy species that often seeds itself. Best used only for naturalizing. 'Laciniata' is an unusually attractive form, with each leaflet deeply divided. A handsome shrub when in flower.

Sambucus pubens 15' Zone 3 Red-berried Elder

A species native across a large part of Canada. Useful for naturalizing in moist areas. Flowers yellowish-white in pyramidal clusters, fruits scarlet.

Sambucus racemosa 10' Zone 3 European Red Elder

A selection 'Plumosa Aurea' of this species is extremely attractive with its golden, feathery foliage.

SARCOCOCCA

Sarcococca humilis 2-4' Zone 8 Small Himalaya Sarcococca

A compact shrub with short, dark-green, evergreen leaves, small, white, fragrant flowers, and black fruits. Best in shaded areas. Hardy only in the milder areas of British Columbia.

Sarcococca ruscifolia 6' Zone 8 Fragrant Sarcococca

A species similar to the small Himalaya sarcococca except that it has red fruits. Suited for use as a tall ground cover, especially in deep shade, where few other shrubs do well. They spread slowly by underground runners.

SASA

Sasa palmata 6-8' Zone 8 Palmate Bamboo

An attractive bamboo that has proved hardy in temperatures as low as 5°F. The leaves of this plant, one of the largest-leaved of the hardy bamboos, are 15 inches long. As it spreads by underground rhizomes it should be grown only in an area where it can be readily confined.

SENECIO

Senecio greyi 4' Zone 9a

An attractive and unusual shrub from New Zealand. Has gray foliage and yellow daisylike flowers in late spring. Forms a dense mound 3 to 4 feet high and 5 feet across. Ideal for use in a protected site in a foundation planting, where it will survive uninjured all but the severest winter in the mildest areas of coastal British Columbia.

SHEPHERDIA

Buffaloberry

Drought-resistant shrubs native to Canada.

Shepherdia argentea 15' Zone 1 Silver Buffaloberry

A large shrub with leaves silvery on both sides. Flowers yellow and inconspicuous, sexes separate, fruit a scarlet to orange berry. A very effective shrub, useful because of its contrasting foliage, also useful as a hedge plant.

Shepherdia canadensis 6-8' Zone 1 Russet Buffaloberry

A medium-sized shrub with a fairly dense habit. Leaves green above, silvery beneath, flowers yellowish, fruit red to orange. Native across Canada.

SKIMMIA

Skimmia × *foremanii* 3' Zone 7b

An attractive evergreen shrub with scarlet berries. Useful for shady areas in coastal British Columbia.

Skimmia japonica 4' Zone 7b Japanese Skimmia

An attractive evergreen for shady areas. Valued for the showy, fragrant flowers on male plants and the bright-red fruit on female plants. A combination planting of both sexes is best.

SORBARIA

False Spirea

The false spireas form high shrubs with large, compound leaves and creamy-white flower clusters in July and August. As they spread rapidly by underground stolons, they should not be used in confined areas or small gardens. Best used in a shaded area of a large garden where a large foliage mass and the late summer flowers are useful.

Sorbaria aitchisonii 8' Zone 4 Kashmir False Spirea

The most ornamental false spirea with large, pyramidal flower clusters up to 2 feet long in July and August.

Sorbaria sorbifolia 6' Zone 2 Ural False Spirea

A good specimen shrub for the colder areas of Canada. Also suited to naturalizing in woodland areas.

SORBUS

Mountain-ash

Sorbus koehneana 8' Zone 5 Koehne's Mountain-ash

A shrubby species of mountain-ash with attractive, glistening white fruit that has a reddish spot on the calyx end. Foliage turns crimson in the fall.

SPARTIUM

Spartium junceum 8' Zone 8 Spanish Broom

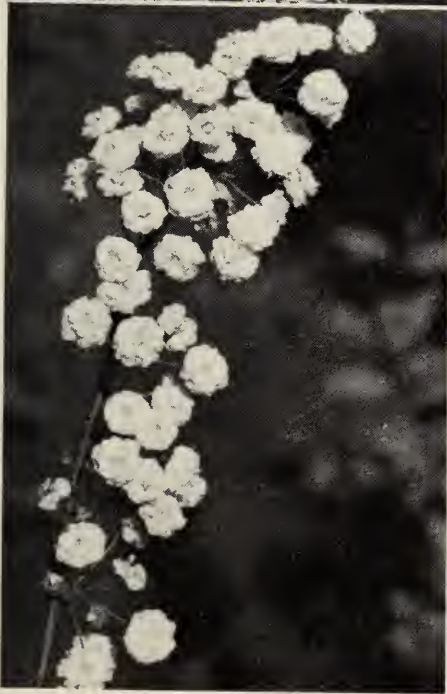
Of interest for its masses of rich yellow flowers from June through the summer. The Spanish broom is difficult to transplant and only pot-grown plants should be used. Best grown in a dry sunny location. Hardy only in the milder areas of British Columbia, where it tip-kills regularly but recovers and flowers well on its new wood.

SPIRAEA

Spirea

An extremely interesting genus of shrubs and herbs containing excellent ornamental plants, some of which are hardy in the colder areas of Canada. Several species are native to Canada but are not among the more ornamental kinds and are chiefly of value for naturalizing. One, *Spiraea* × *vanhouttei*, the bridalwreath spirea, is probably the most widely grown shrub in Canada.

Spireas grow in sun or shade but most flower better in sunny areas. They grow in almost any soil. Most species require an occasional renewal pruning and they recover very well, even when cut almost to ground level. Those spireas such as *S. albiflora*, *S.* × *brachybotrys*, *S.* × *bumalda*, *S.* × *margaritae*, *S. menziesii* 'Drop-more' and *S.* 'Rosabella,' which flower on the new growth, should be pruned early in the spring, whereas the others, which flower on the previous year's wood, should be pruned after flowering.



Above, *Spiraea* X *arguta*; below, *Spiraea prunifolia* and *Spiraea trichocarpa*.

Spiraea albiflora 18" Zone 5 Japanese White Spirea
An attractive, dwarf, compact shrub, with white rounded or flat clusters of flowers in July.

Spiraea × arguta 4-6' Zone 3 Garland Spirea
A very free flowering early spirea, with showy white cascades of flowers two weeks before *Spiraea × vanhouttei* blooms. This spirea is somewhat leggy and is best planted toward the background with other plants in front. Requires regular renewal pruning to keep attractive. 'Compacta' is a lower-growing, more compact form, of greater value for the home garden.

Spiraea × brachybotrys 7' Zone 4
A vigorous shrub with graceful, arching branches and panicles of bright-pink flowers in late June.

Spiraea × bumalda 2-3' Zone 2b
The specific name given to a group of hybrids of *Spiraea japonica* and *S. albiflora*. Occasionally kill back but recover from base.

SELECTIONS

'Anthony Waterer'—An invaluable dwarf shrub to 2 feet, ideal for use in foundation plantings or near the front of a border. Flat clusters of bright-crimson flowers intermittently over a long period in July.

'Crispa'—Selection similar to 'Anthony Waterer,' but of added interest because of its unusual, slightly twisted leaves.

'Froebelii'—Similar to 'Anthony Waterer,' but much taller, reaching 4 feet, and more vigorous.

Spiraea × cinerea 4' Zone 5
An attractive hybrid with a very neat habit and extremely graceful arching branches. The plant in the Plant Research Institute Arboretum could be described as a better and more compact shrub than the similar *Spiraea × vanhouttei*.

Spiraea × margaritae 4' Zone 5
A very attractive hybrid with large, flat clusters of rosy-pink flowers in late June, and again in September if the old flowers are cut off as they fade. Requires an annual renewal pruning to keep it neat and dwarf.

Spiraea media 'Sericea' 4' Zone 2 Oriental Spirea
An upright shrub of interest for its profuse, creamy-white flowers in late May, but unattractive otherwise. Of use only where *Spiraea × vanhouttei* is not hardy.

Spiraea menziesii 'Dropmore' 2' Zone 2b
An extremely attractive low bush with 6-inch spikes of deep-rose flowers. Best if pruned back to within 2 inches of its previous year's wood. Very hardy.

Spiraea × pikoviensis 4' Zone 2 Polish Spirea
A very hardy, white spirea with graceful, arching branches.

Spiraea prunifolia 5-7' Zone 6 Double Bridalwreath Spirea
An attractive shrub with slightly arching branches. The flowers are small, double and white, giving the appearance of small buttons along the branches, in May. Orange fall color.

Spiraea 'Rosabella' 18" Zone 2b
A hybrid originated at Dropmore, Manitoba. A neat, dwarf bush with flat clusters of bright-pink flowers throughout the summer.

Spiraea 'Snowwhite' 4' Zone 2b
 An extremely valuable hybrid for use on the prairies, where it is much hardier than the similar *Spiraea* × *vanhouttei*.

Spiraea 'Summersnow' 2' Zone 2b
 A low-growing spirea with flat clusters of white flowers from late June until August.

Spiraea trichocarpa 5' Zone 3 Korean Spirea
 One of the latest of the white spireas to flower. Habit irregular and pendulous, similar to *Spiraea* × *vanhouttei*. Not always reliably hardy at Dropmore, Manitoba.

Spiraea trilobata 4' Zone 2 Three-lobed Spirea
 One of the better white spireas. Habit fanlike but with foliage right to the ground. Hardy on the prairies.

Spiraea × **vanhouttei** 6' Zone 4 Vanhoutte Spirea, Bridalwreath
 Without doubt the best spirea for much of Canada, and for many considered to be the best of all shrubs. However, it has become so much overplanted that it has lost some of its appeal and is often considered too commonplace. Its perfect shape and its large arching branches laden with flowers in late May make it still an outstanding shrub and provide good reasons for its occasional use. Not reliably hardy in most areas on the prairies.

STACHYURUS

Stachyurus praecox 10' Zone 8
 Of interest for its 3-inch pendulous clusters of yellow flowers in March. Hardy only in the mildest areas of British Columbia, where late March frosts are uncommon. Soil should be acid and contain plenty of peat moss and leaf mold.

STAPHYLEA 8-15' Bladdernut
 A group of shrubs of little interest other than for their bright-green foliage and unusual inflated seed pods containing 3 or 4 hard seeds. These pods rattle if shaken. *Staphylea trifoliata* (Zone 5), the rattlebush, is native to the milder regions of Eastern Canada. *S. colchica* (Zone 6), from the Caucasus has somewhat showier, creamy-white flowers.

STEPHANANDRA Stephanandra
Stephanandra incisa 6' Zone 5 Cutleaf Stephanandra
 A shapely mound-type shrub with attractive fernlike foliage, which turns crimson in fall. The flowers are rather inconspicuous but do have a subtle beauty. Makes an admirable subject for the front of the shrub border or in foundation plantings, where a mound-type plant is useful. Winterkills sometimes at Ottawa but soon recovers and regains its formal shape.

STEWARTIA Stewartia
 An interesting group of summer-flowering trees and shrubs related to the camellias. These shrubs grow best in a soil mixture of loam and peat moss.
Stewartia ovata 15' Zone 6b Showy Stewartia
 Has large white flowers with a center of contrasting purple stamens, during July. Also brilliant orange fall color and flaky bark attractive during the winter.

Stewartia pseudo-camellia 12-25' Zone 7 Japanese Stewartia
 White flowers during the summer. Larger than the showy Stewartia, this species forms a small tree in coastal British Columbia, a large shrub in southern Ontario. The yellow and red fall color and red flaky bark are interesting.

STRANVAESIA

Stranvaesia davidiana 10-20' Zone 7b Chinese Stranvaesia
 A wide-spreading, tall shrub with narrow semievergreen leaves. Small red berries in the fall. Hardy in the milder areas of British Columbia.

STYRAX Snowbell

A group of small trees or shrubs with small, bell-shaped waxy-white flowers in June. The flowers appear after the leaves are developed but are quite showy as the leaves are held upright, while the flowers are pendulous.

Styrax japonica 10-25' Zone 6b Japanese Snowbell
 Makes an attractive small tree or wide-spreading shrub in the mild parts of southern Ontario and other areas with a similar climate.

Styrax wilsonii 8' Zone 8
 A much-branched shrub, flowering when very small. Of interest for the coastal areas of British Columbia.

SYMPHORICARPOS Snowberry

A small group of shrubs, particularly useful because of the graceful foliage, red, pink or white berries, and tolerance of shade.

Symphoricarpos albus laevigatus 6' Zone 2 Snowberry
 A native of Western Canada, noted for its large terminal clusters of snow-white pulpy berries. 'Ovatus' is a more compact type suitable for the front of a shrub border.

Symphoricarpos × **chenaultii** 3' Zone 5b Chenault Coralberry
 Attractive dark-rose fruits and graceful foliage. In areas as cold as Ottawa they must be planted in a protected location.

Symphoricarpos 'Hancock' 3' Zone 5
 A prostrate coralberry, very useful as a ground cover, lower growing than the others.

Symphoricarpos 'Mother of Pearl' 4' Zone 5
 Has clusters of large pearly-pink berries at the tips of the branches.

Symphoricarpos orbiculatus 4-6' Zone 2b Coralberry
 An attractive and distinct type, with small coral fruit in small clusters all along the branches. Grows well in the shade. As it suckers freely it can be used for covering banks.

Symphoricarpos 'White Hedge' 5' Zone 5
 A bushy, upright snowberry with small white berries borne on the top of the young shoots. Very good for use as a hedge.

SYMPLOCOS

Symplocos paniculata 10-30' Zone 6 Asiatic Sweetleaf
 A large shrub of interest chiefly for its small, white, fragrant flowers in late

May and its pale-blue fruit in October. However, both the flowers and fruit are effective for only very short periods.



Symphoricarpos 'White Hedge' in fruit.

SYRINGA

Lilac

Since many species and cultivars of *Syringa* withstand temperatures of at least -50°F and still produce an abundance of exquisite flowers, it is no wonder that this is the most popular group of trees and shrubs in Canada. In 1920 a breeding program was started at the Central Experimental Farm. This eventually led to the development of a very beautiful late-flowering race of lilacs known collectively as the *S. \times prestoniae* hybrids and named after Miss Isabella Preston, who was responsible for this work. A few years later Dr. F. L. Skinner, of Manitoba, repeated the same crosses and selected some deeper colors that contrasted favorably with the lighter tones of the Preston cultivars.

The lilacs are an attractive group of vigorous shrubs. Usually they have abundant foliage of a rather dark color, which renders them unexcelled as dominant shrubs, specimen plants, screens or tall hedges. Some of the newer selections are



Syringa \times josiflexa 'Royalty.'

lower growing and more ideally suited for use in the small garden. The larger lilacs can be kept within bounds by judicious renewal prunings. One species, *S. amurensis*, makes an attractive small tree when grown with a single trunk. Unfortunately the lilacs do not have any fall color of merit, nor do they have attractive fruits.

Lilacs grow equally well in acid or alkaline soils, but they respond favorably to the occasional addition of lime to the soil.

Most are troubled by a few pests that must be kept under control if the plants are to do their best. All are susceptible to the lilac scale and the plants should be sprayed with a miscible oil each year while dormant. The graft blight disease can cause a lilac that is not growing on its own roots to die suddenly. These lilacs have usually been grafted on a privet understock. Now more and more nurserymen are

propagating them by cuttings. If they have been grafted, the young plants are set deep in the earth so that the scion sends out its own roots. It is best, when buying lilacs, to be sure that the plants are on their own roots. The lilac borer may also attack older branches and these should be cut off below the borer holes and burned. Small piles of "sawdust" are an indication of borer activity.

Renewal pruning every two or three years is very important. Many lilacs send up large numbers of suckers from the base each year. Most should be removed, leaving only enough to replace the older branches that are pruned out during renewal pruning. An old plant can be completely refurbished by removing the old branches over a period of three years, allowing new suckers to replace the old. Flower clusters should be removed as soon as the flowers are finished, because the formation of seed decreases the number of flower buds that form for the next season's display.



Syringa × *prestoniae* 'Donald Wyman.'

The cultivars of *S. vulgaris*, commonly known as the French hybrids, are the most popular of the lilacs. Many of them are hardy over a wide area of Canada but they are not satisfactory in areas as cold as Beaverlodge, Alberta. Others, as noted, are hardier. By careful selection from other early- and late-flowering lilac groups, the lilac season can be extended from early May through to late June.

Syringa amurensis 15' Zone 2 Amur Lilac

A shrubby tree with creamy-white flowers in late June after the other lilacs have finished flowering. The variety *japonica* forms an attractive tree 20 to 25 feet high.

***Syringa* × *chinensis* 'Saugeana'** 15' Zone 2b Chinese Lilac

A loose, open shrub with large panicles of lilac-red flowers.

Syringa × josiflexa 8' Zone 2b

'Guinevere' is a hybrid originated by Miss Preston. Flower clusters rather loose, flowers a purple-lilac color that fades to pinkish-lilac. 'Royalty' has dark-purple flowers. 'Bellicent' is a 'Guinevere' seedling with a graceful growth habit and distinctive pinkish flowers.

Syringa josikaea 15' Zone 2 Hungarian Lilac

A very dense and rapid-growing species ideally suited for growing where a large screen plant is desired. Because of the small flower clusters this species is not as attractive as many others and is therefore not as good for general planting.

Syringa microphylla 'Superba' 6' Zone 6 Littleleaf Lilac

A useful lilac with a widespread habit and small leaves. Small clusters of pale-pink flowers in June and occasionally again in August.

Syringa oblata dilatata × S. vulgaris 5-9' Zone 2 American Lilac

A group of hybrids developed by Dr. Skinner. This is the only group related to the French lilacs that has proved reliably hardy at Beaverlodge, Alberta. The shrub suckers very little and flowers one to two weeks earlier than the French hybrids. Very fragrant and rather large open trusses of flowers.

SELECTIONS

'Assessippi'—Single, purple.

'Charles Nordine'—Pale blue.

'Laurentian'—Bluish.

'Mount Baker'—Single, pure white.

'Pocahontas'—Single, dark purple.

'Swarthmore'—Double, mauve striped with white.

Syringa oblata giraldii × S. vulgaris 10' Zone 2b

A group of tall, vigorous, early-flowering hybrids, flowering before the leaves are developed and one to two weeks before the common lilacs.

SELECTIONS

'Clarke's Giant' (Zone 4)—Single, bluish-lilac.

'Esther Staley'—Single, pinkish.

'Necker'—Single, pink.

'Patricia'—Double, purple-lilac.

Syringa × persica 6' Zone 4 Persian Lilac

An attractive, graceful shrub, rather like the common lilac, but with smaller leaves and small, loose trusses of flowers. Flowers light purple, almost gray, and produced freely on small shrubs.

Syringa × prestoniae 9' Zone 2 Preston Lilac

This is a group of very hardy lilacs, which flower about two weeks after the common lilacs. Foliage large and luxuriant, and more or less pendulous trusses of flowers varying in color from coral to pinkish lilac. Many selections have been named, but most are very similar to each other. The following are some of the better ones.

SELECTIONS

'Coral'—A very clear pink.

'Desdemona'—Very pale pinkish-lilac flowers, very late.

'Donald Wyman'—Very floriferous, dark reddish-purple flowers.

'Elaine'—Pinkish, fading to white.

'Elinor'—Very prolific, pale-violet flowers.

'Hiawatha'—Reddish-purple buds opening pale pink.

'Isabella'—Largest flower clusters, pyramidal, pink.

'Jessica'—Fragrant purple flowers, one of the latest and darkest.

Syringa × swegiflexa 9' Zone 3

'Fountain'—Pale-pink trusses that droop.

Syringa velutina 9' Zone 2 Manchurian Lilac

An extremely fragrant, very hardy lilac with large, loose clusters of purplish flowers.

Syringa villosa 10' Zone 2 Late Lilac

A very hardy lilac, drought-resistant and especially useful for exposed areas on the prairies. It makes a good screen or hedge for large properties. Flowers rosy-lilac in dense trusses, a week after the common lilacs.

Syringa vulgaris 10-18' Zone 2b Common Lilac

The true common lilac, with its single "lilac" flowers, is still very much a part of our older communities. It has most likely been grown in Canada for at least two centuries. The group known as the French hybrids has been developed over the last century by crossing and selection of the widely grown and popular garden selections.

Better cultivars, by color:

Blue and Bluish

Single 'Decaisne'
'General Sherman'
'President Lincoln'

Double 'Ami Schott'
'Emile Gentil'
'President Grevy'

Dark Red

Double 'Charles Joly'

Lilac

Single 'Jacques Callot'
'Marengo'

Double 'Henri Martin'
'Victor Lemoine'

Magenta

Single 'Capitaine Baltet'
'Marechal Foch'

Double 'Mrs. Edward Harding'

Pink and Pinkish

Single 'Lucie Baltet'

Double 'Katherine Havemeyer'
'Mme. Antoine Buchner'

Purple

Single 'Ludwig Spaeth'
'Monge'
'Prodige'
'Frank Patterson' (very large flowers)

Double 'A. B. Lambertson'

Violet

Single 'Cavour'

Double 'Madeleine Lemaire'
'Marechal Lannes'

White

Single 'Clarke's Giant White'
'Jan van Tol'
'Mme. Florent Stepmann'

Double 'Edith Cavell'
'Mme. Lemoine'
'Prof. E. H. Wilson'

TAMARIX

Tamarisk

An interesting group of shrubs with light, feathery, scalelike leaves, somewhat resembling those of certain junipers. The flowers are extremely small, but are abundantly produced in dense clusters. Tamarisk withstands salt sea air and is used extensively for hedges and sand binding in areas near the sea.

Tamarix odessana 6' Zone 3 Odessa Tamarisk

A smaller shrub than the other tamarisks, with minute, pink flowers in late July. This species flowers on new growth and should be pruned in early spring while it is dormant. 'Pink Cascade' is a new selection with masses of pink flowers in late summer.

Tamarix parviflora 15' Zone 4 Small-flowered Tamarisk

The earliest tamarisk, with pink flowers in early June on the previous year's growth. Should be pruned after flowering and must be pruned severely to prevent the specimens from becoming too leggy.

Tamarix pentandra 15' Zone 3 Amur Tamarisk

The hardiest tamarisk, with masses of pink flowers in July and August. This species must be pruned severely to be kept to an attractive size. Winterkills in most areas on the prairies, but recovers to produce a good display during the summer.

Tamarix pentandra 'Rubra' 15' Zone 3 Summerglow Tamarisk

A shapely and vigorous form, with dark-carmine flowers in midsummer.

TAXUS

Yew

Because of their lustrous, deep-green foliage and their ability to withstand shade, city conditions, pruning and shearing, the yews are among the most widely used plants for home gardens in the Northern Hemisphere. Unfortunately, no yews are reliably hardy on the Canadian prairies. The English yew, *Taxus baccata*, and its forms are the most tender, and only one of these, 'Repandans,' is reliably hardy in southern Ontario. The English yew grows very well in coastal British Columbia. The Japanese yew, *T. cuspidata*, and its hybrids, *T. × media*, are quite hardy in most of Eastern Canada and are widely used in gardens. The Canada yew, *T. canadensis*, a native of Eastern Canada, is the hardiest of the yews but does not have a very attractive habit.

The yews thrive in either sun or partial shade and are the best evergreens for use in foundation plantings with a northern exposure. Yews make excellent hedges and withstand pruning very well. A large number of different forms have been selected with different sizes, shapes and foliage colors, so that they have a wide range of landscape uses. The bright-red fruits, on the pistillate, or female, plants are quite showy during the fall. However, a staminate or male plant must be planted nearby to ensure fertilization and fruit.

Fortunately, the yews have no serious pests, although precautions should be taken against infestations of the black vine weevil. The lower foliage of all yews should be thoroughly covered with a spray or dust of malathion in late June.

Taxus baccata 30' Zone 7 English Yew

Although *Taxus baccata* is a tree as high as 60 feet in its native habitats, its many cultivated forms are much smaller growing or are kept as small formal plants or hedges by annual shearing. Only the selections 'Variegata' and 'Repandans' are reliably hardy in areas as cold in winter as Ottawa. Most forms of *T. baccata*, including 'Fastigiata,' the Irish yew, are hardy only in coastal British Columbia.

SELECTIONS

- 'Dovastonii'—Westfelton Yew. An upright type with pendulous branchlets.
- 'Fastigiata' (Stricta)—Irish Yew. Rigidly upright, a most striking form.
- 'Fastigiata Aureo-marginata'—A golden form of the Irish yew.
- 'Repandens' (Zone 5)—A low, spreading form to 4 feet.
- 'Semperaurea'—A low-growing, golden form.

Taxus canadensis 6' Zone 3 Canada Yew
Native from southeast Manitoba to Newfoundland, the Canada yew is a straggling, creeping species, useful in heavily shaded areas where other conifers do not grow. It can be effectively used for naturalizing in woodland areas.

Taxus cuspidata 15-50' Zone 4 Japanese Yew
The typical Japanese yew under cultivation in Ottawa reaches a height of 15 to 20 feet and has a spread of 25 feet with numerous branches from the ground. With clipping, the Japanese yew can be maintained as a smaller plant. There are, however, several more compact, slower-growing selections.



Tamarix pentandra.

SELECTIONS

- 'Capitata'—The true species, often given this name or simply called upright type, to distinguish it from the other forms of this species.
- 'Densa'—Low and round, much broader than high.
- 'Expansa'—Vase-shaped.
- 'Nana'—Compact, spreading habit; very dark, dense foliage.
- 'Thayerae'—A wide-spreading plant, fast growing.

Taxus × hunnewelliana 8-10' Zone 4
The hybrid *Taxus cuspidata* × *T. canadensis*. A spreading bushy plant.

Taxus × media

Zone 5

The hybrid of *Taxus baccata* and *T. cuspidata*, of which many selections have been made. It is only slightly less hardy than *T. cuspidata*.

SELECTIONS

- 'Brownii'—Dense, slow growing and vase-shaped.
- 'Hatfieldii'—Pyramidal form to 18 feet.
- 'Hicksii'—Hick's Yew. An excellent upright, narrow form to 15 feet.
- 'Kelseyi'—A semiupright, compact bush to 12 feet.

TEUCRIUM**Teucrium chamaedrys**

12"

Zone 6

Chamaedrys Germander

A dense subshrub, suitable for formal edgings, rock gardens, or the foreground of a foundation planting. Small spikes of rose or purple flowers during the summer. Foliage aromatic when crushed.

Teucrium fruticans

30"

Zone 8

Bush Germander

An attractive subshrub with grayish leaves and small blue flowers in May. Suitable for use in shady areas in the mildest parts of British Columbia.

THUJA**Thuja occidentalis**

60'

Zone 3

American Arborvitae

A tree native to Eastern Canada, with many forms selected for use as specimen plants or hedges or in foundation plantings. They prefer a rich soil with a good supply of moisture. As most forms are highly susceptible to winter desiccation, they should be given a thorough watering late in the fall and a good mulch to help retain water for the roots. Arborvitae are also apt to be injured by dogs and should be protected from them or planted in locations where dogs cannot reach them.

The various forms make excellent hedges and the common arborvitae can be kept as low as three feet by annual shearing. However, if pyramidal arborvitae are to be used in foundation plantings care must be taken to select a slow-growing, compact form, as many soon grow out of proportion. Often called white-cedar.

SELECTIONS

- 'Douglasii Aurea'—A dense, columnar form with an attractive bronzy-yellow color during the spring and summer. Reaches tree size.
- 'Ellwangeriana Aurea' (Rheingold)—A low, broad pyramidal form with golden foliage.
- 'Fastigiata'—A narrow columnar form with a compact habit. This is often sold under the name 'Pyramidalis.'
- 'Globosa'—A dwarf, rounded form.
- 'Holmstruppi'—A very compact pyramidal form, attractive dark-green color.
- 'Hoveyi'—An oval form, which will eventually outgrow a foundation planting.
- 'Little Champion'—A dwarf, rounded form, which retains its shape remarkably well without pruning.
- 'Lutea'—A pyramidal form growing to 30 feet. Leaves bright yellow.
- 'Pumila' (Zone 2b)—Little Gem Arborvitae. A very dwarf form often not more than 18 inches high, but several feet across. Ideal for rock gardens.
- 'Robusta' (Wareana) (Zone 2)—A dense, broadly pyramidal form, the hardiest.

'Rosenthalii'—A handsome pyramidal form with lustrous, dark-green foliage.
A compact grower.

'Umbraculifera'—A dense, dwarf form, very much like umbrella-shaped domes.

'Woodwardii'—An excellent globe, very dense, dark green.

Thuja orientalis 50' Zone 6 Oriental Arborvitae

A more refined and graceful species than the American arborvitae but not as hardy. There are many forms of this species that would be very useful in coastal British Columbia and even in southern Ontario. 'Aurea' or Berckmann's Golden is an attractive, dense, ovoid form with golden foliage.

Thuja plicata 'Cuprea' 3' Zone 7

A dwarf form of the western arborvitae, with bronzy-gold foliage.

TSUGA

Tsuga canadensis 75' Zone 4 Common Hemlock

Usually a tree, this species makes an excellent slow-growing hedge, either in sun or shade. The growth is compact and the color and texture attractive. "Pendula," or Sargent's hemlock (Zone 5), is an appealing low form, wider than high, with pendulous branches. Suited for use in foundation plantings, rock gardens or as a specimen plant.

ULEX

Ulex europaeus 4' Zone 7 Gorse

This spiny shrub, a relative of the brooms, is a naturalized pest on Vancouver Island. The yellow, pealike flowers appear in clusters at the ends of the branches in April or May and again later on in the summer. A good shrub for seashore plantings. As it is difficult to transplant, only a container-grown plant should be moved.

ULMUS

Elm

The elms grow naturally as trees but one of them, *Ulmus pumila*, the Siberian elm (Zone 2), commonly known as the Chinese elm in the nursery trade, is one of the plants most often used for hedges today. However, it should be borne in mind that the Siberian elm is a tree, and is very fast growing. Used as a hedge the plants give a good screen within three years, but after that require pruning several times during the summer, and soon become bare at the base. They are not recommended for general use as a hedge that has to be kept 3 to 6 feet high.

The true Chinese elm, *U. parvifolia* (Zone 5), is a smaller tree that grows to 30 feet high and has attractive dark-green leaves. This elm has grown well at Ottawa and should make a good hedge, but it is not reliably hardy in locations where the winters are colder.

VACCINIUM

Blueberry

This genus contains some interesting and useful shrubs of particular merit for the beauty and texture of their leaves, especially in the fall and for growing in low, wet areas. Some *Vaccinium* species are tended in wild or garden plantations for the commercial production of their fruit.

Vaccinium corymbosum

12'

Zone 4

Highbush Blueberry

Because of its good foliage, which turns scarlet in the fall, and its red twigs in winter, this is one of the most ornamental blueberries. Commercial blueberry growers have made many large-fruited selections from this species. Needs an acid soil.



Foliage of *Vaccinium ovatum*.

Vaccinium ovatum 8' Zone 7 Box Blueberry

A native of coastal British Columbia. The foliage of this evergreen blueberry is widely used by the florist industry. This is an attractive shrub that should be used more in gardens in coastal British Columbia.

Vaccinium vitis-idaea minus 8" Zone 1 Mountain-cranberry

A small-leaved, evergreen *Vaccinium*, which makes an attractive ground cover, especially on moist peat soils. Very hardy.

VIBURNUM

Viburnum

A large genus of serviceable shrubs, many species being attractive in foliage, flower and fruit. Several have evergreen leaves, but are hardy only in the milder areas of Canada. Most viburnums flower very heavily, beginning with *Viburnum farreri* in early April, and ending with *V. acerifolium* in June. *V. tinus* flowers throughout the winter in mild climates. Some, including *V. × burkwoodii* and *V. farreri*, have very fragrant flowers. The flowers are followed in summer, and in many species through into winter, by colorful fruits. They may be red, yellow, blue or black. Some species also provide a brilliant display of autumn color, notably *V. prunifolium*, which has scarlet leaves. As some viburnums are grafted on more vigorous species care must be taken to remove all suckers.



Viburnum × carlcephalum.

Viburnum acerifolium 6' Zone 3 Mapleleaf Viburnum

A species native to Eastern Canada. Of interest only for its purple fall color and its ability to grow in heavily shaded areas.

Viburnum × bodnantense 10' Zone 7 Bodnant Viburnum

A vigorous, winter-flowering shrub with very fragrant, rose-colored flowers.

Hardy only in the mild areas of British Columbia, where its winter flowers are of special interest.

Viburnum × **burkwoodii** 6' Zone 6 Burkwood Viburnum

A vigorous evergreen to semievergreen shrub with lustrous foliage and very fragrant white flowers followed by red to black fruits. One of the better fragrant viburnums. 'Chenault' is similar but has a better habit of growth.

Viburnum × **carlcephalum** 8' Zone 6 Fragrant Snowball

A very attractive new viburnum with large, fragrant clusters of white flowers up to 6 inches across in early spring. This hybrid is a decided improvement over *Viburnum carlesii*, one of its parents, although not as fragrant.



Viburnum davidii.

Viburnum carlesii 5' Zone 5b Korean Spice Viburnum

An old favorite, valued for its glistening white flowers of extremely sweet fragrance. It is not reliably hardy at Ottawa, and needs a protected location. As it is susceptible to the graft blight disease, it is best to grow one of the newer hybrids, *Viburnum* × *burkwoodii*, *V.* × *carlcephalum* or preferably *V.* × *juddii*.

Viburnum cassinoides 8' Zone 2b Withered

A shapely bush of rounded form with creamy-white flowers followed by berries that turn from green to red to black. Autumn color a good red. A serviceable shrub for use in massing or in naturalizing. Native to Eastern Canada.

- Viburnum davidii** 3' Zone 7b David Viburnum
A distinct dwarf shrub with attractive evergreen leaves and white flowers followed by blue berries. Hardy only in the mild areas of British Columbia.
- Viburnum dentatum** 12' Zone 4 Arrowwood
A very vigorous, upright shrub, native to Eastern Canada. This is a rapid-growing shrub adapted to most soils and useful as a filler. Its autumn color is an attractive glossy red.
- Viburnum dilatatum** 9' Zone 5 Linden Viburnum
A free-flowering species with creamy-white flowers followed by bright red fruits, which persist for several weeks. Autumn color an attractive russet red.
- Viburnum farreri** 9' Zone 6b Fragrant Viburnum
Formerly known as *Viburnum fragrans*. An interesting shrub for areas where its very early flowers are not killed by late frosts. The flower buds are pink, the flowers almost white and very fragrant. Flowers from mid-April to early May in southern Ontario.
- Viburnum henryi** 9' Zone 7b Henry Viburnum
A large rounded shrub with narrow, elliptical leaves, which are glossy and evergreen. Flowers in an interesting pyramidal cluster, followed by bright-red berries.
- Viburnum × juddii** 8' Zone 5 Judd's Viburnum
Similar to *Viburnum carlesii* but an improvement with better foliage and growth. Flowers also similar, pale pink and sweetly scented. An excellent shrub.
- Viburnum lantana** 8-15' Zone 2b Wayfaring Tree
A vigorous, large shrub of use only in large collections particularly where berries are required for attracting and feeding birds. Grows well in dry soil and is hardy on the prairies.
- Viburnum lantanoides** 10' Zone 3 Hobblebush
Formerly known as *Viburnum alnifolium*. A good plant for growing under trees and in the shade, where its conspicuous, early flowers and vivid, red fall color will be appreciated. Not suited for use in open, sunny areas. Native to Eastern Canada.
- Viburnum lentago** 10-20' Zone 2 Nannyberry
A shapely small tree or large shrub with showy flat clusters of white flowers in June and glossy green leaves. The blue-black fruit and striking purplish-red fall coloring add considerably to their beauty. Native from Quebec to Manitoba.
- Viburnum opulus** 12' Zone 2b European High Bush-cranberry
A very vigorous shrub or small tree with flat clusters of white flowers in May and tart red fruit. This species is often sold as *Viburnum trilobum*, the high bush-cranberry, which is very similar but has edible fruit.

SELECTIONS

- 'Aureum'—An attractive form with bright-red berries, which contrast very effectively with the deep-golden foliage. Withstands the sun without burning and is rugged enough to take all kinds of soil conditions.
- 'Nanum'—Dwarf European High Bush-cranberry. A very dwarf form to 3 feet that produces few flowers and no fruits. Its dense habit makes it extremely useful as a small hedge.

'Roseum'—European Snowball. A form with showy sterile flowers in compact, globose heads that look like snowballs. It is a showy shrub but its usefulness is often marred by aphids which, unless killed by spraying, will curl and destroy all the leaves and completely disfigure the entire shrub.

'Xanthocarpum'—A form with attractive yellow fruits.

Viburnum plicatum 9' Zone 6 Japanese Snowball

Usually listed as *Viburnum tomentosum* 'Sterile'. Very similar to the European Snowball with its snowy globes of flowers. It is far less susceptible to aphid attack but is not as hardy as the selections of *Viburnum opulus*. This species and all its forms are also noted for their unique, trim horizontal branching habit. The cultivar 'Mariesii,' known as Maries' doublefile viburnum, has its flat flower and fruit clusters all borne on the upper surface of the branches.



Viburnum lentago.

Viburnum prunifolium 15' Zone 3 Black Haw

A tall, vigorous shrub or small tree native in Eastern Canada. One of the best large viburnums, with its flat clusters of white flowers, followed by blue-black fruits

and shining red fall color. The large fruits are sweet and edible and are often used for preserves.

Viburnum rhytidophyllum 6-15' Zone 6b Leatherleaf Viburnum

An evergreen species with distinctive wrinkled leaves 7 to 9 inches long and red to black fruits. Hardy in areas as mild as southern Ontario but only in protected locations. Best planted in a shaded area.

Viburnum sargentii 12' Zone 3b Sargent's Cranberry

A large shrub, striking with its flat clusters of white flowers and scarlet fruits. Its vivid crimson coloring is especially showy in fall.

Viburnum sieboldii 25' Zone 4 Siebold Viburnum

One of the best all-round large viburnums, with its deep-green, lustrous leaves, 6 inches long, its flat clusters of creamy-white flowers and its red berries, which turn black. An excellent viburnum for use as a specimen plant or in the large shrub border.



Flower head of *Viburnum opulus* 'Roseum.'

Viburnum tinus 15' Zone 8 Laurestinus

An excellent winter-flowering shrub with evergreen leaves, hardy only in the milder areas of British Columbia. The buds are pink, the flowers white when open. Grows best in a sunny, well-drained location.

Viburnum trilobum 12' Zone 2 High Bush-cranberry
 Similar to *Viburnum opulus* except for the fruit, which is edible in *V. trilobum*. Both species make good hedges, but this American species is hardier and better for use on the prairies.

Viburnum wrightii 8' Zone 6 Wright's Viburnum
 An attractive shrub, especially because of its large clusters of bright-red berries in the autumn.

VITEX

Vitex agnus-castus 8' Zone 8 Chastetree
 Hardy only in British Columbia, this shrub should be treated like *Buddleia* and be cut back to ground level each spring. Of interest for its aromatic foliage and clusters of pale-violet flowers in mid-August.

Vitex negundo 'Heterophylla' 12' Zone 5 Cut-leaved Chastetree
 Hardier than the above species, this one is root-hardy at Ottawa and can be grown successfully if cut to the ground each spring. At Ottawa this graceful shrub produces an abundance of violet-blue flowers in long clusters during September and October.

WEIGELA

Weigela

Shrubs valued chiefly for their profuse bloom during May and June. They were at one time much more popular than they are today. Although relatively free of pests and diseases, they are not reliably hardy in most of Canada, and need annual renewal pruning and removal of dead wood. Even at Ottawa, where most of the cultivars do fairly well, they may be killed to ground level during a severe winter. However they usually recover. The flowers are white through pink to red. There is no interesting fruit or autumn color in the weigelas, although two varieties have interesting foliage.

Weigela 'Abel Carriere' 5' Zone 5
 A brilliant, deep-pink cultivar.

Weigela 'Boskoop Glory' 5' Zone 5
 A new cultivar from Holland, with large salmon-pink flowers.

Weigela 'Bristol Ruby' 5' Zone 5
 An impressive plant with large crimson-red flowers in late May, also a few flowers in the fall.

Weigela 'Eva Supreme' 5' Zone 5
 A new, vigorous type, with bright-red flowers. This is an improved form of 'Eva Rathke'.

Weigela 'Feerie' 7' Zone 5
 An attractive shrub with rose-pink flowers produced in profusion.

Weigela florida 5' Zone 4
 A species from which the following selections have been made.

SELECTIONS

'Eva Rathke'—A good cultivar to 5 feet, with dark-crimson flowers.

'Foliis Purpuriis'—A purple-leaved selection to 4 feet with dull-pink flowers.

'Variegata'—An excellent dwarf cultivar, 3 to 5 feet; leaves edged with yellow, flowers deep rose.

venusta—One of the hardiest; flowers purplish-pink.

Weigela 'Manchurian Pink' 5' Zone 3

Hardy on the prairies, when planted in a protected location. Has profuse, soft pink flowers in early June. Also known as 'Dropmore Pink'.

Weigela middendoriana 5' Zone 4

Another of the hardiest weigelas, quite distinct with its yellow flowers.



Weigela florida 'Variegata.'

Weigela 'Vanicek' 5' Zone 4

One of the better, and the hardiest, of the red-flowered weigelas. Often listed as 'Newport Red'.

XANTHORRHIZA

Xanthorrhiza simplicissima 2' Zone 5 Yellowroot

A valuable low shrub, which can be used as a ground cover in light shade. Its small brownish flowers are quite inconspicuous, but its shiny green leaves are showy in summer and turn a brilliant orange in the fall.

YUCCA

A group of liliaceous trees and shrubs usually confined to subtropical and tropical countries. Some of the species, however, can be grown much farther north and at least two can be grown in Canada. One species is native to a small area in southeast Alberta.

Yucca filamentosa 3' Zone 4 Adam's-needle

This species is quite hardy at Ottawa. The sharply pointed leaves give a desert-like effect to the area, and the plant is quite prominent during July with its large spikes of creamy-white flowers. It grows best in a hot dry location.

Yucca glauca 2' Zone 3 Spanish Bayonet

A striking, sword-leaved plant, with two-foot spikes of creamy-white flowers in July. Requires a hot, dry location. Native in southeast Alberta.

ZANTHOXYLUM

Zanthoxylum americanum 10' Zone 4 Prickly-ash

A large, spreading, round-headed shrub, native in Eastern Canada. Of no merit except, perhaps, as a hedge plant, where the prickles may prove a barrier to animals.

ZENOBIA

Zenobia pulverulenta 6' Zone 6 Dusty Zenobia

An interesting ericaceous shrub valued for its gray foliage, useful as a contrast in the rock garden, shrub border or woodland. Needs a sandy, acid soil.

SOME HELPFUL PUBLICATIONS

Except where noted otherwise, the following publications are available from the Information Division, Canada Department of Agriculture, Ottawa, Ontario.

Checklist of Ornamental Trees for Canada, by Lawrence C. Sherk. Canada Department of Agriculture Publication 1343, 1968. 23 pages.

Culture of Ornamental Trees for Canadian Gardens, by R. W. Oliver. Canada Department of Agriculture Publication 994, 1962. 30 pages.

Garden Rose Growing. Canada Department of Agriculture Publication 908, 1964. 23 pages.

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Ornamental Trees and Shrubs for the Coastal Regions of British Columbia, by J. J. Woods and J. H. Crossley. Experimental Farm, Saanichton, British Columbia, Publication 100, 1964. 14 pages.

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Recommended Trees and Shrubs. Experimental Farm, Beaverlodge, Alberta, 1956. 5 pages.

Rhododendrons in the Atlantic Provinces, by George S. Swain. Canada Department of Agriculture Publication 1303, 1967. 19 pages.

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Woody Climbers and Ground Covers for Canadian Gardens, by R. W. Oliver. Canada Department of Agriculture Publication 1017, 1964. 18 pages.

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INDEX

- abelia 40
 glossy 40
Abelia 40
 'Edward Goucher' 40
 × *grandiflora* 40
 abelialeaf, Korean 40
Abeliophyllum distichum 40
Acanthopanax 40
 senticosus 40
 sessiliflorus 40
 sieboldianus 40
Acer 40
 campestre 40
 circinatum 40
 ginnala 40
 palmatum 40
 'Atropurpureum' 40
 dissectum 40
 'Ornatum' 40
 'Osakazuki' 41
 'Rubrum' 41
 spicatum 41
 tataricum 41
 Adam's-needle 166
Aesculus parviflora 41
 alder 41
 royal 42
 white- 58
 allspice, Carolina 49
 almond See flowering-almond 121
 dwarf Russian almond 121
Alnus 41
 crispa 41
 glutinosa 'Imperialis' 42
 rugosa 41
 sinuata 41
 tenuifolia 41
 alpine-azalea 99
Amelanchier 42
 alnifolia 42
 'Pembina' 42
 'Smoky' 42
 canadensis 42
 × *grandiflora* 42
 humilis 42
 laevis 42
 stolonifera 42
Amorpha 42
 canescens 42
 fruticosa 42
 nana 42
 andromeda, downy 43
Andromeda 42
 glaucophylla 43
 polifolia 43
 angelicatree, Japanese 43
 annual care 6
 aralia, five-leaved 40
Aralia 43
 elata 43
 spinosa 43
 arborvitae, American 156
 little gem 156
 Oriental 157
 arbutus, trailing 73
Arbutus unedo 43
Arctostaphylos 44
 alpina 44
 columbiana 44
 uva-ursi 44
Aronia 44
 arbutifolia 44
 'Brilliantissima' 44
 melanocarpa 44
 prunifolia 45
 arrowwood 161
Artemisia 45
 abrotanum 45
 tridentata 45
Arundinaria japonica
 See *Pseudosasa japonica* 121
Atraphaxis 45
 caucasica 45
 frutescens 45
Atriplex 45
 aucuba, Japanese 45
Aucuba 45
 japonica 45
 'Lanceolata' 45
 'Nana' 45
 'Variegata' 45
 autumn-olive 73
 azalea 132
 'Adonis' 135
 'Aladdin' 135

- 'Anny' 135
 'Apple Blossom' 134
 'Balzac' 134
 'Berry Rose' 134
 'Bouquet de Flore' 133
 'Brazil' 134
 'Buccaneer' 136
 'Byron' 133
 'Cameo' 135
 'Cameroon' 135
 'Christmas Cheer'
 See 'Ima-shojo' 135
 'Claret' 135
 'Coccinea Speciosa' 133
 'Comte de Gomer' 134
 'Corneille' 133
 'Corsage' 135
 'Daviesi' 133
 deciduous 133
 'Devon' 134
 'Diana' 135
 'Dr. Jacobi' 134
 'Dr. Reichenbach' 134
 'Elizabeth Gable' 135
 evergreen 134
 Exbury 134
 'Exquisite' 134
 'Fanny' 133
 'Favorite' 135
 'Fawley' 134
 'Fedora' 135
 'Firefly' 134
 'Forest Fire' 135
 'Frans van der Bom' 134
 Gable 135
 Ghent 133
 'Gibraltar' 134
 Glen Dale 136
 'Gloria Mundi' 133
 'Golden Dream' 134
 'Golden Oriole' 134
 'Harvest Moon' 134
 'Helena' 135
 'Hino-crimson' 135
 'Hinodegiri' 135
 'Hi-no-mayo' 135
 'Hortulanus H. Witte' 134
 'Hotspur Red' 134
 'Hugh Wormald' 134
 'Ima-shojo' 135
 'Irene Koster' 134
 'James Gable' 135
 'J. J. Jennings' 134
 'John Cairns' 135
 Kaempferi 135
 'Kathleen' 135
 Knap Hill 134
 'Knap Hill Apricot' 134
 'Koster's Brilliant Red' 134
 Kurume 135
 'Louis Gable' 135
 'Magnifica' 134
 'Mildred Mae' 135
 Mollis 134
 'Nancy Waterer' 133
 'Narcissiflora' 133
 Occidentale 134
 'Orange Beauty' 135
 'Palestrina' See 'Wilhelmina Vuyk' 135
 'Pallas' 133
 'Peregrine' 134
 'Persil' 134
 'Purple Splendour' 135
 'Red Pimpernel' 135
 'Rembrandt' 133
 'Rosebud' 135
 'Royal Lodge' 134
 'Sakata Red' 135
 'Scarlet Pimpernel' 134
 'Seville' 134
 'Sherwood Red' 135
 'Springtime' 135
 'Stewartstonian' 135
 'Toucan' 134
 'Tunis' 134
 'Ward's Ruby' 135
 'White Swan' 134
 'Wilhelmina Vuyk' 135
 'Zulu' 136
Baccharis halimifolia 45
 bamboo, arrow 121
 dwarf Oriental hedge 45
 golden 114
 metake 121
 palmate 143
Bambusa multiplex 'Chinese Goddess' 45
 barberry 46
 Chenault 46
 common 46
 Darwin 46
 deciduous 46
 dwarf Magellan 46
 evergreen 46
 Japanese 46
 paleleaf 46
 rosemary 46
 threespine 46
 warty 46
 wintergreen 46
 bay 97
 sweet- 104
 bayberry 108
 bearberry 44
 black 44
 beautyberry, Japanese 48

- beautybush 96
Benzoin aestivale See *Lindera benzoin* 99
Berberis 46
 amurensis 46
 buxifolia 'Nana' 46
 candidula 46
 'Cardinal' 46
 darwinii 46
 'Humber Red' 46
 × *hybrido-gagnepainii* 'Chenault' 46
 julianae 46
 linearifolia 46
 poiretii 46
 'Sheridan Red' 46
 × *stenophylla* 46
 thunbergii 46
 triacanthophora 46
 verruculosa 46
 vulgaris 46
 bladdernut 147
 bladder-senna 59
 common 59
 Persian 59
 bluebeard 52
 blueberry 157
 box 159
 highbush 158
 blueblossom 52
 bog-laurel 95
 box, English 48
 littleleaf 47
 box sand-myrtle 97
 boxwood 47
 edging 48
 Korean 48
 bridalwreath 147
 broom 66
 butcher's- 141
 Golden Carpet 66
 Moroccan 66
 Portuguese 66
 prostrate 66
 Provence 67
 purple 67
 Scotch 67
 Spanish 144
 spike 67
 Warminster 67
Bruckenthalia spiculifolia 46
 buckeye, bottle-brush 41
 buckthorn 123
 common sea- 86
 buckwheatbush 45
 buddleia 47
 fountain 47
Buddleia 47
 alternifolia 47
 davidii 47
 'Burgundy' 47
 'Charming' 47
 'Dubonnet' 47
 'Empire Blue' 47
 'Fascinating' 47
 'Ile de France' 47
 'Peace' 47
 'Purple Prince' 47
 'Royal Red' 47
 'White Profusion' 47
 buffaloberry 143
 russet 143
 silver 143
 burningbush 76
 bush-clover 97
 Japanese 97
 shrub 97
 bush-cranberry, high 164
 dwarf European 161
 European 161
 bush-honeysuckle 71
 Southern 71
 butcher's-broom 141
 butterflybush 47
 buttonbush 53
Buxus 47
 microphylla 47
 koreana 47
 'Pin Cushion' 48
 'Tall Boy' 48
 'Winter Beauty' 48
 sempervirens 48
 'Broman' 48
 'Suffruticosa' 48
 buying 2
Callicarpa japonica 48
Calluna 48
 vulgaris 48
 'Alba Plena' 48
 'Atrorubens' 48
 'Aurea' 48
 'Camla' 48
 'County Wicklow' 48
 'David Eason' 48
 'H. E. Beale' 48
 'J. H. Hamilton' 48
 'Mrs. Ronald Gray' 48
 'Nana' 48
 'Searlei' 48
 'Searlei Aurea' 48
 'Tib' 48
Calycanthus floridus 49

- camellia 49
 common 49
 Sasanqua 49
Camellia 49
 'Apple Blossom' 49
 'Donation' 49
 japonica 49
 'Ake-bono' 49
 'Amabilis' 49
 'Are-jishi' 49
 'Berenice Boddy' 49
 'Cheerful' 49
 'Daikagura' 49
 'Donckelari' 49
 'Ecstasy' 49
 'Elegans' 49
 'Elisabeth' 49
 'Finlandia' 49
 'H. A. Downing' 49
 'Kishu-tsukasa' 49
 'Lady Clare' 49
 'Lady Vansittart' 49
 'La Reine' 49
 'Leucantha' 49
 'Mathotiana' 49
 'Monjisu Red' 49
 'Nagasaki' 49
 'Prof. C. S. Sargent' 49
 'Somegawa' 49
 'Tricolor' 49
 'Tricolor Red' 49
 sasanqua 49
 'Kenko' 51
 'Meigetsu' 51
 'Mine-no-yuki' 51
 'Togo-no-tzuki' 51
 × *williamsii* 51
 'Mary Christian' 51
 'J. C. Williams' 51
 caragana 51
 short-leaved 51
 shrubby 51
Caragana 51
 arborescens 51
 'Lorbergii' 51
 'Pendula' 51
 aurantiaca 51
 brevifolia 51
 frutex 51
 'Globosa' 51
 pygmaea See *C. aurantiaca* 51
 sinica 51
Carpenteria californica 52
Caryopteris 52
 × *clandonensis* 52
 'Blue Mist' 52
 'Heavenly Blue' 52
Ceanothus 52
 americanus 52
 × *delilianus* 52
 'Gloire de Versailles' 52
 'Henri Defosse' 52
 gloriosus 52
 griseus 52
 ovatus 52
 × *pallidus* 52
 'Carmen' 52
 'Marie Simon' 52
 thyrsiflorus 52
 cedar, red See red-cedar 94
 white See white-cedar 156
Cephalanthus occidentalis 53
Cercis 54
 canadensis 54
 'Alba' 54
 chinensis 54
 siliquastrum 54
Chaenomeles 54
 × *californica* 54
 'Clarke's Giant' 55
 cathayensis 54
 japonica 55
 alpina 55
 lagenaria See *C. speciosa* 55
 speciosa 55
 'Nivalis' 55
 'Rubra' 55
 'Spitfire' 55
 × *superba* 55
 'Coral Sea' 55
 'Crimson and Gold' 55
 'Hollandia' 55
Chamaecyparis 55
 lawsoniana 55
 'Allumii' 55
 'Ellwoodii' 55
 'Fletcheri' 55
 'Lane' 55
 'Minima Glauca' 55
 nootkatensis 55
 'Compacta' 55
 obtusa 55
 'Crippsi' 55
 'Nana' 56
 'Nana Gracilis' 56
 pisifera 56
 'Filifera' 56
 'Filifera Aurea' 57
 'Filifera Nana' 57
 'Plumosa' 57
 'Plumosa Aurea' 57
 'Squarrosa' 57
Chamaedaphne calyculata 57
 chastetree 164
 cut-leaved 164

- cherry 119
 Cornelian See Cornelian-cherry 59
 European bird 120
 Manchu 121
 purpleleaf sand 119
 Shubert choke 121
 cherry-laurel 119
Chionanthus virginicus 57
Choisya ternata 57
 chokeberry 44
 black 44
 purple 45
 red 44
Chrysothamnus 57
graveolens 57
nauseosus 57
 cinquefoil 117
 shrubby 117
Cistus 57
corbariensis See *C. × hybridus* 57
× hybridus 57
 'Silver Pink' 57
laurifolius 58
obtusifolius 58
Clerodendrum trichotomum 58
 clethra, cinnamon 58
Clethra 58
acuminata 58
alnifolia 58
Colutea 59
arborescens 59
persica 59
Comptonia peregrina 59
 coralberry 148
 Chenault 148
 cornel, Japanese 61
 Spaeth's 59
 Cornelian-cherry 59
Cornus 59
alba 59
 'Argenteo-marginata' 59
 'Coral Beauty' 59
 'Elegantissima'
 See 'Argenteo-marginata' 59
 'Sibirica' 59
 'Spaethii' 59
alternifolia 59
amomum 59
hessei 59
mas 59
officinalis 61
racemosa 61
rugosa 61
stolonifera 61
 'Flaviramea' 61
 'Kelseyi' 61
Corylopsis 61
glabrescens 61
pauciflora 61
sinensis 61
spicata 61
Corylus 61
americana 61
avellana 61
 'Contorta' 61
 'Fusco-rubra' 61
cornuta 61
maxima 'Purpurea' 61
Cotinus 61
coggygria 61
 'Purpureus' 62
 'Royal Purple' 62
 cotoneaster 62
 bearberry 63
 Diel's 63
 European 63
 Franchet 63
 hedge 63
 Henry 63
 Himalayan 63
 necklace 63
 Peking 62
 showy 63
 small-leaved 63
 spreading 63
 Vilmorin 63
 willowleaf 63
Cotoneaster 62
acutifolia 62
adpressa 62
praecox 62
ambigua 62
bullata 'Floribunda' 63
conspicua decora 63
dammeri 63
 'Skogholm' 63
dielsiana 63
divaricata 63
franchetii 63
frigida 63
henryana 63
horizontalis 63
integerrima 63
 'Lofast' 63
lucida 63
microphylla 'Cochleata' 63
multiflora 63
salicifolia floccosa 63
tomentosa 64
× watereri 64
 'Autumn Fire' 64
 'Cornubia' 64
 'Pendula' 64

- crab apple 105
 Arnold 105
 carmine 105
 Japanese 107
 midget 107
 redbud 108
 Sargent's 108
 Siberian 105
- cranberry, mountain- 159
 Sargent's 163
- Crataegus* 64
 chrysoarpa 64
 crus-gallii 64
 × *mordenensis* 'Toba' 64
 phaenopyrum 64
 succulenta 64
- crowberry 73
- Cryptomeria* 64
 japonica 'Elegans' 64
 'Jindai-sugi' 64
- currant 136
 alpine 136
 black 136
 Buffalo 137
 golden 137
 red 136
 white 136
 winter 137
- cydonia See *Chaenomeles* 54
- Cytisus* 66
 albus 66
 battandieri 66
 × *beanii* 66
 'Golden Carpet' 66
 decumbens 66
 'Hollandia' 66
 × *kewensis* 67
 nigricans 67
 × *praecox* 67
 'Albus' 67
 'Allgold' 67
 purgans 67
 purpureus 67
 scoparius 67
 'Burkwoodii' 68
 'Daisy Hill Splendens' 68
 'Dragonfly' 68
 'Golden Sunlight' 68
 'Goldfinch' 68
 'Jubilee' 68
 'Killarney Salmon' 68
 'Maria Burkwood' 68
 'Moonlight' 68
 'Newry Gold' 68
 'Queen Mary' 68
 'Red Wings' 68
 'Zeelandia' 66
- Daboecia* 68
 cantabrica 68
 'Alba' 68
 'Atropurpurea' 68
 'Pallida' 68
- daisybush, New Zealand 109
- daphne 69
 February 69
 Burkwood's 69
 Giraldi 69
 Manten's 69
 rose 69
 winter 69
- Daphne* 69
 × *burkwoodii* 69
 'Silveredge' 69
 'Somerset' 69
 cneorum 69
 collina 69
 giraldii 69
 'Leila Haines' 69
 × *mantensiana* 'Manten' 69
 mezereum 69
 'Alba' 69
 odora 69
- deutzia 69
 fuzzy 70
 Lemoine 69
 Kalmia 69
 Mongolian 70
 showy 70
 slender 69
- Deutzia* 69
 gracilis 69
 × *hybrida* 'Mont Rose' 69
 × *kalmiaeflora* 69
 × *lemoinei* 69
 'Compacta' 69
 magnifica 70
 parviflora 70
 × *rosea* 70
 'Campanulata' 70
 'Carminia' 70
 'Eximea' 70
 scabra 'Plena' 70
 'Pride of Rochester' 70
- devil's-walkingstick 43
- diervilla, honeysuckle 71
- Diervilla* 71
 lonicera 71
 sessilifolia 71
- Dirca palustris* 71
- diseases 13
 blights 15
 cankers 17
 diagnosis of 19

- leaf spots 14
- nonparasitic 18
- powdery mildews 15
- rusts 16
- wilts 17
- dogwood 59
 - gray 61
 - Hesse 59
 - pagoda 59
 - red osier 61
 - roundleaf 61
 - Siberian 59
 - silky 59
 - Tatarian 59
 - variegated 59
- elaeanthus, cherry 73
 - thorny 73
- Elaeagnus* 71
 - angustifolia* 71
 - argentea* See *E. umbellata* 73
 - commutata* 72
 - × *ebbingei* 72
 - multiflora* 73
 - pungens* 73
 - 'Maculata' 73
 - 'Aureo-maculata' See 'Maculata' 73
 - umbellata* 73
- elder 142
 - European 143
 - European red 143
 - golden American 142
 - red-berried 143
- elm 157
 - Chinese 157
 - Siberian 157
- Elsholtzia stauntonii* 73
- Empetrum nigrum* 73
- enkianthus, redvein 73
- Enkianthus* 73
 - campanulatus* 73
 - deflexus* 73
 - perulatus* 73
- Epigaea repens* 73
- Erica* 73
 - carnea* 74
 - 'Aurea' 74
 - 'James Backhouse' 74
 - 'Praecox Rubra' 74
 - 'Queen Mary' 74
 - 'Ruby Glow' 74
 - 'Snow Queen' 74
 - 'Springwood' 74
 - 'Springwood Pink' 74
 - 'Vivellii' 74
 - 'Winter Beauty' 74
 - cinerea* 74
 - 'Alba' 74
 - 'Atrorubens' 74
 - 'C. D. Eason' 74
 - 'Fulgida' 74
 - 'Mrs. Dill' 74
 - × *darleyensis* 75
 - tetralix* 75
 - vagens* 75
 - 'Lyonesse' 75
 - 'Mrs. D. F. Maxwell' 75
 - 'St. Keverne' 75
- escallonia 75
- Escallonia* 75
 - 'C. F. Ball' 75
 - 'Donard Radiance' 75
 - 'Donard Seedling' 75
 - 'Donard Star' 75
 - 'Iveyi' 75
 - 'Peach Blossom' 75
 - 'Pride of Donard' 75
- Eucryphia* 76
 - glutinosa* 76
 - × *nymansensis* 76
- euonymus, deciduous 76
 - dwarf 77
 - evergreen 77
- Euonymus* 76
 - alata* 76
 - 'Compacta' 76
 - atropurpurea* 76
 - bungeana* 77
 - 'Pendula' 77
 - europaea* 77
 - 'Aldenhamensis' 77
 - fortunei* 77
 - 'Colorata' 77
 - 'Emerald Beauty' 77
 - 'Emerald Charm' 77
 - Emerald cultivars 77
 - 'Emerald Cushion' 77
 - 'Emerald Gaiety' 77
 - 'Emerald Leader' 77
 - 'Emerald Pride' 77
 - 'Sarcoxie' 77
 - vegeta* 77
 - japonica* 77
 - nana* 77
 - phellomana* 77
 - sachalinensis* 77
 - sanguinea* 77
- Exochorda* 77
 - giraldii wilsonii* 77
 - 'The Bride' 79

- false cypress 55
 Hinoki 55
 Lawson's 55
 Nootka 55
 Sawara 56
 false spirea 144
 Kashmir 144
 Ural 144
 fatshedera 79
 × *Fatshedera lizei* 79
 fatsia, Japan 79
Fatsia japonica 79
 fertilizers 6
Ficus carica 79
 fig, common 79
 fireberry 64
 firethorn 121
 Gibb's 121
 scarlet 121
 flowering-almond 121
 dwarf 119
 forsythia 79
 Albanian 79
 early 80
 Korean 80
 weeping 80
Forsythia 79
 'Beatrix Ferrand' 79
 europaea 79
 × *intermedia* 'Arnold Dwarf' 79
 'Lynwood' 79
 'Primulina' 80
 'Spectabilis' 79
 'Spring Glory' 80
 'Karl Sax' 80
 ovata 80
 'Tetragold' 80
 suspensa sieboldii 80
 viridissima koreana 80
 fothergilla 80
 Alabama 81
 dwarf 81
 large 81
Fothergilla 80
 gardenii 81
 major 81
 monticola 81
 franklinia 81
Franklinia alatamaha 81
 fringetree 57
 fuchsia, Magellan 81
Fuchsia 81
 magellanica 81
 'Riccantonii' 81
Garrya elliptica 81
 wrightii 81
Gaultheria 81
 humifusa 81
 miqueliana 81
 shallon 81
Genista 82
 hispanica 82
 lydia 82
 pilosa 82
 sagittalis 82
 tinctoria 82
 'Plena' 82
 germander, chamaedrys 156
 bush 156
 glorybower 58
 Harlequin 58
 gold-dust shrub 45
 goldflower 88
 gooseberry 136
 gorse 157
 Spanish 82
 greenweed, Dyer's 82
 groundselbush 45
Halimodendron halodendron 82
Hamamelis 83
 × *intermedia* 'Jelena' 83
 'Ruby Glow' 83
 mollis 83
 vernalis 83
 virginiana 83
 hardiness 37
 hardiness map 38
 hardy-orange 117
 haw, black 162
 hawthorn 64
 cockspur 64
 fleshy 64
 Washington 64
 hazel 61
 American 61
 beaked 61
 corkscrew 61
 European 61
 purple 61
 winter- 61
 heath 73
 Cornish 75
 crossleaf 75
 Darley 75
 Irish 68
 Scotch 74
 spring 74
 heather 48
Hebe 84
 'Autumn Glory' 84
 buxifolia 84
 cupressoides 84
 'Nana' 84
 traversii 84

- Hedera helix* 'Arborescens' 85
hemlock, common 157
Sargent's 157
Hibiscus 85
syriacus 85
'Admiral Dewey' 85
'Ardens' 85
'Blue Bird' 85
'Celestial Blue' 85
'Duc de Brabant' 85
'Hamabo' 85
'Jeanne d'Arc' 85
'Lady Stanley' 85
'Leopoldii' 85
'Monstrosus' 85
'Rubis' 85
'Violet Claire' 85
'Woodbridge' 85
Hippophae rhamnoides 86
hobblebush 161
holly 88
American 89
Burford 89
English 89
Japanese 89
longstalk 90
mountain- 109
Perny 90
Holodiscus discolor ariaefolius 86
honeysuckle 99
Albert thorn 101
Amur 101
Arnold 99
bearberry 101
belle 101
box 101
Clavey's dwarf 102
European fly 102
Morrow 101
privet 101
Tatarian 101
winter 101
Zabel's 101
hydrangea 86
house 86
oakleaf 87
peegee 86
Sargent 86
snowhill 86
Hydrangea 86
arborescens 'Annabelle' 86
'Grandiflora' 86
aspera sargentiana 86
bretschneideri 86
macrophylla 86
'Blue Wave' 86
'Intermedia' 86
'Mariesii' 86
paniculata 'Grandiflora' 86
quercifolia 87
serrata 'Acuminata' See *H. macrophylla*
'Intermedia' 86
Hypericum 87
calycinum 88
hookerianum 'Hidcote' 88
kalmianum 88
× *moserianum* 88
patulum henryi 88
prolificum 88
'Sungold' 88
Ilex 88
aquifolium 89
'Aureo Marginata' 89
'Bleeg' 89
'J. C. van Tol' 89
'Pyramidalis' 89
'Silvary' 89
cornuta 'Burfordii' 89
crenata 89
'Convexa' 89
'Golden Gem' 89
'Green Thumb' 89
'Latifolia' 89
'Rotundifolia' See 'Latifolia' 89
'Stokes' 89
glabra 89
'Nellie R. Stevens' 89
opaca 89
'Cardinal' 90
'Christmas Carol' 90
'Ed Thomas' 90
'Hedge Holly' 90
'Wake Pond' 90
'Yule' 90
pedunculosa 90
pernyi 90
serrata 90
verticillata 91
indigo 42, 91
dwarf 42
false 42
Indigofera 91
amblyantha 91
gerardiana 91
kirilowii 91
potaninii 91
inkberry 89
insect pests 20
ants 20
aphids 20
borers 20
caterpillars 21
identification of 20
lacebugs 21
leafhoppers 21

- leaf miners 21
- mealybugs 21
- mites 22
- root weevils 22
- scales 22
- thrips 23
- whiteflies 23
- Itea virginiana* 91
- ivy, shrubby 85
 - poison- 136
- japonica See *Chaenomeles* 54
- jasmine 92
 - rosy 92
 - winter 92
- Jasminum* 92
 - beesianum* 92
 - nudiflorum* 92
 - parkeri* 92
- jetbead 136
- judastree 54
- juniper 92
 - Andorra 94
 - Bar Harbor 94
 - Chinese 92
 - common 93
 - creeping 93
 - Hornibrook 93
 - Irish 93
 - Meyer 94
 - mountain 93
 - Savin 94
 - spiny Greek 92
 - Swedish 93
 - Tamarix 94
 - Waukegan 93
- Juniperus* 92
 - chinensis* 92
 - 'Ames' 92
 - 'Blaaw' 92
 - 'Fairview' 92
 - 'Hetzii' See *J. virginiana* 'Hetzii' 94
 - 'Iowa' 92
 - 'Keteleeri' 92
 - 'Maney' 92
 - 'Mountbatten' 92
 - 'Obelisk' 92
 - 'Olympia' 92
 - 'Pfitzeriana' 92
 - 'Pfitzeriana Aurea' 92
 - 'Pfitzeriana Nana' 92
 - 'Pfitzeriana Old Gold' 92
 - 'Plumosa' 92
 - 'Pyramidalis' 92
 - sargentii* 92
 - 'Spartan' 92
 - communis* 93
 - depressa* 93
 - 'Aureo-spica' 93
 - 'Hibernica' 93
 - 'Prostrata' 93
 - 'Pencil Point' 93
 - saxatilis* 93
 - 'Suecica' 93
- excelsa* 'Stricta' See *J. chinensis*
- 'Pyramidalis' 92
- horizontalis* 93
 - 'Douglasii' 93
 - 'Glauca' 94
 - 'Plumosa' 94
 - 'Wapiti' 94
- sabina* 94
 - 'Arcadia' 94
 - 'Blue Danube' 94
 - 'Hicksii' 94
 - 'Skandia' 94
 - 'Tamariscifolia' 94
- scopulorum* 94
 - 'Blue Heaven' 94
 - 'Hill's Silver' 94
- squamata* 'Meyeri' 94
- virginiana* 94
 - 'Blue Mountain' 94
 - 'Burkii' 94
 - 'Canaertii' 94
 - 'Glauca' 94
 - 'Grey Owl' 94
 - 'Hetzii' 94
 - 'Hillii' 94
 - 'Hill's Dundee' 94
 - 'Reptans' 94
 - 'Skyrocket' 94
- Kalmia* 95
 - angustifolia* 95
 - latifolia* 95
 - polifolia* 95
 - Kalmiopsis leachiana* 95
- kerria 95
- Kerria* 95
 - japonica* 95
 - 'Picta' 95
 - 'Pleniflora' 96
- Kolkwitzia* 96
 - amabilis* 96
 - 'Rosea' 96
- Labrador tea 97
- Latin names 37
- laurel 97
- laurestinus 163
- Laurus nobilis* 97
- Lavandula officinalis* 97
- lavender 97
- leadplant 42
- leatherleaf 57
- leatherwood 71
- Ledum groenlandicum* 97

- Leiophyllum buxifolium* 97
Lespedeza 97
 bicolor 97
 japonica 97
 thunbergii 97
 leucothoe, drooping 97
Leucothoe 97
 catesbaei See *L. fontanesiana* 97
 fontanesiana 97
Ligustrum 97
 amurense 98
 delavayanum 98
 × *ibolium* 98
 ionandrum See *L. delavayanum* 98
 japonicum 98
 obtusifolium 98
 regelianum 98
 ovalifolium 99
 ‘Aureo-marginata’ 99
 ‘Aureus’ See ‘Aureo-marginata’ 99
 tschonoskii 99
 × *vicaryi* 99
 vulgare 99
 ‘Atrovirens’ 99
 ‘Aureum’ 99
 ‘Lodense’ 99
 ‘Pyramidale’ 99
 lilac 150
 American 152
 Amur 151
 California 52
 Chinese 151
 common 153
 French hybrids 153
 Hungarian 152
 late 153
 littleleaf 152
 Manchurian 153
 Persian 152
 Preston 152
Lindera benzoin 99
 locust, Kelsey 137
Loiseleuria procumbens 99
Lonicera 99
 × *amoena* ‘Arnoldiana’ 99
 × *bella* ‘Atrorosea’ 101
 ‘Dropmore’ 101
 coerulea edulis 101
 fragrantissima 101
 involucrata 101
 korolkowii ‘Zabelii’ 101
 maackii 101
 podocarpa 101
 morrowii 101
 myrtillus 101
 nitida 101
 pileata 101
 spinosa albertii 101
 tatarica 101
 ‘Alba’ 102
 ‘Arnold Red’ 102
 ‘Beavermor’ 102
 ‘Hack’s Red’ 102
 ‘Latifolia’ 102
 ‘Rosea’ 102
 xylosteum 102
 ‘Claveyi’ 102
Lyonia ligustrina 102
 magnolia 102
 anise 103
 Chinese 103
 Merrill 102
 Oyama 103
 saucer 103
 southern 102
 star 102
 Wilson 104
Magnolia 102
 grandiflora 102
 kobus borealis 102
 ‘Merrill’ 102
 stellata 102
 liliflora ‘Nigra’ 102
 salicifolia 103
 sieboldii 103
 sinensis 103
 × *soulangiana* 103
 ‘Alba’ 104
 ‘Alba Superba’ See ‘Alba’ 104
 ‘Alexandrina’ 104
 ‘Brozzonii’ 104
 ‘Lennei’ 104
 ‘Nigra’ See *M. liliflora* ‘Nigra’ 102
 ‘Rubra’ 104
 ‘Rustica’ See ‘Rubra’ 104
 stellata See *M. kobus stellata* 102
 virginiana 104
 wilsonii 104
 mahonia, creeping 105
 leatherleaf 105
Mahonia 104
 aquifolium 104
 bealii 105
 nervosa 105
 repens 105
 maleberry 102
Malus 105
 ‘Almey’ 105
 ‘Arctic Dawn’ 105
 × *arnoldiana* 105
 × *atrosanguinea* 105
 baccata 105
 ‘Dolgo’ 106
 ‘Dorothea’ 106

- floribunda* 107
 'Golden Hornet' 107
 'Hopa' 107
 'Katherine' 107
 'Makamik' 107
 × *micromalus* 107
 × *moerlandsii* 'Liset' 107
 'Profusion' 107
 'Prince Georges' 107
 × *purpurea* 'Aldenhamensis' 107
 'Eleyi' 107
 'Red Jade' 107
 'Royalty' 107
 'Rudolph' 107
sargentii 108
 × *scheideckeri* 108
 'Sissipuk' 108
 × *soulardii* 'Red Tip' 108
 'Strathmore' 108
 'Sundog' 108
 × *zumi calocarpa* 108
 manzanita, hairy 44
 maple 40
 Amur 40
 hedge 40
 Japanese 40
 mountain 41
 Tatarian 41
 vine 40
 mayflower 73
 metake 121
 Mexican orange 57
 mock-orange 110
 Manchurian 112
 sweet 111
 virginal 112
 mountain-ash, Koehne's 144
 mountain-cranberry 159
 mountain-holly 109
 mountain-laurel 95
 mulches 5
Myrica 108
 cerifera 108
 gale 108
 pensylvanica 108
 nandina 108
Nandina domestica 108
 nannyberry 161
 native shrubs, moving of 3
 neilla, Chinese 108
Neilla sinensis 108
Nemopanthus mucronatus 109
 New Jersey tea 52
 ninebark 114
 twinpod 114
 oceanspray 86
Olearia haastii 109
 oleaster 71
 olive, Russian 71
 orange, Mexican 57
 Oregon grape 104
 osmanthus, holly 109
Osmanthus 109
 delavayi 109
 heterophyllus 'Ilicifolius' 109
 × *Osmarea burkwoodii* 109
 pachistima 109
 Canby 109
 myrtle 109
Pachistima canbyi 109
 myrsinites 109
 pachysandra 109
Pachysandra terminalis 109
Paeonia 109
 lutea 110
 suffruticosa 109
 'Comtesse de Tuder' 110
 'Reine Elizabeth' 110
 'Souvenir de Ducher' 110
 'Souvenir de Maxime Cornu' 110
 parrotia, Persian 110
Parrotia persica 110
 peach, flowering 120
 pearlbush, Wilson 77
 peashrub 51
 Chinese 51
 pygmy 51
 Siberian 51
 weeping 51
 peony, tree 109
 pernettya, Chilean 110
Pernettya 110
 mucronata 110
 'Alba' 110
 'Bell's Seedling' 110
 'Coccinea' 110
 'Pink Bell' 110
 tasmanica 110
Perovskia atriplicifolia 110
 pesticides, use of 23
 pH 7
Philadelphus 110
 'Albatre' 111
 'Avalanche' 111
 'Bouquet Blanc' 111
 coronarius 111
 'Aureus' 111
 'Dame Blanche' 111
 'Enchantment' 111
 'Galahad' 112
 × *lemoinei* 'Innocence' 112
 lewisii 'Waterton' 112
 'Manteau d'Hermine' 112
 'Mont Blanc' 112

- Regel's 98
 sharpleaf 99
 Vicary golden 99
 pruning 7
 established shrubs 7
 evergreens 12
 of broad-leaved shrubs 12
 of coniferous shrubs 12
 rejuvenation 10
Prunus 119
 cerasifera 'Atropurpurea' 119
 × *cistena* 119
 glandulosa 119
 'Alboplena' 119
 'Sinensis' 119
 laurocerasus 119
 'Latifolia' 119
 'Macrophylla' See 'Latifolia' 119
 'Otto Luyken' 119
 'Reynvaanii' 119
 'Schipkaensis' 119
 'Zabeliana' 119
 lusitanica 119
 maritima 119
 × *nigrella* 'Muckle' 120
 padus 120
 persica 120
 'Cardinal' 120
 'Iceberg' 120
 'Clara Meyer' 120
 'Pink Charming' 120
 'Purpurea' 120
 × *skinneri* 'Baton Rouge' 121
 tenella 121
 'Fire Hill' 121
 tomentosa 121
 triloba 'Multiplex' 121
 virginiana 'Shubert' 121
Pseudosasa japonica 121
Pyracantha 121
 atalantoides 121
 coccinea 121
 'Kasan' 121
 'Lalandii' 121
 'Orange Glow' 121
 crenulata 'Flava' 123
 rogersiana 123
 'Eddie's Coral' 123
 'Oxford' 123
 'Rosedale' 123
 quince, flowering 55
 Japanese 55
 rabbitbush, greenplume 57
 rubber 57
 raspberry 141
 boulder 141
 flowering 141
 Korean 141
 redbud 54
 Chinese 54
 red-cedar 94
 Western 94
Rhamnus 123
 frangula 17
 purshiana 17
 rhododendron 124
 'Albatross' 132
 'Alice Street' 131
 'America' 127
 'Angelo' 132
 'Anna Rose Whitney' 131
 'Azor' 132
 'Beauty of Littleworth' 131
 'Bluebird' 131
 'Blue Peter' 127, 131
 'Bow Bells' 131
 'Bric-a-brac' 131
 'Britannia' 132
 'Brocade' 131
 'Caractacus' 127
 'Carita' 131
 'Caroline' 127
 'Catawbiense Album' 127
 'Catawbiense Grandiflorum' 127
 'C. B. van Nes' 131
 'Charles Dickens' 127
 'Cheer' 129
 'Christmas Cheer' 131
 'Cilpinense' 131
 'C.I.S.' 131
 'Conewago' 127
 'Cotton Candy' 131
 'Cunningham's White' 128
 'Damaris' 131
 'David' 131
 'Day Dream' 132
 'Elie' 129
 'Elizabeth' 131
 'Everestianum' 128
 'Fabia' 132
 'Faggetter's Favourite' 131
 'Fastuosum Plenum' 128
 'Gold Mohur' 131
 'Goldsworth Orange' 132
 'Goldsworth Yellow' 128
 'Grosclaude' 131
 'Holden' 129
 'Humming Bird' 131

- 'Jan Dekens' 131
 'Jean Mary Montague' 131
 'King of Shrubs' 132
 'LaBars' White' 128
 'Lady Chamberlain' 131
 'Lady Clementine Mitford' 132
 'Lee's Dark Purple' 128
 'Loderi King George' 131
 'Loder's White' 131
 'Marcia' 132
 'Margaret Dunn' 132
 'May Day' 132
 'Moonstone' 132
 'Mrs. A. T. de la Mare' 132
 'Mrs. Betty Robertson' 132
 'Mrs. C. S. Sargent' 128
 'Mrs. Furnival' 132
 'Mrs. G. W. Leak' 132
 'Mrs. Horace Fogg' 132
 'Mrs. W. C. Slocock' 132
 'Naomi' 132
 'Nereid' 132
 'Nova Zembla' 128
 'Parson's Gloriosum' 128
 'Pink Pearl' 132
 'Pioneer' 128
 'Polar Bear' 132
 'Praecox' 128, 131
 'Purple Splendour' 128, 132
 'Rainbow' 132
 'Ramapo' 128
 'Rocket' 129
 'Roseum Elegans' 128
 'Snow Lady' 131
 'Souvenir of W. C. Slocock' 132
 'Susan' 132
 'Temple Belle' 132
 'The General' 129
 'Tony' 129
 'Unique' 131
 'Van Weerden Poelman' 128
 'Vulcan' 132
 'White Olympic Lady' 131
 'Windbeam' 128
Rhododendron 124
 aberconwayi 130
 arborescens 133
 arboreum 129
 arizelum 130
 augustinii 130
 auriculatum 130
 barbatum 129
 brachycarpum 127
 bullatum 130
 bureavii 129
 calendulaceum 133
 calophytum 129
 campanulatum aeruginosum 130
 campylocarpum 130
 canadense 133
 carolinianum 127
 catawbiense 127
 ciliatum 129
 cinnabarinum 130
 concatenans 130
 dauricum 127, 129
 dauidsonianum 130
 degronianum 127
 desquamatum 127, 130
 fargesii 127, 129
 fauriei 127
 ferrugineum 127
 fictolacteam 130
 flavidum 129
 forrestii 130
 fortunei 130
 × *fraseri* 133
 glaucophyllum 130
 haematodes 130
 hirsutum 127
 impeditum 127
 imperator 130
 indicum 133
 insigne 127
 japonicum 133
 kaempferi 133
 lacteum 130
 lepidostylum 130
 leucapsis 129
 lutescens 129
 macabeanum 129
 macrophyllum 127
 makinoi 130
 mallotum 129
 maximum 127
 minus 127
 mollyanum 130
 moupinense 129
 mucronatum 133
 mucronulatum 127, 129
 nudiflorum 133
 orbiculare 130
 oreodoxa 127
 oreotrepes 130
 pemakoense 129
 prunifolium 133
 racemosum 129
 radicans 130
 reticulatum 133
 roseum 133
 russatum 130
 saluenense 130
 sargentianum 130
 schippenbachii 133

- scintillans* 130
sinogrande 129
souliei 130
smirnowii 127, 130
sperabile 130
strigillosum 129
trephropeplum 130
vaseyi 133
venator 130
viscosum 133
wardii 130
williamsianum 130
xanthocodon 130
yakusimanum 130
yedoense poukhanense 133
Rhodotypos scandens 136
Rhus 136
aromatica 136
copallina 136
cotinus See *Cotinus coggygria* 61
glabra 136
typhina 136
 'Laciniata' 136
Ribes 136
alpinum 136
aureum 137
odoratum 137
sanguineum 137
Robinia 137
hispida 137
kelseyi 137
 rock-rose 57
 laurel 58
 white 57
 rockspray 63
 creeping 62
 rodents 5
Rosa 137
acicularis 138
 'Betty Bland' 138
 'Blanche Moreau' 138
blanda 138
canina 138
damascena 'Versicolor' 138
 'Dr. Merkeley' 138
eglanteria 138
 'Goldbush' 138
 'Magnifica' 138
foetida 'Bicolor' 138
 'Persiana' 138
gallica 'Scarlet Glow' 138
 'Haidee' 138
 × *harisonii* 139
hugonis 139
 'La Noblesse' 139
laxa 139
 'Micmac' 139
multiflora 139
 'Nevada' 139
nitida 140
pendulina 140
pimpinellifolia 'Frühlingsgold' 140
 'Prairie Youth' 140
rubrifolia 140
rugosa 140
 'Agnes' 140
 'F. J. Grootendorst' 140
 'George Will' 140
 'Grootendorst Supreme' 140
 'Hansa' 140
 'Mme. Georges Bruant' 140
 'Max Graf' 140
 'Mrs. John McNab' 140
 'Pink Grootendorst' 140
 'Schneezwerg' 140
 'Therese Bugnet' 140
 'Wasagaming' 140
setigera 140
spinosissima altaica 140
virginiana 140
 rose
 alpine 140
 Altai 140
 Austrian copper 138
 bristly hedge 140
 dog 138
 Father Hugo 139
 floribunda 138
 French 138
 grandiflora 138
 Harison's yellow 139
 hybrid perpetual 138
 hybrid tea 138
 Japanese 139
 meadow 138
 Persian yellow 138
 polyantha 138
 prairie 140
 prickly 138
 redleaf 140
 rugosa 140
 shrub 137
 spring gold 140
 sweet brier 138
 Turkestan 139
 Virginia 140
 York and Lancaster 138
 rose-acacia 137
 rose-mallow 85
 rosemary 42, 140
 bog 43
 rose of Sharon 85
Rosmarinus officinalis 140

- Rubus* 141
 coreanus 141
 deliciosus 141
 odoratus 141
Ruscus aculeatus 141
 Russian almond, dwarf 121
 Russian olive 71
 rust 16
 white pine blister 17
 sagebrush 45
 salal 81
Salix 141
 acutifolia 141
 alba 'Chermesina' 141
 'Vitellina' 141
 alexensis 141
 argyrocarpa 141
 caprea 141
 discolor 141
 × *erdingeri* 141
 exigua 142
 gracilistyla 142
 humilis 141
 interior 141
 lasiandra 141
 lucida 141
 lutea 141
 myrtilifolia 141
 pellita 141
 pentandra 142
 pulchra 141
 purpurea 'Gracilis' 142
 pyrifolia 141
 scouleriana 141
 syrticola 141
 vestita 141
 saltbush 45
 salttree 82
Sambucus 142
 canadensis 'Aurea' 142
 'Maxima' 142
 nigra 143
 ' Laciniata' 143
 pubens 143
 racemosa 143
 'Plumosa Aurea' 143
 sandmyrtle, box 97
 sarcococca, fragrant 143
 small Himalaya 143
Sarcococca 143
 humilis 143
 ruscifolia 143
Sasa palmata 143
 saskatoon 42
 sea-buckthorn, common 86
Senecio greyi 143
 serviceberry 42
 apple 42
 low 42
 shadblow 42
 shadbush 42
 shallon 81
 sheep-laurel 95
Shepherdia 143
 argentea 143
 canadensis 143
 silk-tassel bush 81
 silverberry 72
 'silver-sage' 110
 skimmia, Japanese 144
Skimmia 144
 × *foremanii* 144
 japonica 144
 smoketree 61
 snowball, European 161
 fragrant 160
 Japanese 162
 snowbell 148
 Japanese 148
 snowberry 148
 soils 4, 7
Sorbaria 144
 aitchisonii 144
 sorbifolia 144
Sorbus koehneana 144
 sources 2
 southernwood 45
 Spanish Bayonet 166
Spartium junceum 144
 spicebush 99
 spike-heath 46
 spindletree 77
 Sakhalin 77
 winged 76
Spiraea 144
 albiflora 146
 × *arguta* 146
 'Compacta' 146
 × *brachybotrys* 146
 × *bumalda* 146
 'Anthony Waterer' 146
 'Criska' 146
 'Froebelii' 146
 × *cinerea* 146
 × *margaritae* 146
 media 'Sericea' 146
 menziesii 'Dropmore' 146
 × *pikoviensis* 146
 prunifolia 146
 'Rosabella' 146
 'Snowwhite' 147

- 'Summersnow' 147
trichocarpa 147
trilobata 147
 × *vanhouttei* 147
 spirea 144
 bridalwreath 147
 double bridalwreath 146
 false See false spirea 144
 garland 146
 Japanese white 146
 Korean 147
 Oriental 146
 Polish 146
 three-lobed 147
 Vanhoutte 147
 spruce 114
 blue Colorado 115
 Colorado 115
 dwarf Alberta 114
 dwarf Serbian 115
 Norway 114
 spurge, Japanese 109
Stachyurus praecox 147
Staphylea 147
 colchica 147
 trifoliata 147
 stephanandra, cutleaf 147
Stephanandra incisa 147
 stewartia 147
 Japanese 148
 showy 147
Stewartia 147
 ovata 147
 pseudo-camellia 148
 St. John's-wort 87, 88
 Henry 88
 Kalm 88
 shrubby 88
 stranvaesia, Chinese 148
Stranvaesia davidiana 148
 strawberrytree 43
Styrax 148
 japonica 148
 wilsonii 148
 sumac 136
 fragrant 136
 poison 136
 shining 136
 smooth 136
 staghorn 136
 summersweet 58
 sweet-bay 104
 sweet-fern 59
 sweet gale 108
 sweetleaf, Asiatic 148
 sweetspire 91
Symphoricarpos 148
 albus laevigatus 148
 × *chenaultii* 148
 'Hancock' 148
 'Mother of Pearl' 148
 orbiculatus 148
 'White Hedge' 148
Symplocos paniculata 148
Syringa 150
 amurensis 151
 japonica 151
 × *chinensis* 'Saugeana' 151
 × *josiflexa* 152
 'Bellicent' 152
 'Guinevere' 152
 'Royalty' 152
 josikaea 152
 microphylla 'Superba' 152
 oblata dilatata × *S. vulgaris* 152
 'Assessippi' 152
 'Charles Nordine' 152
 'Laurentian' 152
 'Mount Baker' 152
 'Pocahontas' 152
 'Swarthmore' 152
 oblata giraldi × *S. vulgaris* 152
 'Clarke's Giant' 152
 'Esther Staley' 152
 'Necker' 152
 'Patricia' 152
 persica 152
 × *prestoniae* 152
 'Coral' 152
 'Desdemona' 152
 'Donald Wyman' 152
 'Elaine' 152
 'Elinor' 153
 'Hiawatha' 153
 'Isabella' 153
 'Jessica' 153
 × *swegiflexa* 153
 'Fountain' 153
 velutina 153
 villosa 153
 vulgaris 153
 'A. B. Lambertson' 153
 'Ami Schott' 153
 'Capitaine Baltet' 153
 'Cavour' 153
 'Charles Joly' 153
 'Clarke's Giant White' 153
 'Decaisne' 153
 'Edith Cavell' 153
 'Emile Gentil' 153
 'Frank Patterson' 153
 'General Sherman' 153

- 'Henri Martin' 153
 'Jacques Callot' 153
 'Jan van Tol' 153
 'Katherine Havemeyer' 153
 'Lucie Baltet' 153
 'Ludwig Spaeth' 153
 'Madeleine Lemaire' 153
 'Marechal Foch' 153
 'Marechal Lannes' 153
 'Marengo' 153
 'Mme. Antoine Buchner' 153
 'Mme. Florent Stepmann' 153
 'Mme. Lemoine' 153
 'Monge' 153
 'Mrs. Edward Harding' 153
 'President Grevy' 153
 'President Lincoln' 153
 'Prodige' 153
 'Prof. E. H. Wilson' 153
 'Victor Lemoine' 153
 tamarisk 154
 Amur 154
 Odessa 154
 small-flowered 154
 summerglow 154
Tamarix 154
 odessana 154
 'Pink Cascade' 154
 parviflora 154
 pentandra 154
 'Rubra' 154
Taxus 154
 baccata 154
 'Dovastonii' 155
 'Fastigiata' 155
 'Fastigiata Aureo-marginata' 155
 'Repandens' 155
 'Semperaurea' 155
 'Stricta' See 'Fastigiata' 155
 'Variegata' 154
 canadensis 155
 cuspidata 155
 'Capitata' 155
 'Densa' 155
 'Expansa' 155
 'Nana' 155
 'Thayerae' 155
 × *hunnelliana* 155
 × *media* 156
 'Brownii' 156
 'Hatfieldii' 156
 'Hicksii' 156
 'Kelseyi' 156
 tea, Labrador 97
 New Jersey 52
Teucrium 156
 chamaedrys 156
 fruticans 156
Thuja 156
 occidentalis 156
 'Douglasii Aurea' 156
 'Ellwangeriana Aurea' 156
 'Fastigiata' 156
 'Globosa' 156
 'Holmstruppi' 156
 'Hoveyi' 156
 'Little Champion' 156
 'Lutea' 156
 'Pumila' 156
 'Pyramidalis' See 'Fastigiata' 156
 'Rheingold' See 'Ellwangeriana Aurea' 156
 'Robusta' 156
 'Rosenthalii' 157
 'Umbraculifera' 157
 'Wareana' See 'Robusta' 156
 'Woodwardii' 157
 orientalis 157
 'Aurea' 157
 Berckmann's Golden See
 'Aurea' 157
 plicata 'Cuprea' 157
 tree-anemone 52
Tsuga 157
 canadensis 157
 'Pendula' 157
Ulex europaeus 157
Ulmus 157
 parvifolia 157
 pumila 157
 uses of shrubs 1
 boundary 1
 foundation 2
 separation 2
 specimen 2
Vaccinium 157
 corymbosum 158
 ovatum 159
 vitis-idaea minus 159
Veronica See *Hebe* 84
viburnum 159
 Bodnant 159
 Burkwood 160
 David 161
 fragrant 161
 Henry 161
 Judd's 161
 Korean spice 160
 leatherleaf 163
 linden 161
 mapleleaf 159
 Maries' doublefile 162
 Siebold 163
 Wright's 164
Viburnum 159
 acerifolium 159

- alnifolium* See *V. lantanoides* 161
 × *bodnantense* 159
 × *burkwoodii* 160
 'Chenault' 160
 × *carlcephalum* 160
carlesii 160
cassinoides 160
dauidii 161
dentatum 161
dilatatum 161
farreri 161
fragrans See *V. farreri* 161
henryi 161
 × *juddii* 161
lantana 161
lantanoides 161
lentago 161
opulus 161
 'Aureum' 161
 'Nanum' 161
 'Roseum' 162
 'Xanthocarpum' 162
plicatum 162
prunifolium 162
rhytidophyllum 163
sargentii 163
sieboldii 163
tinus 163
tomentosum 'Sterile'
 See *V. plicatum* 162
trilobum 164
wrightii 164
Vitex 164
 agnus-castus 164
 negundo 'Heterophylla' 164
 watering 5, 6
 wax-myrtle 108
 wayfaring tree 161
 weigela 164
Weigela 164
 'Abel Carriere' 164
 'Boskoop Glory' 164
 'Bristol Ruby' 164
 'Dropmore Pink' See 'Manchurian
 Pink' 165
 'Eva Supreme' 164
 'Feerie' 164
 florida 164
 'Eva Rathke' 164
 'Foliis Purpuriis' 164
 'Variegata' 164
 venusta 164
 'Manchurian Pink' 165
 middendoriana 165
 'Newport Red' See 'Vanicek' 165
 'Vanicek' 165
 white-alders 58
 white-cedar 156
 willow 141
 Arctic 142
 bay 142
 bigcatkin 142
 coyote 142
 goat 141
 laurel 142
 native 141
 pussy 141
 redstem 141
 sharpleaf 141
 winterberry 91
 wintercreeper 77
 wintergreen 81
 alpine 81
 Miquel 81
 winter-hazel 61
 winter protection 7
 witch-hazel 83
 Chinese 83
 common 83
 vernal 83
 witherod 160
 woadwaxen, silkyleaf 82
 wormwood 45
Xanthorrhiza simplicissima 165
 yellowroot 165
 yew 154
 Canada 155
 English 154
 Hick's 156
 Irish 155
 Japanese 155
 Westfelton 155
Yucca 166
 filamentosa 166
 glauca 166
Zanthoxylum americanum 166
 zenobia, dusty 166
Zenobia pulverulenta 166

NOTES

NOTES

NOTES



