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Woody Plants for Minnesota

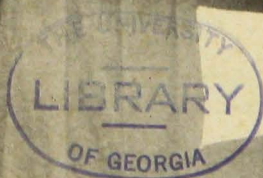
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FOR BEAUTY AND SHELTER

UNIVERSITY OF MINNESOTA
Agricultural Extension Service
U. S. DEPARTMENT OF AGRICULTURE

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WOODY PLANTS

for Minnesota

Leon C. Snyder and Marvin E. Smith

Deciduous trees and shrubs form the backbone of any landscape or shelterbelt planting. The trees serve many purposes: they frame the house, provide shade for the family and shelter for livestock, form a background for the house and yard, and in windbreaks and shelterbelts they furnish year-round protection to farmsteads and fields.

The shrubs are used in the foundation planting to blend in the house with the yard; in the shrub border for screening, beauty, and a background for flowers; and in the shelterbelt to give ground-line density and control drifting snow. Shrubs are also used in hedges which line the drive or separate yard areas.

In order that we may select and use these materials intelligently, we must know something about them. We should know their hardiness, color and time of bloom, foliage and twig texture, color of summer and fall leaves, color and season of fruits, winter stem color, site preference, and mature size. Only when we know these things about a shrub or tree can we select and use it intelligently.

Ordering and Caring for Nursery Stock

Nursery stock should be ordered early to be certain of a good selection. Order from some reputable nurseryman, preferably from within the state and as near to home as possible. Such nurserymen are interested in your problems and are more likely to have varieties adapted in your locality.

When the nursery stock arrives, open the bundle and examine the roots carefully. If they are at all dry, stand them in water for several hours before planting. Plant as soon as possible.

If for some reason you cannot plant immediately, heel-in the stock in a shaded, moist site. The north side of a building or grove is a good place. Dig a trench with one side vertical and the other sloping, and then line up the plants in this trench with the roots toward the vertical side. Throw soil over the roots and tramp this soil down to eliminate air pockets. The plants can then be protected until weather and soil conditions are right for planting.

Spacing

The spacing of trees and shrubs is very important. In shelterbelts and windbreaks the distance between the rows should be determined by the width of cultivating equipment. However, evergreen and deciduous rows should be separated by at least 14 feet. Within the rows, trees should be six to eight feet apart and shrubs four feet apart.

Trees used in the yard should be spaced so each will have ample room to

develop without crowding. You can judge the spacing by measuring the branch spread of some mature trees in your neighborhood. For most large trees you will find a branch spread of 50 or more feet.

Trees used for framing the house should be out at least 25 to 30 feet from the front corners of the house at about a 45-degree angle. Place shade trees where shade is most needed and background trees near the back of the yard.

Shrubs used in the foundation and border plantings should have plenty of room to develop, too. Large shrubs such as honeysuckle, lilac, and mockorange, need at least five to seven feet of space. Medium shrubs like cotoneaster and rugosa rose need three to five feet, while small shrubs like Froebel spirea and alpine currant need two to three feet.

Where low shrubs are used in front of taller types, it is especially important to allow room for the development of both. Otherwise you will find the smaller shrubs struggling for existence under the shade of the taller shrubs. Be sure also to leave ample room—about 2½ to 3 feet—between the house foundation and the shrubs used in the foundation plantings.

Planting

The secret of successful planting is to have the soil well prepared. For shelterbelts and windbreaks this means plowing and summer fallowing the previous season if the land is in heavy sod. For foundation and border plantings this means spading and working the soil thoroughly over the entire area where the shrubs are to be planted. This should be done the previous fall, although where water is readily available it can be done just before planting. If there is a thick sod over the area to be planted, scalp the sod off before working the soil.

Dig each hole large enough to accommodate the root system of the

shrub. Long, straggly roots should be cut back rather than doubled up to fit the hole. Set the shrub so it will be an inch or so deeper than it was in the nursery, then put in good soil around the roots and pack it down. Leave a depression at the top and add enough water to soak the soil thoroughly around the roots. This helps settle the soil and eliminate air pockets. After the water has soaked in, level the soil around the shrubs.

Most shrubs should be pruned back rather severely when planted. This results in a more bushy and attractive plant and also helps balance the root loss which results when nursery stock is dug. For shrubs that develop many stems from the ground, cut each stem back at least half its length. For shrubs with a few stems, thin out the branches to help balance the root loss.

Trees that are used in the yard should be planted carefully. First remove the sod in a three-foot circle before digging the hole, and then follow the same instructions as given for planting shrubs. If you reach subsoil in digging the hole, put this soil in a separate pile and use it only on top or replace it with topsoil.

Pruning should be a thinning-out process which leaves a natural crown on the newly planted tree. When branches are headed back, cut to a side branch or bud. Make all cuts clean with a sharp knife or pruning shears, and leave no stubs sticking out from the trunk or main branches.

Broad-leaved trees and shrubs used in protection plantings need be no larger than one- or two-year-old seedlings and may be planted with a mechanical tree planter or with the aid of a two-bottom plow. If you use the plow, straighten up the trees and firm the soil around the roots.

For further information on planting shelterbelts see Extension Folder 85, *Tips on Tree Planting*, and Extension Bulletin 196, *Planting the Farmstead Shelterbelt*.

Culture

It is important that you take good care of all new plantings. Keep the soil cultivated to control weeds and help conserve moisture. Water the plants during dry periods, especially the first year after planting. For further information on points of culture such as pruning and fertilizing, see Extension Bulletins 196, *Planting the Farmstead Shelterbelt*, and 250, *Landscaping the Farmstead*.

Selecting Varieties

Trees and shrubs must be carefully selected to fit the location where they are to be used. Trees that frame the house should be long-lived and their size and form should fit the house and grounds. An example is American elm, which is an excellent tree for framing a large house on a big lot but would be quite out of place for framing a modern one-story home.

A shade tree should give a reasonable amount of shade over a long season, but the leaves must not be so dense that grass cannot grow beneath the tree. Consider also the seasonal appearance of the

tree—its flowers, colorful fruits, and autumn color.

In selecting shrubs for the foundation planting, hardiness, size, texture, and form are the most important considerations. Usually fine-textured, compact shrubs are the best. Foliage color, flowering and fruiting habits, and fall and winter color should also be considered.

Shrubs to be used in the shrub border are selected on much the same basis except that coarser shrubs can be used.

In making your selections do not sell your space too cheaply. Select shrubs that combine as many desirable features as possible—taking care to pick those that add interest in all seasons. A lilac or a mockorange has beautiful bloom but has little interest during the balance of the year. On the other hand, the winged euonymus lacks conspicuous flowers but has fine-textured foliage which can be enjoyed throughout the summer.

In the shelterbelt, hardiness, crown density, mature height, shade tolerance, and rate of growth are primary considerations. The ability to grow and thrive with a minimum of care is also very important.

Plant List

To assist with the selection of the right trees, shrubs, and vines for your plantings, the following list of materials has been prepared. The map on the next page shows the hardiness zones accepted by the Minnesota Horticultural Society for both fruits and woody plants. New varieties or plants on which information is lacking are suggested for trial. These

may later prove hardy. Plants listed as semihardy are those that kill back but sprout from the base and bloom on new wood.

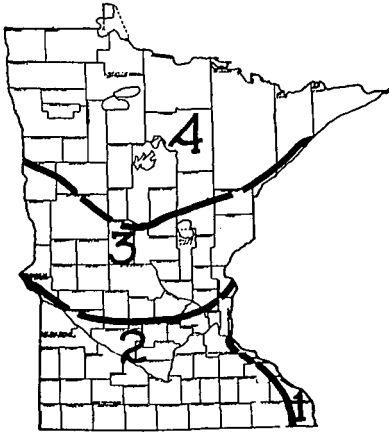
The normal height of the plant under cultivation is given at the beginning of each description. Plants are listed alphabetically according to scientific name and the common name is listed next.

DECIDUOUS TREES

Acer negundo (Boxelder)—50 feet. Large, spreading tree with compound leaves. Native over most of the state and widely planted. Valuable in shelterbelt

and windbreak plantings in western Minnesota. Not recommended for lawn or boulevard plantings because of its irregular form and brittle branches that

Plant Zones



often break down in ice storms. Boxelder bugs harbored by this species are also annoying. Hardy in all zones.

Acer platanoides (Norway Maple)—50 feet. Large, spreading, dense. Leaves large, dark green, producing very dense shade. It is difficult to grow a good lawn under these trees because of their dense shade and shallow rooting habit. Planted in parks and along boulevards. Hardy in zones 1 and 2; trial in zone 3.

Acer platanoides schwedleri (Schwedler Maple)—Similar to Norway maple, except leaves are bright red when young and turn dark green after a few weeks. Hardiness same as for Norway maple.

Acer platanoides schwedleri nigra (Crimson King Maple)—Form of Schwedler maple that was selected in Europe for its brilliant crimson leaves that keep their color all summer. Hardiness same as for Norway maple.

Acer rubrum (Red Maple)—50 feet. Narrow, upright tree. Native in swamps and moist woods in eastern Minnesota. Very attractive in early spring, with its red flowers that come before the leaves, and later its red fruits. In fall the leaves take on brilliant scarlet or yellow color. This beautiful native tree should be used more than it is. Suitable for lawn or

boulevard tree. Plant in moist protected sites. Hardy in all zones.

Acer saccharinum (Silver Maple)—75 feet. Large, fast-growing tree. Native along streams and rivers throughout Minnesota. Leaves silvery green, turning yellow in fall. Widely planted for shade and shelter. In shelterbelts it gives early protection because of its rapid growth rate. Not recommended for small yards or sites near buildings because it is too large and brittle. Hardy in all zones.

Acer saccharinum weiri (Weirs Cutleaf Maple)—This is a weeping form of maple with finely lobed leaves. Commonly planted as an ornamental lawn tree. Hardy in all zones.

Acer saccharum (Sugar Maple)—60 feet. Large, round-topped tree. Native in rich woods throughout the state. One of our most handsome maples, with bright green leaves that turn yellow or orange and scarlet in fall. Source of the important maple syrup industry. Widely planted for ornamental and boulevard plantings. Grows best in moist, rich soil. Very shade tolerant; subject to sunscald when young. Hardy in all zones.

Aesculus glabra (Ohio Buckeye)—30 feet. Small, round-topped tree. Flowers yellowish-white, forming distinct clusters which appear in early June. Fruits large, nutlike, prickly at first, becoming smooth as they reach maturity. Seeds large, shiny brown. Leaves bright green, turning yellow in fall. Very hardy tree comparatively free of insects and diseases. Useful where small tree is needed in the lawn. Difficult to transplant except when very small. Hardy in zones 1, 2, 3; trial in zone 4.

Aesculus hippocastanum (Horse Chestnut)—30 feet. Rather tender in Minnesota; often confused with the Ohio buckeye. Flowers large, white tinged with red; form large showy clusters in early June. Trial in zones 1 and 2.

Ash—See *Fraxinus*

Basswood—See *Tilia*

Betula papyrifera (Paper Birch)—40 feet. Native in moist sites over the state.

Bark white. Plant in the lawn in natural clumps of three or more. Avoid planting in dry, exposed sites. Tree is subject to attacks by the bronze birch borer. Hardy in all zones.

Betula pendula laciniata (Cutleaf European Birch)—30 feet. Leaves deeply lobed on drooping branches. Bark white. Handsome tree frequently planted for lawn specimen or for frame for small home. Avoid planting in dry, exposed sites. Tree is subject to attacks by the bronze birch borer. Hardy in all zones.

Birdcherry—See *Prunus*

Black Locust—See *Robinia*

Boxelder—See *Acer*

Buckeye—See *Aesculus*

Butternut—See *Juglans*

Carya ovata (Shagbark Hickory)—60 feet. Bark shaggy, separated into narrow plates. Leaves large, compound, with five to seven leaflets. Occasionally planted as far north as the Twin Cities. Hardy in zones 1 and 2.

Catalpa speciosa (Northern Catalpa)—40 feet. Flowers large and showy in June, but rather messy when they drop from the tree. Fruiting pods long and narrow, hanging to the trees all winter. Avoid planting in dry or exposed sites. Hardy in zones 1 and 2; trial in zone 3.

Celtis occidentalis (Common Hackberry)—50 feet. An upright tree with oval shape. Bark much roughened by

prominent, short, corky ridges. Fruits berrylike and black, with a sweet coating of edible flesh over a hard seed. Drought resistant and long-lived. Widely planted in shelterbelts and street and lawn plantings. Subject to witches broom—a twiggy growth along some of the main branches—and insect galls on the leaves. Hardy in all zones.

Cercis canadensis (Eastern Redbud)—15 feet. Small, round-topped tree. Leaves large and heart-shaped, turning yellow in the fall. Flowers rosy-pink, pealike, coming before the leaves. This beautiful tree has not been widely tested in Minnesota. Some very fine specimens are growing in Rochester, Red Wing, New Ulm, Excelsior, and St. Paul. Success with this tree will probably depend on breeding hardy strains. Suitable for a small lawn tree or as a background tree in the shrub border. Trial in zones 1 and 2.

Chokecherry—See *Prunus*

Coffeetree—See *Gymnocladus*

Cottonwood—See *Populus*

Crabapple—See *Malus*

Crataegus spp. (Hawthorn)—20 feet. Hawthorns are large shrubs or small trees characterized by prominent thorns and small, crabapplelike fruits. Flowers showy, ranging in color from white to pink and appearing in late May or early June. Several native species in Minnesota are difficult to distinguish. This small tree with horizontally spreading branches is useful in the landscape. Also useful in wildlife plantings for food and shelter. Hardy in all zones.

Elaeagnus angustifolia (Russian Olive)—30 feet. Large shrub or small tree. Leaves silvery green. Flowers small, yellow, very fragrant in mid-June. Very hardy, drought resistant, and alkali tolerant. Extensively planted as a snowcatch and an outside shrub row in shelterbelts. Good contrast shrub for shrub border. Hardy in all zones.

Elm—See *Ulmus*

Fraxinus pennsylvanica lanceolata (Green Ash)—50 feet. Narrow, upright



Eastern redbud

tree. Drought resistant and alkali tolerant. One of the best trees for shelterbelt and woodland plantings. Also useful for street and lawn plantings in the drier sections of the state. Hardy in all zones.

Ginkgo biloba (Ginkgo or Maidenhair Tree)—30 feet. Usually narrow and upright, sometimes spreading. Leaves fan-shaped, two-lobed, resembling the leaves of the maidenhair fern. Fruits plumlike, scarlet, ill-smelling. Since the sexes are separate, it is advisable to plant only male trees. Use if you want something different. Hardy in zones 1 and 2.

Gleditsia triacanthos (Common Honeylocust)—50 feet. Open, spreading tree with brown-colored bark and large, simple or branched thorns. Leaves once or twice compound with small leaflets; turning yellow in the fall. Flowers white, pea-like in clusters, coming in early June. Pods edible, large, flattened, sometimes twisted. Native in southeastern Minnesota. A beautiful lawn tree; occasionally planted in shelterbelts. Hardy in zones 1 and 2; trial in zone 3.

Gleditsia triacanthos inermis (Thornless Honeylocust)—Similar to the common type except that it is thornless or nearly so. Preferred for this reason. Hardy in zones 1 and 2; trial in zone 3.

Gymnocladus dioica (Kentucky Coffeetree)—50 feet. Open, spreading tree. Leaves large, twice compound. Pods large and broad. Native in southeastern Minnesota; occasionally planted in parks in southern Minnesota. Avoid dry or exposed sites. Hardy in zones 1 and 2; trial in zone 3.

Hackberry—See *Celtis*

Hawthorn—See *Crataegus*

Hickory—See *Carya*

Honeylocust—See *Gleditsia*

Horsechestnut—See *Aesculus*

Juglans cineria (Butternut)—50 feet. Large, spreading tree. Leaves large, compound, soft and hairy beneath. Fruits long and pointed, containing a deeply furrowed edible nut. Native in rich woods and on hillsides from Pine County

southward. Wood is used for cabinets and interior finishes in houses. Do not plant in dry or exposed sites. Hardy in zones 1, 2, and 3.

Juglans nigra (Black Walnut)—50 feet. Large, handsome tree with widespreading branches. Leaves compound, dark green. Nuts oval, slightly flattened, dark brown, irregularly grooved, edible. Wood hard, strong, and very durable; it takes a beautiful finish and is one of the most valuable woods for fine furniture and cabinets. Native in rich woods in southeastern Minnesota. Commonly planted in southern Minnesota in both lawns and shelterbelts. Hardy in zones 1 and 2; trial in zone 3.

Lilac—See *Syringa*

Linden—See *Tilia*

Locust—See *Gleditsia* and *Robinia*

Magnolia acuminata (Cucumber Tree Magnolia)—50 feet. Only magnolia hardy enough for our climate. Upright, round-topped tree. Flowers large, greenish-yellow, appearing in late May or early June. Fruits in long cones of about three inches. Tree is occasionally planted in parks in the Twin Cities. Avoid dry or exposed sites. Hardy in zones 1 and 2.

Maidenhair Tree—See *Ginkgo*

Malus baccata (Siberian Crabapple)—25 feet. Small, spreading tree. Flowers white, very showy; appearing with leaves. Fruits very small, yellow or red. Planted for an ornamental lawn tree and sometimes used as an understock for apple trees in northern Minnesota. Hardy in all zones.

Malus ioensis (Prairie Crabapple)—25 feet. Small tree with horizontal branches. Flowers pink, coming in late May or early June. Common in thickets along streams in southeastern Minnesota. Hardy in zones 1 and 2; trial in zone 3.

Malus ioensis plena (Bechtel Crabapple)—20 feet. Double-flowering form of the prairie crabapple. Flowers double, large, pink, appearing in late May. Very showy in full bloom but flowers soon fade and no fruits are produced. Plant as

lawn tree or background for border. Hardiness same as for prairie crabapple.

Malus purpurea eleyi (Eley Crabapple)—20 feet. Small, upright-spreading tree. Flowers reddish-pink, coming out with leaves in mid-May. Leaves have purplish cast when young. Use in lawn or shrub border. Hardy in zones 1 and 2.

Malus Hybrids—Numerous red- or rosy-bloom flowering crabapple hybrids are grown in Minnesota. One of the oldest and perhaps the most widely grown of these is the **Hopa** originated in South Dakota. Hardy in all zones. **Red Silver** is another South Dakota selection that has a deeper red color than Hopa and has reddish foliage. Hardy in zones 1 and 2; trial in zone 3.

A group of Rosy-Bloom crabapples developed in Canada are now being offered for sale in Minnesota. **Almey** has larger flowers than any of the older varieties and a deeper red color. Trial in all zones. **Strathmore** and **Sundog** are upright varieties that should prove popular.

Two white-flowered forms, **Dolgo** from South Dakota and **Flame** from the University of Minnesota Fruit Breeding Farm, are desirable ornamentals and hardy in all zones.

Maple—See *Acer*

Mayday Tree—See *Prunus*

Morus rubra (Red Mulberry)—20 feet. Fruits purple, resembling an elongated blackberry, very sweet. Native in southeastern Minnesota. Occasionally planted for food for birds. Hardy in zone 1; trial in zone 2.

Morus alba tatarica (Russian Mulberry)—20 feet. Fruits white, edible, but of poor flavor. Sometimes planted in shelterbelts and plantings for wildlife protection. Hardy in zones 1 and 2; trial in zone 3.

Mountain Ash—See *Sorbus*

Mulberry—See *Morus*

Oak—See *Quercus*

Plum—See *Prunus*

Populus alba (White Poplar)—50 feet. Large, spreading tree with suckering

habit. Bark grayish-white. Leaves shaped like a maple leaf; silvery white underneath. Not widely planted at present. Hardy in all zones.

Populus alba bolleana (Bolleana Poplar)—40 feet. Upright form of white poplar. Bark grayish-white. Leaves silvery white beneath; lobed like a maple leaf. Widely planted where a narrow, upright tree is needed—such as for screens and for backgrounds. Fast growing but inclined to be short-lived except in moist, favorable sites. Subject to a fungus trunk canker. Hardy in all zones.

Populus deltoides (Cottonwood)—80 feet. Very large, spreading tree. Leaves triangular, glossy green, turning brilliant yellow in fall. Commonly planted in shelterbelts because of its rapid growth when young. Too large for landscape plantings, except possibly in parks or on very large grounds. To avoid the "cotton" from the female trees, plant only cuttings from male trees. Hardy in all zones.

Hybrids such as Norway, Northwestern, and Canadian poplars are sometimes sold but have not proven superior to the species. These hybrids are all hardy in all zones.

Populus nigra italica (Lombardy Poplar)—50 feet. A tall, upright, narrow tree. Bark dark colored. Leaves dark, shiny green. Fast-growing but inclined to be short-lived. Subject to fungus trunk canker and occasionally to winter injury. Widely planted for screens and backgrounds. Hardy in zones 1, 2, and 3; trial in zone 4.

Prunus americana (American Plum)—20 feet. Large shrub or small tree. Branches more or less thorny. Flowers white, appearing in early May. Fruits edible. Native in thickets throughout the state. Some horticultural varieties are grown for the edible fruits. Often planted in shelterbelts for catching snow as well as providing edible fruits. Very good for wildlife plantings. Hardy in all zones.

Prunus padus commutata (Harbinger European Birdcherry or Mayday Tree)—25 feet. Large shrub or small tree. Resembles chokecherry but blooms about two weeks earlier, and flower clusters are larger. Since it blooms about May 1, the common name of Mayday Tree has been applied to it in this area. Planted in parks and in shrub borders. Hardy in all zones.

Prunus virginiana (Common Chokecherry)—20 feet. Large shrub or small tree. Native throughout the state. Fruits edible, making excellent jelly. Occasionally planted in shelterbelts and in background of shrub border. Hardy in all zones.

Quercus spp. (Oaks)—40-60 feet. Many species and varieties of oaks are native in Minnesota but few are planted. This is because of their slow growth and difficulty of transplanting. **Northern Red Oak** (*Quercus borealis*)—characterized by the sharp-pointed lobes and red fall color—is native throughout the state. The common **Red Oak** (*Quercus borealis maxima*) differs from the northern type in the larger acorns. Occurs throughout the state but more common southward. **Scarlet Oak** (*Quercus coccinea*) occurs sparingly in southeastern Minnesota but is less common than **Northern Pin Oak** (*Quercus ellipsoidalis*), which it resembles. Northern pin oak does not have the brilliant autumn color that the scarlet oak has. Both have leaves with deep lobes ending in sharp points. The northern pin oak is common on sandy, acid soils throughout the state.

Oak wilt is a serious disease on the above species; it occasionally attacks bur oak but rarely white oak.

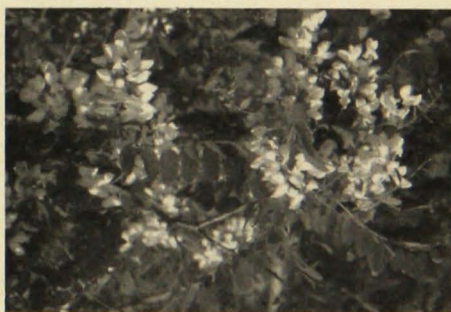
The white oak group is characterized by leaves with blunt lobes. The **White Oak** (*Quercus alba*) is one of our most valuable oaks. Highly ornamental in fall, when leaves take on a purplish cast. Native as far north as Kanabec County. **Bur Oak** (*Quercus macrocarpa*) has acorns enclosed by a prominent burlike cup and leaves that have a broader ter-

minal lobe than those of white oak. Native throughout the state.

Of the oaks the red and scarlet types are most easily transplanted. Where white oaks are native they should be left if they fit into the landscape plan.

Redbud—See *Cercis*

Robinia pseudo-acacia (Black Locust)—30 feet. Bark nearly black, rough and deeply furrowed. Twigs smooth, with spines in pairs at the base of the compound leaves. Flowers white, fragrant, pealike, in clusters, appearing in early June. Planted as ornamental tree. Spreads by underground stems, thus forming thickets. Subject to borer attacks and therefore short-lived. Hardy in zones 1, 2, and 3.



Black locust

Russian Olive—See *Elaeagnus*

Salix alba (White Willow)—50 feet. Large tree, often planted in shelterbelts. Hardy in all zones. The following two varieties are grown more commonly than the species:

Salix alba vitellina (Yellowstem or Golden Willow)—Similar to the white willow but with yellow twigs. Widely used in shelterbelts. Hardy in all zones.

Salix alba vitellina pendula (Niobe Weeping Willow)—Hardest of the weeping willows. Planted often as lawn specimen. The drooping branches become annoying as tree becomes older. Best used at some distance from the house and outside the formal lawn area. Hardy in zones 1, 2, and 3; trial in zone 4.

Salix pentandra (Laurelleaf Willow)—25 feet. Shrub or small tree. Leaves bright green, shiny. Commonly planted in shelterbelts. Requires heavy soil. Hardy in all zones.

Sorbus americana (American Mountain Ash)—20 feet. Large shrub or small tree. Flowers small, appearing in dense clusters in late June or early July. Fruits small, red, about 1/5 inch in diameter. Common in northeastern Minnesota where it grows in mixtures of hardwoods and evergreens. Used in the shrub border for background. Birds, especially robins, are very fond of the berries. Do not plant in dry, exposed sites. Protect trunks from sunscald. Hardy in all zones.

Sorbus decora (Showy Mountain Ash)—30 feet. Small, round-topped tree. Flowers white, showy, appearing in large clusters. Fruits vermilion red, about 1/3 inch in diameter, very showy. Native along north shore of Lake Superior. Occasionally planted as lawn tree. Hardy in all zones.

Sorbus aucuparia (European Mountain Ash)—30 feet. Small, round-topped tree. Flowers and fruits much larger than in American mountain ash. Do not plant in dry, exposed sites. Protect the trunks from sunscald. Hardy in all zones.

Syringa amurensis japonica (Japanese Tree Lilac)—20 feet. Small, round-topped tree. Flowers creamy-white, in large open clusters, blooming in mid-June. Occasionally planted as lawn tree. Hardy in zones 1, 2, and 3; trial in zone 4.

Tilia americana (American Linden or Basswood)—50 feet. Large tree with well-rounded head, several stems often growing together in clumps. Flowers open in June and are considered an important

source of honey by beekeepers. Native throughout the state and widely planted in parks and in lawns for shade trees. Hardy in all zones.

Tilia cordata (Littleleaf Linden)—50 feet. Leaves smaller than American linden, otherwise trees are similar. Occasionally planted in the Twin Cities area and doing well. Hardy in zones 1 and 2; trial in zones 3 and 4.

Ulmus americana (American Elm)—60 feet. Large tree with widespread branches and vase-shaped form. Widely planted in shelterbelts, boulevards, and lawns. Several horticultural varieties have been selected and propagated. Of these the **Lake City** and **Minneapolis Park** elms have been most commonly planted in Minnesota. Hardy in all zones.

Ulmus fulva (Slippery Elm)—60 feet. Differs from American elm in having mucilaginous inner bark, and reddish-brown buds. Not as symmetrical as American elm. Occasionally planted in parks. Hardy in all zones.

Ulmus pumila (Siberian Elm—often known as Chinese Elm)—40 feet. Small tree with leaves much smaller than those of American elm. Trees grow rapidly when young but often kill back following winter with low temperatures. Branches often break down in ice storms. Generally short-lived. Sometimes planted for clipped hedges or for fast-growing tree in shelterbelts. Plant only hardy strains of Siberian origin, which are hardy in all zones.

Ulmus thomasi (Rock Elm)—40 feet. Medium-sized tree characterized by corky ridges on young branches. Occasionally planted in lawns. Hardy in all zones.

Walnut—See **Juglans**

Willow—See **Salix**

DECIDUOUS SHRUBS

Acer ginnala (Amur Maple)—15 feet. Graceful, large shrub. Leaves lobed, much longer than wide, about 3 inches long.

Fruits reddish when young, maturing in early fall. Autumn color of leaves a brilliant orange to red, very showy. Valu-



Amur maple

able shrub for screens, borders, roadside plantings, and shelterbelts. Hardy in all zones.

Acer spicatum (Mountain Maple)—12 feet. Large, spreading shrub that becomes leggy as it gets old. Leaves lobed, about as wide as long. Flowers and bright red fruits conspicuous on upright stems. Native in northern and eastern Minnesota. May be planted as a background shrub in the shrub border in moist, protected sites. Hardy in all zones.

Acer tatarica (Tatarian Maple)—20 feet. Small tree or very large shrub. Similar to Amur maple except Tatarian is larger and its leaves are unlobed or nearly so. Planted as small tree or a tall background shrub. Hardy in all zones.

Almond—See *Prunus*

Amelanchier alnifolia (Saskatoon)—6 feet. Flowers showy, appearing in late May to early June. Fruits almost black when mature, sweet and juicy, good for sauce and pies. Native in northern Minnesota. Hardy in all zones.

Amelanchier laevis (Allegheny Serviceberry)—15 feet. Young leaves are purple-bronze, becoming green. Flowers are in drooping clusters, large and showy, appearing in early May when the leaves are about half open. Fruits purple to nearly black, edible, very good for pies, coming in July. Native on the edges of woods, moist hillsides, and ravines

throughout eastern Minnesota. Very good background in shrub border. Hardy in all zones.

Amorpha canescens (Leadplant)—3 feet. Low, spreading bush with silvery green leaves that give plant a gray appearance; hence the name leadplant. Flowers small, deep purple, appearing in dense terminal clusters in late June or July. Very drought resistant. Native on dry hillsides throughout Minnesota; of possible value in exposed sites for border and foundation plantings. Hardy in all zones.

Amorpha fruticosa (Indigobush Amorpha)—6 feet. A coarse, upright shrub. Leaves smooth, bright green. Flowers fragrant, dark purple, coming in May. Native in western Minnesota. Useful in the shrub border. Will grow in wet places. Hardy in all zones.

Aronia arbutifolia (Red Chokeberry)—5 feet. Small spreading shrub. Flowers white or pinkish, appearing in flat-topped clusters in late May. Fruits round, red, about 1/4 inch in diameter, very showy even after the leaves are gone. Foliage turns red in the fall of the year. Useful in the shrub border. Hardy in zone 1; trial in zone 2.

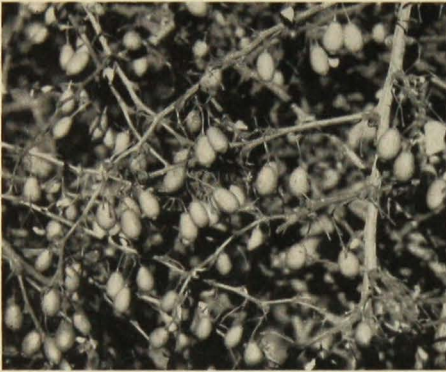
Aronia melanocarpa (Black Chokeberry)—3 feet. Low, branching shrub. Flowers white, showy, appearing in flat-topped clusters in May. Fruits round, black or purplish. Foliage turns red in the fall. Native in wet places in eastern Minnesota. Useful in foundation and border plantings. Hardy in all zones.

Arrowwood—See *Viburnum*

Barberry—See *Berberis*

Beautybush—See *Kolkwitzia*

Berberis thunbergi (Japanese Barberry)—4 feet. A low, compact shrub. Flowers small, yellow, coming in late May. Leaves small, turning a brilliant scarlet color in the fall. Twigs covered with short thorns, thus making an ideal barrier. Fruits are elongated red berries that are attractive in fall and winter. Useful in foundation and border plantings. Hardy in all zones.



Japanese barberry

Berberis thunbergii atropurpurea (Red-leaf Japanese Barberry)—Similar to the species except leaves are red during entire season. Often used in front of dwarf evergreens in foundation plantings; also serves as color contrast in the border. Hardy in all zones.

Berberis thunbergii erecta (Truehedge Columnberry)—Upright form that lends itself well to clipped hedges since only the top needs to be clipped. Not as hardy as the species. Hardy in zone 1; trial in zone 2.

Black Haw—See *Viburnum*

Bladdernut—See *Staphylea*

Bluebeard—See *Caryopteris*

Blueleaf Hedge—See *Salix*

Blue Mist Spirea—See *Caryopteris*

Buckthorn—See *Rhamnus*

Buddleia davidi (Orange-eye Butterfly Bush)—5 feet. Spreading shrub that kills back to the ground each winter. Flowers are white, pink, red, or purple, in upright spikes appearing in summer. Leaves are coarse. Grown in the border because of showy flowers. Offered by many nurserymen in several varieties. Survival is better if dirt is mounded up around base of stems in late fall. Trial in zones 1 and 2.

Buffaloberry—See *Shepherdia*

Burning Bush—See *Euonymus*

Butterfly Bush—See *Buddleia*

Caragana arborescens (Siberian Peashrub)—12 feet. Large, upright shrub, very drought resistant and alkali tolerant. Flowers yellow, pealike, showy, appearing in May. Rather coarse for ornamental plantings and inclined to lose many of its leaves early in fall due to insect attacks and leaf spot diseases. Of value chiefly for snowcatches in shelterbelts in western Minnesota. Sometimes used in a clipped hedge. Hardy in all zones.

Caragana frutex (Russian Peashrub)—6 feet. Flowers large, yellow, showy, appearing in May-June. Leaves dark green, fine textured. Suckers from base. Used in foundation and border plantings. Hardy in all zones.

Caragana pygmaea (Pygmy Peashrub)—4 feet. Small, spreading shrub with fine-textured foliage. Very drought resistant and alkali tolerant. Flowers small, yellow, pealike, appearing in May-June. Useful in foundation and border plantings. Also used as low, informal or clipped hedge. Hardy in all zones.

Caryopteris clandonensis (Bluebeard or Blue Spirea)—3 feet. Of hybrid origin. A selection, **Blue Mist**, has been propagated and sold extensively in the state. Although the plant kills back to the ground each winter, it usually comes up from the base and flowers on new wood. Flowers small, blue, appearing in many-flowered clusters in July-August. Plant is low and spreading and should prove useful in foundation and border plantings. Trial in all zones.

Chaenomeles japonica (Japanese Flowering Quince)—3 feet. Low, compact bush with large red flowers that come before leaves. Although shrub itself is hardy, the blossom buds are killed by severe winter weather unless protected. Of possible use in foundation and border plantings. Trial in zones 1 and 2.

Cherry—See *Prunus*

Chionanthus virginicus (White Fringetree)—12 feet. Large, coarse shrub. Flowers white, in large, open panicles, appearing in early June. Fruits dark blue, ap-

pearing in grapelike clusters in late fall. Useful for screen or background in shrub border. Hardy in zones 1 and 2; trial in zone 3.

Chokeberry—See *Aronia*

Chokecherry—See *Prunus*

Cinquefoil—See *Potentilla*

Columnberry—See *Berberis*

Coralberry—See *Symphoricarpos*

***Cornus alba sibirica* (Siberian Dogwood)**—6 feet. Flowers yellowish-white, appearing in flat-topped clusters in early June, followed by white to bluish berries. Stems are coral-red, attractive during winter. A useful shrub for foundation and border plantings. Hardy in all zones.

***Cornus alba argenteo marginata* (Creamedge or Variegated Dogwood)**—Similar to the above except leaves are bordered with creamy white. Hardy in all zones.

***Cornus alternifolia* (Pagoda Dogwood)**—15 feet. Large shrub with horizontally spreading branches. Native throughout eastern Minnesota. Unlike other dogwoods, branches are alternate rather than opposite. Flowers white in June, followed by dark blue berries on red fruiting stalks. Very attractive shrub for the shrub border. Sometimes grown as a small lawn tree. Hardy in all zones.

***Cornus baileyi* (Bailey Dogwood)**—6 feet. Upright shrub with reddish stems in winter. Flowers and berries white. Commonly planted in border and foundation plantings. Hardy in all zones.

***Cornus mas* (Cornelian Cherry Dogwood)**—12 feet. Large shrub. Flowers appear in early May in small clusters surrounded by four yellow bracts. Fruits scarlet, $\frac{1}{2}$ to $\frac{3}{4}$ inch long, edible, attractive in September. Foliage shiny green, turning red in the fall. Suitable for border plantings. Hardy in zones 1 and 2; trial in zone 3.

***Cornus racemosa* (Gray Dogwood)**—6 feet. Flowers appear in small flat-topped clusters in June. Fruits are white berries on red stalks; these stalks persist after the fruits and foliage have dropped.

Leaves light green, turning purple in the fall of the year. Stems gray. A good shrub for foundation and border plantings. Hardy in all zones.

***Cornus stolonifera* (Redosier Dogwood)**—6 feet. Large, spreading shrub often rooting where stems touch the ground. Winter color on young stems is bright red. White flowers appear in June, followed by white berries. Good shrub for border. Native in moist sites throughout the state. Hardy in all zones.

***Cornus stolonifera flaviramea* (Yellowtwig Dogwood)**—Similar to redosier dogwood except that new stems are bright yellow. Hardy in all zones.



Redosier dogwood

***Cotinus coggyria* (Common Smoke-tree)**—8 feet. Large, open shrub that often kills back after severe winter. Fruits are showy in large, pink to grayish, plumose clusters. The autumn foliage takes on brilliant yellow to orange color. Not fully hardy. Semihardy in zone 1; trial in zone 2.

***Cotoneaster acutifolia* (Peking Coton-easter)**—6 feet. Compact shrub with shiny green leaves that turn red in fall. Flowers small, reddish-white, appearing in May. Fruits bluish-black, persisting into winter. Widely planted in foundation plantings and clipped hedges; also useful in border. Subject to oystershell scale, which if not controlled will ruin the shrub. Very hardy in all zones.

Cotoneaster racemiflora soongorica (Sungari Rockspray Cotoneaster)—8 feet. Flowers white, appearing in showy flat-topped clusters in late May. Fruits bright red, lasting well into winter, very showy. Although it has never been extensively planted in Minnesota, it is considered by some to be the best and one of the hardiest of the cotoneasters. Suitable for screen and border plantings. Trial in zones 1 and 2.

Currant—See *Ribes*

Deutzia gracilis (Slender Deutzia)—4 feet. Small shrub with slender branches. Flowers white, showy, appearing in upright clusters in early June. Useful in foundation and border plantings. Trial in zones 1 and 2.

Deutzia lemoine (Lemoine Deutzia)—4 feet. Small compact bush of hybrid origin, *D. parviflora* x *D. gracilis*. Flowers white, appearing in showy, upright clusters. One of the hardiest of the deutzias. Good in foundation and border plantings. Hardy in zone 1; trial in zone 2.



Lemoine deutzia

Dogwood—See *Cornus*

Elaeagnus commutata (Silverberry)—6 feet. Branches and leaves covered with silvery scales giving entire plant a silvery appearance. Flowers fragrant, silvery outside, yellow inside. Native in northwestern Minnesota. Occasionally planted in border for contrast. Merits trial in shelterbelt plantings. Hardy in all zones.

Elder—See *Sambucus*

Euonymus alatus (Winged Euonymus)—8 feet. Compact shrub with good foliage and form. Fruits are elongated, scarlet, but seldom numerous enough to be very effective. In fall, leaves take on scarlet color that is most attractive. Twigs have corky wings that add to the winter value of the shrub. Used for screens, borders, and hedges, both in sun and shade. Should be used far more. Hardy in zones 1, 2, and 3; trial in zone 4.

Euonymus alatus compactus (Dwarf Winged Euonymus)—4 feet. Similar to the winged euonymus except much smaller. Excellent for foundation and border plantings and for a compact hedge that needs little or no pruning. Hardiness same as above.

Euonymus atropurpureus (Eastern Wahoo)—8 feet. Large, coarse shrub native in eastern and central Minnesota. Very attractive in fall with its brilliant red leaves and scarlet to purple fruits similar in shape to bittersweet fruits. Useful as a background shrub in shrub border. Hardy in all zones.

Euonymus europaeus (European Euonymus)—8 feet. Similar to native wahoo except that fruits are a rose-red to orange color and the leaves do not color as well in the fall. Suitable for background. Hardy in zones 1 and 2; trial in zone 3.

Euonymus nanus (Dwarf Euonymus)—3 feet. Low, spreading shrub with small leaves. Fruits pink in the fall. Useful for rock gardens and ground cover. Hardy in all zones.

False Spirea—See *Sorbaria*

Flowering Quince—See *Chaenomeles*

Forsythia ovata (Early Forsythia)—4 feet. Hardest and earliest of the forsythias. Flowers yellow, small. Best planted in the shrub border. Hardy in zones 1 and 2; trial in zone 3.

Forsythia suspensa fortunei (Fortune Weeping Forsythia)—5 feet. Open, straggly shrub. Flower buds are less hardy than above species; shrub seldom

flowers except after a mild winter or if branches have been covered with snow. Flowers large, showy, yellow, bell-shaped, coming before leaves. Should be planted in shrub border in protected sites. Trial in zones 1 and 2.

Fringetree—See *Chionanthus*

Goldenbell—See *Forsythia*

Highbush Cranberry—See *Viburnum*

Holly—See *Ilex*

Honeysuckle—See *Lonicera*

Hoptree—See *Ptilia*

Hydrangea arborescens grandiflora (**Snowhill Hydrangea**)—4 feet. Low, compact shrub with large, coarse leaves. Flowers large, creamy white, appearing in flat-topped clusters in July. For best bloom prune back heavily in early spring. Should be planted in a moist, protected site. Often used in foundation plantings. Hardy in all zones.

Hydrangea paniculata grandiflora (**Peegee Hydrangea**)—6 feet. Upright shrub. Flowers appear in August in upright, pointed clusters, white at first, turning pink as they age. Use both in border and foundation plantings. Hardy in zones 1, 2, and 3; trial in zone 4.

Ilex verticillata (**Winterberry** or **Minnesota Holly**)—8 feet. Only true holly that will grow in Minnesota. Native in low, moist places from the Twin Cities northward. Sexes are on separate plants, so both male and female plants must be planted in order to get berries. Fruits are bright red, borne in dense clusters along the stems and persisting long after the leaves drop. Highly prized for Christmas decorations and winter bouquets. Plant in a moist, protected site in the shrub border. Soil should be acid for best results. Hardy in all zones.

Juneberry—See *Amelanchier*

Leadplant—See *Amorpha*

Lilac—See *Syringa*

Kolkwitzia amabilis (**Beautybush**)—5 feet. Upright, spreading bush. Flowers very showy, pink, appearing in June, followed by brown, bristly seed pods. Must be planted in well-drained soil in order

to withstand Minnesota winters. Use in shrub border. Trial in zones 1 and 2.

Ligustrum amurense (**Amur Privet**)—6 feet. Fine-textured shrub that makes attractive clipped hedge. Sometimes kills back after a severe winter. Hardy in zone 1; trial in zone 2.

Ligustrum obtusifolium regelianum (**Regels Border Privet**)—3 feet. Low, spreading shrub. Less hardy than amur privet but sometimes used in low hedges and shrub borders. Trial in zones 1 and 2.

Locust—See *Robinia*

Lonicera bella albida (**White Belle Honeysuckle**)—10 feet. Large, spreading shrub resulting from a cross between *L. morrowi* x *L. tatarica*. Flowers white, appearing in late May, followed by red fruits in July and August. Makes a splendid snowcatch shrub in the shelterbelt as it retains its density to the ground. Also useful as a background shrub in the shrub border. Hardy in zones 1 and 2; trial in zones 3 and 4.

Lonicera korolkowi zabelli (**Zabels Blueleaf Honeysuckle**)—8 feet. Large shrub grown for attractive, dark pink flowers which appear in late May and for red fruits that come in July. Foliage bluish-green. Very good in shrub border and in clipped or informal hedge. Hardy in all zones.

Lonicera maacki (**Amur Honeysuckle**)—10 feet. Large shrub with horizontally spreading branches. Flowers white, appearing in early June. Fruits bright red, remaining on the shrub late in the fall. One of the best shrubs for fall display of fruits. Use as a background shrub in the shrub border or as a screen. Hardy in all zones.

Lonicera morrowi (**Morrow Honeysuckle**)—6 feet. Widespreading, mound-shaped shrub. Flowers white, changing to yellow, appearing in late May. Fruits are showy red berries, appearing in June-July. Commonly planted for broad clipped hedge or in shrub border. Valuable for bird food and shelter. Hardy in zones 1 and 2; trial in zone 3.



Tatarian honeysuckle

Lonicera tatarica (Tatarian Honey-suckle)—10 feet. Large, upright, coarse shrub. Flowers pink to white, appearing in late May and followed by yellow to red berries in June and July. Used in shelterbelts as snowcatch and in border plantings where a tall shrub is desired. Too large for foundation plantings except next to tall buildings. Hardy in all zones.

Maple—See *Acer*

Mockorange—See *Philadelphus*

Nannyberry—See *Viburnum*

Ninebark—See *Physocarpus*

Peashrub—See *Caragana*

Philadelphus coronarius (Sweet Mockorange)—8 feet. Large, coarse shrub. Flowers large, single, white, fragrant, appearing in clusters of 5 to 9 in June. Best used as a background shrub in the shrub border. Drought resistant. Hardy in all zones.

Philadelphus coronarius aureus (Golden Mockorange)—5 feet. Leaves golden yellow when young, becoming yellowish-green as they mature. Not as large or as vigorous as sweet mockorange. Plant in full sun for best color. Useful for color contrast in shrub border or in foundation planting. Hardy in zones 1, 2, and 3; trial in zone 4.

Philadelphus grandiflorus (Big Scentless Mockorange)—8 feet. Large shrub with widely spreading branches down to the ground. Flowers large, single, white,

lacking fragrance, appearing in June. One of the best mockoranges for the shrub border. Hardy in all zones.

Philadelphus lemoinei (Lemoine Mockorange)—3-6 feet. A hybrid group obtained by crossing *P. microphyllus* x *P. coronarius*. Mostly small, compact shrubs. Flowers white, single or double, appearing in June. Valuable for foundation and border plantings. The following varieties are commonly grown: **Avalanche**, (3 feet), **Belle Etoile** (5 feet), **Mont Blanc** (3 feet), and **Innocence** (6 feet). Hardy in zones 1, 2, and 3; trial in zone 4.

Philadelphus virginialis (Virginal Mockorange)—4-8 feet. Of hybrid origin, *P. lemoinei* x *P. nivalis plena*. A variable species ranging from a compact, mound-like shrub in the smaller varieties to a tall, leggy shrub in the variety **Virginal**. Flowers large, white, double or single, very fragrant, appearing in June. These varieties are commonly grown: **Bouquet Blanc** (5 feet), **Glacier** (4 feet), and **Virginal** (8 feet). The variety **Virginal** appears on the cover. Plant in shrub border. Hardy in all zones.

Philadelphus sp. (Minnesota Snowflake Mockorange)—6 feet. Upright shrub, fairly compact when young but leggy when mature. A Minnesota introduction with fully double, very fragrant flowers coming in June. Useful in the shrub border but rather coarse in foundation plantings. Hardy in zones 1, 2, and 3; trial in zone 4.

Philadelphus sp. (Sylvia Mockorange)—6 feet. Spreading, graceful shrub. Recent introduction from Morden Experiment Station, Morden, Manitoba. Of hybrid origin, *P. virginialis* **Glacier** x *P. zeyheri*. Flowers white, double, sweetly fragrant, profuse and long lasting, appearing in June. New in Minnesota, it should be useful in shrub borders. Trial in all zones.

Physocarpus opulifolius (Common Ninebark)—6 feet. Large, coarse shrub. Flowers small, white or pinkish, appearing in flat-topped clusters. Fruits dry,

red to brown in color. Useful in shrub borders. Hardy in all zones.

Physocarpus opulifolius luteus (Gold-leaf Ninebark)—6 feet. Similar to common ninebark except that leaves are yellowish or yellowish-green. Plant in full sunlight for best color. Makes attractive color accent in border. Hardy all zones.

Physocarpus opulifolius nanus (Dwarf Ninebark)—4 feet. Low, compact shrub. Leaves small, fine textured. Useful for hedges and foundation plantings. Hardy in all zones.

Plum—See **Prunus**

Potentilla fruticosa (Bush Cinquefoil)—3 feet. Compact, fine-textured shrub native in many parts of Minnesota. Flowers yellow to white, shaped like single roses, lasting from June to frost. Many horticultural varieties are grown. The best are the large-flowered variety **grandiflora** with flowers nearly 2 inches across, **veitchi** with large white flowers, and **farreri** with clear, bright yellow flowers. Said to prefer a high lime soil. Useful for foundation and border plantings. Prefers full sunlight. Hardy in all zones.

Privet—See **Ligustrum**

Prunus americana var. Newport (Purpleleaf Plum)—12 feet. Small tree or large shrub; of hybrid origin, *P. cerasifera* pissardi x *Omaha Plum* (*P. americana* x *P. triflora*). Grown primarily for reddish-purple foliage. Suitable for accent in background of shrub border. Hardy in zones 1 and 2; trial in zone 3.

Prunus cistena (Cistena or Purpleleaf Sandcherry)—5 feet. Compact shrub of hybrid origin, *P. pumila* x *P. cerasifera atropurpurea*. Grown primarily for reddish-purple foliage. Useful for accent in the border. Hardy in all zones.

Prunus glandulosa sinensis (Flowering Almond)—3 feet. Low, compact shrub with narrow leaves. Flowers pink, double, coming before the leaves in late April to early May. Useful in border plantings. Kills back following a severe winter. A white-flowered variety, **albo-plena**, is also grown. Hardy in zone 1; trial in zone 2.

Prunus japonica (Korean Bush Cherry)—4 feet. The selections of Korean cherry offered by Minnesota nurseries came from a packet of seed marked *P. glandulosa* or *P. japonica* obtained from the United States Department of Agriculture. White flowers appear in early May, followed by attractive red cherries in August. Cherries make good cherry pie. Leaves turn a brilliant red color in the fall. Suitable for foundation and border plantings. Hardy in zones 1, 2, and 3; trial in zone 4.

Prunus tenella (Russian Almond)—4 feet. Low, compact bush that suckers from the base. Flowers white to red, appearing in early May. Suitable for foundation or border plantings. Hardy in all zones.

Prunus tomentosa (Nanking or Manchurian Cherry)—8 feet. Large, compact shrub or small tree. Flowers white to pink, coming before the leaves, very showy. Fruits small, pink to red, edible, ripening early in July. Fruits must be protected from birds by covering with cheesecloth. Two named varieties, **Orient** and **Drilea**, are superior to unnamed seedlings. Excellent shrub for borders. Hardy in zones 1, 2, and 3; trial in zone 4.

Prunus triloba (Flowering Plum)—8 feet. Large, coarse shrub with 3-lobed leaves. Flowers pink, double, very showy, coming in early May before the leaves. Wild plum suckers come up from the base and should be cut out as soon as they appear. Use for accent in the shrub border. Hardy in all zones.

Prunus virginiana (Common Chokecherry)—15 feet. Very large shrub that suckers from base. Flowers white, appearing in elongated clusters in May. Fruits nearly black, edible, used for jellies. Used as wildlife cover; also valuable in shelterbelts and windbreaks. Can be used in parks or large grounds for background shrub in border. In purple-leaved variety, **Schubert**, the new growth at the tips of the branches is green. Hardy in all zones.

Ptelea trifoliata (Common Hoptree)—12 feet. Large shrub or small tree with compound, trifoliolate leaves. Flowers inconspicuous. Fruits borne in clusters which bear a flattened wing on each side—giving the fruits the appearance of a cluster of hop fruits. A good background shrub in the border. Hardy in zones 1, 2, and 3; trial in zone 4.

Quince—See *Chaenomeles*

Rhamnus cathartica (Common Buckthorn)—12 feet. Large, coarse shrub or small tree. Widely used, especially for clipped hedges, but has little to merit such wide use other than hardiness. It serves as the alternate host for crown rust of oats and is often attacked by aphids. Hardy in all zones.

Rhamnus davurica (Dahurian Buckthorn)—Another large buckthorn sometimes used for hedges and screens. Foliage more attractive than that of preceding species. Also host for crown rust of oats. Hardy in all zones.

Rhamnus frangula (Glossy Buckthorn)—12 feet. Another large shrub but probably best of buckthorns for landscape purposes. Leaves are dark, lustrous green, turning yellow in the fall. The inconspicuous flowers are followed by red to dark purple berries effective in late summer and fall. Suggested as a background shrub for the shrub border. Also host for crown rust of oats. Hardy in all zones.

Rhus aromatica (Fragrant Sumac)—3 feet. Low, spreading shrub with compound trifoliolate leaves. Flowers yellow, showy, coming in May. Fruits red, berrylike, showy, appearing in dense clusters in late summer and early fall. Leaves turn yellow and scarlet in the fall. Useful in front of tall shrubs in the border and in foundation plantings. Hardy in zones 1 and 2; trial in zone 3.

Rhus glabra (Smooth Sumac)—12 feet. Becomes large under favorable conditions. Since it suckers badly, it should be limited to mass plantings and erosion control projects. One of the showiest of native shrubs in the fall, with its red,

spikelike fruits and bright red leaves. Hardy in all zones.

Rhus typhina (Staghorn Sumac)—12 feet. Similar to the smooth sumac except taller and has stems that are covered with thick, feltlike hairs. Fruits and autumn leaves highly colored. Hardy in all zones.

Rhus typhina laciniata (Cutleaf Staghorn Sumac)—Similar to staghorn sumac except that leaves are finely divided. Beautiful shrub in fall, with its orange to red foliage color. Hardy in all zones.

Ribes alpinum (Alpine Currant)—4 feet. Low, dense shrub with fine-textured, dark green foliage. Flowers inconspicuous; sexes separate. Fruits are scarlet in late summer. Male plant is resistant to white pine blister rust and is commonly propagated. Used for low hedges and foundation plantings. Hardy in all zones.

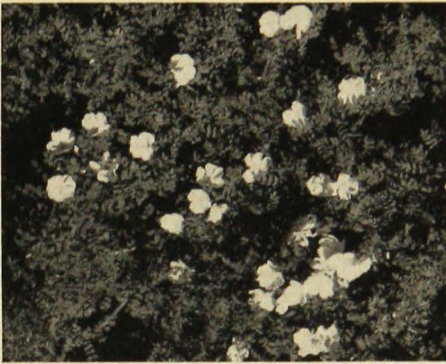
Ribes odoratum (Clove Currant)—6 feet. Upright, spreading shrub inclined to be leggy. Flowers reddish-yellow, fragrant, appearing in mid-May. Leaves shiny green, turning scarlet in the fall. Best used in the shrub border with something low in front. Hardy in all zones.

Robinia hispida (Roseacacia Locust)—6 feet. Flowers are rose to pale purple, appear in elongated clusters, and resemble flowers of the sweet pea. Stems covered with stiff, black bristles. Suckers from the base. Kills back following severe winters. Useful for covering slopes; also grows in sandy soils. Hardy in zones 1 and 2; trial in zone 3.

Rosa blanda (Meadow Rose)—3 feet. Native rose with single, pink flowers that appear in May. Fruits scarlet, round or slightly elongated. Sometimes planted in the shrub border. Hardy in all zones.

Rosa harisoni (Harisons Yellow Rose)—5 feet. Bush covered in early June with double yellow roses 2 inches across. Useful for shrub borders, but prickly and hard to work with. Hardy in all zones.

Rosa hugonis (Father Hugo Rose)—6 feet. Flowers canary yellow, single, 2 inches across, appearing in early June. Leaves fine textured, having small leaf-



Father Hugo rose

lets. Suitable for border and foundation plantings. Kills back somewhat in severe winters. Hardy in zone 1; trial in zone 2.

Rosa multiflora (Japanese or Multiflora Rose)—Compact, thorny bush forming a dense impenetrable hedge. Flowers white, small, in clusters. Fruits are small red berries in open clusters, very showy in fall and winter. Highly publicized for living fences and wildlife cover. Unfortunately it has not proven hardy in Minnesota, usually killing back to the snowline. Trial in zones 1 and 2

Rosa rugosa (Rugosa Rose)—5 feet. Very hardy shrub rose. Flowers red to white, single, appearing in June. Fruits brick-red, large, coming in fall. Leaves dark green, rough, turning orange in fall. Hardy in all zones.

The Rugosa hybrids are planted more often than the species. These retain much of the hardiness of the original but have more attractive, double flowers. Some of these hybrids are Hansa (red), F. J. Grootendorst (red), Grootendorst Supreme (red), George Will (red), Pink Grootendorst (pink), Belle Poitevaine (pink), Sir Thomas Lipton (white), Dr. E. M. Miles (yellow), and Agnes (yellow). These rugosa hybrids are often planted in foundation and border plantings. Hardy in all zones.

Russian Olive—See *Elaeagnus* (under Deciduous Trees)

Salix alba chermesina (Redstem Willow)—Large tree that can be maintained as a shrub by cutting back to the ground every other spring. With this treatment it grows to about 6 feet. Foliage typical of narrow-leaved willows. Winter twigs a brilliant red color when pruned back as suggested. Use in shrub border or for informal hedge. Hardy in all zones.

Salix purpurea (Purpleosier Willow)—8 feet. Upright shrub with purple twigs. Used as snowcatch in shelterbelts and as a background shrub in shrub borders. Used also for basket weaving. Hardy in all zones.

Salix purpurea lambertiana—Quite similar to purpleosier willow, but branches are stouter and leaves are more uniformly parallel-sided. Used in shelterbelts and soil conservation plantings. Hardy in all zones.

Salix purpurea gracilis (Dwarf Purpleosier Willow)—4 feet. Commonly sold as blueleaf hedge. Leaves bluish-green, fine textured. Stems upright, willowy. Makes a compact clipped hedge or an informal hedge. Hardy in all zones.

Sambucus canadensis (American Elder)—8 feet. Coarse native shrub with white flowers in large flat-topped clusters, appearing in late June. Fruits blue to black, small, appearing in large clusters. Fruits used for pies and elderberry wine. Suitable in border as background shrub and in wildlife food plantings. Hardy in all zones.

Sambucus canadensis aurea (Golden Elder)—Similar to American elder except that foliage is yellow and fruits are cherry-red. Used for contrast in shrub border. Plant in full sun for best color. Hardy in zones 1, 2, and 3; trial in zone 4.

Sambucus canadensis acutiloba (Cutleaf Elder)—Similar to American elder except that leaves are finely divided into fernlike lobes. Hardy in zones 1, 2, and 3; trial in zone 4.

Sambucus pubens (Scarlet Elder)—8 feet. Large, coarse shrub. Flowers yellowish-white, appearing in large pyra-

midal clusters in May. Fruits scarlet, very showy in summer. Native throughout the state. Use as a background shrub in the border. Hardy in all zones.

Sambucus racemosa (European Red Elder)—8 feet. Similar to the scarlet elder except that leaves are smaller and smoother. Both cutleaf and golden varieties are planted. Hardy in all zones.

Sandcherry—See *Prunus*

Saskatoon—See *Amelanchier*

Serviceberry—See *Amelanchier*

Shepherdia argentea (Silver Buffalo-berry)—12 feet. Large, coarse shrub. Flowers inconspicuous; fruits red to yellow, edible. Effective in July and August. Leaves silvery green, attractive. Alkali tolerant. Used in shrub border for color contrast; also useful in main shelterbelt and snowcatch. Hardy in all zones.

Shepherdia canadensis (Russet Buffalo-berry)—4 feet. Medium, spreading shrub with silvery-green leaves that are russet colored underneath. Red berries, produced in clusters, come in July and August. Alkali tolerant and can be grown on poor soil. Useful in the shrub border. Hardy in all zones.

Silverberry—See *Elaeagnus*

Smoketree—See *Cotinus*

Snowball Bush—See *Viburnum*

Snowberry—See *Symphoricarpos*

Sorbaria sorbifolia (Ural False Spirea)—5 feet. Very shade-tolerant shrub with suckering habit. Leaves compound, fern-like. Flowers white, appearing in large upright clusters in June-July. Flowers soon fade to a dirty brown color, so it is best to cut off faded flowers. Used on north side of buildings and on banks of streams. Hardy in all zones.

Spiraea albiflora (Japanese White Spirea)—2 feet. Low, compact shrub. Flowers white, appearing in rounded to flat clusters in July. Useful for foundation and border plantings. Hardy in zones 1 and 2; trial in zones 3 and 4.

Spiraea arguta (Garland Spirea)—5 feet. A fine-textured, upright, spreading shrub of hybrid origin, *S. thunbergi* x *S.*

multiflora. White flowers in flat-topped clusters on arching stems, appear in early May. One of the showiest of early spiraeas. Useful in foundation and border plantings. Hardy in zones 1 and 2; trial in zones 3 and 4.

Spiraea billiardi (Billiard Spirea)—4 feet. Upright, open shrub of hybrid origin, *S. douglasi* x *S. salicifolia*. Pink flowers in upright clusters appear in June-July. Very susceptible to alkali injury. Useful for covering banks because of its suckering habit. Sometimes used in border and foundation plantings. Hardy in zones 1, 2, and 3; trial in zone 4.

Spiraea bumalda (Anthony Waterer Spirea)—2 feet. Low, compact shrub of hybrid origin *S. japonica* x *S. albiflora*. Bright crimson flowers in flat clusters, appearing in June-July. Foliage turns red in fall. Sometimes kills back but since flowers form on new wood, this does not affect usefulness of shrub. Commonly used in foundation and border plantings. Semihardy in zones 1, 2, and 3; trial in zone 4.

Spiraea bumalda (Froebel Spirea)—Very similar to Anthony Waterer spirea except that Froebel is more vigorous and its leaves a little broader. Widely used for foundation and border plantings. Semihardy in all zones.

Spiraea prunifolia plena (Bridalwreath Spirea)—5 feet. Dense shrub with glossy green leaves that turn an attractive red to orange color in fall. Flowers white, double, about the size of a button, appearing in late May. Very effective in foundation and border plantings. Not widely tested in Minnesota. Trial in zones 1 and 2.

Spiraea trilobata (Threelobe Spirea)—4 feet. Small, compact shrub. Flowers white, borne in flat-topped clusters. Similar to Van Houtte spirea except smaller and more compact. Hardy in all zones.

Spiraea vanhouttei (Van Houtte Spirea)—6 feet. Widespreading shrub with arching branches. Flowers white, appearing in flat-topped clusters in May-June.

Foliage fine textured, sometimes turning orange to red in fall. Widely used for foundation and border plantings. Hardy in zones 1, 2, and 3; trial in zone 4.

Staphylea trifolia (American Bladder-nut)—9 feet. Large, coarse shrub native in moist thickets and ravines in southern Minnesota. Flowers greenish-white, bell-shaped, borne in elongated clusters. Fruits bladderlike, containing several small, hard seeds. Use as a background shrub in border. Tolerates wet soil. Hardy in zones 1 and 2; trial in zone 3.



American bladdernut

Sumac—See *Rhus*

Symphoricarpos albus laevigatus (Garden Snowberry)—5 feet. Compact, fine-textured, shade-tolerant shrub. Flowers pink, small, appearing in terminal clusters in mid-June. Fruits are large white berries, very effective in late fall and early winter. Useful for foundation and border plantings. Hardy in all zones.

Symphoricarpos chenaulti (Chenault Coralberry)—2 feet. Small, compact shrub. Flowers small, pink, appearing in mid-July. Fruits are red berries in compact terminal clusters, effective in late fall. This is a hybrid, *S. microphyllus* x *S. orbiculatus*. Kills back but comes from the base and blooms on new wood. Superior to the following species in texture of foliage and color of fruit. Useful for foundation and border plantings. Hardy in zone 1; trial in zone 2.

Symphoricarpos orbiculatus (Indian Currant Coralberry)—4 feet. Flowers small, inconspicuous. Fruits purplish-red, coral-like berries appearing in clusters along and at the ends of twigs in late fall. Foliage fine textured. Use in foundation and border plantings. Hardy in all zones.

Syringa amurensis (Amur Lilac)—10 feet. Large, spreading shrub. Flowers creamy white, in large open clusters, coming late in June—almost a month after other lilacs have finished blooming. Useful for background shrubs in border, for screens, and for snowcatches in shelterbelts. Hardy in all zones.

Syringa chinensis (Chinese Lilac)—8 feet. Large, compact shrub with fine-textured foliage. Flowers purple-lilac, in small clusters, appearing in late May. White- and lilac-red varieties are also grown. A red-flowered form is often sold as *rothamogensis*. Leaves much smaller than those of common lilac. Does not sucker. Of hybrid origin, *S. laciniata* x *S. vulgaris*. Useful for hedges, screens, border and foundation plantings. Hardy in all zones.

Syringa persica (Persian Lilac)—5 feet. Smaller shrub than the Chinese lilac but otherwise very similar. Flowers pale lilac, appearing in late May. Of hybrid origin, *S. afghanica* x *S. laciniata*. Useful in foundation and border plantings. Hardy in all zones.

Syringa villosa (Late Lilac)—10 feet. Large, coarse shrub. Flowers rosy-lilac to white. Leaves large, hairy. Useful for shrub borders and screens. Hardy in all zones.

Syringa vulgaris (Common Lilac)—15 feet. Large, coarse shrub with suckering habit. Flowers lilac or white, fragrant, coming in late May. Very good for snowcatches in shelterbelts; may also be used in groups around the edge of large lawns. Hardy in all zones.

Syringa vulgaris Hybrids (French Lilacs)—French hybrids are among most highly prized of lilacs. They come in

wide variety of flowers colors and range from single to completely double. Visit a nursery featuring these lilacs at flowering time to select varieties. Useful in shrub border. Most French hybrids sucker, though not as much as common lilac. Hardy in all zones.

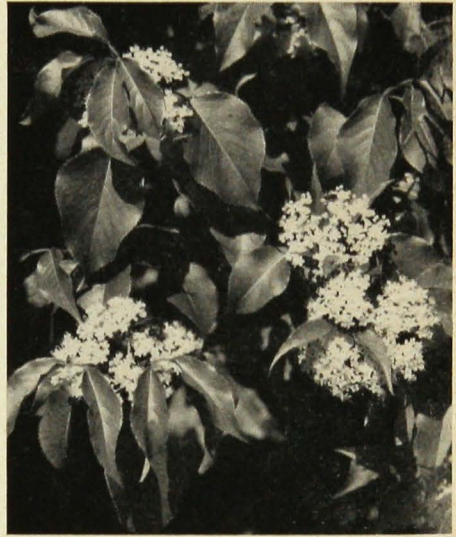
Tamarix odessana (Odessa Tamarisk)—6 feet. Leaves small, scalelike, giving feathery texture to shrub. Flowers pink, small, borne in fluffy panicles in mid-July. One of the smallest of Tamarix species and useful for foundation and border plantings. Needs full sunlight and good drainage. May kill back but comes from base and blooms on new wood. Hardy in zones 1 and 2; trial in zone 3.

Tamarix pentandra (Fivestamen Tamarisk)—10 feet. Tall, open shrub with feathery texture. Flowers small, pink, borne in fluffy clusters in mid-July. Hardest of tamarisks. Use as background shrub in border. Hardy in all zones.

Viburnum dentatum (Arrowwood)—8 feet. Large, compact shrub. Flowers white, in flat-topped clusters, appearing in early June. Fruits blue to black, coming in fall. Leaves dark green, turning red in fall. Shade tolerant. Valuable as food for song and upland game birds. Use for background shrub in border. Hardy in all zones.

Viburnum lantana (Wayfaring Bush Viburnum)—8 feet. Foliage is attractive, silvery green, turning red in fall. Flowers white, borne in flat-topped clusters in mid-May. Fruits red to black, appearing in fall. Good shrub for border. Hardy in all zones.

Viburnum lentago (Nannyberry Viburnum)—12 feet. Flowers white, appearing in flat-topped clusters in late May. Fruits black, coming in fall and early winter, edible, an important food for song and upland game birds. Leaves glossy green, turning purplish-red in fall. Rather open and straggly in wilds, where it grows among other trees and shrubs. Under cultivation, given plenty of light, it forms attractive, compact shrub. Use



Nannyberry viburnum

in the shrub border or for screens. Hardy in all zones.

Viburnum opulus (European High-bush Cranberry)—8 feet. Flowers white in flat clusters; outer flowers sterile, large and showy; inner flowers small, perfect. Fruits are red berries, appearing in fall and winter. Leaves turn red in fall. Good shrub for border. Plant where red berries can be enjoyed from indoors in winter. Hardy in all zones.

Viburnum opulus roseum (Snowball Bush)—8 feet. Variety of European high-bush cranberry. Flowers are sterile; form snowball-like clusters. No fruits. Subject to leaf injury by aphids. Use in shrub border. Hardy in all zones.

Viburnum trilobum (American High-bush Cranberry)—8 feet. Similar to European highbush cranberry, except that fruits are edible. Valuable food for birds. Tolerates wet soil. Use in shrub border. Hardy in all zones.

Wahoo—See *Euonymus*

Wayfaring Bush—See *Viburnum*

Weigela florida (Old-fashioned Weigela)—5 feet. Flowers white to rose-pink, large, bell-shaped, coming in early June.

Plant in protected sites in foundation and border plantings. May kill back but usually sprouts from base. Hardy in zone 1; trial in zone 2.

Weigela Hybrids—5 feet. The following hybrid varieties have been grown in

Minnesota: **Eva Rathke**, **Bristol Ruby**, and **Vaniceki**. Flower color of these hybrids is a brighter red than *W. florida*. Trial in zones 1 and 2.

Willow—See *Salix*

Winterberry—See *Ilex*

WOODY VINES

Aristolochia durior (Common Dutchmans Pipe)—30 feet. Vigorous, twining vine with dark green, large, heart-shaped leaves. Flowers of peculiar shape, resembling Meerschaum pipe, greenish, well-covered by leaves. Useful for covering porches and trellises. Hardy in zones 1 and 2; trial in zone 3.

Bittersweet—See *Celastrus*

Boston Ivy—See *Parthenocissus*

Campsis radicans (Common Trumpet Creeper)—30 feet. Flowers orange to scarlet, trumpet-shaped, showy, appearing in mid-July. Shrubby vine clinging to stone or woodwork by small, rootlike holdfasts but often needing more tying to hold it in place. Plant in full sun to get attractive bloom. Hardy in zone 1; trial in zone 2.

Celastrus scandens (American Bittersweet)—20 feet. Flowers inconspicuous, sexes separate. Fruits are yellow berries, opening to show a scarlet interior; effective in fall and winter. Leaves turn

yellow in the fall. A twining vine that grows on almost any support. Highly prized for fruiting branches used for winter bouquets. Plant both sexes to be sure of getting fruits. Hardy in all zones.

Clematis jackmani (Jackman Clematis)—10 feet. Flowers violet to purple, large, 5 to 7 inches across, appearing in July-August. Fruits are plumelike, borne in dense clusters, attractive in fall. Of hybrid origin, *C. lanuginosa* x *C. viticella*. One of most popular of flowering vines. Has been crossed with other species to produce large number of large-flowered hybrids too numerous to discuss here. May kill back to the snowline but comes from the base and flowers on new wood. Semihardy in all zones.

Clematis paniculata (Sweet Autumn Clematis)—30 feet. Flowers white, about an inch across, in showy clusters, appearing in September. Fruits plumelike, in dense clusters. Foliage dense, lustrous. Vigorous vine but not too hardy. Hardy in zone 1; trial in zone 2.

Clematis virginiana (Virginsbower)—18 feet. Flowers small, white, in dense clusters, appearing in July. Fruits plumelike, in dense clusters. Leaves turn purple in fall. Native throughout state. Often used in fence rows. Hardy in all zones.

Dutchmans Pipe—See *Aristolochia*

Engelmann Creeper—See *Parthenocissus*

Honeysuckle—See *Lonicera*

Japanese Creeper—See *Parthenocissus*

Lonicera heckrottii (Goldflame Everblooming Honeysuckle)—12 feet. Flowers red outside, yellow inside, shaped like



American highbush cranberry

2-inch trumpets, blooming all summer. Useful for covering arches and trellises. Trial in zones 1 and 2.

Lonicera sempervirens (Trumpet Honeysuckle)—20 feet. Flowers orange to scarlet, shaped like 2-inch trumpets, appearing in mid-June to August. Red berries produced in fall. Popular vine for trellises and porches. Hardy all zones.

Lycium chinense (Chinese Wolfberry)—8 feet. A spreading—almost creeping—shrub or vine grown because of purple-violet flowers from July to September and elongated red berries in late fall. Often used for covering walls or for ground cover in poor soils. Hardy in zones 1 and 2; trial in zones 3 and 4.

Menispermum canadense (Common Moonseed)—12 feet. Twining vine grown for attractive ivylike leaves and black, grapelike fruit. Used for ground cover and covering on trellises. Hardy in all zones.

Parthenocissus quinquefolia (Virginia Creeper)—50 feet. Rank, native vine used for covering such objects as telephone poles and windmills. Leaves compound with five radiating leaflets; turn brilliant red in fall. Hardy in all zones.

Parthenocissus quinquefolia engelmanni (Engelmann Creeper)—Leaves smaller and vine more refined than Virginia creeper. Used for covering brick

walls and buildings. Clings by suckerlike discs on tendrils. Hardy in all zones.

Parthenocissus tricuspidata (Japanese Creeper or Boston Ivy)—30 feet. Tight, clinging vine that holds fast to brick or stone with small, rootlike holdfasts. Leaves three-lobed, lustrous green, turning scarlet in fall. Forms interesting patterns on stone or brick walls. Sometimes kills back but new growth comes up from base. Semihardy in zones 1 and 2.

Rosa spp. (Climbing Roses)—6 to 15 feet. The climbing roses are of complex hybrid origin mostly from *R. multiflora* x *R. wichuriana* crosses. Flowers single or or double, white, pink, yellow, or red, usually in clusters. The following are grown with winter protection: **New Dawn** (pink), **Blaze** (red), **Phyllis Bide** (yellow), **White Dawn** (white), **Pauls Scarlet** (red), and others. Hardy in all zones (with winter protection).

Trumpet Creeper—See **Campsis**

Virgins Bower—See **Clematis**

Virginia Creeper—See **Parthenocissus**

Wistaria floribunda (Japanese Wistaria)—12 feet. Flowers violet to violet-blue, appearing in long drooping clusters in late May to early June. Used for trellises. Popular vine in the East but not considered very hardy in Minnesota. Trial in zones 1 and 2.

Wolfberry—See **Lycium**

For your further information

Evergreen plants—which are not covered in this bulletin—are given in Extension Bulletin 258, *Evergreens*.

Two valuable bulletins which will tell you how to use the plants in these bulletins are Extension Bulletin 250, *Landscaping the Farmstead*, and Extension Bulletin 196, *Planting the Farmstead Shelterbelt*. You can get any of these bulletins from your county agent or by writing to the Bulletin Room, University Farm.

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