



HARDY SHRUBS

*for Landscape Planting
in Michigan*

MICHIGAN STATE COLLEGE

Of Agriculture and Applied Science

EXTENSION DIVISION

R. J. Baldwin, Director

PRELUDE

"In all places, then, and in all seasons,
Flowers expand their light and soul-like-wings,
Teaching us, by most persuasive reasons,
How akin they are to human things."

—Longfellow.

Hardy plants are most akin to human things. To know them is to like them; to be unacquainted with them is to miss one of the greatest resources of interest and enjoyment of one's environment. No matter how lowly plants may appear as one sees them in the field, by the roadside or about the home, they possess an inherent and distinctive beauty if one has but the mind and eyes to see it. As there are "sermons in stones and books in running brooks," so all plants have their history, their associations and their peculiar fitnesses to certain specific conditions of their environment that make them interesting and that show how well they are performing their part in transforming this otherwise bare and unclothed surface of the earth into a floral kingdom. But most of all, plants are pleasing because in performing their functions of life they do them in such beautiful ways. The flower does not live for its beauty, but assumes its gracefulness of form, attractiveness of color and delicacy of texture to facilitate its necessary function of providing for the perpetuation of its species. So also does the foliage, the fruits and other beautiful characters of plants assume these qualities that they may better perform their essential functions of life.

As the beauty of a painting or the beauty of a landscape is measured largely by what one reads into the scene, so also is the beauty of a plant or flower measured largely by the story it presents to the mind of the observer. Since man ceased to be a nomad and since all of his effort has not been required in gaining a subsistence, he has devoted a share of his labor in surrounding his abode with some of these plants with whose story of beauty he has been most familiar.

HARDY SHRUBS

For Landscape Planting in Michigan

C. P. HALLIGAN

Hardy ornamental shrubs are most desirable in beautifying our out-of-door surroundings and in developing them into enjoyable and inspiring environments. We inherit this affection and desire for them about our abodes through many generations. History records that some of these shrubs, we so commonly plant about our home grounds today, were similarly used and cherished by the early Greeks before the white race had migrated into Italy; others were found here in the wild by early pioneers and plant explorers who considered them so desirable that specimens were shipped back to Europe for ornamental planting.



Shrubs seem to possess to a nice degree the qualities of both trees and perennials that make them especially fitting in developing the home grounds. They possess body as well as bloom and may create shelter as well as shade. In addition to their intrinsic beauty, their proper disposition and arrangement may greatly accentuate the attractiveness of the entire home grounds. They may be so disposed in naturalistic groups or masses as to soften and harmonize the harsh line effects of the house with its site; as to obscure and beautify the corners and boundaries of the lawn; as to accentuate and enhance the beautiful vistas within and without the property, and as to screen or obscure such objects or scenes as are not attractive nor in unity with the general beauty of the grounds. For banking along curves of walks and drives, for covering steep or rugged banks, and for forming naturalistic or formal enclosures they are almost indispensable. When used in groups to supplement neighboring-masses, to render a less rigid and definite effect to their boundary lines, or when disposed individually to accentuate definite points by their brilliant colors or striking forms they also prove very serviceable in developing the general attractiveness of the place.

At present, however, the value of hardy flowering shrubs, their charm, and above all their variety, are only beginning to be dimly appreciated. There are a few kinds that are commonly planted everywhere, but the vast majority are too infrequently used about our home grounds. A more intimate knowledge of the infinite number of kinds of shrubs available for use in beautifying our places should prove a most valued

asset in diversifying our plantings and developing that appropriateness and distinctiveness that should characterize every home ground.

Success in growing ornamental shrubs is measured largely by the hardiness and adaptability of the kinds one selects to the conditions of soil and exposure under which one places them. There is a great diversity in plants as to their adaptability to different types of soil, some requiring a moist, fertile, clay loam and others thriving best on a dry, light, sandy soil. Many of the ornamentals, such as the Rhododendron and Azalea, do not flourish upon a limestone soil such as prevails in most parts of Michigan. Fortunately there are desirable kinds that thrive on almost any of the soil conditions that may be found. The

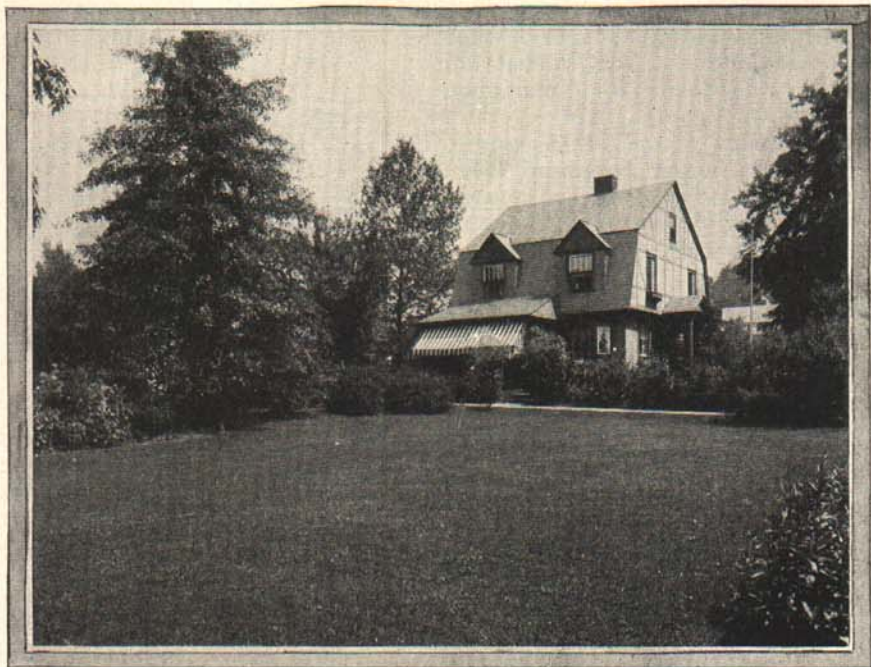


Fig. 2.—Groups and masses of hardy shrubs tastefully arranged about the open lawn areas compose the finishing touches to the development of beautiful home grounds.

problem is, however, to select the particular kinds of shrubs suited to the specific soil conditions at hand.

The climatic conditions of Michigan also are so variable that many of the ornamental shrubs are sufficiently hardy for planting in some sections and not in others. No definite line of demarcation can be drawn to designate the boundaries of these sections of the state possessing about the same climatic conditions, but the approximate location of these sections is designated on the accompanying diagram. It should be understood, however; that the exposure greatly influences the ability of plants to withstand the climatic conditions of any locality, and that it is not always low winter temperatures that injures plants, but the injury is sometimes due to the prolonged heat and drouth of

summer, to the dry winds of late winter and early spring, and to the alternate freezing and thawing of the plants in March and April. Therefore, plants that are considered as "half-hardy" may frequently be found thriving in particularly favorable situations in sections considered beyond their general climatic limitation.

The exposure most suitable for shrubs that are not hardy is generally northeastern with the protection of trees, buildings or other things from the southern sun and western winds.

In the following descriptions the term "very hardy" is used for plants hardy in the most northern section; "hardy" for the central region; "half-hardy" for plants that will thrive only in the mildest section of the state or sometimes in most protected situations of the central region.



Fig. 3.—General climatic sections of Michigan in reference to the hardiness of shrubs. Only those described as "very hardy" should be generally planted in section 3. Shrubs described as "hardy" may be planted in sections 1 and 2 while others considered "half-hardy" should be largely confined to section 1.

Acanthopanax pentaphyllum*—FIVE-LEAVED ARALIA, Hardy

This native of Japan we welcome to our gardens although it possesses neither flower nor fruit of ornamental value. Its upright growing habit, with slender arching branches that are densely clothed with fine textured bright green leaves, make it a most admirable shrub for rendering the effects of stability, cleanliness and cheerfulness to our garden scenes.

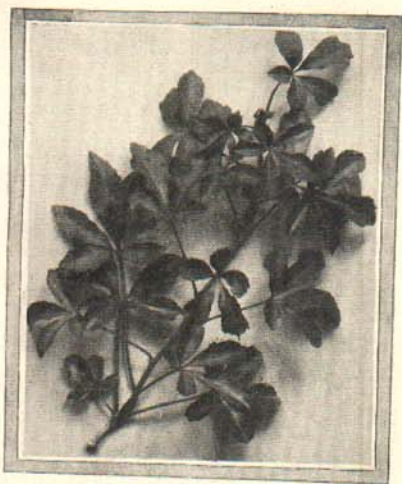


Fig. 4.—The five-leaved aralia is valued primarily for its bright dense foliage.

Fortunately, it is most adaptable to many types of soils as it seems to grow well even upon the lighter, drier, and less fertile types, usually attaining a height of five feet or more. No insects nor fungous diseases commonly trouble it and as it maintains its foliage well to the base of the plant, it is very suitable for arranging in the foreground or at the ends of mass plantings, in the planting of groups about the lawn, and in the planting of hedges.

Acer palmatum—JAPANESE MAPLE, Half Hardy

These plants, for there are several varieties, are characterized and prized for their beautiful and striking foliage. The admiration of the Japanese for them is so sincere and intense that a celebration is declared each year in their honor when they are at the height of their beauty.

The leaves vary in color from green to a light yellow and to the brightest and sometimes darker scarlets, the bright scarlet selections or varieties being the most popular. The leaves also vary greatly in form, some being quite similar in shape to our native cut-leaved soft maples, while others are so deeply and finely lobed as to be quite fern-like. Although really dwarf trees, their spreading habit makes them very suitable for planting as shrubs in groups and masses. With such an attractive combination of characters they are most striking out-of-door plants and for beautiful landscape effects should only be disposed in such locations as appear worthy, reasonable, and fitting for plants of such intensity of color and daintiness of texture in the landscape. Unfortunately, they lack hardiness and should only be planted in the most sheltered situations of the mildest sections of the state.

Acer ginnala—AMUR MAPLE, Very Hardy

A maple tree attaining about ten feet in height that is used more commonly as a high growing shrub. It is noted for its beautiful foliage that is particularly striking and beautiful in the autumn when its deeply notched

*The nomenclature of this bulletin is in accordance with "Standardized plant names," 1924, proposed by the American Joint Committee on Horticultural Nomenclature.

leaves assume brilliant scarlet colors that are hardly surpassed by any American tree or shrub. It is also interesting on account of the fragrance of the flowers, fragrant maple flowers being unusual. The excellent foliage characters of the plant during the entire growing season make it a desirable shrub for group and mass planting about the home grounds.

Amorpha fruticosa—INDIGOBUSH, Hardy

The name "*Amorpha*" means without form, referring probably to the fact that four petals of the flower are wanting, but the common name suggests the unusual color of the flower spikes. It is a tall, open growing, gracefully spreading shrub that is desirable both for its fine feathery foliage

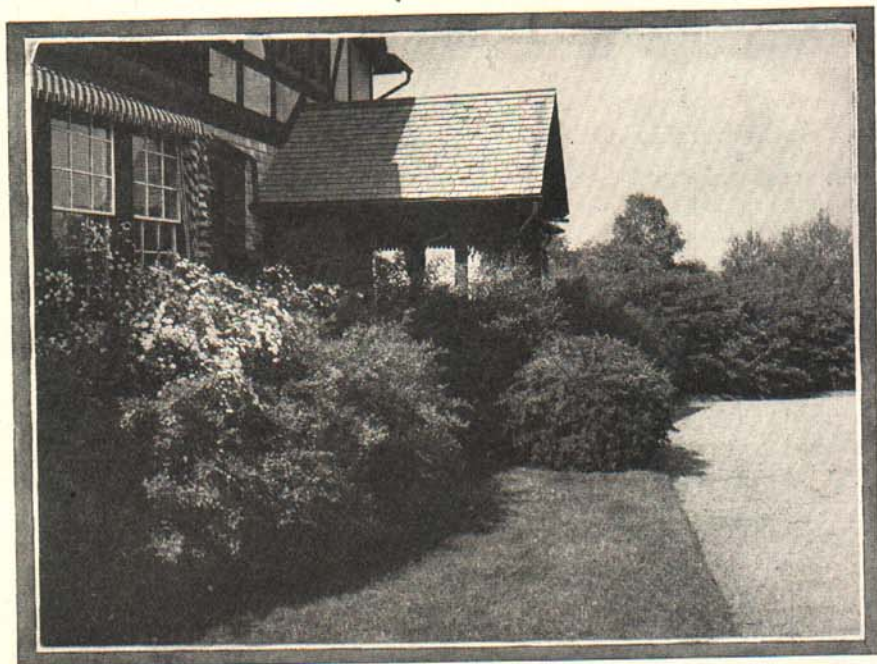


Fig. 5.—Groups of fine-leaved shrubs such as spireas and Japanese barberry are suitable for plantings immediately about the house and front walk.

and the rich color of its dark violet-purple flower spikes that continue to be evident from May to July. It grows best in a moist soil and sometimes requires rather severe spring pruning to keep it from becoming too wayward in its growth. This plant is native from Wisconsin and Pennsylvania southward. The delicacy of its foliage and richness of its flower spikes make it appropriate in plantings adjacent to garden walks or such other nearby places.

Aralia spinosa—DEVILS-WALKINGSTICK, Hardy

The large exotic appearing leaves seen upon this shrub in the summer and the bare appearance of the few coarse spiny stems in winter characterize this native plant of the Southlands. Every landscape character of this plant

seems to be immense. Its immense compound leaves, two to three feet long and about half as broad, its immense white flower clusters slightly tinged with green appearing in August, and its immense size, attaining twelve to sixteen feet in height, combine to make it a plant of very unusual characters more suited for special conditions than for general landscape planting. It succeeds best in a sheltered situation, since its leaves are too large and heavy to withstand high winds, and in a fairly moist soil although one finds it thrives even upon the dryer soils. The coarse textural effect of its foliage makes it more desirable in plantings to be seen at a distance and it appears more harmonious in combination with such textural foliaged plants as the sumacs than with such small leaved shrubs as Japanese barberries, bush honeysuckles, or spireas, where the contrast of size and texture of foliage is too great for harmonious effects. Though it is generally regarded as hardy, there is some question as to its hardiness in the more northern sections of Michigan.

Aronia arbutifolia—RED CHOKEBERRY, Hardy

The red chokeberry is one of the native American species of this desirable genus noted particularly for the beautiful effects of its brilliant fruits. Like the other species of this genus that are widely distributed in the eastern part of the country, it produces small white flowers in erect compound clusters, and handsome foliage.

The flowers of this species are followed by the production of erect clusters of bright scarlet fruits which remain on the plants without change of color well into the winter. Late in the season the brilliant fruit and bright scarlet of the autumn leaves make this one of the most beautiful of the native shrubs. The bush is a tall, slender, and somewhat irregular growing plant and conducive to the production of a more naturalistic and less domesticated type of effect than characterizes the usual small home grounds.

Aronia melanocarpa* var. *elata—GLOSSY CHOKEBERRY, Hardy

This is the plant commonly listed as *Aronia melanocarpa* or by the common name of black chokeberry. However, the black chokeberry is a shrub twelve to eighteen inches high with stems spreading into a broad mat. The form more commonly handled is this variety, *elata*, which grows into a high, broad bush from six to ten feet tall.

As the name implies, the fruit is black, lustrous, and drooping on long stems, and it remains on the plant until the beginning of winter. It flowers earlier than the red chokeberry, and the fruits are larger; otherwise, its general characters are quite similar.

Berberis thunbergi—JAPANESE BARBERRY, Very Hardy

This most widely known exotic shrub is native of the mountains of Japan where it was discovered by a Russian botanist in 1864 and sent to the Petrograd Botanic Gardens. Seeds were received from Petrograd by the Arnold Arboretum of Boston, Massachusetts, in January, 1875, and a few years later plants were freely distributed. It has since become one of the most common and popular shrubs for planting the home grounds.

It is a compact growing shrub attaining about five feet in height. The slender arching branches are protected by small sharp spines and clothed

with dense, small oval leaves that are quite yellowish green in the spring but turn deeper in color as the season advances. In the spring these gracefully drooping branches are strung with pale, inconspicuous, yellow blossoms and in the autumn with attractive, shining, scarlet berries. The leaves in the fall assume gorgeous colors varying in shades of orange and red to crimson. Throughout the winter the lustrous berries prove very attractive and commonly remain attached to the plant until well into the following summer.

This barberry thrives upon any moderately fertile, well drained soil and will endure partial shade. Its dense, fine textured foliage and compact habit of growth, combined with its general attractiveness at all seasons of the year, make it a most appropriate kind for planting about doorways, porches, walks and such other nearby places. It is most suitable for planting

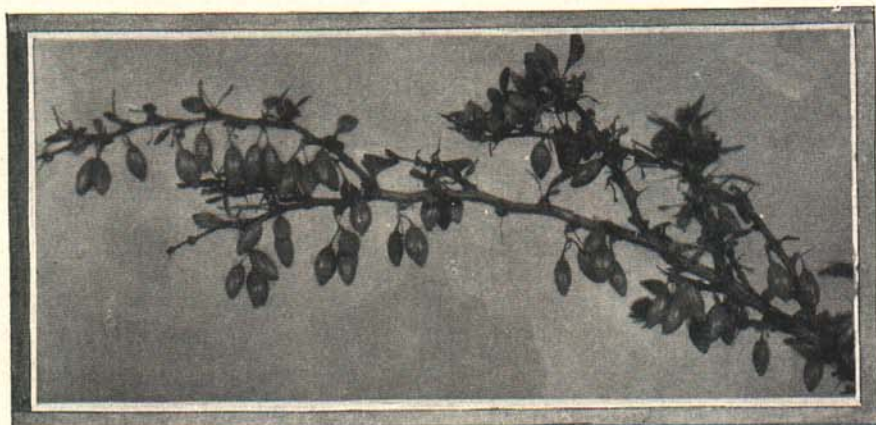


Fig. 6.—The bright scarlet berries of the Japanese barberry prove very attractive in fall and winter.

in the foreground of higher growing shrubs, and as a hedge plant it ranks among the indispensables, being easily kept in shape, dense in habit, and impenetrable to man and beast. Its hardiness, ease of culture, and uniformly desirable characters combine to make it one of the most popular shrubs in this country. In fact, this commonness with which we see it used is the only objection to it.

This species is not subject to wheat rust and may be planted in any part of the state.

Berberis thunbergii var. atropurpurea—PURPLE-LEAF JAPANESE BARBERRY, Very Hardy

The leaves of this plant are deep red or purple in the spring, tending to green as the season advances. Otherwise it is similar in its characteristics to the Japanese barberry. As with other colored foliage plants, it does not retain its redness well when grown in the shade but should be given full sunlight. It may be used advantageously for formal low hedges or for informal masses where a high degree of color over a long period of the season is desirable.

Berberis thunbergi minor—BOX BARBERRY, Very Hardy

This dwarf form of *B. thunbergi* grows from six inches to two feet in height and its leaves are only about one-half of an inch long. Otherwise its characters are similar to those of the parent form. Its dwarf habit of growth, fine, dense texture, and adaptability to frequent clipping combine to make it one of the best for the development of low edgings for formal gardens.

Berberis thunbergi pluriflora erecta—TRUEHEDGE COLUMNBERRY, Very Hardy

A semi-dwarf, upright, column-like variety of the Japanese barberry recently introduced that possesses qualities of intrinsic value as a plant for low ornamental hedges.

Calycanthus floridus—COMMON SWEETSHRUB, Half Hardy

This native shrub of many common names, known also as the strawberry shrub and Carolina allspice, was a very popular garden shrub in the earlier days. In fact, it was one of the first native American shrubs to be taken to England and popularized as a garden plant. Its interestingly formed dark red, fragrant flowers, appearing from May to July, and its foliage, also with a somewhat strawberry or spicy fragrance, made it a garden plant much desired by our ancestors for arranging about doorways, steps, and other nearby spots where they might frequently enjoy its fragrance. However, its general lack of hardiness and thriftiness unless planted in a rich, moist soil in a partially shaded and sheltered situation and its lack of such character in flower, fruit, or foliage as to make it especially effective or distinctive in a landscape planting combine to make it less desirable for general planting than many other kinds now available.

Caragana arborescens—SIBERIAN PEA-TREE, Very Hardy

This pea-tree that has been brought all the way from the harsh and rugged clime of Siberia to grace our gardens, seems to be a most accommodating plant in adapting itself to almost any type of upland soil or exposure. It has an upright habit of growth attaining some fifteen to twenty feet in height, and its compound leaves, with four to six pairs of small leaflets, produce a fine textural foliage effect. The latter part of April or May finds it covered with numerous "pea-like," pale yellow flowers that later in the season are followed by the production of "pea-like" fruit pods from one and a half to two inches long. When the seeds have matured, the pods open with a slight explosion, and the seeds are shot some ten to twenty feet away as a means of seed dispersion. This plant is especially suited to light soils and to sunny locations. It is an excellent hedge plant, and the beauty of its foliage makes it desirable for planting in groups or in masses behind other lower growing shrubs.



Fig. 7.—The small pea-shaped seed pods and delicate leaflets of the Siberian pea-tree are most distinctive.

Cephalanthus occidentalis—COMMON BUTTONBUSH, Very Hardy

The name "*Cephalanthus*" is derived from the Greek words "*cephale*" meaning head and "*anthos*," a flower, referring evidently to the fact that the flowers are produced in spherical heads. This native of our lowlands is a strong, vigorous growing shrub usually from six to twelve feet high and equally broad. The leaves are comparatively large, coarse, and dark, shining green. Its chief attraction is the creamy white, fragrant, "ball-like" flower heads that appear in July and August, a season when few other shrubs are in bloom. It is particularly suited to the planting of the shores of streams or ponds in developing very naturalistic effects. Since it endures wet soils or even the presence of water above its roots, it is also a most suitable plant to use for the production of naturalistic effects upon lowlands where such soil conditions prevail.

Chionanthus virginica—WHITE FRINGETREE, Half Hardy

A literal interpretation of this name "*Chionanthus*," coming from the Greek word "*chion*" meaning snow and "*anthos*" flower, would give this plant the name "snowflower," and as the specific name indicates, it comes to us from Virginia and the Carolinas. However, the drooping panicles of delicate flowers with long, narrow, thread-like, white petals appearing late in May or early June may best be described as more of a white fringe-like character than anything else, making the common name quite descriptive of the form and color of the flower.

The leaves, rather tardy in their appearance in the spring, are large, abundant, of good color, and are seldom disfigured by insects or fungous diseases. It commonly grows to a height of about twelve to fifteen feet but is known to attain a height of thirty feet. It thrives in a fertile, sandy loam soil in a sunny position but unfortunately is not very hardy. In protected situations of southern Michigan, it is very appropriate for planting in open groups about the lawn or as a large specimen flowering shrub.

Clethra alnifolia—SUMMERSWEET, Hardy

The scientific name "*alnifolia*" refers to the alder-like appearance of the foliage, while the common name refers to the fragrance of the white, slender, spike-like clusters of flowers that clothe the bush in August and September. Native of the lowlands from Maine to Florida, it constitutes one of the most important native plants of the season for flowering effects in naturalistic plantings. It is a shrub from five to ten feet high growing naturally in masses in low, wet places where its roots are often submerged in water, especially in the early spring. However, it thrives also upon fairly fertile or moist upland soil and in half-shaded situations. The leaves are alternate, simple, dark-green above and a dull yellow-green beneath, in the autumn turning to a bright, clear yellow. Unfortunately the foliage is sometimes disfigured by the attacks of the red spider.

Our interest in this shrub is concerned largely in its adaptability to the planting of low-lands and to its late flowering season. It is probably more suitable for producing a free, very naturalistic effect than for the more restrained and cultivated effects of the small home grounds.

Colutea arborescens—COMMON BLADDER-SENNA, Hardy

The most interesting and distinctive character of this Old World plant is its reddish inflated seed pods forming peculiar parchment-like bladders, some two or three inches long. Though very attractive in their coloring, they are still more alluring to the observer in tempting him to press and "pop" them as one "pops" a blown-out paper bag, with an explosive crack. Gerard informs us that even the Elizabethans played this "popping" trick upon the plant. The real purpose of these inflated pods, however, after they have ripened and become detached from the branches, is that they shall become blown by the wind in all directions and the small seed within carried far and wide.



Fig. 8.—The yellow pea-shaped flowers and delicate leaflets of the common bladder-senna supplement the attractiveness of the reddish inflated seed-pods.

Aside from this character, this dainty shrub with pale yellow flowers of the pea type, and airy, delicate foliage is a graceful addition to any garden.

The flowers, in clusters of five or six, grace the foliage in June and July while the bladder pods assuming tints of red make it even more attractive in late summer and early autumn.

The plant grows rapidly and thrives over a large range of soil conditions, with or without a great amount of sunlight. It attains a height of from six to ten feet, forming a well rounded head.

The attractiveness of the fine textured foliage, gay flowers, and peculiar fruits make it of ornamental value over a very extended portion of the season. It is especially suited for planting in soils too infertile and upon sites too exposed or shaded for the well being of other plants.

As its flowers are produced on the stems of the current year's growth, annual severe spring pruning is desirable.

CORNUS—DOGWOOD

There are more native dogwoods in North America than anywhere else in the world. In earlier times the dogwoods were more widely scattered over the earth's surface than they are now. In some of the early geologic periods species of dogwoods inhabited the present Arctic Regions. The ancestors of our flowering dogwood occurred in Europe, where, however, their descendants have been unable to retain a foothold and it is now native only to the New World.

The generic name of this group "*Cornus*" is from *Cornu* referring to the toughness of the wood, while the common name "dogwood" came from the English practice of steeping the bark to make a solution to wash "mangy" dogs.

As a class, they are adapted to moist or wet soils and to shady, cool situations. The intense bright coloration of the bark of the more shrubby forms

in the winter and the large whitish flowers, appearing before the leaves in the spring, of the tree-like forms, characterize the several species of this group.

The species of dogwoods of the shrub-like type that are grown for the effects of their colored bark respond well to annual pruning since it is the young vigorous twigs that are most highly colored. This pruning should consist in cutting back the oldest canes in the early spring to the ground. Whenever the bush has become too high and straggling the entire top may be pruned to the ground. The method of pruning shrubs by cutting-back the tops a short distance should not be practiced with this type of dogwood since they usually "kill back" a considerable distance from each cut that is made in this manner.

Cornus alba—TATARIAN DOGWOOD, Very Hardy

The red-stemmed dogwoods are a most satisfactory class of plants for beautifying our landscape scenes during the winter. Of the several species characterized by their brilliant stems, the tatarian dogwood is one of the most satisfactory and generally cultivated species in this country although native of Siberia. The blood-red twigs and branches which glow throughout the winter and become more intense in color as winter merges into spring and the small clusters of bluish-white fruits in summer, whence its Latin name, *alba*, is derived, characterize this very hardy species.

It is an upright, spreading shrub, seven to ten feet in height, densely clothed with bright green leaves, two to three and a half inches long, producing a rather coarse foliage effect. Like most of our native red-barked dogwoods that we find upon the lowlands, it grows best in a moist, cool soil but thrives upon any moderately fertile upland soil with full exposure to sunlight or in partly shaded situations. It is especially suited to mass plantings about the borders of lawns, for screens and for backgrounds, and particularly desirable for its winter colorations. Like most of the other dogwoods, it is very susceptible to scale insects.

Cornus alternifolia—PAGODA DOGWOOD, Very Hardy

This species is native of the woodsey places in Michigan where it may be readily differentiated from other dogwoods by the fact that it is one of the few species with alternate instead of opposite leaves and possesses the habit of forming its branches in irregular whorls, forming horizontal tiers of foliage.

In addition to these distinctive qualities the twigs are greenish in color and the leaves, crowded at the ends of the branchlets appear larger than most other species and of a verdant green. The flowers appearing in May are pale yellow and produced in slender stalked clusters. The fruit is bluish black on very striking colored red stems which persist after the berries have been removed by the birds.

This plant, which assumes the form of a somewhat flat horizontal shrub is particularly adapted to shaded or partly-shaded situations where the soil is at least moderately moist and cool. It is particularly suitable for naturalizing and also proves desirable for the shrubbery border.

Cornus alba spaethi—SPAETH DOGWOOD, Very Hardy

This is an attractive variety of *Cornus alba* that differs from the parent in the production in early spring of dark, almost bronze colored leaves that in summer become variegated with pale golden yellow. This variegation is lighter when the plant is grown in full open sunshine making it a very unusually bright foliage shrub. The attractiveness of its foliage necessitates very careful arrangement with other shrubs to prevent obtaining strong contrasts without harmonious effects. It is desirable for special effects and for accentuating dominant points in the plantings.

Cornus alba sibirica—CORAL DOGWOOD, Very Hardy

The branches of this variety of *Cornus alba* are supposed to be of a more intense, bright coral-red than the parent form, but both of them are so intense in color that it is difficult to differentiate them by this or other characters.

Cornus alba argenteo-variegata—SILVERBLITCH DOGWOOD,
Very Hardy

The silverblotch dogwood is a variety of *Cornus alba* much prized for its variegated foliage which makes it a very showy-leaved shrub. It should be severely pruned back in early spring to maintain a dense compact vigorous growth. It is one of the best silver-leaved shrubs for home planting.

Cornus florida—FLOWERING DOGWOOD, Very Hardy

The flowering dogwood when in bloom seems to typify the actual realization and culmination of the spring season more than any of our native shrubs. Few sights are more attractive at this time of the year than a native bit of woodland clothed along its borders with groups of these small flat-topped trees or spreading shrubs with their branches covered with layers of these great white flowers. A closer inspection of these flowers reveals a development both interesting and unique. The terminal bud from which each flower develops, has been covered throughout the winter by four bud scales which in the spring, instead of ceasing their services and passing away unnoticed as other bud scales do, have renewed their growth and become the petalous-like parts that render the flower its beauty and attractiveness. As one sees it in full bloom, the real flower is the little green bunch in the center which is surrounded by the four renewed and resplendent scales, each still showing a notch at its apex which is the bud scale of the past winter.

After the flowers have disappeared the plant becomes so subordinated and harmonized into the general landscape that one forgets its presence, but in the fall before the foliage fades from the landscape scene, the plant again plays a leading role, attracting admiration by its gorgeous scarlet colorations.

The plant flourishes in a rich, well-drained soil and preferably in shaded or partly shaded situations. Although rather difficult to transplant and slow

to become re-established, it is perfectly hardy and long-lived. There is no shrub more suitable for planting along the borders of woodlands where the soil is rich in rotting leaves or for planting through sparse, wooded areas than this native flowering dogwood.

A variety of this species known as the red flowering dogwood, *Var. rubra*, is also a very attractive plant with flowers of a bright lively pink color.



Fig. 9.—If more of our country roadsides were planted with such beautiful native shrubs as the flowering dogwood how attractive they would be.

Cornus ammonum—SILKY DOGWOOD, Very Hardy

The small, creamy white flowers of this plant appearing in early June are about the last of the dogwoods to appear in bloom. Naturally a very spreading shrub some six to ten feet high, it takes unkindly to cultivation unless given ample space for its wide spreading branches to extend freely over the ground. It is well suited for moist or wet soils and endures shade well. There is no better shrub to plant by the margins of streams or lakes where its long branches can hang gracefully over the water than this species of native dogwood. It is well suited also for planting in the front of groups of larger plants and where the purple colored branchlets and twigs of the bush may be visible over winter.

Cornus kousa—KOUSA DOGWOOD, Very Hardy

This is a Japanese dogwood which is especially attractive in June when its showy clusters of small creamy white flowers adorn the bush. As in the flowering dogwood the showy part of the flower is furnished by the four large white bracts which surround the real blossom. It has a longer period of bloom than the flowering dogwood and assumes either a shrub or tree-like form to a height of twenty feet.

Cornus mas—CORNELIAN CHERRY, Very Hardy

This European dogwood plays the prelude of spring in the melody of colors displayed by the flowering shrubs. Very early in the spring its compact globular clusters of small, bright-yellow flowers appear even in advance of the foliage and completely clothe the plant in a robe of golden color. It is a spreading, round-topped shrub usually from 8 to 10 feet high with dense, glossy foliage which, in addition to the beauty of its early spring flowers, makes it desirable as a background shrub in mass plantings on soils of at least moderate fertility.

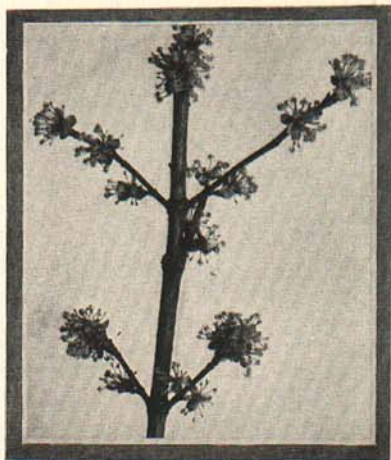


Fig. 10.—The clusters of small yellow flowers of the English dogwood appear very early in the spring.

The variegated cornelian cherry (*Cornus mas aurea-elegantissima*) produces foliage that is variegated with light and yellow shadings occasionally bordering on the pink. It is therefore adaptable for special effects rather than for general planting.

Cornus paniculata—GRAY DOGWOOD, Very Hardy

This dogwood, native of our lowlands and woodland borders, derives its name from the grayish appearance of its bark. This plant is variable in height being sometimes but three feet tall but under other conditions developing into a broad spreading shrub from ten to twelve feet high. Its most distinctive characteristics are its long, narrow, sharply tapering leaves, grayish beneath and but slightly downy above, and the red stems which bear the creamy-white flat clusters of flowers and the white, pale-blue fruits which are stripped from the plants by birds soon after ripening. It is a very adaptable shrub in naturalistic planting upon moist soil and in partial shade.

Cornus sanguinea—BLOODTWIG DOGWOOD, Very Hardy

This species is one of the red-barked dogwoods, native of Europe and the Orient, with branches that are a dark and dull blood-red color making it less attractive in the winter than many of the other red-barked species. It grows from six to twelve feet high producing late in the spring, greenish-white flowers that are not especially attractive, followed by fruits that are small and black. The common name of this species sometimes leads one to consider it as one of the bright red-barked dogwoods. Other more desirable species are sometimes sold under this name but the true *Cornus sanguinea* is not most desirable either for winter effects or for its summer flowers and fruits.

Cornus stolonifera—RED-OSIER DOGWOOD, Very Hardy

The red-osier dogwood is a very common native shrub that brightens our meadow and lowland scenes in winter with its glowing red-purple stems and branches. This dogwood obtains its name *stolonifera* from its habit of spreading into clumps or thickets by underground shoots or stems, and from the prostrate form of the main stem of the plant. It is most adapted to moist or wet soils where it attains a height of from four to eight feet. The leaves, which are opposite and simple are bright green in summer but turn a bronze purple or dark red touched with orange and yellow in the fall. The flowers, a creamy-white in June, are followed by the production of white, globose fruits.

In leaf, flower, and fruit it resembles *Cornus alba*, the red-stemmed dogwood of cultivation, and were it not surpassed in the brightness of its winter coloration by this imported species, it would be more commonly used in our gardens.

The goldentwig dogwood (*Cornus stolonifera flaviramea*) a variety of *Cornus stolonifera*, is characterized by its bright yellow-barked stems and branches which in the winter are very striking, especially when used in combination with the red-barked dogwoods. If the bush is pruned rather severely in early spring, the new shoots will be more vigorous in their growth and more intensely colored the following winter.

COTONEASTERS

The cotoneasters are a group of shrubs that will doubtless be more generally planted as their admirable qualities become better known. Though some of the species are unfortunately not sufficiently hardy to withstand the climatic conditions of Michigan, many of them, being but recently introduced from China, have not been sufficiently tested in this state to ascertain their adaptability. We do know, however, that some of the species are well adapted and very desirable for landscape planting.

Cotoneaster acutifolia—PEKIN COTONEASTER, Hardy

An upright spreading shrub from Northern China with slender branches usually from five to six feet in height, with dense, acute leaves, studded in June with small whitish-pink flowers that are followed by the production of black, ovoid fruits about one-half inch long. Like most of the other cotoneasters, it thrives on a rather poor soil if it is well drained and if full exposure to sunlight is provided.

This is one of the hardiest and most vigorous growing species but not especially attractive either in flower or fruit. It is more particularly desirable for its dense, dark-green foliage effect.

Cotoneaster adpressa—CREEPING COTONEASTER, Very Hardy

Most of the cotoneasters are not very hardy, but, in the winter of 1933-34, this species demonstrated its superior hardiness at the Graham Experiment Station at Grand Rapids. It is an admirable foliaged dwarf shrub about a foot and a half in height with dense small pointed leaves that are dark green in color. The main branches are closely appressed to the ground, from whence the specific name is derived, but the secondary branches when in leaf compose a dense mound of foliage. The red fruits in autumn are also attractive.

This shrub is particularly suitable for the small rock garden but also has its place wherever a low, dense, fine-textured foliaged shrub is required.

Like other species of this genus it transplants with more difficulty than most other deciduous shrubs and for this reason should be purchased from the nurseryman "balled and burlapped".

Cotoneaster divaricata—SPREADING COTONEASTER, Hardy

A very desirable species of cotoneaster, that is cherished more particularly for its deep green, small, dense, oval leaves that produce an excellent, fine-textured, foliage effect and for its attractive scarlet fruits that in September crowd its many spreading branches. Later in the fall, the foliage turns a bright scarlet but unfortunately the bright red berries are not retained into the winter. The plant assumes an open, spreading form but may be directed to develop a more dense, compact bush by frequent pruning. Its hardiness in the more northern sections of the state is questionable, but its desirable characters of foliage and fruit make it worthy of more general use in southern and central Michigan. It is very susceptible to San Jose scale.

Cotoneaster horizontalis—ROCK COTONEASTER, Half Hardy

This species of cotoneaster promises to become one of the most popular of all the cotoneasters recently introduced from China. It is a low-lying shrub with branches almost horizontal. The small, smooth, dark green leaves are retained throughout the fall, while the small, rosy flower buds appearing in June are followed by blossoms that are white, pinkish, and erect. The berries, appearing in September or October are small, bright red, and very attractive on the shrub at this season. Like the other cotoneasters, this shrub thrives best in full sunlight and in a well-drained though not necessarily fertile soil. It is particularly adapted to the planting of rocky slopes, to planting about the base of walls, buildings or fences and very suitable in the foreground of deciduous or evergreen mass plantings. It transplants with difficulty and should be procured from the nursery balled in soil and wrapped with burlap.

Cydonia japonica—FLOWERING QUINCE, Very Hardy

The flowering quince was formerly one of the most generally known of the flowering shrubs and it was planted in almost every garden. Its popularity waned with the period of infestation of the San Jose scale through the state. Its special attraction lies in its display of bright scarlet flowers appearing in the spring with the leaves. These brilliant flowers, produced mostly on lateral spurs from the older canes, combine with its dense foliage,—purplish on the young twigs but soon turning a dark shining green,—to make it particularly suitable for hedges, as it may be trimmed in early spring without materially reducing its floral display. It is well suited also to mass planting but is perhaps even more attractive when set in free development in a sunny location on the lawn. When grown without the restraint of pruning, its spreading, spiny branches attain from five to six feet in height and in the autumn are clothed with foliage that assumes an attractive bronze-red color. It thrives upon a fairly moist, fertile soil and may require an early spring application of lime-sulphur or an emulsified oil spray to control the San Jose scale to which it is very susceptible.

There are many garden forms of Japanese quince in cultivation with flowers varying from dark scarlet to pink and white and some with double or semi-double flowers. Also a dwarf form sometimes listed as *Cydonia japonica pygmaea*, but probably more properly designated as *Cydonia japonica alpina*, that is spreading with upright branches commonly not more than two feet in height. This form is particularly suitable when a very low growing shrub is required,



Fig. 11.—The bright scarlet flowers of the Japanese quince appear just as its leaves are unfolding.

Deutzia gracilis—SLENDER DEUTZIA, Hardy

The slender deutzia is one of the best known and generally liked of all the deutzias. Although it is not as free flowering, as hardy, or as thrifty as *D. lemoinei*, its slender, graceful branches and lower growing habit make it particularly fitting for plantings adjacent to steps, walks, and other places where higher growing and coarser textural plants might prove less desirable.



Fig. 12.—The white star shaped flowers of the slender deutzia lend their beauty to the spring scene.

Attaining a height of but $1\frac{1}{2}$ to $2\frac{1}{2}$ feet, its slender branches are clothed in May with numerous racemes of pure white, star-shaped flowers that are very attractive. The leaves, light green in color, are smaller and more finely toothed than those of any other species. It prefers a moderately fertile, moist, but well-drained soil with moderate shade and responds well to rather vigorous pruning performed directly after flowering.

The rose panicle deutzia (*Deutzia gracilis rosea*) is a less known but very thrifty and taller growing variety of *Deutzia gracilis*, possessing about the same degree of hardiness and producing panicles of flowers that are pink.

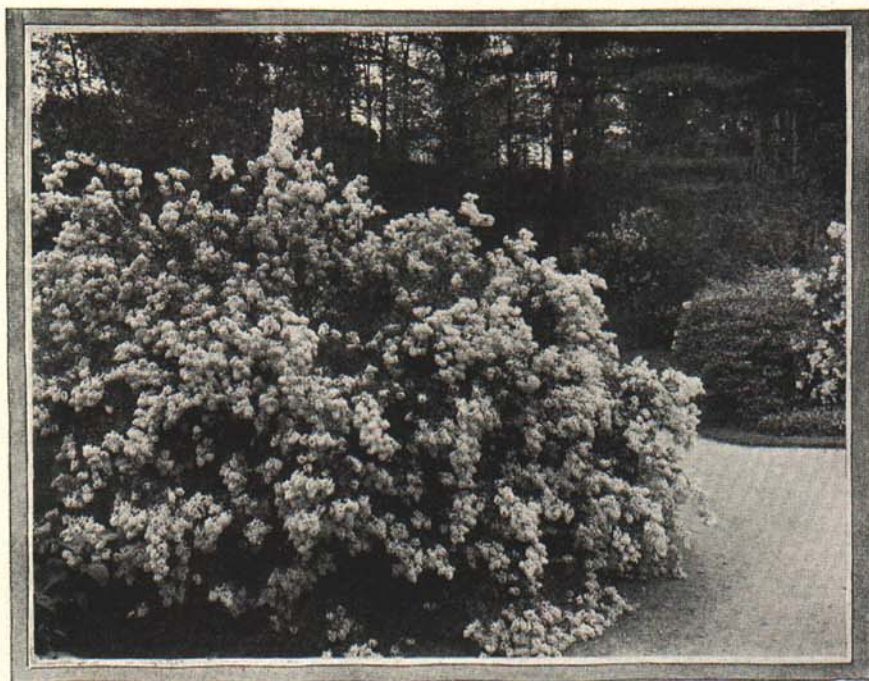


Fig. 13.—Lemoine deutzia is the hardiest and freest flowering species.

Deutzia lemoinei—LEMOINE DEUTZIA, Hardy

This hybrid deutzia, commemorating the name of Lemoine, the hybridist, is the most satisfactory one for general landscape planting, being probably the thriftiest, hardiest, and most free flowering. Coarser and more upright growing than *D. gracilis*, it attains a height of from $2\frac{1}{2}$ to $3\frac{1}{2}$ feet and the white flowers, being more numerous and tightly clustered, present a more striking flower display. It is especially suitable for mass plantings about the borders of the lawn when used with lower growing shrubs in front to subdue its apparent lack of gracefulness, and with higher growing shrubs behind to form a background of foliage for its floral display. The early spring pruning of the plant should consist simply in removing the dead

branches. Directly after flowering, some of the older canes may well be pruned to the base of the plant.

***Deutzia scabra* var.—PRIDE OF ROCHESTER, Half Hardy**

This variety is characterized by its large double white flowers faintly tinged with pink. Growing to a height of six feet, it is clothed with large rough, pubescent, dark green leaves and later with erect panicles of flowers that appear in June or early July. Though preferable to *D. scabra*, its parent type, and hardier than many of the other high growing species, it lacks sufficient hardiness for general planting in this state and should be used to but a limited degree in the very mildest sections of Michigan.

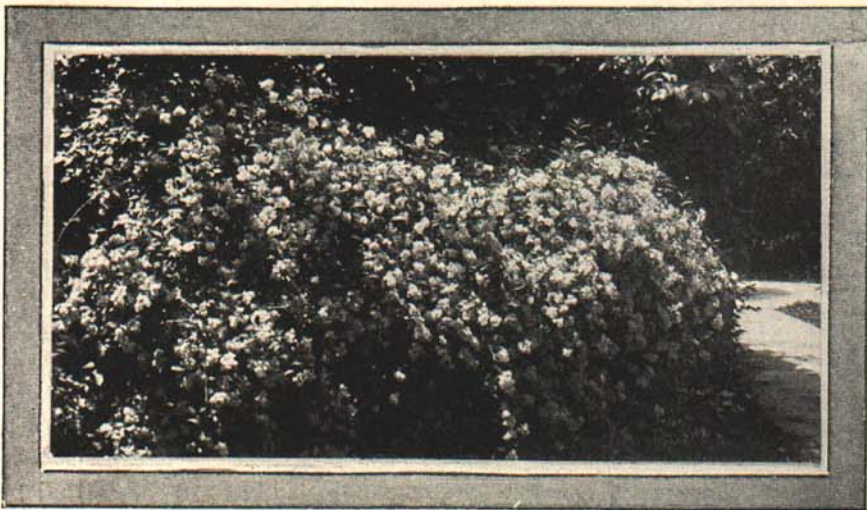


Fig. 14.—The deutzias make attractive shrubs for planting in the foreground of higher growing kinds.

***Elaeagnus angustifolia*—RUSSIAN OLIVE, Very Hardy**

This wild olive tree of southeastern Europe and western Asia is more frequently used in this country as a tall growing shrub although none the less suitable as an ornamental tree. It is believed to be the wild-olive of the classic authors, while the intense fragrance of its numerous small, yellow flowers have led the Portuguese to know it as the tree of paradise. Here we prize it more for its handsome, silvery foliage, which renders the plant so attractive in the landscape during the entire growing season. The leaves are long and narrow, producing a fine textural effect which, combined with its extreme hardiness and adaptability to moderately light soils and to exposed situations, make it a very worth while plant. It may be used in groups or masses for screens or border plantings, readily attaining a height of twelve feet or more, while it is also excellent for specimen planting where it assumes a tree form and attains a height of twenty feet or more.

Elaeagnus argentea—SILVERBERRY, Very Hardy

This habitant of the colder range will doubtless thrive better in northern Michigan than in the southern portions of the state, since it is less tolerant of heat than many plants of the more temperate range are of cold. The most attractive character of the shrub is its silvery foliage, making it very effective in the landscape during the growing season if harmoniously combined with green-leaved shrubs. It requires neither fertility of soil nor protection over winter but in southern Michigan is much benefited by being sheltered from the drying winds and sweltering heat of midsummer.

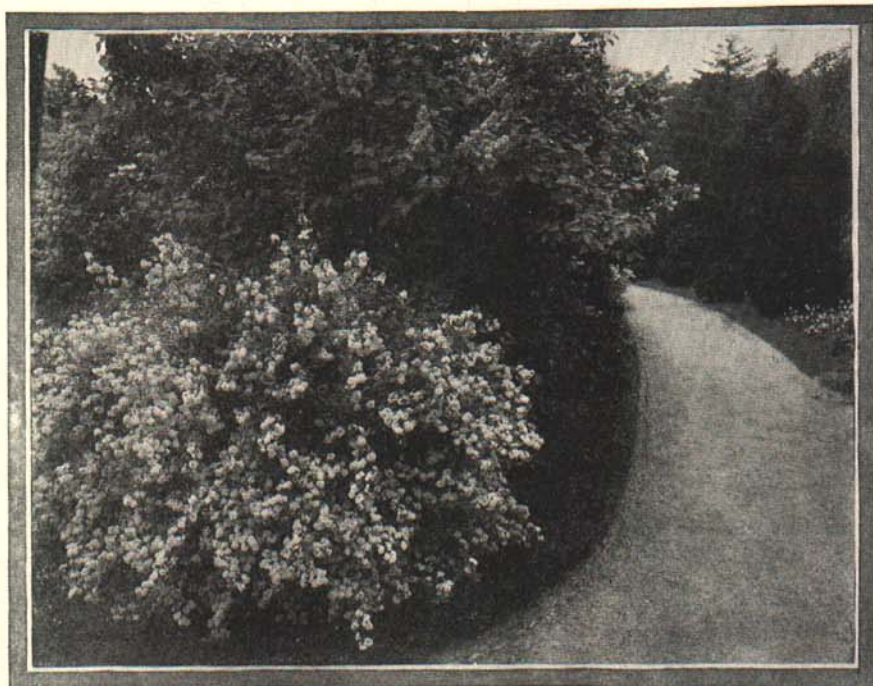


Fig. 15.—Lemoine deutzia is unusually attractive in flower.

Euonymus alatus—WINGED EUONYMUS, Hardy

The name *Euonymus* is derived from the Greek words, "eu" meaning good and "onoma" meaning name, hence meaning a genus of good name or repute. It is a rather appropriate name for this genus since so many of the species are such admirable shrubs or vines for landscape planting.

This corked barked species from China and Japan is the most popular of the deciduous leafed sorts. It is an erect shrub about eight feet in height with rigid, wide-spreading branches that in winter are made conspicuous by the presence of prominent corky wings. In early spring the bursting buds are marked with pink and followed by the development of dense, rich green leaves so disposed as to give a layering effect to the branches.

In autumn the foliage assumes most brilliant tints of rosy-scarlet to crimson and it well deserves the name of "burning bush" by which it is often known. The fruits, freely produced, dull purple in color, with scarlet coated protruding seeds, are also attractive at this season. It is well adapted to shrubby planting and will thrive upon any moderately fertile, moist but well-drained soil in half shaded situations. Unfortunately, it is not extremely hardy, and therefore its plantings should be confined mainly to the milder sections of the state.

Euonymus americanus—BROOK EUONYMUS, Hardy

This American species of euonymus is hardier and develops larger and more attractive fruits than *E. alatus*, but is not as attractive in foliage. It is an erect growing shrub, usually about eight feet in height and may usually be identified by its four-angled, ash-colored twigs. The large, warty crimson fruits, opening and disclosing its scarlet-covered seeds, are retained on the twigs until late autumn, making it very attractive in the fall. It prefers a moist soil and partial shade. It is most suitable in very naturalistic plantings for fall effects.

Euonymus europaeus—EUROPEAN BURNINGBUSH, Hardy

This European species is commonly known abroad as the spindle tree since its wood is tough, close-grained, and light colored and was much in demand for the making of spindles and the manufacture of other small objects. It is an erect shrub or small tree growing as high as twenty feet, and like *E. alatus*, the foliage turns a beautiful deep red or scarlet in the autumn. When in fruit in the fall it is the most attractive species.

Euonymus radicans—WINTERCREEPER, Hardy

This broad-leaved evergreen plant is commonly grown and classified as a vine but it is such a hardy and desirable broad-leaved evergreen that it is also frequently used and trained as a low shrub. As such it constitutes one of the best broad-leaved evergreens, where a shrub-like plant not more than three to four feet in height is desired, for winter effects. It is hardy, thrifty and thrives in partial shade. It is particularly suitable for foundation plantings on the north or eastern sides of buildings where it may be protected from the winter sun and winds of the south and west.

Exochorda grandiflora—COMMON PEARLBUSH, Hardy

The intense whiteness of the flowers of the pearl-bush, appearing just before the flowers of the *Deutzia* and *Philadelphus* made this a popular shrub a decade ago, but its thin foliage, short flowering season, and straggling habit combine to make it less desirable than many kinds now available. It is a slender branched shrub, usually from eight to ten feet high, with thin, bright green leaves and very showy white flowers with very noticeable green centers. It grows best in a well-drained, loamy soil in a sunny situation and should be planted behind other shrubs to screen the usual bareness of its lower branches.

FORSYTHIAS OR GOLDEN BELLS

In the bleakness and harshness of our late March and April winds, in the fitful sunshine of the first warm days of spring, one may behold the vividness and cheerfulness of color displayed by multitudinous bell-shaped, yellow flowers swinging in pairs on drooping leafless branches,—this is the spring greeting of “the shrub of the golden bell.”

Forsythia intermedia—BORDER FORSYTHIA, Very Hardy

This intermediate or hybrid form of forsythia produces larger and richer colored flowers than either *F. viridissima* or *F. suspensa*, its parent forms. It is an erect, strong-growing shrub, usually eight to ten feet high, with slender, more or less arching branches forming a dense foliage mass. Like the other species of forsythia, it is a sun and loam loving plant and requires plenty of space for its arching branches to spread. Since the flowering buds of forsythias are formed the previous fall, any pruning considered necessary should be given immediately after flowering. In gardens where there is room but for one forsythia, this hybrid or its form *spectabilis* is the best to select.

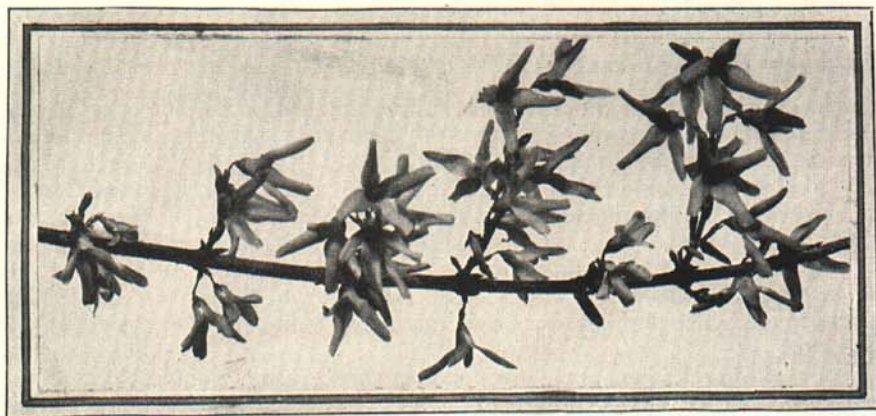


Fig. 16.—The golden bell-shaped flowers of the forsythia appear even before the leaves in early spring.

Forsythia suspensa—WEEPING FORSYTHIA, Very Hardy

First of its kind to venture westward from the land of the Oriental, arriving in Holland in 1832, and first to be introduced to America, it has generally been the earliest cultivated shrub in our older gardens to shed its floral splendor over our landscape scenes. Though now superseded by other species for general landscape planting, its drooping, pendulous habit of growth, its general adaptability to various soils and exposures, its dense foliage and general thriftiness make it still a most suitable species for planting along rugged slopes or upon steep banks where it will produce a feast of color and beauty in early spring.

Forsythia suspensa fortunei—FORTUNE FORSYTHIA, Very Hardy

This is an improved variety of *F. suspensa*, assuming a more upright habit of growth, being from eight to ten feet high, with finely arching branches. Its freedom of bloom, general hardiness, and thriftiness make it a very desirable plant for early spring effect. After its season of bloom, its dense bright green foliage makes it a most admirable plant for backgrounds for later flowering shrubs or perennials.

Forsythia viridissima—GREENSTEM FORSYTHIA, Hardy

Growing wild among the mountains of the interior of China in the province of Chekiang, but first discovered in the small fairy gardens of the Mandarins in the island of Chusan, this old time species of forsythia, parent of some of our best improved hybrids, was first seen by that noted adventurous explorer, Robert Fortune. Upon his return to England, Robert Fortune became Curator of the Botanic Garden at Chelsea, and coincidentally this treasure of the Orient was named to honor a previous Curator of these gardens, William Forsyth.

Though this species was a great favorite in the gardens of the past and is still a beautiful shrub, it is somewhat tenderer than other species now available and has been generally superseded by such improved sorts as *F. intermedia* and its form *spectabilis*.

Hamamelis virginiana—COMMON WITCH-HAZEL, Very Hardy

In the autumn just as the leaves are falling this last of the flowering shrubs comes into bloom. Its yellow, crumpled, filamentous flowers present themselves at this apparent undue season only to be restrained in their development almost as soon as they appear by the harsh and trying weather of fall and winter. It would seem that this pre-season habit of flowering might be the means whereby the flowers gain an early start upon the following growing season thus providing for the extreme slowness in the development and maturing of its fruits and seeds. At any rate, it is one of the few shrubs upon which both flowers and maturing fruits may be found at the same time.

The witch-hazel is an upright spreading shrub, usually some eight to ten feet high, that retains its lower branches well. The branches are clothed with rather large, coarse textured, dark green leaves. Being commonly found growing along the borders of woodlands or upon the northern or eastern slopes of ravines, it seems to thrive best in a moderately fertile, cool, loamy soil and in a partly shaded situation. It is most suitable in landscape planting for producing very naturalistic effects in parks and larger estates rather than for the production of the more refined and domesticated effects of the small home grounds.

Hibiscus syriacus—SHRUB ALTHEA, Half Hardy

The shrub altheas are a very popular class of summer flowering shrubs for home planting. They produce very attractive flowers over an extended period of July and August when few other flowering shrubs are in bloom, and are grown as specimen shrubs, small flowering trees or flowering hedges. There are numerous varieties varying much in color of the flowers from

pure white through the pinks, reds and purples. Unfortunately, they are not sufficiently hardy for general planting in Michigan and should be used only in sheltered situations of the mildest sections of the state.

Hydrangea arborescens grandiflora—SNOWHILL HYDRANGEA,
Hardy

After the spring flowering shrubs have completed their floral display, the large globular flower-heads of the snowhill hydrangea present themselves



Fig. 17.—Snowhill hydrangeas relieve that summer dullness that might otherwise prevail in our landscape scenes.

to brighten the scenes about our homes and gardens that might otherwise fall into summer dullness. These large, pretentious flower-heads, so striking in any scene of which they form a part and yet so coarse in texture and formal in effect, make it a both liked and disliked plant, depending largely upon its fitness in the particular scene in which they are observed. One should appreciate that though this plant lacks that daintiness and gracefulness so frequently admired in other plants as well as the beauty of detail in its flowers, the strength of effect developed by its coarse, light green foliage, by its immense size and whiteness of flowers combine to make it a very forceful element in the garden scene. It is a plant that is more appropriately used in a domesticated or formal composition than in a naturalistic scene

and in such an environment it is very effective for accentuating important points in the garden design and for formal masses. This hydrangea is a strong feeder, especially just before and during the flowering season. Its flowers are therefore larger and more effective when grown in a reasonably moist and fertile soil, and when severely but judiciously pruned in early spring, removing the weaker and older shoots and pruning the stronger shoots of the past season's growth well back. In fact, frequently where the plant has not been making a satisfactory growth, the entire top may well be pruned to the ground.



Fig. 18.—The peegee hydrangea is particularly suitable for developing formal flowering hedges.

Hydrangea peegee—PEEGEE HYDRANGEA, Hardy

The shrub that attracts attention in late summer and early fall by the abundance and immense size of its compact clusters of sterile flowers is the peegee hydrangea. This unprepossessing name, peegee, is a colloquial abbreviation of *p* (*aniculata*) *g* (*randiflora*) established by the trade and now become the general trade and common name of this shrub. The flowers, a pale green when they first appear, change to a creamy white as summer merges into fall. Later they turn to a pale pink and finally to a dull, somewhat bronzy red, the color they retain until the flowers are beaten from the branches by the winter storms. This is one of the hardiest species of the hydrangeas, withstanding a winter temperature as severe as twenty degrees

below zero. Being doubtless the most popular fall flowering shrub for the home grounds, the very generality of its use in some sections and its lack of adaptability to the development of informal landscape effects, have prejudiced many against it. It is, nevertheless, a most desirable plant for late summer and fall effect in formal gardens or in plantings on the small city lot where an artificiality of effect characterizes the entire environment.

Most attractive effects may be created by its use as a flowering hedge plant. Where points in formal plantings should be accentuated by the use of plants of striking form or flower, this hydrangea, purchased in what is known as the tree form, taking the place of the tree roses so universally used abroad, is a very appropriate and satisfactory plant.

In whatever manner it is arranged, the size, and effectiveness of the flowers are determined largely by the fertility and moisture of the soil and the efficiency of the early spring pruning. It responds well to annual feeding with stable manure or to some commercial form of nitrogenous fertilizer applied early in the spring; and, to heavy, early spring pruning that entirely removes the weaker twigs of the past season's growth and reduces each of the remaining stronger twigs to within one or two buds of the base. This spring pruning may also be so accomplished as to control the general height and shape of the plant but inasmuch as the flowers are produced terminally upon shoots of the same season's growth, the plant should not be trimmed during the growing season, even when used as a hedge plant.

Hypericum aureum—GOLDEN ST. JOHNSWORT, Hardy

In olden times when folks believed in witches and other evil spirits, the St. Johnsworts were a much cherished group of plants, as they were supposed to possess the power to ward off the evil spirits which were particularly busy on St. John's night. Now we prize them for their abundant bright yellow flowers that clothe the bushes with golden splendor and carry the warmth and color of summer into fall. As Cowper has written:

Hypericum all bloom, so thick a swarm of flowers,
Clothing her slender stems,
That scarce a leaf appears.

Even before the season of its floral display this golden margined-leaved species develops an attractive appearance. Later, when its large orange-yellow flowers, bearing masses of long stamens with reddish filaments, appear, it develops such a brilliant display that it would be difficult to find a more showy fall flowering shrub.

Shrub though it is, it possesses the inherent tendency of growing to a single stem and assuming a miniature tree form to a height of about four feet. It responds favorably to rather severe pruning-back in early spring, and thrives particularly well in a moist but well-drained soil with partial shade. It may be used advantageously around or under trees or in front of high branching shrubs for naturalistic flowering effects in late summer and fall. It is also excellent for filling in vacant corners around the house where most other shrubs would not grow because of the shade.

Hypericum prolificum—SHRUBBY ST. JOHNSWORT, Hardy

This native, green-leaved species, usually attaining a height of from one to three feet, is more diffusely branched near the base than *Hypericum aureum* and the flowers, appearing in July and throughout the remainder of the summer, are bright yellow, from three-fourths to an inch and one-half across and are borne both axillary and terminally in clusters of two or more. The continuous bloom of these brilliant terminal clusters makes the plant very effective during an extended period of the summer. It is excellent for naturalizing even upon rocky or sandy soil and responds admirably to cultivation. Where a low growing shrub for summer flowering is desired, in shaded or partly shaded situations or even upon soil too infertile for some plants, this will produce an effective display.

Ilex verticillata—COMMON WINTERBERRY, Very Hardy

Native of our swamp and meadow lands, surpassing in brilliancy of color the fruit of any imported shrub and nevertheless scarcely known in cultivation,—this is the brief story of our common winterberry. It is a shrub varying in height from five to ten feet, with spreading branches and leaves that are bright green and thick. Though not especially attractive either in foliage or in flower, its clusters of bright scarlet berries, ripening in late summer, enable it to make up for its previous lack of attractiveness. Later, when the leaves have fallen, it surpasses everything of its season in the brilliancy of its thickly studded scarlet berries that cling to the branches well into the winter. Fortunately it will thrive in any upland soil that is moderately cool and moist, although it is more suited to a naturally swampy ground. It would seem that this shrub should be more largely used in naturalistic plantings for fall and early winter effects while it might also prove very attractive in plantings about the borders of the home lawn to brighten the landscape after most other shrubs have ceased to color the scene.

Kerria japonica—KERRIA, Hardy

Perhaps it is the quaint neatness and primness of this dainty shrub, perhaps it is the perpetual bright appearance of its light green foliage, or perhaps it is the presence of its intense green stems in winter and of its golden flowers in summer that make this Japanese shrub a favorite to all that are familiar with its virtues.

Named by the French botanist, De Candolle, to commemorate the work of William Kerr, a gardener and plant collector for the famous Kew Gardens of England, it has become better known in this country in its double flowering form than in the original single, more dainty, but less showy form. The flowers, appearing terminally on the new shoots in late June, closely resemble the buttercup and continue to appear at intervals during the remainder of the season. Unfortunately the flowers have a tendency to bleach white in bright sunlight, and therefore, a partly shaded situation is best. The slender branches, apparent after the leaves have fallen, are covered with a very bright green bark making the plant rather attractive over winter. Severe pruning-back in early spring encourages a dense, new, vigorous growth.

It is tolerant of a wide range of soil conditions and ordinarily attains a height of about three to six feet, making it quite desirable as a foreground shrub in border plantings and very suitable for filling in vacant corners or shaded spaces around the house.

Kerria japonica florepleno—DOUBLE KERRIA, Hardy

The double flowering *kerria*, very appropriately known by many as the globe flower, since its blossoms are such thick little rosettes of orange-yellow petals, is a more vigorous growing form than the type, and its flowers are more conspicuous and desirable for producing color effects in the garden. It requires equally severe spring pruning and is generally considered preferable for landscape planting.

Kerria japonica argenteo-variegata—SILVER KERRIA, Hardy

This is a dwarf form of *Kerria japonica* with many slender upright shoots reaching a height of from a foot and a half to three feet. Its low dense habit of growth and its delicate green leaves that are edged with white make it a very attractive low growing foliage shrub. It will grow well in partly shaded situations and, like the green leaved forms, is not particular as to soil. Its flowers are similar to those of *Kerria japonica* although naturally somewhat smaller. The delicate textural effect of its attractive foliage in summer and of its bright green stems in winter make it effective over an extended period of the year. It is especially suitable as a foreground shrub in mass plantings and appears very harmonious when used in combination with the other green leaved *Kerrias*.

Lespedeza bicolor—SHRUB BUSHCLOVER, Hardy

Think of this plant as a hardy perennial, rather than as a shrub, with delicate-textured leaves clothing its many upright slender stems. Think of it as being overspread with a profusion of long clusters of small rose-purple, pea-shaped flowers. Arrange it as a hardy perennial in groups and masses with other flowering perennials, possibly in the foreground of higher, coarser growing shrubs. Prune it to the ground each spring to encourage the density and vigor of its new growth. Then, if situated on a rather sandy, well-drained soil, it will produce most dainty and gratifying effects about the home grounds in late summer and fall. Then one will not complain about its dying back more or less each winter or of its wayward habit of growth and thin foliage, but he will appreciate its delicacy of texture, richness of flower color and adaptability to soils so dry, sandy, and infertile that few other shrubs could survive in them.

LIGUSTRUM-PRIVET

"Prime printemps" an old, poetic, fanciful name of this common hedge plant, meaning "first in the spring-time." This was the original old English name for privet, although it seems strange now that in those days this genus was so confused with the primroses as to be designated by the same name. Later this name was shortened first to "primprint," then to "primet" and finally softened by usage to privet. Such a plebian ending for the name of a plant with such an aristocratic beginning!



Fig. 19.—Hardy species of privet make very desirable plants for the development of hedges.

Ligustrum amurense—AMUR PRIVET, Hardy

This representative of the genus, from eastern Siberia, is best distinguished by its pyramidal habit of growth, and erect stems which form a narrow head. It is often confused with *L. ibota*, but the lateral flowering branches of this species are longer and the terminal flower clusters larger. The fruit, however, is covered with a bloom similar to *L. ibota*. Its erect growing habit, rapid growth and hardiness have combined to make it a deservingly popular species for hedge planting in Michigan.

Ligustrum ibota—IBOTA PRIVET, Hardy

This Asiatic species is perhaps the best known of the hardy species in this country. It is a broader growing shrub than *L. vulgare*, attaining a height of 10 feet with spreading, slightly curved branches that are clothed with small dark green leaves which turn purplish in the fall. The short nodding clusters of creamy white flowers produced on the short lateral branches are followed by clusters of small purplish-black fruit covered with a pale bloom and often persisting on the branches until spring. It is one of the least ornamental species.

Ligustrum ibota regelianum—REGAL PRIVET

This is a much lower, denser, larger-leaved shrub than the parent form, with horizontal spreading branches which form a broad flat-topped hedge. Though it lacks the extreme hardiness of some of the other species, its handsome foliage effect makes it desirable in milder sections of the state if a hedge of but moderate height is desired. Its horizontal effect with its wealth of metallic black berries in the fall makes it also a desirable subject for shrub groups.

Ligustrum ibolium—IBOLIUM PRIVET

This hybrid is the result of a cross of *Ligustrum ibota* and *Ligustrum ovalifolium* possessing about the same degree of hardiness as *L. ibota* and approaching the foliage characters and denseness of *Ligustrum ovalifolium*, making it a more desirable form to use than the California privet for the development of hedges.

Ligustrum ovalifolium—CALIFORNIA PRIVET, Half Hardy

The California privet is sometimes designated appropriately as the oval-leaved privet because this species is characterized by large, dark, glossy, oval leaves. It is not a native of California but is of Chinese origin. It has been much used throughout the country for hedge planting, although in Michigan in severe winters it is usually killed to the ground. This inherent lack of hardiness makes it ill suited for planting in this state.

Ligustrum vulgare—EUROPEAN PRIVET, Very Hardy

Many species of privet have in late years been introduced from eastern Asia, but none is as hardy a garden plant as this old fashioned European shrub.

It is a tall, broad, shapely plant with bluish green leaves that in late June are surmounted by numerous, small, erect, terminal clusters of creamy white flowers. The most distinctive qualities of this plant, however, are not in its flowers but in its terminal clusters of lustrous black berries that decorate it in late fall and in its dense rich green foliage that is retained without change of color until the beginning of winter. It is not as desirable for hedge purposes as the Amur and Ibota Privets, but makes a good foliage shrub for planting about the north side of buildings or other partly shaded locations.

It is particularly adapted to use as a hedge plant and accommodates itself to a wide range of conditions both as to soil and exposure. Fortunately it is not particularly susceptible to any serious insect or fungous disease; it is readily propagated, easily transplanted, and withstands frequent or severe clipping which tends to result in the production of a more dense growth.

This species is considered the hardiest of the *Ligustrums* and sufficiently so for the southern and central sections of the state, but in the northern section it is subject to more or less "killing back" in severe winters.

The lodense privet, as this variety name infers, is a lower, denser growing form of European privet especially suited to the formation of very low hedges or formal garden edgings as a substitute for boxwood as used in the milder sections of the country. It originated about 16 years ago in a block of *Ligustrum vulgare* at the Kohankie Nursery, Painesville, Ohio. The original plant is now about three and a half feet high.

LONICERA—HONEYSUCKLES

Honeysuckles—a name full of kindly associations and pleasing remembrances of flowers that saturate the atmosphere with their fragrance and that lure the distant bees and humming birds to their honey-laden blossoms. They are one of the most attractive groups of all the shrubs in their floral display and equally admirable in their second period of beauty, namely, when their brilliant, translucent fruits ripen in the summer or fall. Among the many species of this genus are some of the hardiest and generally most successful shrubs for northern gardens. The honeysuckles as a class need a good soil and plenty of space in which to develop naturally; lacking these, much of their beauty is lost.

Lonicera bella albida—WHITE BELLE HONEYSUCKLE, Very Hardy

This honeysuckle, the result of a cross between *L. tatarica* and *L. morrowi*, is variously listed as *L. albida* or *L. bella* as well as by a combination of these two terms. It is a more upright growing form than *L. morrowi* and the flowers are pure white, changing slightly to light yellow; the foliage is also a brighter green and the fruits a darker red which make it an excellent species for use in combination with *L. tatarica rosea* to secure variety.

Lonicera korolkowi—BLUELEAF HONEYSUCKLE, Very Hardy

The blueleaf honeysuckle is one of the most attractive shrubs introduced in recent years for landscape planting. It is a large growing bush to 10 or 12 feet in height with more slender, twiggy branches that are densely clothed with smaller ovate leaves than most other bush honeysuckles. Thus it produces a delicate fine-textured effect. The grayish blue-green effect of the foliage is one of the most distinctive and attractive characters of the plant. When this is overspread with a great multiplicity of delicate rose-colored flowers it is about the daintiest, and most beautiful effect that is available in flowering shrubs. This is an excellent shrub to use for open groups about the lawn as it requires ample room to fully display its most beautiful growing characters, and therefore should not be crowded in mass plantings.

Lonicera maacki—AMUR HONEYSUCKLE, Very Hardy

The Amur honeysuckle is a newer species to American gardens. It comes from northeastern Asia and Japan. It is a large, spreading bush, reaching 10 to 15 feet in height and equally broad, with large milk-white flowers clustering its rigid branches from base to tip, making a handsome contrast with its dark green leaves. The fruits ripen and the leaves fall in October, making a very attractive late fall effect. Being one of the handsomest in bloom and very attractive in its late fruit effect, it is likely to become a popular species of the group.

Var. podocarpa is more spreading than the type with darker green leaves that are retained longer in the fall. The flowers are somewhat smaller and the fruit is later in ripening.

Var. erubescens is a form of the preceding variety with larger flowers flushed pink.

Lonicera morrowi—MORROW HONEYSUCKLE, Very Hardy

The morrow honeysuckle is a large, round-headed shrub with pale gray-green foliage and wide-spreading branches, the lowest clinging close to the ground. It is an extremely free flowering and heavy fruiting species, the flowers being often white at first but changing to a creamy-yellow and the fruit being a translucent red. There is no species of honeysuckle more handsome in fruit than *L. morrowi*. It is very suitable for the formation of dense mass plantings to border drives and walks where abundant space can be given it. It is one of the best hardy shrubs for general landscape plantings, and our gardens are indebted to the early activities of the Arnold Arboretum and their plant explorations in Japan for the introduction of this plant. Unfortunately it produces natural hybrids freely which are not so desirable as the true type.



Fig. 20.—The scarlet berries of the morrow honeysuckle make it very attractive in early summer.

Lonicera tatarica grandiflora—BRIDE HONEYSUCKLE, Very Hardy

The tatarian honeysuckle, the best known of the honeysuckles, is an old inhabitant of our gardens, but has been superseded by selections of it that are freer and larger flowering than the original type.

This variety excels the type in its flowers which are larger, more abundant, and generally pink in color; the berries, usually red, are also more abundant and therefore more effective in their color display, ripening in July and August. It retains, however, the desirable growing qualities of the type, being a vigorous plant, attaining some ten feet or more in height and in

width. The leaves are rather small, deep green and luxuriant and are retained on the bush until late in the autumn.

Since the foliage of the honeysuckle is comparatively fine in its textural effect, it is well suited for high plantings to be seen at close range, such as adjacent to walks and drives or for filling in large vacant corners about the dwelling. Its rapid rate of growth and dense foliage make it also suitable for developing the higher portions of border plantings where it may be desirable to screen the view beyond or to develop a background for lower growing shrubs and flowers.



Fig. 21.—The bush honeysuckles, high and wide spreading, if given plenty of space, are a most satisfactory class of hardy shrubs.

Lonicera tatarica rosea—ROSY TATARIAN HONEYSUCKLE,
Very Hardy

A variety of *L. tatarica* with similar characters in foliage and growth to the parent form but producing larger and more abundant flowers that are bright rose in color making it one of the most attractive honeysuckles in bloom.

PHILADELPHUS—MOCKORANGE

The *Philadelphus* has long been a close rival to the lilac in popularity. Its hardy, thrifty characters, freedom of bloom and long-lived habit combine to make it a most cosmopolitan plant.

Philadelphus coronarius—SWEET MOCKORANGE, Very Hardy

Though it is not known just how long this shrub has been in cultivation, it has been written that the early Greeks used its flowers for wreaths to crown their heroes returning from their battles—whence the Latin name "*coronarius*," meaning "for crowns," was supposed to be derived.

It reached England, however, at an early period. This "White Pipe Tree which later Physicians call *Syringa*," reports Gerard in 1597, "does not grow wild in England but I have them growing in my garden in very great plenty."

Linnaeus later changed the name from "*Syringa*," a name by which it is still often known, to "*Philadelphus*," to differentiate this genus from the lilacs or "Blue Pipe Tree," both of which were at that time known as "*Syringa*," a Greek word meaning "hollow like a pipe" referring to the ease with which the pith of the small branches of these plants could be removed to make pipe stems. Possibly in earlier times it was called *Philadelphus*, since it is known that the Athenians called some plant by this name which honors an ancient Egyptian king, Ptolemy Philadelphus, who reigned from 285 to 247 B. C. It is also considered that this old-time shrub originated just about where the white race began, namely in the region of the Caucasus, so it is probable that it has been associated with us as long as any of our cultivated shrubs.

Any shrub that has been cherished for planting about man's abode for such an extended period of years must surely possess most worth-while characters. In this plant one finds that extreme hardiness and general tolerance to a wide range of soils, demanding hardly more than a bountiful amount of sunlight and space to spread its vigorous branches both upward and outward. One of the last of the spring flowering shrubs to bloom, barely before the season of roses, it annually clothes itself with masses of white flowers that are painted somewhat creamy by the yellow central stamens and fill the surrounding atmosphere with a heavy fragrance "yielding but in scent to the rich orange." Hence the common name mockorange.



Fig. 22.—Flowers of the mockorange are white with yellow stamens and generally very sweet scented.

Though rather coarse in texture and high in growth for many plantings immediately about the house, it is a most fitting shrub for the planting of backgrounds or for screens about the borders of the lawn where a plant some ten feet or more in height may be desired. If given plenty of space, it is about the most permanent and longest lived shrub available, thriving even in the environment of our largest cities where the smoke, gas, and dust prove fatal to many other kinds. The injudicious practice of pruning it in early spring by cutting back the twigs or branches of the past season's growth from which the flowering shoots are produced, instead of cutting out only the oldest and less vigorous wood or instead of delaying pruning until after flowering is a mistake too frequently made in its management.



Fig. 23.—The mockorange is a desirable shrub for massing about the boundary of the lawn where it is desirable to screen the view beyond.

There are other more recently introduced species that possess characters of flowers, foliage, or growth that make them more fitting for special conditions, but this old-time type still remains a good, reliable, general purpose flowering shrub for home planting.

The golden mockorange, a variety of *Philadelphus coronarius*, is characterized by its intense golden-yellow foliage which retains its color well throughout the summer if grown in full sunlight. It is a more dwarf, compact, slower growing shrub than its parent form, attaining an ultimate height of about five feet. Its bright yellow foliage, entering into such strong contrast with most green-leaved shrubs, makes it a very appropriate plant for accenuating points or lines in formal design but extremely difficult to harmonize in most informal or naturalistic plantings.

Philadelphus var. Virginal—VIRGINAL MOCKORANGE, Hardy

Of the many new varieties of *Philadelphus*, none have attained such widespread popularity in recent years as this large semi-double flowering kind. Unlike the large flowering single kinds, the yellow stamens are not apparent, rendering a very waxy white appearance to the flowers of this variety. The shrub is large leaved, coarsely branched and tall growing with a tendency to become leggy.

Philadelphus grandiflorus—BIG SCENTLESS MOCKORANGE,
Very Hardy

Of the many native species of this group, this large flowering species is one of the most beautiful and distinctive. The plant is somewhat larger and more open growing than *P. coronarius*. The leaves are also somewhat darker while the flowers, appearing a week or so later, are large, solitary, and pure white, without that heavy fragrance that some find objectionable in *P. coronarius*. It is particularly suited for planting about the larger estates where its hardiness, thriftiness, freedom from insects and diseases, and general adaptability to a wide range of soil conditions make it particularly fitting in extensive plantings.

Philadelphus lemoinei—LEMOINE MOCKORANGE, Very Hardy

This hybrid is a smaller growing and finer textured bush than *P. coronarius*, attaining about five feet in height, with slender arching branches that are densely clothed with small, deep-green pointed leaves. It produces a great profusion of small white flowers that are sweet scented but without that intense heaviness of fragrance that some find objectionable in *P. coronarius*. Flowering later and over a longer period and producing a more dwarf and dainty compact growth than the species of *Philadelphuses* previously used in gardens, it is considered one of the greatest successes ever achieved by the hybridizer's art, being the forerunner of a new and distinct type of *Philadelphus* and the first of a most beautiful race of summer flowering shrubs.

It is an excellent shrub for grouping and massing about porches, steps and other locations where a dainty, fine textured effect is required and for general planting about the small lot where larger, coarser growing shrubs could not be appropriately used.

There are many desirable varieties of *Philadelphus* of the *Lemoinei* type. Such varieties as Avalanch, Bouquet Blanc and Mount Blanc are to be recommended where small leaved, slender-branched flowering shrubs from four to five feet in height are desired.



Fig. 24.—Lemoine mockorange is a smaller and more delicate form than the common mockorange.

Physocarpus opulifolius—COMMON NINEBARK, Very Hardy

The ninebark acquires this familiar name from the habit of its bark peeling in thin strips from its coarse stems rendering a shaggy unkempt appearance to it particularly over winter. The leaves are large, alternate, and palmately lobed. The flower clusters, so similar to some of the spireas that in the past it was known as *Spirea opulifolius*, are larger and coarser with very conspicuous, numerous stamens extending beyond the white petals. The blossoms appear in June, a trifle later than *Spirea vanhoutti*. After the petals drop, the fruits enlarge and develop into shining clusters that are first green, then russet, and finally purplish, making it almost as attractive as when in flower.

A native of the low moist lands, ranging from Quebec to Georgia and westward to Manitoba and Kansas, and rather coarse in foliage texture, it is particularly suited to the development of rather extensive, naturalistic landscape plantings about ponds, streams, or other sites where the soil is both cool and moist.

Physocarpus opulifolius luteus—GOLDLEAF NINEBARK, Very Hardy

The yellow-leaved variety of the common ninebark is very similar to the parent form except that its leaves are golden-yellow in early spring and its flowers are double. As the season advances, the leaves tend to approach green, especially when the plant is grown in partial shade. This variety may be very suitable for high foliage color effects in formal designs, but like the other yellow-leaved shrubs, is difficult to harmonize in landscape plantings.

Prunus cerasifera pissardi—PURPLELEAF PLUM, Very Hardy

Purple-leaved, hardy shrubs are very uncommon and, like other plants of strong contrasting colored foliage, require thoughtful and judicious consideration in their arrangement with other shrubs to gain the variety and contrast desired in their use without sacrificing the harmony and unity of effect that are the basis of beauty in landscape scenes. Under these conditions, where purple-leaved foliage shrubs are desired the purpleleaf plum is most worthy of consideration. Although in reality it is trained and grown as a small tree and frequently disposed as such about the grounds, it is more commonly considered and arranged in plantings as a large shrub, attaining a height of ten feet or more. It possesses to an unusual degree the habit of retaining the rich purple color of its foliage well throughout the season. The flowers and fruit, however, are of little ornamental value.

The purpleleaf plum can at times be used advantageously to accentuate a dominant portion of a mass planting or as a specimen plant about the border of the lawn where its highly colored foliage may make it worthy of the prominence in position thus given to it. Any plant of such highly contrasting foliage color should be used sparingly as much repetition tends to develop a spotted, inharmonious effect. Like most of the other plums, it requires but little pruning and is perfectly hardy but very subject to scale insects.

Prunus glandulosa glabra albiplena—DOUBLE PINKFLOWERING ALMOND, Hardy

In the early spring, directly after the early forsythias have displayed themselves, this otherwise unpretentious shrub attracts our admiration by its gorgeous display of numerous, double, pink flowers borne before the leaves appear.

It seldom grows more than four feet in height in Michigan, although in milder sections it sometimes attains a height of twenty feet. The leaves are peach-like, shining, yellowish-green and not especially attractive. It is desirable only for its spring flowering effect and neither especially vigorous nor fully hardy.



Fig. 25.—The flowering almond with its many double white or pink flowers is about the most attractive shrub while in bloom.

Prunus glandulosa trichostyla sinensis—DOUBLE WHITE-FLOWERING ALMOND, Hardy

A species of the flowering almond, quite like the previous species but with double white flowers.

Prunus tomentosa—NANKING CHERRY, Very Hardy

Native of northern and central China, commonly cultivated in Japan, and an old denizen of European and American gardens, this shrub, beautiful in flower, foliage and fruit, has been too little known by us to be fully appreciated and commonly grown. It is an extremely hardy, spreading shrub attaining about six feet in height. In favorable soil, if given plenty of space, it is often broader than it is tall. In early spring just as its leaves are unfolding it becomes clothed in pink by its abundant flowers opening from pink buds, each flower white in petal although sometimes streaked with pink and with a bright red stalk and calyx. Its dense, deep green, tomentose leaves, following the flowers and filling out the shrub well from top to bottom, make a very luxuriant foliage effect throughout the remainder of the season. In June, the second season of its color display, the numerous short-stalked, cherry-like fruits lend their scarlet tone to the entire bush.

There are few shrubs better suited for massing about the shrubbery borders, for the planting of large corner areas about buildings, or for using in open groups about the lawn, than this most hardy Chinese cherry.

Prunus triloba—FLOWERING PLUM, Very Hardy

On the mountains near Peking, China, in 1882, Dr. E. Bretschneider found this native Chinese plum and apparently appreciating its inherent qualities, sent seeds of it to the Arnold Arboretum.

Resplendent in beauty each spring with its bright, clear pink, single flowers, each about an inch in diameter, literally covering its otherwise naked boughs, it proves about the prettiest of all the flowering plums in bloom. As the name implies, the leaves, which appear later, are three lobed. The spreading,

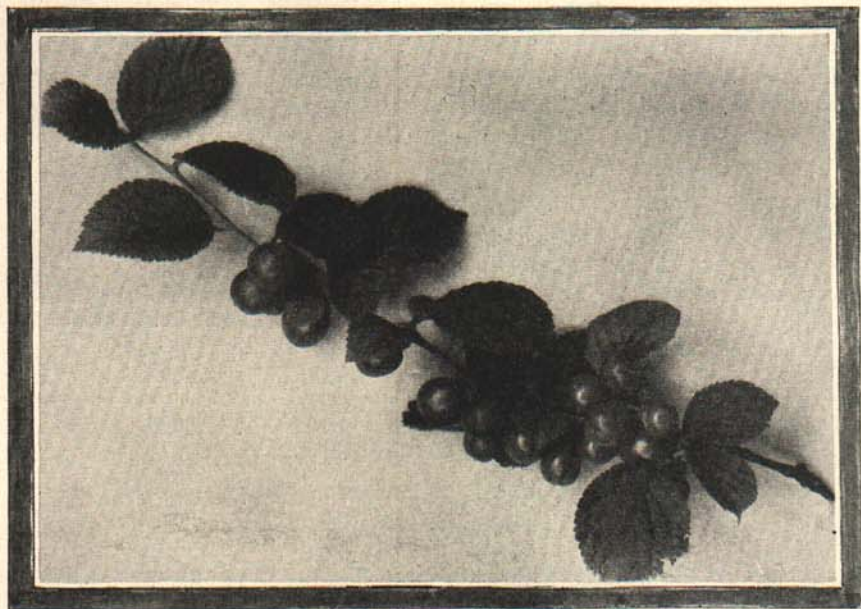


Fig. 26.—The scarlet fruit of the Nanking cherry are as attractive in early summer as the pretty light pink flowers that grace the bush in early spring.

slender branches form a shrub from six to eight feet in height. Though it is suited to quite a range of soil conditions and is perfectly hardy, it is not, unfortunately, particularly vigorous or long-lived. It well deserves a place, however, in our gardens for its charming spring display of its numerous pure pink flowers.

Prunus triloba var. plena—DOUBLE FLOWERING PLUM, Very Hardy

The double flowering form, cultivated in the gardens of China, is more commonly used in the gardens here than the single form. It is characterized by flowers that are large, pink, and very freely produced before the leaves appear. It is not considered as beautiful, however, as the single flowering form.

Prunus virginiana—COMMON CHOKECHERRY, Very Hardy

The native chokecherry is familiar to every country child by its astringent, cherry-like fruits that pucker the mouth and stain the teeth and lips. Although it is ranked as a tree, it is more commonly used as a high, upright, spreading shrub. The white flowers in racemes, three to five inches long, are followed by the production of drooping racemes of small berries each about the size of a pea and varying in color from dark to bright red and, sometimes, yellow. It is a rather attractive plant both in flower and fruit and is extremely hardy, thrifty, and vigorous growing. It is suitable for the production of quick, naturalistic effects where one is making a rather extensive planting. It is rather subject to splitting and breaking of its branches, especially when it has made a vigorous growth and seems to be a favorite tree of web worms.

Rhodotypos kerrioides—JETBEAD, Hardy

The generic name *Rhodotypos* means "rose type" referring to the botanical character of the flower, while its specific name, *kerrioides*, refers to the similarity of the foliage of this plant to the leaves of the Kerria. It is a Japanese shrub introduced into England in 1866 and is admired for its bright, light-green foliage, its long flowering season, and its general thriftiness. Usually it grows about five to six feet in height forming a somewhat open straggly bush unless severely pruned back once or twice after planting to induce a compact growth. The single white flowers, borne terminally on the branches, blossom more or less continuously from early June until frost and are followed by the production of globular fruits resembling jet beads whence it obtains its common name. The plant is particularly desirable for its bright foliage and for planting about the home grounds where the soil is too dry or the exposure too shaded for the well-being of many other plants.

Rhamnus cathartica—COMMON BUCKTHORN, Very Hardy

The common buckthorn, although neither its flowers nor its fruits are attractive, proves desirable when a rather high, hardy, vigorous hedge plant is needed. It is commonly found wild in New England and sometimes in the Middle States, clothing fence lines and boundaries of roads with its dense, dark-green masses of foliage. The plant usually attains a height of from twelve to fifteen feet forming a spreading round-topped shrub about as wide as it is high. It is perfectly hardy and never suckers; its fibrous, shallow roots extend outward but a short distance thus interfering very little with neighboring plants. It may be used for backgrounds and screens in high shrubbery plantings as well as for hedges and may be found very acceptable for covering steep slopes and other locations where the exposure is too severe and soil too infertile for many other kinds of shrubs.

Rhamnus frangula—GLOSSY BUCKTHORN, Very Hardy

The glossy buckthorn, deriving its name from its pretty, shining foliage, the principal attractive feature of the plant, is a well-formed, compact shrub

with fruits that are red as they are ripening, but later change to black. It attains a height of about ten feet and is useful for planting in shrubberies where the soil is moist and the situation shaded or partly shaded.

RHUS—SUMAC

Robert Louis Stevenson once wrote that "if we were charged so much a head for sunsets or if God sent around a drum before the hawthorne came into flower, what a work we should make about their beauty! But these things, like good friends, stupid people early cease to observe."

If the common sumacs were some rare, imported species from a distant land that could be grown only with painstaking care "what a work we should make about their beauty!" But thriving about us on every hand, along the roadside or in the fence rows, we see them only as worthless native brush.

Rhus canadensis—FRAGRANT SUMAC, Hardy

The fragrant sumac, so-called because its leaves are fragrant when crushed, is so different in foliage and habit from the better known species of this genus that few would recognize it as sumac. It is a low growing species, usually from two to four feet high and very spreading, its lower branches frequently being prostrate. The leaves instead of being pinnately compound with numerous lanceolate leaflets like the more familiar sumac leaf, are three-foliolate, each leaflet being comparatively wide or ovate in form with its margin coarsely serrate. Though it is not showy in flower, fruit or foliage, its dense, low spreading habit of growth and its foliage,—a bright, luxuriant green in summer changing to tints of yellow, orange and scarlet in the fall, make it very acceptable in any landscape scene and especially harmonious where a naturalistic effect is desired. It is very effective as a foreground shrub in mass plantings and particularly suited to the covering of bare, rugged banks or sandy knolls.

Rhus copallina—SHINING SUMAC, Very Hardy

This is a dwarf sumac, native from Maine and Southern Ontario to Florida; it is found thriving usually on rocky and barren spaces where it grows to a foot or more in height. When transferred to the garden, however, it assumes a more vigorous, tree-like form and spreads rapidly by its shallow, horizontal roots which sprout at the nodes. Though the leaves are rather more lustrous than those of the other sumacs and turn a bright scarlet in the fall and though its clusters of red fruits prove attractive throughout the winter, its undesirable habit of spreading in every direction, combined with the difficulty of controlling or eradicating it, make it less desirable than some of the other species except for covering very dry, barren, and exposed spaces. It may be readily distinguished from the other more desirable species by the presence of the wings on the stalks between the leaflets.

Rhus cotinus—COMMON SMOKETREE, Very Hardy

The common smoketree, native of the Caucasus and a garden favorite for 2,000 years, is a most interesting and distinctive flowering shrub. The small yellowish green flowers that appear in May are but moderately attractive at this period of the season. After the flowering period, they are succeeded by the renewed growth and elongation of the pedicels into long plume-like threads that become clothed with soft hairs and collectively assume the form of fine, loose, fluffy panicles. Countless numbers of such billowy clusters literally cover the shrub in early summer and with their light misty appearance replace that summer dullness shrubs so frequently assume at this season. These feathery clusters later change their color, first to light yellow and finally to light purple. Hence, many know it as the purple fringe. Their attractiveness add much to the midsummer effect of the home grounds.

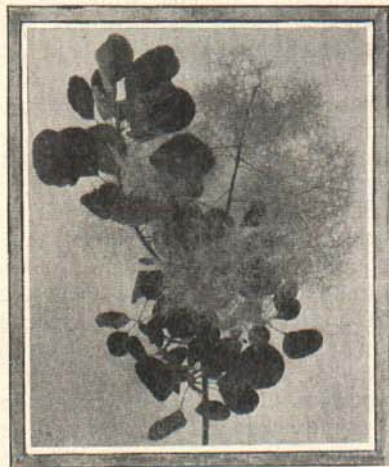


Fig. 27.—The mist-like flower heads of the smoketree make it an attractive shrub over an extended period of the season.

There's the mist o'er the mountain and the mist o'er the vale,
 There's the mist o'er the ocean where ships must sail,
 But the mist in the landscape most delightful to see,
 Is the billowy mist of the old smoke-tree.

In addition to these attractive qualities of its mist-like flower heads, its leaves—smooth, round, and glaucous in spring and summer, approaching rosy crimson in autumn, add their share of beauty to the plant. The plant is hardy and grows on almost any well drained soil but requires ample room and plenty of sunlight. It may attain a height of but eight to ten feet when crowded in masses, but when given plenty of space, it expands to from fifteen to twenty feet in height.

The smoketree is particularly suited to light soils and to the production of midsummer effects. It is excellent for accentuating higher portions of boundary plantings and is very suitable for use as single specimens or in open groups about the lawn.

This species is partly dioecious, some plants producing only male flowers, which do not fruit and do not develop the mist, plume-like flower heads for summer effects. Other plants produce both male and female flowers. It is these that are so effective for summer display.

Rhus glabra—SMOOTH SUMAC, Very Hardy

Of the several beautiful native species of sumacs the smooth sumac is one of the most common in Michigan. It is of a rather spreading, wayward habit, varying in height from four feet upward. The twigs and branchlets are smooth and glabrous, while the foliage is composed of typically feathery, compound leaves that are dark green above and white beneath. In autumn these leaves turning to brilliant orange and scarlet make a very pleasing fall effect. The flower spike is clothed with small inconspicuous yellow flowers from June to August; these are followed in the fall by velvety, red, compact clusters of fruits that remain with but slight change of color throughout the winter. Though it thrives in the wild on gravelly, upland soils, it does equally well on any well-drained, cultivated soil.

The beautiful, luxuriant effect of its dark green foliage in summer, of its scarlet colorations in autumn, and velvety, scarlet, compact fruit clusters throughout the winter, make it a very attractive plant over an extended period of the year. It is a very desirable shrub for mass plantings about the distant borders of the lawn, especially if used in the foreground of higher growing shrubs. It is equally desirable for plantings about the borders of drives or for covering banks or other exposed situations in developing naturalistic effects. This plant needs plenty of sunlight but is not exacting in its requirements about a high degree of soil fertility or abundance of soil moisture. It may be pruned to the ground each spring to induce a vigorous, dense, new foliage growth and to increase the fruiting effect.

Rhus glabra laciniata—CUTLEAF SUMAC, Very Hardy

The leaves of this variety of the smooth sumac being finely and deeply cut produce a very fern-like foliage effect. This fine textural effect of its leaves makes it desirable in plantings to be seen near at hand, and it is especially harmonious and fitting when used in the foreground of *Rhus glabra* or *Rhus typhina* and in plantings adjacent to walks, and drives.

Rhus typhina—STAGHORN SUMAC, Very Hardy

The staghorn sumac is the largest, as well as one of the handsomest, of the many-foliolate leaved sumacs. It apparently obtains its common name from the simulation of its thick, blunt, clumsy-appearing shoots, thickly covered with hair, that branch terminally into two equal parting shoots, to the development of a stag's horn. It grows naturally along the borders of woods or upon dry, infertile hillsides, usually assuming an upright, spreading tree form, to a height of 10 to 15 feet. Its large, pinnate, leaves 10 to 24 inches in length, divided into many lanceolate, tooth-margined leaflets, 11 to 31 in number, are of a dark, opaque green but assume the most gorgeous orange and scarlet colorations in the autumn. The flowers are greenish and inconspicuous, but the fruits, which are in thick clusters, are bright crimson and very attractive, holding their color well into the winter.

Since the plant is not graceful and assumes an upright, spreading tree form, with the lower portions of the plant left unclothed with foliage, it should be used largely as a background shrub with lower growing kinds planted in the foreground to screen its less desirable characters. It makes an excellent plant to use in the higher portions of border plantings about the distant boundaries of the lawn and for producing very naturalistic effects on the less fertile and drier types of soils.

Rhus typhina laciniata—SHREDDED SUMAC, Very Hardy

This is a cut-leaved variety of the staghorn sumac having the same characters of growth as its parent form, but with lacinated leaves, producing a finer textural effect when seen close at hand. Hence, for special situations or immediately about the house where a more cultivated and restrained effect is desired and a high growing shrub is needed, it is preferable to the parent form. It is not as desirable, because of its high, coarse growing habit, where a shrub of moderate height is desired, as the cut-leaved variety of the smooth sumac. It makes an excellent kind, however, for specimen planting when a tree-formed shrub some ten to fifteen feet in height is needed.



Fig. 28.—The staghorn sumac when disposed in naturalistic groups and masses makes a beautiful landscape effect.

Ribes odoratum—GOLDEN CURRANT, Hardy

Yellow seems to be a favorite color of springtime flowers. After the forsythias have about finished their floral display, the golden currant, accompanied by the yellow daffodils, and yellow tulips, as well as by the plebian dandelion, bloom forth to supplement and prolong the golden splendor of the spring season. While the leaves of the golden currant are just unfolding, the numerous small clusters of its tubular flowers crowding the twigs almost cover the bush with their attractive golden color. Later the simple, dark-green, trilobed leaves densely cover the branches which are upward and outward spreading, the lower ones usually drooping gracefully to the ground.

The plant reaches a height of four to six feet and sprouts readily from the roots. It thrives best in a soil at least moderately moist and fertile and either in full sunlight or partial shade. Its beautiful, early spring flowering effect followed by its excellent summer foliage effect combine to make it a worthy kind for planting in groups or shrubbery masses about the walks, drives, or other nearby portions of the home grounds. Since it fills out well with foliage to the ground, it also makes a good foreground shrub. Unfortunately, it is very subject to scale insects, the presence of which necessitates the application of a spray in early spring before the flowers and foliage appear. The spring pruning of this plant should be confined to the practice of cutting out a few of the oldest canes as close to the ground as possible, preferably directly after flowering.

Ribes sanguineum—WINTER CURRANT, Hardy

The winter currant is one of the interesting native plants of America whose discovery is closely associated with the story of the early explorations to northwestern America. Dr. Archibald Menzie, a doctor in the Royal Navy of England, on a voyage around the world, first found it in 1787 near Nootka Sound. On a later expedition in 1795, sent out by the British Government to ascertain the existence of any navigable communication between the North Pacific and the North Atlantic oceans, he found it growing all along the coast of California and Oregon and sent specimens back to the British Museum. The beautiful qualities of this bush, however, still remained unknown to the people of England until it was again seen in 1822 by that venturesome plant explorer, David Douglas, whose services are commemorated in the naming of the Douglas Fir. Greatly impressed with its beauty, he sent seeds of it to the Horticultural Society at Cheswick, England. There they were planted in the open border in 1828, the first of the myriad winter currant bushes to deck the gardens of England. Though entering England as an alien, it has since found its way there into the gardens of every rank, while here in America, its native country, it is still scarcely known and seldom cultivated.

The winter currant is a bush three to four feet high. Its winter buds, responding to the first warm touch of spring, swell rapidly, and out between pink-tinged bracts, three fresh, bright-green, pleated leaves delicately unfold from each bud. But before its foliage is yet half formed, a cluster of deep pink flower buds emerges from the center of each leaf cluster and are soon pushed outward beyond the leaves. Before these ruddy clusters of flower buds are ready to open they fall over and form gracefully drooping clusters. Shortly afterward they appear as delicate cascades of small deep pink flowers and deeper shaded buds, the latter at the point or bottom of the cluster and the open flowers above. So while the days are still raw and chilly, this shrub appears to cheer and brighten the early spring landscape with its vivid floral display. Its flowering season is long and its floral charm intensified by the distinctive fragrance exhaled by its flowers. In August the blue-black berries ripen but possess a musky, unpleasant flavor distasteful even to the birds.

This plant prefers a situation that is shaded or partly so and where the soil is both cool and moist. It makes a desirable shrub for a rather low planting about the north or east side of the house or where otherwise sheltered from the southern sun and western winds. It may be arranged in

open groups or in the foreground of masses of higher growing shrubs but should not be crowded in plantings as it needs ample space to develop to its full degree of beauty. It is particularly desirable about the home grounds for early spring flowering effect.

Robinia hispida—ROSE ACACIA, Hardy

The rose acacia, native of the southern Alleghanies, is one of the few acacias sufficiently hardy for northern planting. The bush is a vigorous grower, quickly attaining a height of eight to twelve feet, or more. The foliage possesses that dark, rich-green color and fine texture of the honey locust and develops rapidly in the spring, forming a beautiful background for the loose racemes of soft rose, pea-shaped blossoms that appear in May and June. The twigs, petioles, pedicels, and fruit pods are so thickly covered with bristly hairs as to appear quite mossy.

The plant is suited to light soils but needs a protected situation, since its brittle branches are readily broken by wind. Like other species of its genus, it suckers freely and readily forms thickets. It makes an excellent specimen plant trained in the tree form and planted about the lawn, but is even more desirable as a shrub for arranging in masses and thickets for the covering of dry banks or for the development of screens or mass effects on soil too light, infertile, or dry for many other shrubs.

NATIVE ROSES

The wild rose makes a strong appeal to all people interested in wild plants. The unpretentiousness and simplicity of the flower, its pleasingness and delicacy of form, color and texture, as well as its sweet fragrance,—all these attributes so harmoniously combined symbolize the charm, grace and beauty of nature.

There are several species of wild roses all of which are hardy and thrive on moderately fertile, well-drained clay-loam soils. The flowers of our native species are single and pink, and the plants are particularly suited to the production of very naturalistic effects in rather extensive developments such as characterize the parks or larger estates rather than to the plantings of small gardens.

Rosa blanda—MEADOW ROSE, Very Hardy

The meadow rose, flowering in June, is rather low growing, usually attaining a height of from three to four feet. Its dark red stems, although sometimes bearing a few slender prickles, are practically spineless. The plant spreads freely by underground root stalks and readily forms a thicket.

Like most of our native roses, the meadow rose is very hardy and may be used in masses for plantings adjacent to drives, walks or for covering banks and other waste spaces.

Rosa nitida—BRISTLY ROSE, Very Hardy

The bristly rose is one of the most beautiful of the native species. It is a shrub, usually from one to two feet high, with red shoots densely clothed with slender red prickles and spines. The foliage is rather sharply pointed and the leaves divide into from seven to nine leaflets. The flowers appear in late June and July and are deep pink. Although this species is native of the meadow lands and other moist situations, when transplanted to the garden it grows freely making a broad mass of bright foliage and flowering freely. It is very hardy and suitable for massing in front of taller shrubs.

Rosa humilis—PASTURE ROSE, Very Hardy

The pasture rose is another low growing native species with dull colored leaves and usually grows on dry and rocky soils. The bush is erect in habit and from a foot to three feet in height. The stems are more or less prickly and have but few sharp, slender spines. The flowers appear after *Rosa blanda* and are single and pink, and continue to bloom over an extended period. The red fruit clings to the branches throughout the winter.

This rose is very hardy and endures exposure or shade equally well; hence it is very suitable in landscape planting for use as an under-shrub in developing naturalistic effects. However, it is the least ornamental of the native species of roses.

Rosa setigera—PRAIRIE ROSE, Very Hardy

After most of the other hardy roses have faded, the flowers of this native of the prairie expand to prolong the season of roses. The large full clusters

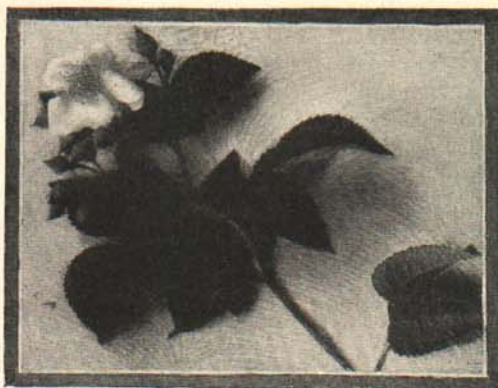


Fig. 29.—The prairie rose produces clusters of single deep rose-colored flowers in early July that are very attractive.

of its single, deep rose-colored flowers, fading to nearly white before they fall, make a very attractive color display in the landscape. Though this is our only native climbing rose, it is more frequently used as a sprawling shrub for covering some barren slope or exposed bank. Here it assumes a shrub-like form to a height of about four or five feet when its vigorous shoots arch gracefully over until the tips of its branches are trailing the ground. In the fall its clean, attractive foliage assumes a medley of crimsons and bronzes lightened with yellow and orange.

This is one of our most beautiful native roses for the development of naturalistic effects. It makes a very appropriate shrub for the covering of banks adjacent to drives and is an extremely hardy and very thrifty plant.

EXOTIC ROSES

Rosa rubiginosa—SWEETBRIAR ROSE, Very Hardy

The sweetbriar rose, native of England, is embedded deeply in the very heart of English life and of English literature. It is the "Sweet Eglantine" of Chaucer, Spenser and Dryden, while even Shakespeare has expressed his delight in its beauty and fragrance in these words,—

"The rose looks fair, but fairer we it deem
For that sweet odour which doth in it live."

That pleasing fragrance "which doth in it live" exhaled from the numerous glands on the under surface of the leaves, and especially perceptible when the young leaves were wet with dew or rain, made it a favorite dooryard shrub in England. Naturally it was one of the old home plants to be carried to America by the Pilgrims, probably on the Mayflower or at least shortly thereafter, and to become a typical plant of the Puritan gardens. Since that period it has escaped cultivation and become naturalized throughout a large area of northeastern America.

In addition to its fragrance there is a certain delicacy about the plant that adds to its charm. The flowers, though in themselves devoid of fragrance, are small, delicate and pink and are followed in the fall by scarlet fruit hips which are almost as pleasing as the flowers. It has a slender habit of growth, toppling over after attaining from four to six feet in height, and the canes are heavily studded with stout recurved thorns that scratch or hold whatever brushes against them.

The general hardiness and thriftiness of the plant on well-drained clay loam soils of even moderate fertility and its general adaptability to naturalizing make it still a favorite shrub for disposing in masses for naturalistic effects. As a dooryard shrub, it is still prized by all familiar with its fragrance although it is better not to use it immediately adjacent to walks or steps because of its thorny character.

Rosa rubrifolia—REDLEAF ROSE, Very Hardy

The redleaf rose, as the name suggests, is characterized by its reddish foliage. It is not the bright, dazzling red, however, of some of the high colored foliage plants, but a rather soft, modest, delicate shade of crimson, underlaid with a bluish-green ground color. This delicacy of shading, while making the plant less distinctive and showy in garden scenes, renders it more harmonious and pleasing with other green leaved shrubs.

It is an upright growing bush about six feet in height. The slender branches are purplish and covered with bloom, while the single flowers are intensely pink, and borne freely in clusters of from one to three. The scarlet fruit hips, like the flowers, are also attractive but the colored leaves are the most desirable feature of the plant.

The redleaf rose, native of the mountains of Europe, is hardy and withstands partial shade. It may be used advantageously in small, formal gardens, primarily for its foliage effect. It makes a desirable kind to use also in open groups about the lawn and its delicate foliage color makes it desirable for plantings to be seen close at hand.

Rosa foetida bicolor—AUSTRIAN COPPER ROSE, Hardy

This is the most striking colored rose of those in cultivation which are adapted to general landscape planting, the blooms being of an intense copper-red with the reverse side of their petals yellow. Being an offspring of the Austrian Brier, from whence its flowers obtain their base color of yellow, it is a hardy, thrifty plant with single flowers appearing very early in the season. It seems to thrive best upon a rather light, dry soil in a sheltered situation. This is one of the few exotic roses that may be readily naturalized since it requires but little cultural attention and no pruning after it has once become established.

Rosa foetida harisoni—HARISON'S YELLOW ROSE, Very Hardy

This old time Austrian Brier is still the best yellow rose for landscape planting in Michigan. The flowers are semi-double, abundant, appear early, and are sweetly fragrant, but like most other yellow colored roses fade to white in intense sun-light. The foliage is dense and fine textured and is retained well throughout the season. The general thriftiness and hardiness of the plant combined with the attractive qualities of its foliage and flowers make it an excellent kind for planting the grounds about the dwelling where a shrub not more than five feet in height might be required.

The susceptibility in Michigan of *Rosa Hugonis*, a more recently introduced species, to the destructive effects of the rose girdler, has made it feasible to select Harison's Yellow in its stead.



Fig. 31.—The wichurian rose is one of the best "groundcovers" for planting along the upper side of retaining walls and for steep banks.

Rosa wichuraiana—WICHURIAN ROSE, Very Hardy

The wichurian rose is one of the most desirable hardy trailing roses of any kind. Yet this plant that we now cherish so greatly came to our shores undesigned, unvalued, and unknown. Later, we discovered that this alien plant possessed the vigor, hardiness, and freedom from diseases which, combined with its abundant, beautiful, shining, dark green foliage,—almost evergreen, and its fragrant flowers, and free blooming habit, make a combination of desirable qualities such as few other species possess. Is it to be wondered that it has since become the parent of more worthy hardy climbing roses than any other species?

Unlike many of the trailing roses, the new stems of each succeeding year of this plant grow over those of the preceding year forming a dense matted growth unless the tips happen to come in contact with something upon which to climb. The large clusters of pure white flowers with golden centers appear rather late in the season and are extremely fragrant and very attractive in their effect.

This rose is one of the best plants for ground covers, particularly for planting on rough pieces of ground or for covering steep banks or rocky, barren slopes where the soil is so shallow and infertile that few other plants could survive. Even upon sandy and gravelly soils it thrives better than most other roses.

Rosa rugosa—RUGOSA ROSE, Very Hardy

The rugosa rose is one of the best shrubs imported from Japan for American gardens. Its luxuriant deep green, wrinkled foliage, its large rosy-crimson flowers, its perpetual blooming habit and its attractive, scarlet, rose hips,—all of these desirable aesthetic qualities combine with its general vigorous, thrifty and hardy characters to make it a very adaptable and beautiful landscape shrub.

The ungainliness of the few coarse awkward stems of the plant in its youth is early transformed to a well-rounded, upright, spreading shrub. The numerous stout canes sprouting from the base of the plant are thickly covered with prickles and spines. About the third year after planting, it attains a height of from four to five feet, and if given ample space on good soil, it may finally become five to six feet high. Fortunately, few insects and diseases trouble it and it is suited to a wide range of soils and exposures, thriving equally well in full sunlight or partial shade. Ordinarily, it requires no spring pruning but if the plant becomes thin and straggly, it may be pruned to the ground and new stout vigorous shoots will soon appear to transform the plant into a more dense and well-balanced shrub.



Fig. 30.—The rugosa rose is noted for its heavy deep green foliage, its perpetual flowering habit and its large scarlet rose-hips.

There are few kinds of shrubs more desirable to use in mass plantings about the home grounds, either in the foreground of higher growing shrubs or for the lower portions of the shrubbery plantings than this rugosa rose. About the steps, walks, and other places where a plant of moderate height is desired, it is most appropriate, while its dense rich foliage and responsiveness to pruning make it well suited also to use for flowering hedges.

In northern Michigan, particularly in the section about Marquette, this rose thrives unusually well.

RUGOSA HYBRIDS

Since the rugosa rose from Kamchatka and Northern Japan is the only absolutely hardy, ever-blooming rose that we have, it has been used considerably in recent years as a parent in the breeding of many new hybrids. These rugosa hybrids usually possess the foliage character of rugosa and partake of the hardiness, healthiness and general thriftiness of this parent but are not always so continuous in their blooming habit. Though these hybrids do not compare as cut flowers with the hybrid teas, they are far superior for general landscape planting about the home grounds. In Michigan, they are of special value by reason of their hardiness.

Many of the varieties have been so recently introduced that their qualities have not been generally tested throughout the state but at present the following varieties seem notably promising and desirable.

CONRAD FERDINAND MEYER, Hardy

This variety is considered by some the handsomest flowering hybrid rugosa rose. The flowers are well formed, silvery pink, fragrant and of large size. It blooms profusely in June and occasionally thereafter. The plant is a very vigorous growing sort, producing canes from six to ten feet in length in a single season. Therefore it requires ample room for development and for the proper display of its flowers. Though the plant is not as hardy as rugosa, it will withstand all but the severest winters without protection except in the northern sections where its growth should not be attempted without winter protection which means laying down the canes and covering them with soil.

F. J. GROOTENDORST, Very Hardy

This is the first of a race of rugosa roses hybridized with polyanthas, or baby ramblers, combining the characters of the flowers and ever-blooming habit of the polyanthas with the heavy, wrinkled foliage, hardiness and vigor of the rugosa. The bright red double flowers are freely and continuously produced in large clusters from early June until late fall. It is one of the most suitable plants for ever-blooming hedges and also desirable for shrubbery and specimen plantings.

GARDEN ROSES**HYBRID PERPETUAL AND HYBRID TEA ROSES***

Hybrid perpetuals and hybrid teas are desirable kinds for the rose garden. Unfortunately they are not of a hardy, thrifty character and are more or less susceptible to mildew, black spot and other fungus as well as insect troubles. They also require more intensive culture and attention than is commonly given to shrubs used for general landscape effect about the home grounds. Therefore, instead of placing them with other shrubbery plantings, it is better to arrange them in a garden by themselves where the required culture, care and winter protection may be given.

The hybrid perpetual roses as a class are hardier and more vigorous growing than the hybrid teas. The flowers are larger and borne in abundance during June. They are not, however, perpetual blooming roses as the name infers, although some varieties usually flower again sparingly in the fall. In late years they have been losing in popularity to the hybrid teas which possess the continuous flowering habit. The hybrid perpetuals, however, continue to be of importance for planting in the northern sections due to their greater hardiness although they require winter protection as do the hybrid teas.

The lack of proper winter protection is the most common source of failure in growing these roses. The plants should be hilled-up with soil and after this soil is well frozen they may be further protected by covering the tops with evergreen boughs, straw or very strawy manure, which shades them from the sun and the resulting thawing of warm winter days.

HYBRID PERPETUALS**White****FRAU KARL DRUSCHKI**

The best white flowering rose and the most satisfactory hybrid perpetual.

Pink**GEORGE ARENDS**

Soft light pink. Very large and full, delicately scented and better than most varieties as a fall bloomer.

MRS. JOHN LAING

Soft solid pink. Fragrant. Flowers of good size and form and flowering over a longer period than most of its class.

Red**GENERAL JACQUEMINOT**

An old standard variety with clear red flowers.

J. B. CLARK

Flowers very large, of deep scarlet. Splendid variety unless the weather is hot at blooming time.

*For more detailed information on garden roses see Special Bulletin No. 222, Mich. Agr. Exp. Station.

Yellow

There are no yellow flowering varieties available of the hybrid perpetuals. However, Soleil d' Or is a variety frequently used for a yellow cut flower of hybrid perpetual characters. Though the foliage is very subject to black-spot and the wood dies back during the growing season, and though it is not very hardy, it is apparently the best variety at present available of this type for its color.

HYBRID TEAS**Pink****RADIANCE**

The most popular, reliable and easiest growing hybrid tea rose.

MISS CYNTHIA FORDE

A generally satisfactory, desirable and dependable variety.

MME. BUTTERFLY

A light pink sport of Ophelia possessing the thriftiness and vigor of its parent and preferred by many.

White**OPHELIA**

The best cutting rose among the light shades, being a creamy white with salmon flesh shading, deepening toward the center to a light orange salmon.

WHITE KILLARNEY

A vigorous free flowering variety with long pointed buds and pure white flowers. Quite susceptible to mildew, but its other admirable characters make it well worth protecting from this trouble.

KAISERIN AUGUST VIKTORIA

A standard old variety, that is not a strong grower but noted for the perfection in form of its lemon white, double flowers.

Red**RED RADIANCE**

Same as Radiance but deeper in color.

MME. EDOUARD HERRIOT

A brilliantly colored coral-red and orange variety that is extremely free flowering with a strong stem but weak neck. Tends to wilt quickly after cutting.

TALISMAN

A recently introduced variety noted for its brilliant scarlet-orange color partly overlaid with yellow, its well formed buds and flowers and its freedom of bloom.

GRUSS AN TEPLITZ

A very hardy, vigorous growing and continuous flowering variety. The flowers are velvety crimson, shaded maroon. The buds are short, opening into flat, loose flowers. The variety is too vigorous to plant with other hybrid teas and not much of a rose for cutting. It is good, however, for garden decoration as it is seldom out of bloom and its purple foliage is attractive.

Yellow

DUCHESS OF WELLINGTON

The most generally satisfactory yellow hybrid tea rose.

LADY HILLINGDON

A tea rose, very desirable in the rose garden for its lovely slender pointed buds and cupped flowers of deep saffron-yellow, becoming lighter as they expand. It is very free flowering but requires good feeding and attention and careful protection.

POLYANTHA ROSES

These dwarf modern roses, more nearly everblooming than any others, are desirable for bedding, edging and massing in the foreground of other shrubs. They produce beautiful color effects over a long portion of the season. Some of the varieties are quite hardy but many require the winter protection as provided for the hybrid teas. They are ordinarily bushy plants not more than 18 inches high bearing small flowers usually in many-flowered clusters. Pruning in the spring is desirable when the bush should be thinned lightly and all old wood and last years flower stems removed to encourage new growths.

The following are a few of the leading varieties:

CECILE BRUNNER

Light pink with yellow center in graceful open clusters. Flowers beautifully formed and borne over a long period. A strong grower with healthy waxy foliage.

The first of the class to be introduced and still considered one of the best of its color.

CHATILLON

A semi-double flowering variety, bright pink in color. The flowers are arranged in large trusses on long stems and are continuous bloomers. The plants are vigorous, healthy and quite hardy.

GLORIA MUNDI

The leader of a new class of polyanthas with orange-scarlet flowers that promises to become very popular.

GRUSS AN AACHEN

A variety approaching the hybrid teas in size and character of its growth as well as in the size of its flowers. It should be considered as a distinctly large flower massing rose, making a beautiful effect when used as such in the rose garden. The flowers are a flesh pink with a deep center fading light. The plant is strong and healthy and a continuous bloomer.

ELLEN POULSEN

A free-flowering variety bearing rather good sized bright rose pink flowers in large compact clusters. Plant of average foliage character and quite hardy.

LADY READING

Bright true red flowers in large clusters. The plant is of vigorous growth, bushy and free-flowering. Recommended for bedding and massing where a variety of this color is desirable.

LAFAYETTE

Another desirable bedding rose with large semi-double flowers of light crimson color borne in large loose clusters. The plant is tall and healthy making this variety another desirable sort for massing in a rose garden or in the foreground of shrubbery borders where a bright color effect is desired over an extended portion of the growing season.

CLIMBING ROSES

AMERICAN PILLAR

A large, single-flowering, crimson-pink cluster rose with a white center. A very vigorous and hardy variety but very subject to fading.

CLIMBING AMERICAN BEAUTY

Large double flowers, usually on strong stems; carmine to rich imperial pink. Good as a cutting flower. Vigorous but needs protection in the northern section. One of the best of its class.

DOROTHY PERKINS

Flowers a soft blush pink; small to medium in size, double, in heavy clusters. Very vigorous, hardy, and free flowering. The most popular of the pink clustered flowering varieties.

DR. HUEY

One of the darkest colored varieties with semi-doubled flowers in clusters of the darkest crimson-maroon color that holds its bloom for about three weeks.

DR. VAN FLEET

A vigorous, hardy variety producing double flowers of lightest shell-pink on long stems that are very distinct and beautiful. Formerly considered the best climbing rose but now exceeded only by Mary Wallace.

GOLDFINCH

Deep yellow bud, opening light lemon to cream. Flowers small, semi-double, in clusters. Very vigorous and one of the hardiest of the yellow flowering climbing roses.

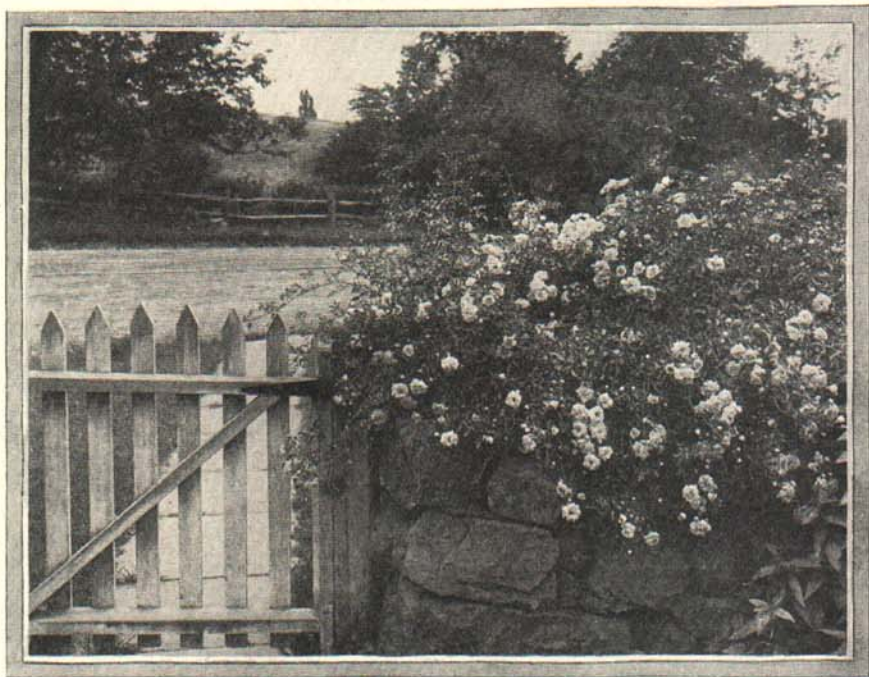


Fig. 32.—Roses at the garden gate. The light-pink cluster variety Dorothy Perkins.

HIAWATHA

Flowers single, medium to large, crimson, with white at the base of the petals. A vigorous and hardy variety. One of the best and most attractive single flowering of the cluster type.

MARY LOVETTE

A pure white rose of climbing type with large handsome flowers borne singly and in sprays. Plant vigorous and hardy.

MME. GREGOIRE STAECHELIN

This is one of the more recently introduced varieties that has taken a leading place in the list of beautiful flowering climbing varieties. The plant is a vigorous grower, at least fairly hardy, with dark green foliage quite resistant to disease. The flower buds are large, long-pointed, opening to large delicate pink, beautifully petaled blooms. It is one of the most beautiful varieties as a cut flower and a free bloomer.

MARY WALLACE

A rather recently introduced variety developed by Dr. Van Fleet and considered by some to be the best of his many creations.

The plant is coarse textured, very vigorous, with good foliage. The flowers are large, double, cup-shaped, deep flesh pink, on long stems and moderately fragrant. The flowers upon young plants are commonly not true to type, being single or semi-double and of a deeper pink color. It may be used as a climber, a pillar rose or even as a bush rose but it always needs ample room. It is also a most attractive rose for cut flowers.

PAUL'S SCARLET CLIMBER

A very desirable variety where a bright crimson rose is desired. It makes a good cut flower and is very vigorous and hardy. One of the best varieties.

SILVER MOON

A most attractive white flowering variety with unusually large single flowers produced in small sprays. It is a vigorous grower with good foliage but slightly tender in severe winters.

STAR OF PERSIA

A more recently introduced yellow flowering rose that promises to become a very desirable one. Flowers semi-double, bright yellow, borne in loose sprays. Growth vigorous, with dark foliage. It is expected to prove a hardy yellow climber.

WHITE DOROTHY

Probably the best of the white cluster-flowered hardy climbers. Except in color of flower, it possesses the same desirable characteristics as Dorothy Perkins.

Sambucus canadensis—AMERICAN ELDER, Very Hardy

What is more attractive in the rural landscape in early July than the sight of groups and masses of this American elder "foamed over with blossoms white as spray." Equalling, if not surpassing, in beauty and effectiveness the choicest of our garden favorites, it makes an inspiring display at this

season which marks the termination of the delightful spring flowering period of shrubs. Even were it not such a beautiful flowering bush, its large, well-rounded form, dense foliage and large, flat clusters of dark purple fruits would still combine to make it an admirable native shrub. Along the roadside and fields it grows usually on the low lands, seeming more dependent on a bountiful supply of moisture than a high degree of soil fertility. It is a rather coarse branching shrub, reaching a height of from six to ten feet or more and about as broad. Since it adapts itself well to cultivation, these characters of growth make it a desirable shrub about the home grounds for background plantings to be seen at a distance. On more extensive developments, it is used for large mass effects in moist situations, or grouped about the borders of ponds.

Sambucus canadensis acutiloba—CUT-LEAF AMERICAN ELDER,
Very Hardy

This cut-leaved variety of the American elder possesses a finer and more delicate textural effect of the foliage than the plain leaved form. It may be used for producing effects to be seen near by and is also desirable when combined or disposed in the foreground of the plain-leaved form.

Sambucus nigra—EUROPEAN ELDER, Hardy

The European elder is very similar to the American species in its general characters although not quite as hardy and thrifty. It is cherished particularly in its golden and cut-leaved forms, for producing special effects.

Sambucus nigra aurea—GOLDEN EUROPEAN ELDER, Hardy

The golden European elder is one of the best of the large, coarse growing, golden leaved shrubs. It is noted for the pureness and intensity of the yellow color of the leaves which it retains well throughout the season if situated in full sunlight; otherwise the foliage has a tendency to revert to green. It also should be "pinched back" frequently to maintain a dense and dwarf growth. Like the other yellow leaved shrubs, it should be used rather as an accent plant than for general effects.

Sambucus nigra laciniata—CUT-LEAF EUROPEAN ELDER, Hardy

This is a form of the European elder with finely cut, deep green foliage producing a delicate and graceful effect. It should be used as recommended for the cut-leaf American elder.

Sambucus racemosa—EUROPEAN RED ELDER, Very Hardy

The red elder gets its name from the very attractive corymbs of red fruits which characterize the bush in late June or July. In size and foliage, it is quite similar to the American elder and seems to require the same moist conditions of soil. Its flowers, however, appear in April and May and are not showy, but in early summer when its fruits ripen, their beautiful, scarlet effect makes the shrub very attractive. The large coarse growing habit and size of the plant make it suitable for the production of large mass effects and for grouping about the shores of ponds and other moist situations. Under these conditions, it thrives either in full sunlight or partial shade.

Sorbaria arborea—TREE SPIREA, Hardy

A larger, higher growing species more tree-like in its habit of growth than the better known *Sorbaria sorbifolia* and is particularly adapted to rich moist situations. It is suitable for back grounds of shrubby borders and makes attractive effects when planted in open groups.

Sorbaria sorbifolia—URAL FALSE-SPIREA, Very Hardy

Named because of the resemblance of its leaves to the *sorbus* or mountain-ash this shrub was more popular before the introduction of San Jose scale to which it is very susceptible. It attains a height commonly of three to five feet, spreading by underground roots into clumps. The large plume-like flower heads, yellowish-white in color, appear the latter part of June and produce an attractive effect.

Its attractive foliage and flowers combine with its spreading habit to make it a good shrub to use for planting step banks and rough broken areas.

SPIRAEA—SPIREA

Spireas are doubtless the most common and popular class of hardy flowering shrubs. They have been gathered from many distant lands to gratify our desires in developing and beautifying our surroundings. Their general hardiness, thriftiness, and free flowering characters, their moderate size, graceful habit, and fine textured foliage, their general freedom from serious insect and fungus troubles, all of these admirable qualities fulfill our ideals and requirements in beautifying our home grounds.



Fig. 33.

The spireas may be divided into two classes based upon their season of flowering—the early or spring flowering and the summer flowering. As a class the spring flowering spireas require but little pruning. This should consist simply in thinning out a few of the older canes to the base of the plant, retaining the naturalness and gracefulness in form of the bush. This pruning should be performed directly after flowering. Early spring pruning of this class of shrubs reduces the quantity of flowers. The summer flowering spireas require more severe pruning. This should consist of removing all the old flower stalks still retained on the plant and of thinning out the oldest and weakest canes to the base of the plant. Sometimes it is advisable to prune them to the ground. This pruning may be performed in early spring before growth commences.

The spireas are generally moisture loving plants and prefer a soil of at least moderate fertility.

Spiraea Bumalda var. Anthony Waterer—ANTHONY WATERER
SPIREA, Very Hardy

This dwarf, compact, upright growing spirea, flowering from about the middle of June until frost, is one of the best hardy, small shrubs for summer flowering effect as well as for massing or grouping in the foreground of higher growing shrubs. It attains a height of $1\frac{1}{2}$ to $2\frac{1}{2}$ feet, develops a rather fine textured foliage effect and produces flat corymbs of rosy crimson flowers. It is a very desirable shrub about the home grounds wherever a low bush is required.



Fig. 34.—*Spiraea Anthony Waterer* is one of the best low-growing summer flowering shrubs and very suitable for planting in masses in the foreground of higher growing kinds.

This spirea will stand rather severe thinning out of the older shoots in the early spring or may even be pruned to the ground. The old flower heads should be clipped during the growing season directly after flowering to maintain a tidy appearance.

Spiraea billiardi—BILLIARD SPIREA, Hardy

The narrow, dense spikes of bright pink flowers, five to eight inches long, that terminate its erect branches, are the most attractive landscape character of this spirea. These flowers appear in July and August when few other shrubs are in bloom, tending to remove the summer dullness that frequently characterizes our shrubbery plantings at this time. It attains a height of from three to six feet and may be used advantageously in the foreground of other higher shrubbery plantings. It is particularly suitable for moist situations and most fitting for the production of naturalistic effects.

Spiraea reevesiana lanceata—DOUBLE REEVES SPIREA, Hardy

This double flowering form of *S. cantoniensis* is one of the most attractive of all the spring, white-flowering spireas. The plant is a graceful spreading bush to a height of from four to five feet with long, narrow serrated leaves densely disposed upon the plant. The flowers appear at the same time as the Vanhoutte spirea but are retained for a more extended period. They produce a much brighter, whiter and more attractive effect than *S. cantoniensis* or the Vanhoutte spirea. Its moderate height and size, its dense, fine textured foliage effect, and its very attractive, pure white flowers combine to make it a very superior shrub for home planting. Its chief fault is its lack of extreme hardiness but it has not shown any winter injury for the past three seasons at this place.

Spiraea froebeli—FROEBEL SPIREA, Very Hardy

This variety is very similar to Anthony Waterer spirea but somewhat larger and more vigorous. It produces a larger quantity of flowers in June and early July, than Anthony Waterer spirea and it blossoms again in the fall but is not a continuous blooming variety. The old flower heads, however, do not appear quite as ragged after flowering as those of Anthony Waterer. Nevertheless they should be clipped in early summer directly after blooming, to improve the appearance and to induce flowering in late summer and early fall. It is an excellent foreground shrub for summer flowering effects about the home grounds.

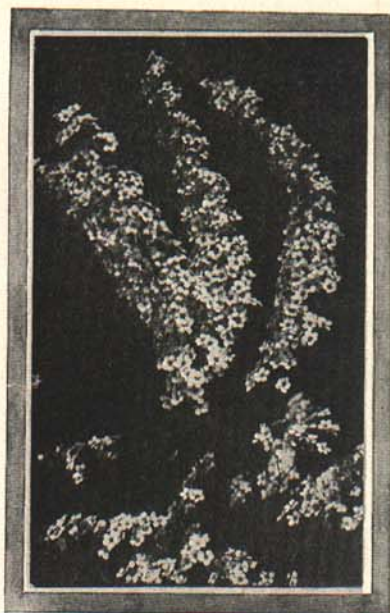
Spiraea arguta—GARLAND SPIREA, Very Hardy

Fig. 35.—The garland spirea is one of the best early spring flowering spireas.

Of the early flowering spireas, this small leaved and small flowered variety is one of the best. In April or early May, the abundant pearly-white flowers on the numerous slender, graceful branches of this shrub completely covering the bush are very attractive. After this early display, its small, deep green leaves, densely disposed upon its graceful twigs, make a very delicate foliage effect. The plant attains a height of from four to six feet and is desirable in groups or masses about the house, walks, and other nearby points where the beauty of its fine foliage texture may be appreciated.

Spiraea douglasi—DOUGLAS SPIREA, Very Hardy

This native summer flowering spirea is characterized by its abundant terminal spikes of deep rose-colored flowers borne on the plants during July and August. It reaches a height of five feet or more and is one of the best summer flowering varieties for naturalistic effects. It may be used about the home ground in groups and masses where a shrub of moderate height is desired for summer flowering.

Spiraea thunbergi—THUNBERG SPIREA, Hardy

The delicate beauty of Thunberg spirea first attracts the eye in early spring when its numerous small, delicate, white flowers clothe its numerous graceful twigs. It is the first of the spireas to blossom; the flowers appear even before the leaves have developed. The plant is a very graceful shrub growing to a height of about five feet; it has long, narrow, light green leaves that gives the bush a rather feathery foliage appearance. This light color of the leaves and the fine foliage texture make it suitable for near-by landscape effects such as in the immediate environment of steps and walks. Unfortunately, in the northern and central sections of Michigan, it is very subject to winter killing of the twigs which seriously reduces the spring flowering effect and gives a ragged, unkempt appearance to the shrub until the new growth has re clothed it. Therefore, it can be recommended for protected situations in the mildest sections of the state. Elsewhere, *Spiraea arguta* is preferable.

Spiraea vanhouttei—VANHOUTTE SPIREA, Very Hardy

Though opinions differ in regard to other species, the general popularity of the Vanhoutte spirea acclaims it the finest of all. In fact, it is probably the most popular hardy flowering shrub for planting the home grounds. Its graceful form, handsome, dense foliage and extremely free flowering habit, combine to make it a very attractive shrub during the entire season. It is a hardy, vigorous growing plant with gracefully drooping branches that are densely clothed with moderately small, rich green leaves. It is most attractive in May or early June, when its profusion of bloom bends the slender branches and covers the bush with a beautiful canopy of white. The plant is a spreading, round-topped shrub, growing to a height of six feet, filling out well with foliage to the ground. It is one of the best general purpose shrubs for planting the home grounds, being particularly desirable for grouping or massing against the house and for the foregrounds and ends of border plantings.

Symphoricarpos racemosus laevigatus—GARDEN SNOWBERRY,
Very Hardy

This common snowberry of the old gardens still retains its popularity as a desirable and effective shrub for home planting. It is frequently listed as *Symphoricarpos racemosus* or common snowberry which is a much smaller plant with small fruits and therefore of less ornamental value.

The plant becomes about five feet in height, with slender, smooth branches that are densely clothed with simple, moderately small, dark green leaves which are retained on the bush well into the fall. Throughout the spring

and early summer the snowberry is simply a clean, bright little shrub, but early in July it begins to put forth its tiny pink flower clusters which do not attract any particular attention. Later in the summer, as these flowers are transformed into clusters of snow-white, wax-like berries, the bush becomes very attractive and the berries retain this attractiveness until well into the winter. Added to these attractive qualities of the shrub, its adaptation to shaded or partly shaded situations renders it especially fitting for planting about the north sides of houses or in other shaded and moist situations. Since the fruit is borne on twigs of the same season's growth, a severe thinning out of the older canes in early spring is desirable.

When the plants become too tall and ungainly, they may be pruned to the ground in early spring, invigorated by heavy manuring or other fertilizer spaded into the soil about them and they will produce a new vigorous growth of four to five feet in height that will be heavily fruited in late summer.

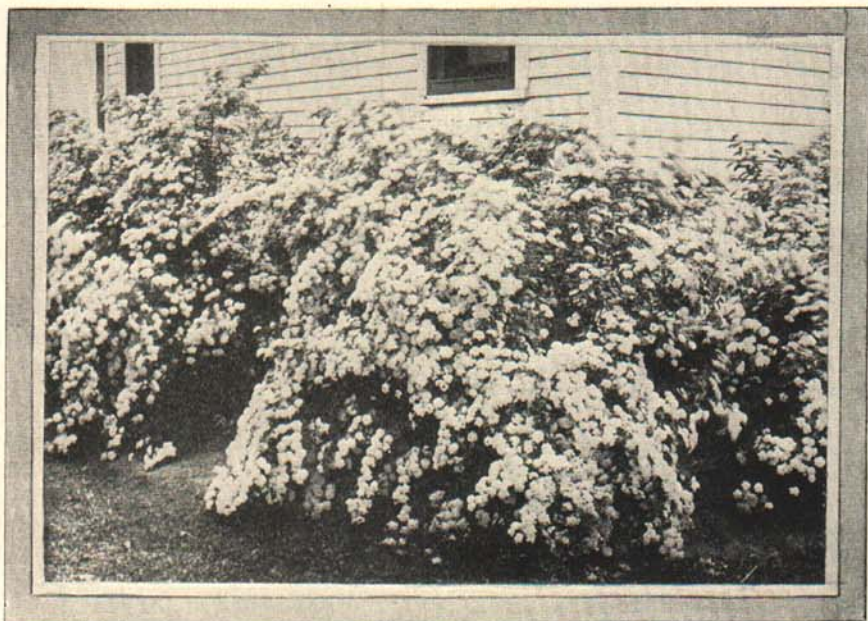


Fig. 36.—The Vanhoutte spirea is excellent for grouping about the house.

Symphoricarpos vulgaris—CORALBERRY, Very Hardy

The coralberry is another shrub much admired for the attractiveness of its fruit in fall and early winter. The foliage and growth of this shrub are much like that of the snowberry, although the twigs are somewhat more slender, the foliage somewhat smaller, and the plant slightly less in height. The slender stems of the bush are fruit bearing for a distance of eight or ten inches from the tips. In late summer and fall these crowded clusters of berries, appearing in the axles of the leaves, become purplish-red and, after the leaves have dropped, they produce a very conspicuous and attractive appearance on the bush. Like the snowberry, this is a shade and moisture

loving plant suitable for grouping or massing about the house where rather small, fine textured shrubs are desired. Under favorable conditions, the plant spreads from the roots, adapting it well to the planting of steep banks or rugged slopes to prevent the soil from washing. It should be pruned in early spring as is the species just described.

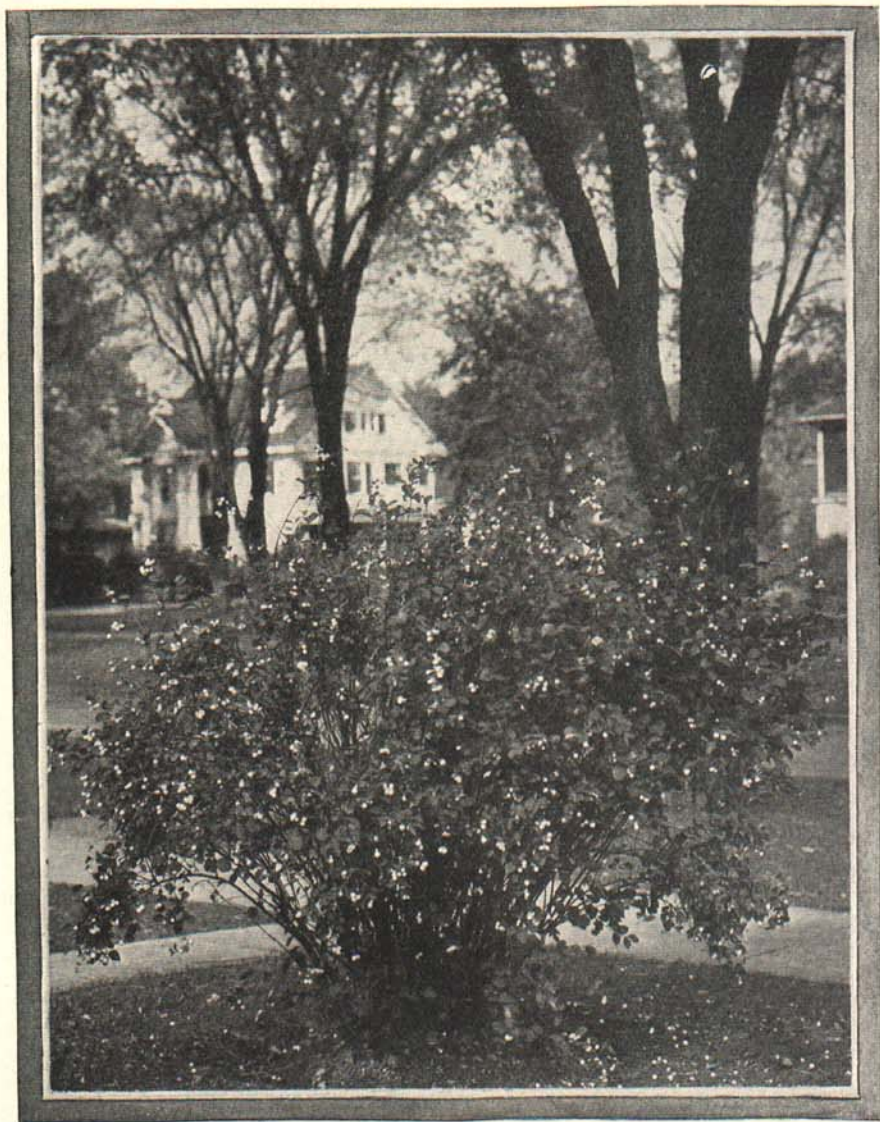


Fig. 37.—The snowberry with its many wax-like globular fruits makes an attractive display in fall and early winter.

SYRINGA—LILAC

Lilac is the quaint name of this quaint shrub from that ancient center of civilization, Eastern Europe, where this beautiful word of Persian origin



Fig. 38. The Chinese lilac, producing large attractive reddish-purple flower clusters, is one of the best high growing shrubs for home planting.

means flower. How many generations have cherished this most domesticated plant we do not know, but we are assured that it reached England at an early date, for Gerard reported in 1597 having it "in my garden in great plenty" where he knew it as the "Blue Pipe Tree" which "the later Physicians" as he states "do name Lillach or Lilach."

Comely and vigorous in its youth, stately and elegant in its prime, permanent and picturesque in its old age, it seems to typify that domestic dignity we associate with those lovely old home grounds of our ancestors,—an inheritance of today from generations of the past. Then it was universally used, whether it was about the small simple cottage of the peasant or the mansion

of the nobleman,—we were assured always of its presence.

"And close beside the gateway,
Tall, upon either hand,
Their green robes shot with sunlight,
Like queens the lilacs stand."*

Syringa vulgaris—COMMON LILAC, Very Hardy

The common lilac always has been cherished for its cosmopolitan characteristics,—withstanding severe cold and excessive heat, full sunlight or partial shade, soil of almost any type providing it is fairly fertile and fairly drained. Under this great range of conditions, time has proven it to be one of the most permanent and longest lived of all shrubs.

In recent years it is even more deserving of one's interest and admiration. During the last half century, much work has been done in hybridizing and crossing it to improve the size, color, and quality of its flowers. These labors have wrought such desirable changes in the flowers that now one can hardly afford the space for planting the original old-fashioned type, the improved varieties are so superior.

To make a choice of these many beautiful varieties now available is a difficult pleasure. Mr. E. H. Wilson, of the Arnold Arboretum, of Boston, selects the following as the twelve best varieties, those starred by the writer being the varieties most commonly available.

*Violet Jacobs.

- *Marie Legraye—Single white.
- Princess Alexandre—Single white.
- *Madame Lemoine—Double white.
- Miss Ellen Willmott—Double white.
- Gloire de Moulin—Pink.
- Macrostachya—Pink.
- *Charles The Tenth—Rosy lilac.
- *Volcan—Ruby red.
- *Congo—Single dark red-purple.
- Philemon—Dark red-purple.
- *Ludwig Spaeth—Single dark red-purple.
- Justi—Blue.



Fig. 39.—Selected varieties of the common lilac planted along a winding walk make it a very inviting place.

The coarse branching habit of the plant, its plain simple leaves, great trusses of flowers, massive size and height make the common lilac more particularly suitable for the development of distant effects. It is also suitable for planting in the corners or boundaries of the lawn, to use as a background plant in the shrubbery borders and to plant as screens in obscuring undesirable views beyond the limits of the lawn.

Unfortunately, the common lilac is very susceptible to scale insects, the presence of which may require the application of a spray in early spring before the buds expand.

Lilacs require very little pruning. Since the flower buds are formed the previous season, severe spring pruning is apt greatly to reduce the number of blossoms. After the flowering season, however, the old flower heads should be clipped and any necessary thinning out of the branches should be accomplished at this time.

Syringa chinensis—CHINESE LILAC, Very Hardy

Though many species of lilacs have been found in China, this kind, commonly known by the public as the Chinese lilac, happens to be one of the few that is not native there. Nearly a century ago this lilac, a cross of *Syringa vulgaris* and *Syringa persica*, appeared in the Botanical Gardens at Rouen and through an error as to its origin, was unfortunately named *Syringa chinensis*. At times it has been also erroneously known as *Syringa rothomagensis*. With all the errors of nomenclature, however, it remains one of the few hybrid forms that have been developed in the vast amount of breeding work performed with lilacs and is one of the most valuable as a garden plant.

In form, this lilac is intermediate between its two parent types, being a round, open headed shrub from seven to ten feet in height. It is superior to the common lilac in the looseness and gracefulness of its branches, and in the color, texture and density of its foliage. The plant is vigorous and free flowering, producing looser and more spray-like flower trusses of very attractive reddish-purple color. Like the common lilac, it thrives in any moderately fertile, well drained soil, withstanding almost all conditions of environment except excessive heat and drouth.

This lilac is well worthy of more general planting about the home grounds. It requires very little pruning or attention and makes a very appropriate kind for border plantings or for filling in empty corners about the house. It is one of the best high growing, general purpose shrubs for home planting.

Syringa japonica—JAPANESE TREE LILAC, Hardy

The Japanese tree lilac is a most distinctive and dignified appearing species. In early July it terminates the season of lilacs with its display of large unsymmetrical clusters of creamy white flowers. It also has the distinction of being the largest and most tree-like form of the genus, with great leathery leaves and large clusters of flowers. Unfortunately in attaining these superior material characters of growth, it has lost its fragrance which by some is considered the chief virtue of the lilac. It is suited to a rich, moist soil and at its best is a round topped tree attaining thirty feet in height with a clean, stout trunk covered with smooth, lustrous bark like that of the cherry. It is a very desirable, free flowering tree and quite hardy.

Syringa josikaea—HUNGARIAN LILAC, Very Hardy

The Hungarian lilac is a rather large, coarse textured shrub with large, bright green leaves and rather narrow panicles of bluish-purple flowers that are almost scentless. It is less handsome than most other species but valuable for its late blooming season.

Syringa Persica—PERSIAN LILAC, Very Hardy

The Persian lilac is one of the smallest growing species of the genus. It attains a height of from five to ten feet and produces slender, arching branches with rather small, lanceolate leaves. The fragrant flowers vary from pale lilac to white, forming rather loose broad panicles about three to four inches long and appearing shortly after *Syringa vulgaris*. It was a very popular shrub of the old gardens but in recent years the superior vigor, size and intensity of flower color of its hybrid, *Syringa chinensis*, have made the latter generally preferable. It may be advantageously used in groups or masses in the foreground of *S. chinensis* or in other places where a small growing, delicate textured lilac is most suitable.



Fig. 40.—The Persian lilac makes a desirable species to plant in the foreground of the larger growing forms.

Syringa villosa—LATE LILAC, Very Hardy

This is a Chinese lilac that is a large, vigorous shrub of excellent habit with large leaves. The flowers are produced in clusters which vary in size on different individuals. In color they also vary from rose to nearly white. The better strains of this variety with the large rose-colored flowers are propagated by cuttings from selected individuals. This species is valuable for its late flowering habit and, like the other coarse textured lilacs, should be used in groups and masses for distant effects.

TAMARIX—TAMARIX

From early spring, when their small bead-like buds first expand, until their abundant minute leaves flutter away in the fall, the tamarix lend their feminine gracefulness and feathery delicateness to our landscape scenes.

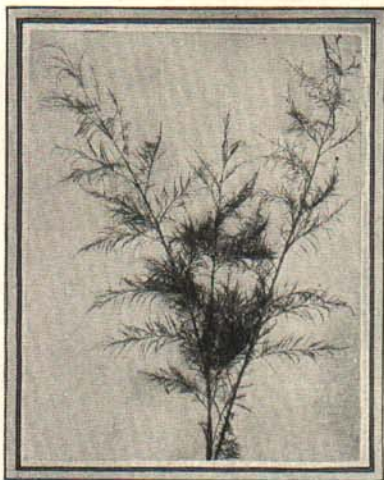


Fig. 41.—The feathery foliage and flowers of the tamarix make a most delicate effect in landscape scenes.

But these delicate, airy characters of flower and foliage appear in strong contrast to their general vigor and thriftiness, even when grown upon the most infertile, dry and wind-swept sites. Since they come to us as former habitants of warmer but more arid regions, they are more particularly suited to dry land conditions, and thrive on the lightest, sandiest soils. They are sufficiently hardy for general planting in Central Michigan, but in more northern regions will doubtless show some effects from winter killing. With the late flowering species, this is not a serious weakness since it is desirable to prune them in early spring by heading them back almost to the ground. Most of the species produce their foliage only upon the new wood,

and with their remarkable vigor in growth they soon become bare and ungainly unless severely headed back each season. In the spring flowering species, this pruning should be deferred until after the floral display because their flower buds are borne on the twigs of the previous season's growth. Other than this difference in the season of flowering, the most important variation in the several species is in the color of the foliage, some possessing an intense, lively green color and others a grayish blue-green. They are all beautiful, admirable shrubs and until one has gained their acquaintance he is not aware of the extreme daintiness and delicateness of effect that may be developed with hardy shrubs.

Tamarix gallica—FRENCH TAMARIX, Hardy

This species from southern France and other Mediterranean countries, the "land of the Gauls," is one of the most commonly cultivated species of tamarix. In early spring it is conspicuous from the reddish coloration of the bark. Later, its pale red or pink flowers appearing from lateral buds near the ends of last year's twigs and borne in short, narrow catkins about an inch long are sure to attract attention and admiration. Before these flowers have finished their graceful display, the scale-like, minute leaves have appeared to clothe the bush with its dull, bluish-green, foliage. Growing to a height of eight to ten feet, its erect, slender branches and delicate branchlets give the effect of a feathery fountain-like mass.

Tamarix gallica indica—INDIA TAMARIX, Hardy

The India tamarix differs from the French tamarix in being a late blooming species. The flowers, appearing in August and September, are borne on wood of the same season's growth. It requires severe pruning in early spring to preserve the symmetry and attractiveness of the plant. Given this attention, no shrub is more exquisitely graceful than this plant and it is especially attractive in late summer when its terminal panicles of delicate pink flowers grace its stems. This species should be disposed in groups or masses for late summer flowering effect. It is also very useful as a specimen plant about the lawn.

Tamarix parviflora, Hardy

Tamarix parviflora is offered in the trade as *Tamarix africana*, but the latter is apparently not in cultivation. It is probably the earliest spring flowering species of tamarix. The small, bright pink flowers appear in great abundance along the slender branches of the previous season's growth. The bush is rank growing, attaining about fifteen feet in height unless restrained in its ungainly growth by severe pruning each year which should be performed directly after the flowering season. It possesses the same attractive, feathery foliage effect as the other species and may be used in similar ways.

Tamarix pentandra—FIVESTAMEN TAMARIX, Very Hardy

This is another species with grey-green foliage that flowers in late summer. During the severe winter of 1933-34, it proved to be an outstandingly hardy species. In addition to this, its deep pink flowers are borne over a longer season than that of any of the other species of the group. For these reasons, it appears to be a species most suitable for general planting in Michigan.

VIBURNUMS

Large, coarse and vigorous, the viburnums lend a stable, dignified, and masculine effect to landscape scenes. Most of them are hardy, easily handled and require little or no pruning. Few insects trouble them and they are almost free from fungus attack. Besides their desirable quality of developing showy flowers in the spring, their attractive colored fruits brighten their appearance in summer, and their rich, verdant foliage generally assumes most gorgeous colors in the fall. As a rule, viburnums delight in cool, moist, fertile soils and withstand partial shade, although, fortunately, there are some species that thrive on the higher, drier lands in full exposure. Their large size and coarse texture especially fit them for the development of distant effects rather than to the planting of areas immediately about the house, steps, or walks. The native species of viburnums constitute one of the most desirable classes of plants for general planting in Michigan and are especially fitting in the production of naturalistic effects in large scale plantings such as upon the more expansive home grounds or other extensive landscape projects.

Viburnum acerifolium—MAPLELEAF VIBURNUM, Very Hardy

The mapleleaf viburnum, an inhabitant of our northern forests, is a small shade-enduring shrub with neat maple-like leaves, small flower heads and black fruit. The foliage sometimes assumes bright autumn colors.

Though this species is not as attractive in fruit or flower as many of the others, it is very suitable for planting under large trees since it is very resistant to shade and to the encroachment of established roots.



Fig. 42.—Along woodland borders and meandering drives the native viburnums seem most harmonious with the environment.

Viburnum americanum—AMERICAN CRANBERRYBUSH,
Very Hardy

There are two viburnums, both admired for their bright red fruits and both commonly known as the cranberrybush. Both of them bear large palmately lobed and veined leaves, and showy, sterile flowers surrounding the flower clusters. This American species is a shrub more open and spreading than its European relative, *Viburnum opulus*, while its fruit, which is very lustrous and translucent, remains on the branches throughout the winter. In the autumn, the leaves turn a bright orange-red before falling. It is usually six feet or more in height and, like *Viburnum opulus*, is suited to higher, drier, and less fertile soils than most other viburnums. It is very suitable for planting along drives or boundaries of lawn areas for late summer and fall effects. Its coarse texture fits it for distant plantings rather than for locations adjacent to walks, steps, and other near-by spots.

Viburnum carlesi—FRAGRANT VIBURNUM, Very Hardy

From Korea, "Land of the Morning Calm," about twenty years ago, came this delightful addition to the aristocracy of our gardens. Its flattened clusters of flowers, pink in bud but waxy-white in bloom, permeate the surrounding atmosphere with their fragrance before spring is a fortnight old. The leaves,—large, dull green, and hairy, appearing with the flowers, the general thriftiness, hardiness, and long-lived habit of the shrub,—all of these admirable qualities combine to make it a most desirable plant. It is the one viburnum above all others for locations in the small garden where a rather coarse textured, round, spreading shrub some four to five feet in height is desired.

Like many of our native viburnums that are woodland plants thriving in moist situations where the soil is rich in rotting leaves, it thrives in a fertile, loamy soil that is both cool and deep.

Viburnum cassinoides—WITHE-ROD, Very Hardy

This is another native viburnum forming a symmetrical shrub six to eight feet in height. The leaves are thick, smooth and shiny, but in the autumn they turn first purple and then orange-red. The white flowers, appearing in June and July, are formed in flat clusters that are two to four inches in diameter. It is the fruit, however, which is most striking. In August and September, the berries assume a fanciful medley of colors,—green, pink, reddish and dark purple berries appearing together in the clusters. The plant stands wet soils and although a little slow in becoming established, is considered an excellent shrub for naturalistic plantings.

Viburnum dentatum—ARROWWOOD, Very Hardy

The arrowwood, used by the Indians for making arrows, is one of the most common native viburnums in our meadows and lower lands. It is a compact growing shrub six to ten feet high and often somewhat more in width. Its beauty attracts our attention in the landscape at two periods. In June it first attracts our attention when covered with large, flat clusters of snowy flowers. Again, later in the season, when these flowers are succeeded by dark, shining, blue berries, we admire its beauty. Though this plant is suited particularly to moist lands, it will grow well in any good garden soil and may be used in plantings along drives, about the borders of ponds or edges of woods where quiet, unassuming, naturalistic effects are to be produced.

Viburnum lantana—WAYFARING TREE, Very Hardy

This European shrub or small tree grows twelve to fifteen feet high with thick, dark blue-green leaves. It is the first of the viburnums to come into bloom, its clusters of small flowers appearing in early May. The leaves, stalks and buds are conspicuously downy, so much so that this shrub is sometimes known as the "cotton tree." The large clusters of fruits when fully grown, become first bright red and later black. This is a very hardy, vigorous plant and one of the best and most commonly planted species of viburnums for large shrubbery masses. It has long been in cultivation and

in former times was commonly known as the "rowen tree." In the days when people believed in witches, goblins and other evil spirits, the efficiency of the "rowen tree" as a protection against them was seldom doubted. For this reason, it was commonly planted adjacent to the entrances of dwellings and stables.

Viburnum lentago—NANNYBERRY, Very Hardy

This roadside plant is a large shrub or small tree with large, thick, lustrous leaves and large rounded clusters of creamy flowers which are followed by drooping blue-black fruits. It will tolerate moist or wet soil and is one of the best shrubs where thick, tall, very native-like growth is desired. It is also most suitable for planting the borders of woods where it will tend to develop most pleasing flowering effects in early June.

Viburnum molle—KENTUCKY VIBURNUM, Hardy

This is a southern viburnum greatly resembling *Viburnum dentatum*. It is a robust growing shrub with cymes of white flowers that appear later than those of other viburnums. It is perfectly hardy in Central Michigan, although of questionable hardiness in the most northern section of the state.

Viburnum opulus—EUROPEAN CRANBERRYBUSH, Very Hardy

The European cranberrybush, frequently known as the highbush cranberry, has been in common cultivation for many years. It is a close branching shrub with large palmately lobed and veined leaves attaining about twelve to fifteen feet in height. The creamy white flower clusters are flat and though the central flowers of each cluster are small and rather inconspicuous, those of the outermost ring are much larger and showier. The latter, however, have sacrificed everything to appearance, for they contain no essential organs,—the possession of seed cases and stamens being left to the small flowers of the center. It is from these inconspicuous flowers alone that are produced the large globular fruits so attractive on the bush in the autumn. When these fruits have assumed their scarlet tints and the large green leaves have changed to red, it is "a shrub that seems to have come from that Garden of Aladdin where the fruits of the trees were jewels." These fruits remain attractive well into the winter making the shrub very suitable in landscape scenes for late season effects. Fortunately it thrives upon an upland soil withstanding drouth better than most of the other species. Its general hardiness and thriftiness unite with the beauty of its foliage, flower and fruit to make it an admirable shrub. It is, however, more suitable for naturalistic, landscape plantings than for the development of the more refined, subdued and cultivated effects of the small home grounds.

Viburnum opulus sterile—COMMON SNOWBALL, Very Hardy

The common snowball is a variety developed from *Viburnum opulus*. Here the flower cluster is made up entirely of ray flowers, transforming the cluster into a great snowball of attractive florets. The florets are all absolutely sterile; consequently, though, the flower effect is more pretentious, there are no fruits produced after flowering for late summer and fall effects.

This shrub was formerly a very popular garden plant but it so commonly becomes infested with aphids that curl and pucker the leaves and distort the young growing shoots that it has fallen into general disfavor. The plants may be sprayed with sulphate of nicotine to kill the aphids, two or more applications being usually necessary. Old plants, where the shoots have become distorted, should be pruned to the ground in March or April and the new growths later thinned out.



Fig. 43.—The globular showy flower-clusters of the Japanese snowball with its dark green leaves as a background make it a most attractive shrub in bloom.

Viburnum opulus nanum—DWARF CRANBERRYBUSH, Very Hardy

This is a very dwarf, compact, growing form of *Viburnum opulus*. The leaves are quite similar in size, color and form to the type, and the foliage is very dense. It usually grows about a foot in height and is more particularly suitable for the forming of coarse leaved, low edgings in formal gardens than for general grouping or landscape planting.

Viburnum tomentosum—DOUBLEFILE VIBURNUM, Half Hardy

Viburnum tomentosum is a large, flat-topped shrub with wide, spreading, horizontal branches. It is a striking plant in foliage. The tomentose or hairy leaves are heavy, rich and luxuriant during the summer months and in the fall assume attractive purple colorations. The flowers, like those of *Viburnum opulus*, develop into flat clusters of small, perfect flowers that are surrounded by a ring of abortive or ray flowers with much enlarged, pure white corollas. The plant is of but moderate growth, of compact habit, and not very hardy.

Viburnum tomentosum plicatum—JAPANESE SNOWBALL,
Half Hardy

The Japanese snowball is a form of *Viburnum tomentosum* with all the flowers of each cluster developed into ray flowers, thus producing a very globular, showy cluster that is even larger and more compact than the common snowball. The foliage is dense and of a deep rich green; the leaves are crinkled or plicated and make a beautiful background for the snowy white flowers. In the fall the leaves turn more or less purple shaded with orange. The plant is of moderate growth and of compact habit.

Unfortunately, this most desirable shrub is not a thrifty or fully hardy plant in Central Michigan. It requires a good soil and a sheltered situation even in the mildest sections of the state. Unfortunately, too, it does not take kindly to transplanting. Were it not for its lack of hardiness and thriftiness, it would be a most beautiful and desirable shrub for home planting.

Weigela rosea—PINK WEIGELA, Hardy

In the garden of an old mandarin on one of the most beautiful islands of the world, the Island of Chusan, off the coast of Northern China, the common pink weigela of our gardens was first found. There, in 1843, the eyes of an English plant explorer, Robert Fortune, first fell upon it, loaded with its tubular rose-colored flowers, the pride of the old mandarin and the admiration of the adventurous discoverer. Declaring it to be one of the most beautiful shrubs of Northern China, Robert Fortune sent specimens back to England where it was enthusiastically received and named to honor the German botanist Weigel.

It is a wide spreading bush six to eight feet high with strong, coarse but gracefully drooping branches. When the plant is given plenty of room, it

fills out well to the ground and assumes a gracefully spreading form, but when crowded, it has a tendency to become straggly and awkward in its form.

The flowers, appearing in early June, are large trumpet-shaped blossoms of bright rosy-pink color turning darker as they age. It is a very free flowering shrub and one of the most attractive bushes while in bloom. This however, is its only season of display. It grows best in full sunlight in a soil of moderate fertility and requires plenty of space. The plant is somewhat subject to winter killing, particularly in its youth or after a season where the branches have made a vigorous growth.

The weigela is more particularly suitable for arranging in open groups about the lawn and for filling in a vacant corner about the house where it may receive the shelter, sunlight and space needed for its best development.

There are many desirable varieties and hybrids of *Weigela rosea* that exceed the type in flower character and vary from a deep pink to almost white in the color of their flowers. Many of them are particularly striking when in full bloom. Gustave Mallet, a pink; Henderson, a light pink; Abel Carriere, a deep pink and Desbois, another deep pink, are a few of the many desirable varieties now available.

Gustave Mallet was the only one of the Weigela group grown at the Graham Experiment Station, Grand Rapids, Michigan, to show no injury from the severe weather of the winter of 1933-34, and to bloom freely the succeeding season.

Weigela Eva Rathka, Hardy

An erect growing hybrid that is very popular because of its brilliant carmine-red flowers that make a particularly striking effect. It tends to flower more or less continuously after its first burst of bloom in June, although usually the flowers are not sufficiently numerous at any one time after this June display to be especially effective. It withstands partial shade but unfortunately, is not a thrifty grower, possessing the tendency to become straggly in form unless judiciously pruned and properly cultivated. Where a very striking effect of flowers is desired this makes a very fitting shrub. It should be used more for accentuating important points in the garden than for general disposition about the grounds.

SHRUBS FOR SPECIAL PURPOSES

For Attracting Birds

It is frequently desirable in making landscape plantings to consider in the selection of shrubs, their attractiveness for birds. Many shrubs listed in this bulletin produce seeds or fruits that not only are ornamental but also serve as food for birds. The following list includes some of the most important shrubs for thus furnishing food for birds:

<i>Aronia arbutifolia</i>	<i>Rhus glabra</i>
<i>Amelanchier canadensis</i>	<i>Rhus typhina</i>
<i>Berberis thunbergii</i>	<i>Rhus copallina</i>
<i>Cornus alba</i>	<i>Rosa nitida</i>
<i>Cornus alternifolia</i>	<i>Rosa humilis</i>
<i>Cornus florida</i>	<i>Rosa setigera</i> and other native species
<i>Cornus stolonifera</i>	<i>Sambucus canadensis</i>
<i>Cornus sanguinea</i>	<i>Sambucus racemosus</i>
<i>Cornus paniculata</i>	<i>Sambucus nigra</i>
<i>Elaeagnus</i> (in variety)	<i>Symphoricarpos racemosus laevigatus</i>
<i>Euonymus</i> (in variety)	<i>Symphoricarpos vulgaris</i>
<i>Ilex verticillata</i>	<i>Viburnum opulus</i>
<i>Ligustrum</i> (in variety but must not be clipped)	<i>Viburnum acerifolium</i>
<i>Lonicera</i> (in variety)	<i>Viburnum lentago</i>
<i>Prunus</i> (in variety)	<i>Viburnum dentatum</i>
<i>Rhamnus cathartica</i>	<i>Viburnum lantana</i>
<i>Rhus canadensis</i>	<i>Viburnum cassinoides</i>

FOR HEDGES

Trimmed Hedge

Acanthopanax pentaphyllum
Berberis thunbergii
Berberis thunbergii pluriflora erecta
Ligustrum (in variety)
Rhamnus cathartica
Elaeagnus augustifolia

Low Hedge

Berberis thunbergii minor
Cotoneaster horizontalis
Euonymus radicans
Ligustrum lodense
Viburnum opulus nanum

Flowering Hedge

Althea (in variety where sufficiently
hardy)
Caragana arborescens
Deutzia gracilis
Deutzia lemoinei
Forsythia intermedia
Hydrangea Peegee
Kerria japonica
Lonicera (in variety)
Philadelphus (in variety)
Rosa hugonis
Rosa rugosa
Rosa rugosa hybrida (in variety)
Spiraea Anthony Waterer
Spiraea froebeli
Spiraea vanhouttei

FOR DRY OR SANDY SOILS

<i>Amorpha fruticosa</i>	<i>Rhus cotinus</i>
<i>Caragana arborescens</i>	<i>Rhus glabra</i>
<i>Colutea arborescens</i>	<i>Rhus trilobata</i>
<i>Lespedeza bicolor</i>	<i>Rhus typhina</i>
<i>Hypericum prolificum</i>	<i>Robinia hispida</i>
<i>Rhus canadensis</i>	<i>Rosa nitida</i>
<i>Rhus copallina</i>	<i>Tamarix</i> (in variety)

FOR SHADY PLACES

<i>Amelanchier canadensis</i>	<i>Sambucus</i> (in variety except yellow leaved sorts)
<i>Calycanthus floridus</i>	<i>Symphoricarpos racemosus</i>
<i>Clethra alnifolia</i>	<i>Symphoricarpos vulgaris</i>
<i>Cornus</i> (in variety except variegated leaved sorts)	<i>Viburnum acerifolium</i>
<i>Hamamelis virginiana</i>	<i>Viburnum dentatum</i>
<i>Hypericum</i> (in variety)	<i>Viburnum lantana</i>
<i>Kerria</i> (in variety)	<i>Viburnum lentago</i>
<i>Ligustrum vulgare</i>	<i>Viburnum tomentosum</i>
<i>Rhodotypos kerrioides</i>	<i>Viburnum tomentosum plicatum</i>
<i>Ribes alpinum</i>	<i>Weigela Eva Rathka</i>
<i>Ribes aureum</i>	<i>Ligustrum</i> (in variety)
	<i>Rhus canadensis</i>

FOR SPECIMEN PLANTS

<i>Acer palmatum</i>	<i>Philadelphus coronarius aureus</i>
Japanese Maple	Golden <i>Philadelphus</i>
<i>Aralia spinosa</i>	<i>Physocarpus opulifolius luteus</i>
Hercules Club	Goldleaf Ninebark
<i>Chionanthus virginica</i>	<i>Prunus cerasifera pissardi</i>
White Fringe-tree	Purpleleaf Plum
<i>Cornus alba spaethi</i>	<i>Prunus triloba</i>
Spaeth Dogwood	Flowering Plum
<i>Cornus florida</i>	<i>Rhus cotinus</i>
Flowering Dogwood	Common Smoketree
<i>Cornus mas aureo-elagantissima</i>	<i>Rhus typhina laciniata</i>
Variegated Cornelian Cherry	Shredded Sumac
<i>Cydonia japonica</i>	<i>Tamarix</i> (in variety)
Flowering Quince	<i>Weigela Rosea</i>
<i>Elaeagnus augustifolia</i>	<i>Syringa chinensis</i>
Russian Olive	<i>Syringa japonica</i>
<i>Hydrangea arborescens</i>	<i>Rosa hugonis</i>
Snowball Hydrangea	<i>Rosa rugosa hybrida</i> (in variety)
<i>Hydrangea paniculata grandiflora</i>	<i>Rosa rubrifolia</i>
Peegee Hydrangea	<i>Viburnum tomentosum plicatum</i>
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