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Mrs. by B. Y. Morrison  
 for book on  
 Ornamentals

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## INTRODUCTION

Although some of the most striking garden effects are to be had from a carefully designed planting of shrubs, this class of plants usually receives scant attention at the hands of gardeners who are content to use the most commonplace plants, now trite and hackneyed no matter what their charms may once have been. This is sometimes explained by amateurs on the ground that they do not know or can not find new shrubs in the nurseries. Nurserymen, on the other hand, claim that they can not afford to grow shrubs for which there is no demand. It is the purpose of this circular, therefore, to call attention to some of the more recently introduced plants in the hope that amateurs will be sufficiently convinced of their desirability to bring them into more common cultivation.

It should be explained, perhaps, that the expression "recently introduced" is used in a relative rather than a literal sense, for some plants are included that have been known to botanists and horticultural specialists for some time, and yet are not well known in any other way.

The advantage in using shrubby materials, rather than herbaceous plants, is chiefly that they make less continued demands in care and cultivation if well planted in the beginning. If proper care is given in the preparation of the soil for planting, little more attention is needed save for corrective pruning, pruning to maintain flowering wood, and the occasional spraying that may be needed for insect attacks or fungus diseases, should these occur. There is nothing comparable to the program of soil fertilization, of division and resetting that is necessary with perennials.

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This present circular is intended to be suggestive rather than final. It has been limited arbitrarily to the discussion of some of the more striking and obvious of the introduced fruiting shrubs and might have been made much longer if the subject had been covered with complete attention to all genera or to their geographical usefulness. Most of the plants discussed are of general usefulness and if any regions are neglected they are chiefly the extreme northern states and our southwestern states which have rather specialized requirements, though both of these will find here plants suitable for their situations.

The one factor that may determine the usefulness of the shrub is the relationship between the size of the shrub and the size of the garden, for obviously the gardener, who has but a small area at his disposal and who passionately desires as much bloom as he can contrive, will not be willing to give up much space to plants that take up considerable room and have only seasonal beauty, unless they can be made to serve as foil or background for some other plants. On the other hand, the gardener, who has at his disposal an ample plot of ground, can find the greatest pleasure in a shrub border that may be made to serve various utilitarian purposes as well. From it he can have effects of flowers with great displays in spring and lesser effects through summer, displays of fruits and autumn color, contrasts of foliage and growth through all the summer season and even effects of shoot and twig in midwinter. If the border is diversified by the use of broad-leaved evergreens, the effects are considerably increased.

In planning such a border, care must be had not to use too many fruiting shrubs at expense of the flowering shrubs, for curiously enough there are relatively few shrubs that are superlatively effective both in flower and fruit. Shrubs that are effective both for flower, fruit, and autumn color should perhaps be chosen first, but the true lover of fine shrubs will not limit his choice in such a fashion but will find justification for his choices. The value of flowers is so obvious that this circular discusses fruiting plants almost exclusively, in order to emphasize this rather neglected phase of shrub planting design.

In considering any plant, the intending planter always likes to know what the plant looks like and what its hardiness will be. These data will tell him if he can use the plant successfully in his location and if he would like to have it in any case. The first question is easier to answer than the latter. When it is possible, specific suggestions are made, but, when no definite statement is given, it should be remembered that the plants are grown here near Washington, D. C., in a climate that has great extremes of temperature, relatively little snowfall and occasional days of intense winter cold accompanied by brilliant sunshine and sharp winds, a combination most trying for evergreen plants and for any shrubs that must have thorough ripening of their growth before the onset of severe weather.



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There are various factors besides cold that may determine a plant's hardiness. All gardeners know that the careful selection of a site will often affect the ultimate hardiness of a plant and that excess of moisture in the soil which may induce too rampant growth will sometimes cause a plant of limited hardiness to continue its growth so late in the season that it can never properly ripen its wood before cold weather. Excessive dryness, on the other hand, may so enfeeble growth that a plant never becomes established. Some plants will survive only when planted in the company of other shrubs that shelter them from wind and sun. Still others are plants that develop hardy tops only after several years of winter killing. This is frequently the case with crape myrtles in their northern limits, which eventually form a root system so vigorous and a base or trunk so firm that they finally succeed in establishing tops that survive. The effect of bright sunlight and low temperatures has already been mentioned, a combination that can be somewhat offset by planting doubtful species where they are protected from morning sunlight.

The discussion of shrubs that follows has been limited in various arbitrary ways. In order to keep within reasonable bounds, no group is discussed in its entirety, but enough examples are chosen to suggest the range of forms available. The inquiring gardener can find further information in various specialized treatments of the different genera. The treatment is divided into groups that are arranged alphabetically, but the various plants in each group are arranged according to the characters that may suggest their use in the garden rather than their botanical relationships. No such arrangement can be entirely satisfactory and some plants are omitted for no other reason than that they do not fall within the arbitrary limits of the scheme.



#### AUCUBA

Among the broad-leaved evergreen plants introduced from the Orient, there is one that has never received as much attention as it deserves in outdoor use, largely because of the disfavor that is heaped upon one of its horticultural forms. Gardeners who know it only as the Gold Dust Tree rarely have a good word for the aucuba, but well-grown fruiting specimens of the several green-leaved varieties of Aucuba japonica are of great value, especially as they are shade tolerant and develop good bushes in the shade of trees or on the north sides of buildings. They are not drought tolerant, however, and it must not be expected that they will compete successfully with tree roots.



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*Aucuba japonica*

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As the sexes are on different bushes, plants propagated from cuttings of fruiting specimens should be chosen with one staminate plant in each grouping to insure fertilization. Planted in rich, moderately moist soil, these will develop into large, dense shrubs up to 10 feet, with vigorous green stems and branches well covered with handsome evergreen leaves of dark, rich green that vary in width according to the variety. The eventual plant is often as dense as a well-grown boxwood and of a somewhat similar outline. The large size of the leaves, often 5 inches wide and 8 inches long, gives a distinct contrast in a mixed planting to the usual small-sized leaves of more familiar shrubs and even more striking contrasts to such conifers as yew and juniper. There is a considerable variation in leaf size, however, and one very handsome form has leaves that are scarcely two inches wide. This plant makes an even more compact mass than the larger-leaved forms, with a rounded silhouette that particularly resembles that of old boxwood. The more commonly met forms are those in which the leaves are dotted and speckled with gold variegations. These may be so few that they are not obvious or so abundant that the whole leaf appears yellow rather than green. For ordinary use these varieties are not always in good taste, but occasionally they provide just the correct color variation for a planting otherwise monotonously green. The popular aversion to such plants is too sweeping, for it happens too often that people who find pleasure in variegation choose such plants to the exclusion of all other kinds, with the result that their gardens become collections of abnormal forms rather than more reasonable compositions. If, in addition to variegation, they specialize in plants with blue or purple foliage and with weeping habit, the concentration becomes even more offensive. On the other hand, a sparing use of bizarre material makes for excellence.



It sometimes happens that aucubas are slow to establish themselves when first planted. This is particularly true of young plants, rooted from cuttings, as there is a period of slow growth immediately after the rooting of cuttings. One should be patient until the plants are well rooted. After that, growth is rapid. No pruning or training is needed unless some shoot develops irregularly.

Flowers develop first in the staminate plants and appear in erect panicles of dull flowers with curious brownish petals. The pistillate inflorescence is smaller and less conspicuous, but from it develop the ovoid berries, the size of a large cranberry, that here turn color very late in autumn, becoming fully scarlet during the winter when they contrast strikingly with deep green leaves. The berries last well into the following season unless eaten by birds.

It has been mentioned that this plant is tolerant of shade, but it should also be mentioned that it is very tolerant of city conditions where there is not always sufficient light and almost always an excess of dirt and soot. Because of this tolerance, the plant is sometimes used too commonly, with the result that its dark green masses of foliage become oppressively dark and gloomy in effect, unless combined with other plants that provide contrasts in color and texture.



## BERBERIS

For the present day gardener the word barberry probably calls to mind one of the most useful of all shrubs, the Japanese barberry (Berberis Thunbergii), which, since its introduction in 1875, has been so widely propagated and distributed in this country that it has been said to exist here now in far greater numbers than in its native country. There are other barberries that are almost as desirable for all states where they can be grown without causing danger from infection by the black stem rust of wheat for which they are alternate hosts.

Nearly everyone is familiar with this plant, that forms eventually a well-rounded specimen up to 5 feet high with a spread up to 6 feet or more. Its overarching branches and abundant twigs, well armed with short spines, form an almost impenetrable mass, clothed all summer with handsome small leaves that turn brilliant hues of yellow, orange and scarlet before falling. In early spring they are lined with pendent, pale-yellow blossoms that make relatively little show in themselves, but are followed by heavy crops of shining scarlet berries that last through the winter until eaten by migratory birds. The use of this plant has been increased by the dissemination of a purple-leaved form that shows all the familiar colors of copper beech, if planted in the sun. Plants grown in the shade lose the fine color they show on new leaves and shoots and turn the familiar green during mid-summer. Whether grown in shade or sun, these turn fine colors in the autumn, much as the normal green type. There is also a useful dwarf form in which the leaves are smaller than those of the type, and the berries, while abundant, are smaller and frequently seedless. This form has been recommended as a dwarf edging for formal garden beds in regions where boxwood is not hardy.

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As the plant is deciduous, like the type, it makes only a comparatively good substitute for boxwood, although its compact growth and ready response to shearing make it a useful low hedge.

Before the advent of the Japanese barberry, the common barberry of Europe, introduced early in the history of the American colonies, was the most commonly found plant. This has established itself as a native in many parts of the northeastern states. There is no denying the fact that a well-developed plant of this species, whether in spring when it is covered with pendent clusters of bright-yellow flowers or in autumn when these are replaced by brilliant scarlet fruits, makes a magnificent sight. It has been so clearly demonstrated, however, that this plant has played an active role in the spread of black stem rust of wheat that no intelligent gardener, whether within the wheat-growing areas or not, will be party to its use, but will content himself with the Japanese barberry or other immune species.

Two deciduous barberries of rather low growth and complete immunity should be mentioned, one from Korea and the other from Japan.

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The latter, Berberis sieboldii, has often been confused in trade with a susceptible plant once known as Berberis sieboldii but properly known as B. japonica. This belongs in the Vulgares Section of the genus and, like B. vulgaris, is highly susceptible. Our plant is a rather low-growing bush, not over 4 feet, that spreads laterally by short stolons until it forms thicketlike masses of erect stems well clothed with rather large leaves that are fringed with delicate ciliate hairs. The leaves are dark green and of heavy texture and show beautiful bronze tints in spring and fine autumn colors. The flowers, which are small and pale yellow, are not particularly showy but are followed by small, round berries of brilliant scarlet with firm, shiny coats, lasting well through the winter.

This plant is very much like the other member of the pair, Berberis koreana, except that the latter is more robust in all its parts, forming bushes up to 5 feet. The leaves are about the same size but are somewhat more coarsely ciliate. They show the same type of coloring spring and autumn. The flowers are somewhat more conspicuous as they are larger and arranged in a larger raceme. The berries that follow are also larger but are of the same polished scarlet, so that they make a greater show.



Another pair of barberries, particularly showy in their fruiting, but unfortunately not immune and so of value only outside the prescribed area, are Berberis Henryana and brachypoda. The first is the smaller of the two, making a bush little larger than an old specimen of Thunbergii and of the same rounded mass. Its leaves, however, are of a very different shape, being 3 to 4 inches long and obovate-oblong, dark green in color and of heavy texture with little autumn color here. The flowers, which are small, are borne in closely set, drooping racemes that hang down conspicuously from the overarching branches, to be followed in the autumn by dull-crimson berries that last well into the winter. As they are dull rather than shining, they are not as showy as any of the previously described sorts but are handsome enough when the leaves have fallen. Berberis brachypoda resembles this species in many ways, but is more upright in growth, forming a rather vase-shaped bush with a broad, somewhat flattened top, as much as 6 feet high. Its leaves are similar in shape and style but somewhat larger, dark green in color, and with a handsome rugose surface. The flower clusters are larger and showier, as are the fruiting clusters.



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If one seeks an effect from berried plants early in the season, one might include Berberis verna, outside the wheat states, for it is immune. In habit it is unlike any of the preceding species for it forms in time large fountainlike bushes up to 6 feet with at least an equal spread of branches. It makes a great mass of slender shoots that fall over of their own weight, especially when loaded with fruit. The leaves, which are a yellowish green, are irregular in size, usually not exceeding  $1\frac{1}{2}$  inches and of a lanceolate or oblanceolate shape. They show no special color before falling but set off the abundant drooping clusters of yellow flowers and the even more conspicuous clusters of small, round berries, coral red in color, that are at their best from late September until destroyed by the first severe freeze. As they are more filled with sap than most barberry fruits, they are very easily hurt by freezing and make no effect during the winter.

Since the genus Berberis is large and varied, many other examples might be cited, but two plants of another group are perhaps sufficient, for all the very handsome evergreen sorts are more valued for their foliage than for their black fruits that are not conspicuously showy on the bush although handsome enough if a branch is cut and brought in for a winter bouquet.

Berberis wilsonae and B. polyantha belong in a subdivision that is characterized by dense growth, slender and rather weak spines, gray-green foliage, midsummer-flowering and round, translucent, juicy berries that show exquisite tinting and coloring as they ripen.



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*Berberis wilsonae*

Mrs. Wilson's barberry forms a rounded bush up to 5 feet high with as much as 8 feet spread, an absolutely impenetrable thicket of slender twigs, well supplied with slender spines. The leaves are narrow, closely set, forming dense coverings, of a grayish-green color, contrasting well with other greens, that shows some bronze color in the autumn. In this climate the plant is semi-evergreen, becoming wholly so farther south but almost deciduous in the north. The flowers appear in July, in small clusters, all along the stems and are quickly followed by round, translucent berries of a pale green color. These show first a pinkish tinting and finally turn light-coral and rose-pink colors as autumn advances. As they are filled with sap, they are soon spoiled by heavy freezing.

Berberis polyantha forms a much more erect shrub up to 8 feet with coarser leaves, broad obovate in shape, up to 3/4 to 1 inch long. Its distinguishing feature is the branched panicle of flowers. As these usually appear along the ends of the flowering shoots, the effect is almost that of a very large or compound panicle, as in some lilacs. This profusion of bloom leads to a corresponding abundance of fruit. In climates that are not extreme, where barberries of this type do best, no more handsome fruiting can be imagined. Neither this nor Mrs. Wilson's barberry is useful in extremely cold climates where they winter kill too often to permit the formation of good specimens.





*Berberis polyantha*



Various named horticultural forms, seedling variations of species in this Section, or possible hybrids between species of this Section, have been offered in trade, all characterized by berries of this type. It has been our experience here that plants of this Section are not dependable in their fruiting and that the displays are not uniform over the plants. In regions with cooler summers and where there is more moisture in the air, they seem to be more dependable.

All barberries make handsome individual specimens as well as effective groups, but they are impatient of crowding and prefer sunny locations in order to develop their best flowering and fruiting. Although they survive in some shade, their growth becomes attenuated and the resulting plants are not typical. They make no special demands of soil but respond best in good soil. No pruning is needed and, unless a defensive hedge is required, none should be given, except for the occasional removal of stems that have become old and feeble. These should be cut out at the base of the plant during the dormant season.

B. Sargentiana  
paragraph



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*Berberis Sargentiana*



CALLICARPA

The callicarpa illustrates perfectly the statement that plants with showy fruits often have rather poor flowers, for surely the tiny clusters of faintly-tinted flowers amount to very little, while the berries that follow are among the most unusual of all in that they are violet or purple, colors rare among hardy shrubs.

Although there is one species native to all our coastal states from Virginia and Florida to Texas, the foreign species are the ones most commonly grown, the oldest in cultivation being Callicarpa japonica, native to Japan and introduced into cultivation about 1862. This is a much more slender and charming plant than some of the oriental species more recently introduced. Left to its natural development, it forms a rounded shrub up to 5 feet with overarching branches lined with slender leaves of yellow-green color that turn somewhat yellowish before they fall. As the berries are borne in rounded corymbs in the axils of all the leaves along the new shoots, they are somewhat hidden until the first frosts have caused the leaves to drop, after which they are fully exposed, showing their warm pinkish-purple color to advantage. As their skin is dry and papery and they are not filled with sap, they last well into the winter, but not after severe freezing which causes them to turn brown. The berries are borne on new wood so no harm follows by cutting the fruiting shoots to use in autumn bouquets, for example, in combination with hardy chrysanthemums or with other berried shrubs, such as the black privets or ivory-white snowberries.

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*Callicarpa japonica*

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In contrast with the rather delicate scale of this plant, Callicarpa Giraldiviana first appears both coarse and gross, but if it is planted where it belongs with ample room to develop it is more promising. Here it makes a tall, much-branched shrub up to 12 feet with large, coarse leaves that contrast well with fine-leaves shrubs. The fruiting clusters are somewhat more open than in japonica and, as the stems are erect rather than overarching, make some show before the leaves have fallen. There is little difference in color, although there may be a trifle less pink in the lavender purple.



## CLERODENDRON

In any mixed shrubbery one of the important points to be considered is a diversity of foliage effects, since they are important for the longer period when there is neither flower nor fruit. The monotonous foliage effect of the usual shrub border comes from the fact that there are few important hardy shrubs with conspicuously fine or conspicuously large leaves.

Clerodendron trichotomum is valuable, therefore, not only because it has showy flowers in late autumn, followed by equally showy fruits, but also because it has large handsome foliage. It is essentially a plant for the back of the border, for in time it develops into a large shrub, in favorable sites even to the size of a small tree. Possibly the most famous plant in this country is the specimen at Highland Park, Rochester, N. Y., where in a sheltered position it has formed a treelike shrub 20 feet high that makes a magnificent sight in season.

The plant grows vigorously with wide-branched shoots clothed with large, coarse leaves. The flowers are borne in large terminal heads. The individual flowers, like white abelia flowers, are furnished with conspicuous calyces at first a pinkish red, becoming almost a dull crimson by the time the fruits are formed. The flowers develop in late summer beginning in August and, as they bloom successively over the flower head, the effect lasts for weeks. They are quickly followed by berrylike fruits of the most brilliant coloring, at first turquoise to peacock blue, darkening with age to purplish black. These, in contrast with the brilliant calyces, make a striking and exotic effect, so that one regrets that the other brilliant species of this genus are not as hardy.

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As the flowers are borne on new wood, it is always desirable to keep the plants in vigorous growth and, as they respond freely to rich, moist soil, this can be encouraged by care in feeding and watering, as well as in the initial choice of location. This latter is more important in the North than in the South, as a little shelter from sun and wind will extend the range of usefulness of the plant.

CORNUS

Although the dogwoods and cornels of our own country provide both bushes and small trees of great value for their fruits, including plants with white berries as in Cornus racemosa, blue berries as in C. alternifolia, and scarlet fruits as in our superb dogwood, C. florida, these fall outside the scope of this bulletin and one can mention only the very old-fashioned Cornus mas, now strangely neglected, and the oriental Cornus kousa.

One finds Cornus mas usually in old plantings, often those made during the latter part of the nineteenth century, and well-developed specimens 10 or more feet high, with an equal spread, often call forth exclamations of pleasure when discovered in late March or early April when their branches are studded with small pompoms of pale yellow, scented flowers.

To be sure, the plant can not compete with forsythia or naked jasmine for display, but it makes a bright spot early in the season at a time when the garden is bright with bulbs and only a few trees and shrubs are in flower. Later it is covered with finely-shaped, small leaves that set off the bright red, oval fruits, about the size of small cranberries. As these are greedily eaten by birds, the effect is not long lasting.

The flowering dogwood of Japan, Cornus kousa, and its Chinese form, C. kousa chinensis, form small trees that resemble our own flowering dogwood in size and habit. Unlike ours, they flower after the leaves are well developed so that the showy white bracts, much like those of our own dogwood except in their pointed shape, have a setting of green. Like our own dogwood, they make their best show after the plants have reached some size, after which the displays are comparable. When planted in combination with our species, they prolong the effect inaugurated by our plant.



At fruiting time, however, there is a conspicuous difference, for, instead of the familiar cluster of scarlet berries, there is a pendent fruit of soft white flesh, tinged and flushed with pink, inside of which are hidden the typical seeds. In these fruits the plants show their relationship to the dogwood of our Pacific slope, Cornus nuttallii, which, unfortunately, is not as hardy in the East as the oriental species.

The Korean dogwood, Cornus controversa, may have mention in passing, for, while it forms a small tree of much the same dimensions and contours as our dogwood, it has flowers of the type found only in our shrubby cornels - flattish cymes of elderlike flowers that are followed in time by small, round berries, at first dull bluish-purple, and then black. Aside from the elegance of its habit, it has less to commend it than the other trees, except for gardens of some size, where it adds variety to the planting.

COTONEASTER

If one attempts to make a botanical survey of a large genus like Cotoneaster, he soon discovers the magnitude of his undertaking and if he attempts to study the genus from the gardener's point of view, he finds the task no less formidable. In the latter undertaking, however, he may fall back upon certain obvious characteristics that will subdivide the genus usefully enough, but would not satisfy the taxonomist. And since delight should be the chief end of gardening, this arrangement is possibly as useful as any, for it will emphasize the particular beauties and utilities of the plants.

In favored climates no great discernment is needed to discover that this useful family comprises that range from almost vinelike creepers to small yet much-branched trees, either deciduous or evergreen. Farther north this differentiation is not so clear, for some of the species that are quite evergreen in the South have discovered the trick, employed by many broad-leaved evergreens, of shedding their leaves in cold weather and becoming deciduous if the occasion warrants.

No change of climate or situation, however, can obscure the difference between red and black-fruited species, although one soon discovers that some of the sorts, eventually as black as coal, show a range of beautiful deep prune reds and brownish purples before they take on their ultimate coloration.

It takes no great amount of observation to discover that some species showiest in flower are not necessarily as showy in fruit. None has flowers of the showy, glistening white that one finds in a philadelphus or a rhodotypos, but rather the vaguely creamy-white hues that one sees in their relatives, the hawthorns and pyracanthas, or even in some of the cornus and viburnums.

On the other hand, some searching is necessary to discover which species in their season yield a pleasant, pervasive scent and which have only the sickish odor of pollen.

If it is possible to visit a botanical collection of these plants, old enough to show their form and not ravished either by fire blight or pruning shears, one soon discovers that they are plants of interesting growth forms. Perhaps as lowly as any is Cotoneaster Dammeri radicans (C. humifusa) which keeps flat on the ground with its flexible, running shoots that root somewhat sparingly as they go, if the soil and moisture be right. As compared to C. horizontalis, which is possibly the best known of these plants, this creeper seems a vine rather than a shrub and in this climate is distinctly more evergreen but is less showy in either flower or fruit, for, while these are large enough, they tend to be hidden below the foliage.

Planted on a dry bank, it spreads rapidly, sending out long shoots that seem to make even greater length in August and September than in the spring growth. This growth is usually unbranched at first but eventually laterals develop and the whole becomes an even ground cover. Eventually, when the plants become crowded, the shoots pile up on one another so that the ultimate surface is no longer flat.

Although fire blight has been present in some of my plantations, this species has not been seriously affected, cutting out of the infection seeming to be enough to stop the spread.



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In my own grouping, the colony of this species is immediately joined by another of Cotoneaster microphylla cochleata which has been much more beautiful in its development than any plants of the type that I have grown. Like the type, this variety is somewhat unprepossessing in the first stages but eventually sends up enough somewhat overarching shoots to make a decent low bush and, in time, increases by widely-spreading branches that root somewhat sparingly at the bases of the newer wood. With the crossing and recrossing of the tangled growths, the whole becomes in time a solid evergreen mass not over 18 inches high and with an almost indefinite spread that is kept in check only by clipping off the ends of the shoots.

Its variety, C. microphylla thymifolia, has such tiny leaves that a much longer time is required before the mass becomes solid enough to be effective; meantime, the rather awkward growths do not suggest the beauties of maturity. When growth is complete, the whole is typified by the finely symmetrical branching and leafing that distinguishes all shrubby cotoneasters. Then it makes a very useful small shrub with fine evergreen foliage that gives a delicate contrast with the coarse leaves of other species.

Two other dwarf cotoneasters should be mentioned: adpressa and microphylla glacialis, each with a name that suggests at once the particular character of the plant. The first, unfortunately, is deciduous in cold climates, but the second is evergreen at our garden. Both are particularly useful in rock gardens, fitting themselves closely around rocks in a very beautiful fashion and forming great contrast to the softer masses of herbaceous plants.

In a circular such as this the familiar Cotoneaster horizontalis does not need comment. Its regular growth with exquisitely regular branching is well known. In our climate it is deciduous, but in more fortunate localities it is evergreen. Its variety, perpusilla, with smaller leaves and more abundant but smaller fruits calls for no special acclaim. One suggestion might be made, however, before passing to the next species and that is that this plant is quite as beautiful when trained on a wall as when allowed to spread over the earth, but in either case ample room must be allowed for the ultimate development which is always greater than expected.

From the point of view of fruiting, all these sorts are surpassed by a little-grown species, C. apiculata, which resembles horizontalis somewhat in growth and habit, although its branches do not form the very flat, sail-like fans of that species. The leaves are wavy margined and larger but not large enough to remark, and deep glossy green in color. Unfortunately, they are deciduous in this climate. The flowers are pinky-white and quite well enough, but the chief beauty of the plant lies in the red, applelike fruits that color well by mid-September and seem to sit upon the leaves rather than be hidden among them as are so many of the nearly sessile species. Like horizontalis, it is a plant that must be given ample room for its ultimate development.

All these dwarf cotoneasters are useful as ground covers for gently sloping banks and all will tolerate a moderate degree of shade but not extreme dryness.

Much larger in growth, with the full character of shrubs, are two charming species that compliment each other well, C. dielsiana and divaricata. If one had to choose between them, the latter might be preferred as it makes a very graceful bush about 4 feet high with overarching, fountainlike branches that reach a spread of 6 to 8 feet in time. Its leaves are glossy as if they promised to be evergreen, but they show first a purplish-bronze cast over the green before they change to crimson and then fall. The flowers, though abundant, are not showy, but the fruits are of good size, turning brilliant scarlet in the late summer and early autumn, turning later a deep crimson and finally a purplish-red. Dielsiana, on the other hand, has less bushy growth, slightly smaller leaves that are dull and with conspicuous veins - and many, rounder berries that color rather later in the autumn and do not darken to purplish-crimson.





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*Cotoneaster divaricata*

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Much larger than any of these, indeed of a size that recalls lilacs and viburnums, are two species that are valuable because their fruits color early in the season; hupehensis, covered with scarlet fruits in August, and bullata, particularly its variety floribunda, that colors soon after. Neither of these plants makes a mature bush of great density, but show always the arching growth with somewhat irregular stems and widely-spreading top. For this reason it is possible to use them as accents toward the back of a mixed planting, overtopping lower shrubs. The former has handsome dark green leaves that color in late autumn before dropping, but is more to be prized for its brilliant fruits that are colored almost as early as those of Viburnum opulus and well before Pyracantha coccinea lalandi, the first of the firethorns to ripen. As they are brilliant scarlet and glossy coated, they make a fine showing. The latter, bullata, is conspicuous for its deeply-veined or rugose leaves that are a deep green. The flowers of this species, while not truly conspicuous, are more showy than some, since they are not hidden among the leaves. The berries, which begin to color in late September, are scarlet and glossy, making a great show.

For our particular section the most interesting of the larger cotoneasters with showy, red fruits are the closely related species, Henryana, salicifolia and lactea. For the small garden the first is the least interesting, in spite of the fact that it has the largest leaves of the winter-hardy, evergreen sorts, chiefly because of its rather spare habit of growth. Frequently there are not more than two or three main stems rising to the full height of the shrub, with a widely-branched, over-arching crown of branches that droop gracefully at their tips. The leaves are handsome, practically evergreen, and the dull, ivory-white flowers are abundantly produced in relatively large corymbs. They are followed by dark-crimson fruits that are rather slow to color in the fall, but which remain in good condition through most of the winter.



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Cotoneaster salicifolia is a member of this group most widely known and of the three is probably the most useful. There is some question as to whether or not the type plant is in general cultivation, a question that will probably be difficult to settle since the varieties that have been named are but slightly different from the type and vary somewhat among themselves. It is, perhaps, enough to say that this plant make a 4 to 6-foot, evergreen shrub with a spread of 6 to 8 feet that is beautiful not only for the curve of the main shoots but also for the drooping curves of all the lateral branches that are arranged almost as regularly as those of Cotoneaster horizontalis. The leaves, clearly shown in the illustrations, are a handsome green color that shows a tinge of purplish bronze during the frosty months. The variations of the leaves have led to the naming of the varieties floccosa and rugosa, the first being characterized by the types of hairs on the under surface, and the latter by the deeply impressed veins. The flowers are the dull white of many cotoneasters and have a faint, sweet scent in addition to the odor of the pollen. The berries color as late as do those of Henryana, rarely in full flower before mid-October, and persist through the winter.



*Cotoneaster salicifolia*

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Cotoneaster lactea differs conspicuously from salicifolia in its more upright growth, its larger leaves, its later flowering, a full ten days later, and by the delightful, somewhat hawthornlike scent of the flowers that fills the air. Its fruits ripen shortly after those of salicifolia and last well through the winter. It is much less hardy, unfortunately, and old plants died during the winter of 1934-35 when they suffered considerable sub-zero weather.

As has been indicated, all cotoneasters need considerable room for development and, as they are somewhat impatient of transplanting, this must be borne in mind when setting out the young plants. This is most successfully accomplished if small, pot-grown plants are used which give a meager appearance if properly spaced when first set out. Any inconvenience resulting from this is outweighed by the advantage that follows when no later transplanting is required. If transplanting must be done, it should be carried out in spring with as little injury to roots as possible and a moderately severe pruning of the tops.

Other pruning is rarely needed but, if shoots must be cut, they should be cut well down toward the ground, as pruned shoots do not always refurnish themselves with graceful new growth.

No special difficulties attend the growth of these plants. They are said to be lime lovers but experience here shows that they do not suffer in mildly acid soil. If pear trees, infected with fire blight, exist near by, infections, that must be carefully cut out, usually show among the cotoneasters. In some localities this infection is severe enough so that one must choose between pears and cotoneasters according to one's taste. It is reported that in the South and in California these infections are often serious, but here they can be controlled by pruning and an occasional <sup>al</sup> fungicide spray.



ELEAGNUS

Although the handsome evergreen eleagnus are of value for their fruits only in the warmer parts of the country, there are other deciduous members of the genus that deserve attention for the abundance of their fruiting and from the fact that they provide fruits of dull and rusty orange colors for the garden scheme.

All of them make large shrubs up to 10 feet or more with erect masses of strong stems and branches that are well furnished with handsome leaves, commonly lighter on their under surfaces, so that they give an additional color effect in the foliage masses through the summer. The flowers usually are not conspicuous as they are borne close to the stems, more or less hidden by the foliage, and of dull colors from white to buff yellows. Many are very sweetly scented.

Eleagnus multiflora is somewhat open in habit so that its masses of buff to dull-orange fruits are showy even before the leaves begin to drop, but Eleagnus umbellata, with rounder fruits of a similar color, becomes more showy as the leaves drop. Although the fruits of both are edible, they have a slightly acrid taste that follows the sweet taste first sensed, so that birds, as well as humans, are discouraged and the fruiting display lasts well into the winter.

Because they are less showy than red-fruited shrubs, it is possible that a single specimen is enough for the mixed border and, when planted so that there is a contrast with other shrubs of differing height and foliage color, they make a minor accent that is of great interest.



*Eleagnus multiflorus*

In the North, even hereabouts, when evergreen eleagnus, such as *E. pungens*, are hardy and of great value wherever a large, broad-leaved evergreen is needed, their flowering comes so late in the season, here in November, that fruits never develop. Farther south, and in milder climates, the deliciously scented, small flowers are followed by large, cranberrylike, dull-red fruits that make a fine show during the summer and autumn before the next flowering.

All of these plants make bushes of great size so that ample room must be allowed for their ultimate development, with 8 feet, perhaps, as a minimum spread, and 10 feet or more for height. Like some other shrubs discussed in this circular, these are plants that require ample time to come to their full development and are at times discouragingly slow in getting to work. Once well rooted, they throw up vigorous shoots from the base that seem stark and poorly leafed during the first season. The year after, however, the lateral branches and twigs develop ample leafage and eventually make dense masses of dark green foliage with silvery reverse. Among horticultural variations have appeared forms in which the leaves are irregularly blotched with yellow, but these variegations are not altogether constant, even on a plant carefully propagated from a variegated shoot, so that the effect is usually of dark, blackish green, such as one finds in the evergreen privets or osmanthus. For this reason they should be placed in shrub plantings with such companion shrubs as will give sharp contrast or as a background for flowering plants, such as deciduous magnolias or fruit trees, that will appear more brilliant on account of its somber color.



EUONYMUS

Among the shrubby relatives of the well-known bittersweet are the euonymus, a group of shrubs and small trees that are conspicuously beautiful only when in fruit or when showing autumn color, since their small flowers, if not actually greenish, are of such faint coloring that they make scarcely any show. Our own American strawberry bush, that so often grows in open woodlands, forms straggling bushes with greenish stems and twigs, and produces interesting but inconspicuously colored flowers that are followed by large, pinkish-crimson fruits that open to disclose the dangling scarlet-coated seeds. Even when moved into the garden, where it responds to light and feeding, this plant offers little suggestion of the displays given by some of the exotic species.

The European spindle tree, E. europeaus, is not often found in gardens but when used will make a compact, erect shrub up to 10 feet with masses of pinkish-red fruits that open to show the orange-coated seeds. Like most of its fellows, it is a gross feeder, forming masses of fibrous roots that make serious competition for other nearby plants. It can be used as a background for perennials, in which case only the most coarse and vigorous species should be near it, and some pains must be taken that these do not lack for water in late summer. It does not provide as brilliant autumn leaf coloration as some of the other forms.

In our gardens E. Hamiltonianus, a somewhat related, treelike shrub, forms a somewhat more spreading, bushy tree, with distinctly yellow-green foliage and masses of 4-lobed fruits, at first whitish but finally pink, that open to disclose the small, orange-coated seeds. The fruits begin to color in August and are distinctly showy in September, even before they have opened. Like some other euonymus, this plant has a tendency to show a white color in the leaves, as if the chlorophyll had disappeared, before they turn the faint pinks and yellows of their typical autumnal coloration, and, like many others, shows this change first in the inner leaves so that the plant seems to be glowing with an inner glow of color before the terminal leaves have colored. The coloring begins to show in September or earlier, both in leaf and fruit, but comes into full effect in October, lasting until frost. As the plant has a very symmetrical habit, it is useful as a specimen plant.

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One of the older euonymus from the Orient and very hardy to cold is Euonymus alatus, conspicuous for the corky ridges that form along the twigs and shoots, giving the plant its name. It is of somewhat slower growth than many of the other species, with stiffer habit, and does not come into its full beauty until it is fairly well matured. In time it forms a small tree of rounded outline, with many branches well clothed with coarse, dark green leaves that color gorgeously, rather late in autumn, with brilliant hues of crimson and pink. The fruits are not large and are not always very abundantly produced, but are typically colored, a purplish pink with orange-coated seeds.



*Euonymus Hamiltonianus*



Of even larger and more treelike proportions is E. Bungeana from northern China that makes a small tree 15 to 18 feet high with abundant yellow-green foliage, typically inconspicuous flowers and showy fruits, less deeply lobed than in E. Hamiltonianus, rather pinkish white in color, that open to show the orange-coated seeds. This species colors rather well in autumn and is valued because the fruits last well into the winter, when they contrast with the green bark of the younger twigs and shoots.

In addition to these deciduous species, there are various evergreen species that are more useful in the South where they have a longer season in which to develop their fruits and a more favorable climate in which to develop to their full height. The most familiar is E. japonica, grown in the North for its evergreen foliage of a handsome dark-green color. In the South it makes an erect shrub or small tree up to 10 or 15 feet, covered in favorable years with masses of rounded, pinkish fruits that open to show the brilliant orange-coated seeds. It is a variable plant and many horticultural forms are grown for their smaller or larger leaves and for their variegations with either white or yellow. These variegations are irregular, occurring both on the margins and in the center of the leaf blades, and are very striking when variegated shrubs can be used. The white-variegated forms give a grayish-green effect to the shrub when viewed at a distance and are useful for that reason. Variation also occurs in leaf size, and some of the small-leaved forms are also rather dwarf in habit so that they can be used for low, formal edges, much as boxwood is used, but, since the range of their usefulness is similar to that of boxwood, nothing is to be gained except in the difference in habit and style.

In the North the gardener must be content with the low, rather spreading and somewhat vinelike oriental E. radicans, that is quite hardy to cold. The form most commonly grown is the Japanese E. radicans vegeta that can be used as an evergreen climber in place of English ivy, where that vine is not hardy, although it does not exactly reproduce the effect given by that plant since it does not give as flat a surface because of its more shrubby habit. It has the additional attraction of producing abundant masses of pinkish fruits that open to show the yellow to orange-coated seeds. Another form, E. radicans acuta, has leaves shaped as the name indicates rather than the more rounded, typical shape, and still another form, E. radicans colorata, which resembles acuta in habit, is used because its thinner leaves develop a reddish coloration that lasts through the cold months, disappearing in spring.

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Nearly all the euonymus are likely to be attacked at times by scale (Chionaspis euonymi) which can be controlled by winter sprays of a miscible oil. If no attention is paid to these infestations, whole shoots are likely to be killed out, particularly in E. japonica, giving the plant temporarily a very unkempt appearance, although new growths will replace the missing parts if some care is given to any feeding and watering necessary to stimulate new growths. These attacks are likely to be even more serious in the South than in the North.



*Euonymus radicans acuta*



GREWIA

Among unusual shrubs that may be introduced into large and varied plantings are the grewias, rather coarse shrubs that fruit heavily along their lateral shoots and provide a strong color note of dull-brownish orange during September and October. Only one species is included in our collection, Grewia parviflora, which makes a widely-branched shrub up to 8 feet with an almost equal spread. It is well clothed with large leaves, rather harsh to the touch and of a distinctly yellow-green tone, that become more yellowish but scarcely yellow before falling with the first frosts. The small, yellowish flowers in umbels along the shoots are not conspicuous but are followed by greenish 2 to 4-lobed fruits that turn during September from greenish yellow to dull-reddish-orange colors. These are abundant enough to give a distinct color to the shrub and, because of their hue, justify the use of the plant in regions suited to its cultivation. It should not be recommended, however, as a substitute for any shrub of more conspicuous fruiting.



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*Grewia parviflora*

ILEX

No discussion of fruiting trees and shrubs would be complete without some discussion of the hollies, whether evergreen or deciduous. Our American holly, Ilex opaca, is so familiar as a decoration for the Christmas holiday season that its omission from this circular need not matter, but it should be noted that some attention is now being paid to its variable forms and special propagations have been made from trees with perfect flowers, so that fruit is no longer dependent upon the inclusion of staminate and pistillate trees in the same planting. This study has also brought to light the fact that some individual trees have finer foliage than others and that trees grown with some shade from taller, deciduous trees preserve a better color than trees grown in hot, sunny locations.



The European holly, Ilex aquifolium, is not a plant for all parts of our country as its northern limits are curtailed by winter cold and its southern usefulness is somewhat reduced by extremes of temperature and dryness. As it has long been cultivated abroad, there are many horticultural forms that show variation in leaf form, size and pattern. The typical plant is a tree up to 50 feet with dense, compact habit and abundant, dark-green foliage, more lustrous than that of our own species. The margins of the leaves are spiny and sinuate in varying degrees. The white flowers, freely produced, are showy enough near by but make no striking effect, while the scarlet berries that follow are often so thickly borne that they show from a considerable distance. The horticultural variations are numerous. There are forms with larger or smaller leaves, with no marginal spines, and with spines thickly produced along the margins and even over the surface of the leaf, with variegation both of white and yellow, the "silver" variegations often accompanied by a grayish cast over the whole surface of the leaf. In trade, as forms of this plant, there are also the hybrids with I. perado that are particularly valued for the size of their leaves (look up Dallimore: cf. Rehder, page 542), of which the variety camelliaefolia is much used abroad as a relatively quick-growing hedge with fine leaves that bear few, if any, marginal spines.

In the South and the Pacific Northwest this is a useful tree, approximating, if not altogether equalling, its beauty in its native habitats. In other parts of the country, where cold prevents its full development, it is still useful as a broad-leaved evergreen in mixed plantings, rather than in hedges as it is so commonly used abroad.



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*Ilex cornuta*

Like most hollies, it will tolerate shearing which is commonly given as growth commences so that new shoots will hide the large leaves cut by the shearing. When so treated, the plant becomes very twiggy and stiff so that impenetrable hedges are formed.

The Chinese holly, Ilex cornuta, has perhaps a wider range of usefulness than the English holly for it is less impatient of summer heat and dryness, as is shown by its success in such states as California and Texas. The range of its usefulness in colder climates is not yet fully established but indications seem to point to the belief that it may endure more cold than species.

Seedling plants show the same variations in character and rate of growth that one expects from hollies, but plants grown from cuttings or grafts of known trees lead one to believe that it is not a rapidly-growing plant until well established. It is very handsome from its earliest stages as the large, lustrous, dark-green leaves with relatively few marginal spines are sufficiently fine to make it worth while. The margins of the leaves are not sinuate but broadly undulate, so that they appear horny rather than spiny. The berries, that are rather larger than those of either the English or native holly, color slowly to a fine scarlet orange and persist well into the second year. When a good technique of propagation from known plants is worked out, it should be more used than now.



As yet, notes on the Chinese Ilex perneyi and its variety I. perneyi veitchii can not be given for old specimens. Young plants show very handsome foliage with characteristically-shaped leaves. The berries are red. Young plants show a tendency to produce a vigorous leader with relatively few lateral branches in the type, which is less pronounced in the variety veitchii, which differs also in having rather larger leaves. Older plants seen abroad suggest that this will not make more than a small tree and that some pruning may be necessary to form a compact plant. Since all hollies are amenable to pruning, even to shearing, this does not produce any great difficulty.

The same difficulties prevent a full report on the Japanese Ilex integra and the Chinese I. fargesii. The latter is represented by older plants here that still show an irregular, somewhat shrubby habit with distinctive, elongate leaves of dull-green. The former has handsome, lustrous, dark-green leaves, 4 to 5 inches long, with few, if any, marginal serrations. If it proves adaptable to our climates and produces its scarlet fruits in abundance, it should make an unusually valuable, small, broad-leaved ever-green tree, possibly more handsome than fargesii, although that also has scarlet fruits.

*Ilex purpurea*  
description comes  
here.



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*Ilex purpurea*



While many of the black-fruited evergreen hollies are very valuable trees and shrubs for ornamental planting, their berries are so much hidden by their foliage as to prevent very showy effect from their fruiting.

In spite of the fact that the word holly suggests only an evergreen to most gardeners, there are several deciduous hollies that are as handsome as any of our berried plants. Our native Ilex verticillata, known in many parts of the country by the misleading name of Black Alder, is an example. In the autumn when its erect shoots are studded with scarlet fruits, it is hard to surpass, although the fruits are spoiled by freezing and do not give the winter effects provided by the drier, harder berries of the evergreen sorts.

The oriental counterpart of this plant is the Japanese Ilex serrata, more common in trade in this country a decade or more ago than now when it often appeared in catalogs as Ilex Sieboldii. Its fruits are smaller than those of our species and the plant often matures into a more picturesque old plant with treelike outlines that make a striking effect silhouetted against a light wall.

All hollies like a little attention at planting time, which is more imperative with field-grown plants than smaller pot plants. Transplanting is most easily accomplished toward the end of the dormant season and should be accompanied by a pruning of the shoots as well as a considerable removal of the leaves from evergreen species. The leaves should be cut and not stripped from the twigs. The following season growth may appear sparse and thin, but, if care is taken to provide moisture during dry weather, the tree quickly recovers. All hollies respond well to soils rich in humus with relatively acid reactions.

LEYCESTERIA

There is a shrub in the Honeysuckle Family that one rarely meets, probably because it is not hardy enough in the North to be of much value there, that can be included in more southern plantings to considerable advantage because it flowers late in the season and is quite distinct from other plants that flower from September to frost. To be sure, it does not compare with crape myrtles, altheas, or hydrangeas for showiness, although it approximates abelia on this point. This is Leycesteria formosa from southwestern China.

As a young plant here, it takes a year or two to settle down to comfortable growth and, like some other plants, winter kills for a season or two until well rooted. After that, each season sees an increase in the number of vigorous, green-barked, young shoots until it forms a well-branched shrub up to 6 feet, clothed from top to bottom with handsome, dark-green leaves that keep their color until frost kills them, so that it furnishes a dark-green color note among the autumn tints of other plants, a point not to be overlooked in planning a border.

In late August the flower heads begin to appear, drooping spikes furnished with large, dark brownish-crimson bracts that overlap to form long, hoplike heads. In the axil of each are borne abelialike flowers, white or white tinted with purplish pink, if the flowers are exposed to the sun, which is not always the case, since the spikes hang below the foliage. As the flowers open successively, there is a long season of bloom which is made even longer as all the inflorescences do not mature at the same time.

The illustration shows the character of the flower spike and the dark color value of the bracts which are the conspicuous feature of the shrub.

The flowers are followed by berrylike fruits that are dark reddish purple, almost black at maturity. These are somewhat hidden by the bracts and in this climate do not always reach maturity before frost. How much farther south one would have to go before these could be counted on for certain effect is not reported, but probably any area free from killing frosts up to mid-November would be safe.

As the plant does not seem to be affected by soil or site, no suggestion need be made on that score except the reminder that perfect winter drainage might be of assistance when the plant is used toward the northern limits of its range.



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LIGUSTRUM

To the reader who thinks of privet only as a useful hedge, it may seem curious to suggest it as a desirable plant for a shrub border that is to yield an effect from fruiting, but some species allowed to grow in freedom from hedge shears will yield astonishing effects.

Possibly the most striking is a little-grown Chinese species with a foreign-sounding name, Ligustrum quihoui (pronounced kwee-hoy), that makes its first claim for attention in August when it covers itself with huge terminal panicles of white flowers that are quickly followed by equally large panicles of berries that weigh down the slender branches. Like most privet berries, these are green at first but by October they have turned first purplish brown and finally inky black. Perhaps this species would be less striking if its flower clusters were smaller, or were scattered along the branches as in Regel's privet, but, coming as they do in a compound panicle at the tips of the shoots, they are more than conspicuous.

Like other privets, this is useful enough in a sheared hedge, forming a compact mass with leaves that persist late into the winter and in mild seasons through all the winter. If it is allowed to grow naturally, however, it makes an interesting, rather open shrub up to 10 feet with branches that are characterized by their sharply-ascending angles. This type of growth gives ample opportunity for the display of the terminal flower clusters and is responsible for the fountainlike appearance when the tips of the slender shoots are weighed down by the developing fruits. As the berries are hard and dry, they last well when cut, even when no water is kept in the container, although the leaves soon fall.



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*Ligustrum quihoui*

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Other semideciduous privets have attractive black fruits and some varieties yellow or greenish berries, but it is necessary, perhaps, to call attention to only one other species and this an evergreen one, Ligustrum japonicum, frequently confused in cultivation with Ligustrum lucidum, another evergreen species but less formally clipped or given just enough shearing to keep it in form, for its natural habit is compact and well furnished. Allowed to grow freely and used as a background for more spectacular shrubs, it is more than useful, as its leaves have the dark black-green color of the yews and are of a size and shape somewhat like lilacs, so that it gives a coarser texture than other privets.

In the South this easily makes a plant of considerable height, but about Washington, D. C., there seem to be no plants more than 20 feet high and with an 8 to 10 feet spread. In its early life its flowering is rather scattered and unimportant but eventually it gives ample bloom that is followed by panicles of purplish-black berries, rather larger and more ovoid than those of the deciduous privets. When cut for decoration, they keep best with water in the container as this preserves the leaves. Combined with the red berries of other shrubs, they are most attractive.

In the border it should not be used in too great quantity as its coloring is so dark that the effect is rather somber, but, as a foil for grayish shrubs, such as Cotoneaster glaucophylla with its leaves silvered with grayish hairs, or Eleagnus argentea with its silver-lined foliage, or even Hippophae rhamnoides of silver leaf and dull orange fruit, it is effective. Again, in contrast with its density of mass, it makes an effective background for the spirelike growths of pyracanthas or the irregular growths of such cotoneasters as Henryana or hupehensis.



LONICERA

Most of the bush honeysuckles are so spectacular at the time of their flowering that gardeners are likely to forget that they have a second time of beauty when their flowers have been replaced by a multitude of fruits, currantlike in shape and color for the most part, although varying from light orange to fairly deep reds. As many of the fruits seem highly palatable to birds, these effects are not always long lived, so that the planter must decide whether or not he wishes to arrange bird-proof displays or is willing to furnish food as well as shelter for these visitors.

Of the many that might be mentioned, possibly none is more spectacular in a well-developed specimen than Lonicera maackii or one of its varieties. This is a hardy shrub from eastern Siberia that has been in this country for several decades, but is still less commonly used than it should be. It is a plant for any gardener who lives in regions where deciduous shrubs are the mainstay of the shrub border, although it does fairly well in the middle south. It is not a plant for a small corner, for in time it reaches 12 to 15 feet in height with an almost equal spread and is most beautiful when allowed to develop fully. Its earliest shoots are not remarkable for size or grace, but each succeeding year shows the development of stronger shoots from the base, so that the first shoots can be cut away. These stronger shoots usually make their full height in one season, develop lateral branches the following year, and these in turn produce secondary lateral shoots with amazing symmetry and regularity so that the whole has somewhat the appearance of a gigantic fern frond. It is these smaller branches that bear the flowers, in pairs at each node, along their length. These, at first white, turning buff yellow as they age, are of the typical honeysuckle shape and form, but do



*Lonicera maackii podocarpa*



*Lonicera maackii podocarpa*



not have the scent of the common vine nor of some of the shrubby species. After they fall, they are followed by berries, green during the summer but turning currant red before the leaves fall. As they are borne on the upper side of the shoots and as the leaves tend to droop as summer advances, they are very showy even before the leaves fall.

Among the many seedlings grown here, there is great variability in the freedom of flowering and fruiting so that the best plants are to be had as cuttings from a bush of known character. There seems also to be a variation in the character of the fruits for some seem more dense and last longer into the winter. All are eventually eaten by birds and so are sown about the countryside, so that some day this plant may be numbered in our naturalized flora.

In striking contrast to this are two other bush honeysuckles that are possibly more beautiful in flower than in fruit, Lonicera Korolkowii and L. syringantha. The first, from Turkistan, forms a moderate-sized, round-headed bush up to 10 feet in height that first attracts attention by the glaucous color of its foliage and then by the abundance of its pale rose-pink flowers that almost hide the foliage. These are followed in midsummer by brilliant orange berries that are somewhat hidden in the foliage and are soon devoured by birds. The second, from northwestern China, forms a rather straggling shrub that is slow to develop its full beauty, with small, narrow leaves and masses of pale lavender-white flowers along the stems in April or early May. These are distinguished for their sweet scent that is often compared to heliotrope but really has a distinct character of its own. On older plants these flowers are followed by translucent orange berries that ripen in midsummer and make a pleasant show.

NANDINA

No garden-minded visitor in either Japan or China can fail to see or admire the nandina, often called there Heavenly Bamboo, on account of its habit of growth, rather than its family relationship for it is kin to the barberries and not to the grasses. As used there, planted against a wall or in a corner of a courtyard, it forms great clumps of upright stalks, clothed and crowned with handsome compound, evergreen leaves of considerable size, accented in season by the terminal panicles of creamy-white flowers that are followed by bright-red berries persisting through the winter months. As the shoots are usually of unequal height, the youngest cover the bare bases of the older shoots that have dropped their leaves. These are the stems which, with their conspicuous nodes, give something of the effect of bamboo culms as seen through the foliage.

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In this country the usefulness of the plant is circumscribed by our climates. For example, in Washington, D. C., the plant leads a rather uncertain life on account of our winter temperatures. These are not often severe enough to damage any but unripened wood, but are severe enough to spoil the foliage which falls to pieces, leaflet by leaflet and joint by joint, until in spring there may remain only the shoots topped by the rachises of last year's leaves. If several such winters follow one another, the vitality of the plant seems to be enough reduced so that feeble or no growth at all develops and the plant succumbs. Farther south, this is not the case and apparently in regions where dull weather accompanies the low temperatures, there is little or no damage.



Some variations appear among seedlings, but even the hardiest of these are eventually injured although they seem to be more satisfactory even than plants grown from seed and started in a milder climate.

Like other evergreen, broad-leaved plants, this eventually sheds its older leaves and these frequently turn brilliant scarlet before dropping, an even more conspicuous color than the bronzy-red colors of the newly unfolding leaves.

In gardens where it can be allowed to develop against a light-colored background, such as a stucco wall, it is particularly handsome, as this brings out all the beauty of the erect stems as well as the horizontal planes of the dark green, palmlike leaves, and, in addition, gives an almost too vivid contrast with the scarlet berries.

PONCIRUS

Wherever oranges are grown, they make a dominant note in the landscape, but their cultivation has become so much a specialized industry that they are not always regarded as a subject for ornamental horticulture and, if they are so used, are often looked upon with some suspicion, since in such planting they may not receive the routine of spraying and fumigation needed to keep their insect enemies in control and so may prove a source of infection for commercial plantations.

For gardeners who live beyond the regions of citrus culture and yet not too far north, there is a plant once included among citrus proper but now given a separate genus, Poncirus trifoliata. As it is found chiefly in old gardens, it may be that it has survived from the time when it was hoped to be a hardy orange, which it is only in effect, since its fruits, though edible, are certainly not palatable. In this climate it makes a small, round-headed tree up to 15 or 18 feet with almost equal spread that is beautiful at all seasons of the year on account of the vivid green color of the stems and branches.

It is easily grown from seed and the young plants develop rapidly after the first few years. As it is somewhat impatient of transplanting, young plants are best for planting.



*Poncirus trifoliata*



During the earliest stages of growth, the plant is amply furnished with small trifoliolate leaves of shining dark green, but in older plants these are most abundant only on the current growths. When the plant has reached a height of 4 to 5 feet, it usually begins to flower and in late spring is covered with large white flowers which are only slightly perfumed. These are followed by small, round oranges, never more than 2 inches in diameter, that begin to turn yellow in September and hang on the trees well into the winter. These have a very oily rind and rather acid, bitter pulp filled with seeds. The effect of a well-grown plant covered with orange-yellow fruits always makes a striking and exotic effect in our landscape.

In Japan this plant is often used as a defensive hedge because its twigs have many sharp, spearlike spurs such as are found on some pears, and it is no uncommon sight there to see a hedge of this plant overhanging the familiar walls and fences of city courtyards and gardens. As the plant will tolerate considerable shearing, it is possible to keep it within narrow bounds, although this will reduce the amount of flowering and fruiting wood.

In regions like our own and farther north along the seacoast, possibly even in Connecticut, this should be a useful plant and one that will give an astonishingly exotic effect in contrast to the more tropical northern foliage.

PUNICA

Another plant familiar to warmer regions is the pomegranate where it is grown chiefly for its showy fruits that seem curiously insipid to many northern palates. No one can deny the beauty of the plant with its smooth, light-colored stems, its green leaves bronze tinted when young, or its gorgeous flowers with their reddish-purple calyces and brilliant scarlet, crumpled petals of a color so intense that it has become a figure of speech in many tongues.

As it is a plant native to regions with long growing seasons that are often both hot and dry, it suffers somewhat when taken to the northern limits of its winter hardiness by its failure to ripen its wood in the autumn, since our autumn seasons are often accompanied by rains that encourage late growth rather than ripening of wood. As a dependable plant for outdoor planting it is useful, therefore, only in our South and on the Pacific coast, but for the adventurous gardener there are some horticultural forms that will survive beyond the optimum regions, just as figs may be found in sheltered places beyond its range. These are rarely successful in ripening fruits which is no great loss since these are small and not filled with their mildly acidulous flesh. Since this is so, it should not be included, perhaps, in this circular, but the beauty of the flowers is excuse enough. In order to make sure of these, the plants should be given a sheltered location and any assistance that will assure ripening of the wood and the building up of a woody framework from which the flowering branches will develop.

This is easiest to do for such horticultural forms as the dwarf Punica granatum nana in both its single and double forms that are small enough to be given some artificial winter protection.

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PYRACANTHA

Among the berried shrubs longest in cultivation in Europe, and perhaps in parts of this country as well, is the firethorn which has been known botanically in several genera, particularly Crataegus and Cotoneaster. This was first observed as a group of plants in a Massachusetts garden where they led a somewhat uncertain existence because they were killed to the ground by occasional severe winters. Later on several superb specimens on Long Island were seen, evidence that for our garden farther south here was an unusual plant. The immediate purchase of several plants, which arrived balled and burlapped as conifers are shipped, disclosed one difficulty that possibly has as much as anything to do with the restricted use of the plant. Part of the shipment promptly died and investigation showed what had been suspected at planting time, namely, that these plants make a somewhat scanty root system with a paucity of fine feeding roots and few large roots impatient of moving.

Subsequent experience leads one to believe that plants propagated from cuttings and grown with care for the first years of their life will produce a more adequate root system that is less difficult, although by no means as tractable as would be plants of more fibrous rooting.

This first planting also showed another difficulty, namely, the irregularity of subsequent growth, for among the survivors only one immediately set about its business of making new shoots from the base, stronger in each successive year until the plant had formed a framework of fruiting branches just as soon as an apple or pear must form a plant before it sets about its business of fruiting.



Eventually all of the surviving plants developed fruiting tops and proved to be uniform in character, suggesting that all had been grown from cuttings.

There, then, are the three possibilities for disappointment in handling firethorns or pyracanthas,- loss of plants from poorly rooted specimens, tardy development of fruiting tops and seedling stock which may develop into poorly-berried plants.

There is not yet enough definite information as to the fruiting behavior of seedlings to make a positive statement, but the evidence seems to indicate that seedlings are usually slow to reach the fruiting age and many individuals grow to great size and flower profusely for years before fruits are set. Since the flowers are perfect, and since other isolated specimens fruit abundantly, there seems to be some doubt that cross fertilization is required. Now that there are more or less abundant supplies of fruiting specimens of nearly all species and forms available, there is no reason why all plants should not be grown from cuttings which root readily in the greenhouse if half ripe wood is taken about August. A mild bottom heat is helpful in hastening rooting.

Originally there was but one cultivated species, Pyracantha coccinea and its selected variety, lalandii, for garden use, but, since Chinese plants have been so widely introduced into gardens, there are numerous other species and varieties to be employed, although the old fire-thorn still remains as handsome as any.

This plant, native from southern Europe to Asia Minor, makes a rather ugly young plant with stiff, irregular shoots and angular branches, but, as it matures, sends up stronger shoots each year until it is strong enough to send up a shoot as much as 12 or 15 feet high in a single season. These later shoots replace the first shoots which may be cut away. They usually branch laterally the first season, but always do the second growing season, forming still lateral branches almost at right angles to the main stem, which in turn produce the spiny-tipped spurs that bear the flowers and fruits.

The plant is evergreen, clothed with leaves that vary greatly in size, both within each group and on different parts of the plant, those of the youngest, most vigorous shoots usually being the largest. The color is a deep green, as dark as American holly. The leaves are firm and show no winter injury unless there is severe freezing or frost followed by sunlight, a combination hard on any broad-leaved evergreen. If the injury is severe enough to cause defoliation, without injury to the wood, the plants are usually strong enough to reclothe themselves the following season.

The flowers suggest hawthorn, being of a similar size and shape, arranged in flattish corymbs all along the shoots. Like hawthorn also, they are not a pure white and are sweetly scented, though not as strongly so as the English may. Here they come in late April and last for a week or more, filled with the busy hum of bees and pollen-gathering flies.

The fruits begin to form immediately but do not count for much until early August when they commence to color. In the type this is rather slow so that they do not show their full color, a flaming scarlet, until early September. In the variety, lalandii, which differs from its parent chiefly by its larger fruits and its color, a brilliant orange, the change is quicker and by mid-August the plants are in their full beauty. As is true of all species, the fruit is uninjured until severe freezing, here usually January or February, when the berries darken to dull brown and drop off.

Like most showy fruits, these attract birds that peck at the rather tough flesh and often spoil the show by breaking off the berries. There seems to be some variation in palatability to birds for some plants that grow here are almost stripped by frost time and others are untouched until after the berries have been frozen.

Of the Chinese species, the most common plant in cultivation is the variable species, crenulata, which behaves in much the same fashion as coccinea as far as growth and habit are concerned. The gardener is interested in the fact that its leaves are glossy and crenulate on their margins and, being somewhat thinner in texture, seem to be more easily damaged during the winter, unless the plants are in protected spots, particularly if given protection from early morning sunlight in winter.



The arrangement of the berries in the clusters differs somewhat in that the individual berries have longer pedicels and so have a more drooping appearance. The berries themselves, although smaller, are abundantly produced so that the color effect is quite as striking. The typical color is a brilliant scarlet, of much the same hue as that of coccinea. There is a variety, flava, however, in which the berries are a clear lemon yellow that is very handsome, and another variety, kansuensis, in which the flame-scarlet fruits are of almost the same hue as the type but are smaller in size and even more freely produced, making it a very striking plant. The young leaves and shoots of this variety are covered with silvery hairs that give a grayish tint to those parts, contrasting with the darker green matured foliage.

More like the first two is P. crenulata var. Rogersiana, named in 1916 for C. Coltman Rogers, an English amateur, of Stanage Park, in whose garden this variety first appeared, raised from seed collected by Forrest in western China. This is variable in the color of its fruits, possibly the handsomest form being aurantiaca which is a fine deep yellow approaching orange.



*Pyracantha crenulata kansuensis*

Of even more robust growth than either of these species is Pyracantha orenato-serrata. In our climate, where it seems to be a little more tender than its fellows, it grows irregularly and even quite awkwardly but eventually makes a tall plant with a heavy trunk. Its leaves are rather larger than either of those previously described and are more subject to winter injury. It is valuable, none the less, for its fruits tend toward a coral red in color rather than the orange to scarlet hues usually shown. They are very late in color, however, often showing mature coloring only in late October or early November, but in the vicinity of Washington often remain attractive until January or February.

The species that differs most from its fellows is angustifolia which with us at least rarely makes as erect a plant as the others but forms a wider-spreading bush, easily distinguished by its narrow, rather furry leaves that appear rather gray green in color. Its fruits are its great beauty, rather flattish berries of fine deep orange.

All the pyracanthas are susceptible to fire blight if it is in the neighborhood, particularly on pears. None are seriously injured here except angustifolia, which often loses whole shoots. This can nearly always be controlled by cutting out the affected shoots and an occasional spray with a good fungicide, like Bordeaux. In extremely hot climates it may be serious, as reports from Texas and California indicate. The only other difficulty is an occasional infestation of woolly aphid which responds to the usual treatment.



Although the firethorns can be used in mixed plantings of shrubs, they are especially beautiful when trained against walls or buildings for which they are particularly suited as they form stiff trunks that are easily trained and, once hardened into position, maintain their form permanently. Except for the eventual replacement of the small first shoots, the plants need little pruning and indeed are better if not pruned, as their greatest beauty comes from the uninterrupted growth of the strong, erect, growing shoots. When grown against a wall, some corrective pruning may be necessary to keep the shoots flat against the wall, but this can be done carefully without affecting the general appearance.

ROSE

To the rosarian whose enthusiasms are centered only in the production of specimen blooms of hybrid teas, it may seem sacrilege to suggest the use of roses for their fruiting, but the fact remains that there are some rose species that can be used with fine effect as shrubs if there is sufficient room for their development. Brief mention is enough for Rosa rugosa, which is well known for its large, applelike fruits that ripen all summer long, and of our own native Rosa setigera with its myriad clusters of dull red fruits, but so many years have passed since the first ramblers were introduced that most gardeners have forgotten the delicious scent of the wild multiflora, even stronger than such a variety as Evangeline, and the beauty of its scarlet hips that last the winter through if they are not pruned off with the approved pruning "immediately after flowering."

If the garden or the shrubbery is large enough to allow the full development of Rosa multiflora, which means a square rod at least, it is well worth a place, both for the perfume of its fragile flowers and for the brilliance of the berries that follow and give color during the winter, as well as food for the birds after they have been softened by freezing. It should be remembered that the plant will form in time a formidable mass that no gardener will want to prune when some cutting out of the oldest canes becomes inevitable. This is more than compensated by the beauties of the plant, both in flower and fruit.

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There are other rose species, closely related to multiflora, that can be used in similar fashion, such as Rosa helenae, R. moschata, and R. gentiliana, in regions where it is hardy, but one, Rosa soulieana, is particularly useful because its time of flowering is 2 to 3 weeks later than that of multiflora. This plant has almost as rampant and vigorous a habit of growth but differs in having rather better foliage, dark green and glossy, even larger panicles of fragrant white flowers that turn slightly pinkish as they fade, and equally striking panicles of orange hips.





*Rosa soulieana*

In contrast to these climbing roses, there are some species roses of bushy habit that are useful in the shrub borders. The European Rosa pomifera makes a rather irregular shrub, somewhat resembling the older gallica roses in habit, with delicately scented, purplish-pink, single flowers that are followed by large fruits about the size of a hickory nut, characterized not only by the usual orange-red color of most rose hips, but by a coating of soft prickles that suggest some of the older forms of gooseberries. In our climate, with its great summer heat, this plant is likely to shed many of its leaves in summer so that the fruits are plainly seen. In the cooler weather of autumn, the plant often makes a second growth of leaves so that the scarlet fruits are accented by tufts of tender, pale green leaves. In striking contrast to this are the Scotch roses, varieties of Rosa spinosissima, that form low thickets of prickly shoots, well clothed with fine leaves, with delicate single or semidouble flowers that range from pure white and creamy yellows through pale-flush pinks to a fairly deep rose pink, and later by numerous, rather flattened hips, dull red until they finally ripen to purplish blacks. A few bushes of Rosa laxa will give a striking note in late summer and autumn when their pinkish flowers have been followed by heavy masses of scarlet-orange hips that contrast well with the green stems of the plant itself. If a larger shrub is wanted, Rosa omeiensis from western China is useful, even in the choicer parts of the garden. This is a large plant up to 8 feet high with an almost equal spread, with erect shoots densely clothed with fine prickles and larger spines, and broad, sail-like lateral branches with exquisite, finely compound leaves. The tiny, single blossoms, usually with four pure white petals, line the twigs and are followed in late summer by clear yellow, ovoid hips of very distinct shape. These do not persist through the winter but drop off when fully ripened so they give no winter effect. The species is not absolutely hardy to cold, so its usefulness decreases for the more northern gardens. It varies somewhat, so that various sub-varieties can be found, but none are lovelier than the type.

Perhaps it should be said again that these are roses for the shrub border and not really for the rose garden, unless that be a large garden with widely diversified planting. All require the sort of care given to shrubs rather than the care given garden roses, which are cultivated to stimulate a succession of flowering rather than a normal annual cycle of growth. If this is clearly understood and they are given care that will induce the formation of a relatively permanent woody framework, with seasonal effects only in spring and fall, they will add much to garden effect. There will be needed only pruning to remove old and feeble wood and spraying if some unusual condition should occur.



STRANVAESIA

When first introduced into cultivation in the United States, there was some confusion as to the identity of the plant now known as Stranvaesia davidiana, a useful broad-leaved evergreen shrub belonging to the rose family but now somewhat eclipsed by its variety undulata which is less rampant in growth.

The type plant is open to objection, easily overcome with a little care either in the nursery or when first planted in shrubberies. The difficulty is the tendency of the plant to put all its energy into the formation of a single stem that rapidly grows up to 4 or 5 feet in one season, often without the formation of a single lateral branch. Knowing this, it is a very simple matter to cut off the tip of every shoot when it has grown 5 or 6 inches. Where this is done, a fair framework of branches is soon formed that will obviate later training, save for the stopping of an occasional shoot.

The leaves are evergreen, tough and leathery with a dark green color on the upper surface and a lighter green beneath. In autumn a purplish bronze color shows on the upper surface that fades away in spring. The oldest leaves, the autumn before dropping, show some autumnal coloration.



*Stranvaesia davidiana*



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*Stranvaesia Davidiana undulata*



The flowers are borne as terminal corymbs on the short, flowering branches. A rather dull white in color, they resemble many of their kin and are not particularly showy. The pollen, unfortunately, has a somewhat unpleasant, sickly odor, like some of the viburnums, so the plants should not be used in places near living rooms. The berries that follow are abundant, beginning to color in October, hanging on all winter. Unlike the pyracanthas, these berries have a dull surface and show some variation from reddish orange to dull scarlet. When the plant is used in a mass or as an informal hedge, the color of the fruits above the rich foliage makes a conspicuous winter effect.

The variety undulata, named to point out the wavy margins of the leaves, differs from the type also by its lower habit which is almost prostrate with all its lateral shoots spreading widely almost parallel to the surface of the ground. During the winter also the bronzy-purple colors of the upper surfaces are emphasized by the gray-purple tints of the under surfaces of the leaves. Our plants have been much slower to develop flowering wood than the type, but the plant is useful enough if grown only for its foliage that makes a useful contrast with dwarf conifers when planted at the front of a mixed shrubbery.

Preliminary trials of another stranvaesia, S. salicifolia, have not been continued long enough to tell its final value, but it appears to be not unlike S. davidiana except that the leaves are more narrow and that it shows almost no winter coloring - giving a lively contrast with its shining, bright-green leaves.

SYMPLOCOS

Among trees and shrubs with conspicuous fruits, the commonest colors are reds and blacks, yellows frequently being variants from red and deep purples either related to dark crimson or black. Blue in the most restricted sense is rare and it is for that reason more than any other perhaps that some attention should be paid to the Asiatic sweetleaf, Symplocos paniculata, which is distinguished for its bright blue fruits, which in good season make a striking effect.

As commonly seen in this country, the plant, which is quite hardy to cold, forms a large shrub or round-headed, small tree up to 15 feet, well clothed with bright green leaves that suggest aronia or some similar shrub in appearance. In late spring it is covered with short panicles of fragrant white flowers that again suggest superficially those of aronia or some other rosaceous plant. During the summer there is little to call for remark, but as autumn approaches the ovoid fruits begin to turn so that by September the tree is covered with its peacock-blue, berrylike fruits that always call forth surprised comment. Although introduced in 1875, it is not much grown. Seedling plants develop rather slowly here and this, perhaps, combined with the irregularity of fruiting, may account for its rarity. In any case, it is a plant for occasional use rather than wide planting and, even when chosen as a specimen on account of its fruit, should, perhaps, be made a secondary garden feature rather than a motif for a particular planting.

VIBURNUM

The great family of viburnums has many species, all of which produce fruits of some sort that add to the effectiveness of the plants in garden use, but many of the species are of more importance for their foliage and autumn coloring than for either their flowers or fruit, although the few exceptions have particularly handsome flowers or fruit. Of those commonly cultivated, the species with particularly showy flowers do not have equally showy fruits, as, for example, the exquisite V. Carlesii, which has rather small, blue-black fruits, an anti-climax to the deliciously-scented, pink-tinted, white flowers, or V. plicatum with its small, red fruits that turn black when ripe, if not eaten by birds. On the other hand, some of those with showy fruits are not so elegant in flower, as, for example, our native V. cassinoides, with its elderlike flower head followed by gorgeous scarlet fruits. In this latter group most of the examples are native to this country so that they fall outside the scope of this circular.



There remains, however, one species rarely seen in gardens except in its sterile form that is handsome in flower and more than striking in fruit. This is the European cranberry bush, the sterile form of which is the common snowball of old-fashioned gardens. In the type the flower head is made up of elderlike blossoms, with a few, showy, sterile flowers about the margins of the cyme. From the small, fertile flowers develop the large, orange-red, acid, edible fruits that give the plant its name of cranberry bush. In hot, dry years these may show their full color before the end of July, but, usually, August is the month of coloring. As the fruits are soft and somewhat translucent, they make a very brilliant effect in strong sunlight.

The plant itself forms an upright bush up to 8 or 10 feet, well clothed with somewhat maplelike leaves of a clear, yellowish green that turn yellow to reddish before they fall. It is not often subject to disease but is sometimes infested with aphids that feed upon the new shoots and distort the young foliage, although these infestations do not seem as frequent as on the common snowball. They are easily controlled by common contact sprays.

In addition to the common form, there is a variety with yellow fruits, but this is not so spectacular as the red-fruited form.

Our American counterpart of this plant, V. trilobum, is much like the European form and the oriental V. Sargentii is also much like it.

In regions where climate is favorable, some of the dark-fruited, evergreen species are desirable, such as V. rhytidophyllum or V. Davidii, but at best these are much more to be valued for their handsome foliage than for their blue-black berries.

ZANTHOXYLUM

If the selection of fruiting shrubs for the border is limited to those that have conspicuous flowers, it is not likely that any of the yellowwoods will be included, as no one will claim for them a conspicuous flowering, although their terminal corymbs are not hidden by the masses of their handsome foliage, for they are essentially greenish in color effect. The corymbs of fruit that develop through the summer are hardly more showy for, even as they ripen, the reddish brown tints that may come over them are not intense enough to call attention to them. By mid-September the fruits have opened so that the shining black seeds contained within are displayed quite strikingly if viewed near by but not otherwise, as at that time the leaves are still a dark and lustrous green that finally drop without much change in color.

In wide shrub borders, particularly those in which the outer plants are all the better for having spines or thorns, these plants may have some use, for all are armed with stout prickles, usually paired below each node. In such positions, combined with acanthopanax, aralia and the like, they will form a useful defensive planting, for their erect shoots and sometimes widely-spreading branches form thicketlike clumps.

In our groups there have been only the oriental Zanthoxylum piperitum and Z. schinifolium. Of the two, the former has been the more spreading, widely-branched plant with many lateral corymbs of fruits that open later in the autumn than those of the latter species. The fruits are a little more reddish in color, but the seed are the same lustrous black color. There is some tendency toward yellow autumnal color but nothing to make the plant valuable for this feature. Z. schinifolium has a much more erect habit, forming bushes up to 10 or 12 feet, well clothed with lustrous green leaves compound in such a fashion as to recall some of the pepper trees. As its inflorescences are terminal, they are more conspicuous at fruiting time. The seed are dropped soon after frost and the corymbs droop on their stems, so that they do not make a showing during the winter months.





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*Zanthoxylon piperitum*