

CATALOG  
of  
*HARDY TREES AND SHRUBS*

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*75 Cents*

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THE NEW YORK BOTANICAL GARDEN

BRONX PARK, N. Y. C.

## TO REACH THE NEW YORK BOTANICAL GARDEN

BY INDEPENDENT SUBWAY: Take a C, CC, or D train to Bedford Park Blvd., leave from the rear (the southern) end of the train, and walk straight east along Bedford Park Blvd. to the Garden.

BY THE IRT LINE: Take the Third Avenue Elevated either to the Bronx Park or the 200th Street station. Or, take the East or West Side subway to Third Avenue and change there to the Elevated. *Do not try to take the subway all the way*, unless visiting the Rose Garden.

BY SURFACE CAR: Take the Webster Avenue line to Bedford Park Blvd.

BY TRAIN: Take the New York Central to the Botanical Garden station.

BY AUTOMOBILE: Drive up the Grand Concourse to Bedford Park Blvd. and turn east; or drive down Bronx River Parkway to the end and turn west. There is ample parking space for automobiles on the grounds.

CATALOG  
of  
*HARDY TREES AND SHRUBS*

A LIST OF THE WOODY PLANTS  
IN CULTIVATION OUTDOORS AT  
THE NEW YORK BOTANICAL  
GARDEN IN 1942

With notes, a map, and twenty illustrations

*75 Cents*

THE NEW YORK BOTANICAL GARDEN  
BRONX PARK, NEW YORK, N. Y.

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## A HANDBOOK OF THE TREES AND SHRUBS AT THE NEW YORK BOTANICAL GARDEN

THE outdoor collection of woody plants at the New York Botanical Garden contains a large proportion of the trees and shrubs that may be cultivated successfully in the Eastern United States.

To those whose chief reason for visiting the Garden is a desire to be amidst the peace and beauty of a wooded land, the trees and shrubs may be but the undefined greenery of a park. To the student of botany or horticulture the specimens here assembled from most of the temperate regions of the world are the equipment of a great laboratory — a classroom of nature.

To this laboratory come botanists, gardeners, landscape architects, nurserymen, and home owners. They come to observe the plants and note their habits of growth, to evaluate their usefulness in the landscape and to learn of their cultural needs. The collection thus serves as a source of knowledge of woody plants; as a result, estates, parks and numerous home landscapes contain trees and shrubs more suited to their needs.

This handbook has been prepared for the greater convenience of those who visit the New York Botanical Gar-

Robert Bocklog 106119562

den. It lists the trees and shrubs growing here in the open in the summer of 1942, and includes a map to help the visitor find particular plant groups. The letters and numerals set in brackets after each generic description are keyed to the map. The word "nursery" indicates that some representatives of the genus are still of small size, hence are accommodated for the present in our nurseries.

### *ARRANGEMENT OF COLLECTION*

In general, the collection is arranged so that the plants of each genus are grouped. When an individual kind needs a special environment, it may be located away from the group to which it belongs. Additional plantings of many species have been installed for purely ornamental effect. Thus the "collection" of deciduous barberries is located at 6J, while the evergreen barberries, which are more tender, are planted in the sheltered courtyard of Conservatory Range I (8E). In other parts of the grounds, selected barberries are used as hedges and for other decorative purposes.

The Garden area consisted originally of native woodland. Today, it includes about 40 acres, known as the Hemlock Forest, which is carefully preserved in its natural state. In all parts of the grounds, magnificent examples of native trees are to be found and the collections of planted material are interspersed among these.

The older collections of deciduous trees, including the oaks, beeches, and magnolias, are located in the northern part of the grounds and to the east of the Bronx River.

Later plantings that include the maples, ashes, and hazels are in the southern part of the Garden on the east side of the river. Other collections set out more recently include the birches, apples, and cherries, which are in the southwestern part of the Garden. The conifer collection occupies an area adjacent to Conservatory Range I. Also near Range I is part of the shrub collection. This extends in a general southerly direction toward Pelham Parkway entrance. Selections of the more tender shrubs, such as certain mahonias, honeysuckles, privets, brooms, and hollies, are accommodated in the courtyard of Conservatory Range I. Many of the smaller, choicer shrubs, both evergreen and deciduous, are located in the Thompson Memorial Rock Garden. Rhododendrons, kalmias, and other broad-leaved evergreens occupy the area between the northern end of this garden and the Boulder Bridge.

### *HISTORICAL SKETCH*

The New York Botanical Garden was established shortly before the end of the last century. The first plantings of trees and shrubs were made in 1903. From that time on, the number of species and varieties cultivated in the Garden has been constantly increased. The arrangement was developed systematically with definite areas designated as Pinetum, Salicetum, Arboretum, Viticetum, and Fruticetum. According to a list published in 1920 there were 1,532 species and varieties in cultivation here.

In 1936 the Garden was reduced from 400 to 280 acres. With new boundaries established, the shrub collection as

well as many tree groups, including the willows, poplars, maples, cherries, elms, and ashes, were excluded from the Garden. Since 1936, new collections of these groups have been planted within the present area and a large number of additional groups have been added. The present enumeration records 2,889 species and varieties. This figure does not include more than one hundred kinds of plants being raised from seed collected by the 1938 Hu expedition to China, nor certain other plants that are not yet identified. New material is constantly being added to the collections of hardy trees and shrubs. Every effort is made to keep the plants clearly labeled.

### NAMES

The nomenclature adopted in this handbook follows essentially that used by Alfred Rehder in his "Manual of Cultivated Trees and Shrubs" (1940 edition).<sup>\*</sup> Where a name in the 1940 edition of Rehder differs from that used in the 1927 edition or from that favored by Bailey in "Hortus Second," the alternate name appears here as a synonym in parentheses. Common names are given only when they are listed in Rehder's "Manual" or in "Hortus Second."

<sup>\*</sup> The following publications have also been consulted: "Kew Hand-list of Trees and Shrubs," 1934; "Kew Handlist of Coniferae," 1938; "Index Kewensis"; "Trees and Shrubs Hardy in the British Isles" by W. J. Bean, 1919-33; "Cultivated Lilacs" by Susan D. McKelvey, 1928; "The Oriental Flowering Cherries" by Paul Russell, 1934; "Yearbook of the Rhododendron Association," 1939; "The Species of Rhododendron" published by The Rhododendron Society [Edinburgh], 1930; "Rhododendrons and Azaleas" by Clement G. Bowers, 1936; and numerous seed-exchange lists and nursery catalogs.



The native habitat or origin is given after each name. The parentage of hybrids, where known, is listed in parentheses.

### *LESS HARDY PLANTS*

Trees and shrubs that are known to require a sheltered situation or protection through the winter are indicated by the use of small capital letters.

### *GENERAL INFORMATION*

The listing of trees and shrubs contained in this handbook has been prepared by Mr. Ralph Pinkus, Arboretum Foreman at the Garden. Both Mr. Pinkus and Mr. J. H. Beale, Superintendent of the Arboretum of the Boyce Thompson Institute for Plant Research, Yonkers, N. Y., assisted in preparing the comments that appear after each generic name. It should be noted that these comments apply only to the plants listed and not necessarily to other species and varieties. Flowering dates given are based in the main on records kept by Mr. Pinkus at the New York Botanical Garden. In cases where plants have not yet reached blooming size at the Garden, the flowering dates recorded in Rehder's "Manual of Cultivated Trees and Shrubs" are given.

T. H. EVERETT,  
*Horticulturist.*

Nov. 1, 1942.

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CATALOG  
OF HARDY TREES AND SHRUBS

AT THE NEW YORK BOTANICAL GARDEN

ABELIA, Caprifoliaceae. Easily cultivated summer-flowering shrubs that require protection when young. The most desirable for this region is *A. grandiflora*, which combines beautiful flowers borne over a long period with persistent lustrous foliage that assumes bronze shades in the fall [8E, nursery].

A. CHINENSIS. China (Jy.-S.).

A. "EDWARD GOUCHER" (*A. grandiflora* x *Schumannii*). (Jn.-O.).

A. GRANDIFLORA (*A. chinensis* x *uniflora*). Glossy A.; (Jn.-O.).

A. G. SHERWOODI. (Jn.-O.).

A. TRIFLORA. N. W. Himal. (Jn.).

ABELIOPHYLLUM, Oleaceae. A recently introduced shrub bearing fragrant white flowers; it may eventually become a garden favorite because of its early blooming [6H].

*A. distichum*. C. Korea (Ap.-My.).

ABIES, Pinaceae. Fir. Pyramidal evergreen trees that differ from the spruces in that they bear their cones upright. Many of the firs do not grow satisfactorily at low elevations or under city conditions. The following are most adaptable to the New York region: *A. homolepis*, *A. Veitchii*, *A. Nordmanniana* and *A. concolor* [8C, 8D, 9D, nursery].

*A. alba pyramidalis*.\*

*A. amabilis*. Cascade F.; B. C. and Alb. to Ore.

*A. balsamea*. Balsam F.; Lab. to W. Va. and Iowa.

*A. cephalonica*. Greek F.; Greece.

*A. cilicica*. Cilician F.; Asia Minor, Syria.

\* The Silver Fir, *A. alba*, is native to the mountains of central and southern Europe.

- A. concolor*. White F.; Colo. to Mex.  
*A. Fabri*. China.  
*A. Faxoni*ana. Faxon F.; W. China.  
*A. FIRMA*. Momi F.; Japan.  
*A. Forrestii*. W. China.  
*A. Fraseri*. Southern Balsam F.; Allegheny Mts.  
*A. holophylla*. Needle F.; Manch., Korea.  
*A. homolepis*. Nikko F.; Japan.  
*A. h. Scottiae*. Dwarf Nikko F.  
*A. h. umbellata*.  
*A. koreana*. Korean F.; Korea.  
*A. lasiocarpa*. Alpine F.; Alaska to N. Mex.  
*A. l. arizonica*. Cork F.; Ariz. and N. Mex.  
*A. magnifica*. Red F.; Ore. to Calif.  
*A. NOBILIS*. Noble F.; Wash. to N. Calif.  
*A. Nordmanniana*. Nordmann F.; Cauc., Asia Minor.  
*A. sachalinensis*. Sakhalin F.; N. Japan.  
*A. Veitchii*. Veitch F.; C. Japan.

ACAENA, Rosaceae. Low prostrate shrubs suitable for the rockery [5E].

- A. fissistipula*. New Zeal.  
*A. glaucophylla*. Patagonia.  
*A. microphylla*. New Zealand Bur; New Zeal.  
*A. novae-zelandiae*. New Zeal.  
*A. ovalifolia*. Chile.

ACANTHOPANAX, Araliaceae. Large spiny shrubs with distinctive foliage and black berry-like fruits borne in umbels. *A. Sieboldianus* is shade-tolerant and is valuable as an impenetrable hedge or in a large massed planting [6E, nursery].

- A. divaricatus*. Japan.  
*A. lasiogyne*. W. China.  
*A. leucorrhizus*. C. and W. China.  
*A. l. scaberulus*. C. and W. China.  
*A. sessiliflorus*. N. China, Manch., Korea.

- A. setchuenensis*. W. China.  
*A. Sieboldianus*. Japan.  
*A. S. variegatus*.  
*A. Simonii*. C. China.  
*A. trifoliatus*. E. Himal., China.

ACER, Aceraceae. Maple. An extensive genus including both small and large trees, many of which are notable for the brilliancy of their fall coloration. Some have rather showy flowers; others are grown for their decorative foliage. Of the less well known maples the following are particularly well suited for planting as specimen trees: *A. carpinifolium*, *A. circinatum*, *A. cissifolium*, *A. Miyabei*, *A. nikoense* and *A. tataricum* [2J, 3J, 2K, 3K, nursery].

- A. argutum*. Japan.  
*A. barbinerve*. Manch., Korea.  
*A. Buergerianum*. Trident M.; China and Japan.  
*A. campestre*. Hedge M.; Eu., W. Asia.  
*A. c. hebecarpum*.  
*A. cappadocicum*. Coliseum M.; Cauc. and W. Asia.  
*A. carpinifolium*. Hornbeam M.; Japan.  
*A. circinatum*. Vine M.; B. C. to Calif.  
*A. circumlobatum*. Japan.  
*A. cissifolium*. Japan.  
*A. Davidi*. C. China.  
*A. diabolicum purpurascens*. Japan.  
*A. distylum*. Japan.  
*A. formosum*. Japan.  
*A. Ginnala*. Amur M.; China, Manch. and Japan.  
*A. G. Semenovii*. Turkestan.  
*A. griseum*. Paperbark M.; W. China.  
*A. Grosseri Hersii (A. Hersii)*. C. China.  
*A. Heldreichii*. Balkan M.; S.E. Eu.  
*A. HENRYI*. China.  
*A. leucoderme*. Chalk M.; N. C. to Ga. and La.

- A. macrophyllum*. Oregon M.; Alaska to Calif.  
*A. Maximowiczii*. C. China.  
*A. micranthum*. Japan.  
*A. Miyabei*. Japan.  
*A. Mono ambiguum* (*A. pictum* a.). Painted M.; Origin unknown.  
*A. monspessulanum*. Montpellier M.; S. Eu., W. Asia.  
*A. Negundo*. Box-elder; Ont. to Fla. and Tex.  
*A. nigrum* *Palmeri*.  
*A. nikoense*. Nikko M.; Japan, C. China.  
*A. Opalus*. S. Eu.  
*A. palmatum*. Japanese M.; Korea and Japan.  
*A. p. atropurpureum novum*.  
*A. p. dissectum atropurpureum*.  
*A. p. Matsumurae*. Japan.  
*A. p.* "Oshi-Beni."  
*A. pensylvanicum*. Moosewood, Striped M.; Que. to Ga.  
*A. platanoides*. Norway M.; Eu., Cauc.  
*A. p. globosum*.  
*A. p. laciniatum*. Eagle Claw M.  
*A. p. palmatifidum*.  
*A. p. Schwedleri*.  
*A. Pseudoplatanus*. Sycamore M.; Eu. and W. Asia.  
*A. pseudo-sieboldianum*. Manch. to Korea.  
*A. rubrum*. Red M.; Newf. to Fla. and Tex.  
*A. rufinerve*. Japan.  
*A. saccharinum*. Silver M.; Que. to Fla. and Okla.  
*A. s. Willisii*.  
*A. saccharum*. Sugar M.; Que. to Fla. and Tex.  
*A. Sieboldianum*. Japan.  
*A. spicatum*. Mountain M.; E. N. Amer.  
*A. STACHYOPHYLLUM*. Himalaya.  
*A. syriacum*. Syria, Cyprus.  
*A. tataricum*. Tatarian M.; S.E. Eu. and W. Asia.  
*A. t. genuinum*.  
*A. t. Slendzinskii*.

\* *A. nigrum*, the Black Maple, is native in eastern North America.

- A. t. torminaloides*.  
*A. tetramerum*. C. and W. China.  
*A. t. betulifolium*. N.W. China.  
*A. triflorum*. Manch., Korea.  
*A. truncatum*. N. China.

ACTINIDIA, Actinidiaceae. Vigorous high climbers with large leaves; suitable for pergolas. Some, such as *A. chinensis*, are usually dioecious [6B, nursery].

- A. CALLOSA*. Himal., S. China.  
*A. CHINENSIS*. China.  
*A. Fairchildii* (*A. chinensis* x *arguta*).  
*A. melanandra*. Japan and C. China.  
*A. polygama*. Silver-vine; Manch., to Japan and C. China.

AESCULUS, Hippocastanaceae. Horsechestnut, Buckeye. Trees and shrubs, grown mostly for their showy flowers and handsome leaves. *A. parviflora* by suckering develops into a compact massive shrub about eight feet high and bears abundantly its erect spires of white flowers [9C, 9B, 3L, nursery].

- A. carnea* (*A. Hippocastanum* x *Pavia*). Red H.; (My. or Jn.).  
*A. discolor mollis*. Woolly B.; N. C. to Fla. and Tex. (My. or Jn.).  
*A. glabra*. Ohio B.; Pa. to Ala. and Neb. (My.).  
*A. Hippocastanum*. Common H.; Balkan Peninsula (My. or Jn.).  
*A. H. Baumannii*.  
*A. neglecta georgiana*. N. C. to Fla. and Ala. (My. or Jn.).  
*A. octandra*. Sweet B.; Pa. to Ga. and Ill. (My. or Jn.).  
*A. parviflora*. Bottlebrush B.; S. C. to Ala. and Fla. (Jy.-Au.).  
*A. Pavia*. Red B.; Va. to Fla. and La. (Jn.).  
*A. turbinata*. Japanese H.; Japan (Jn.).

AETHIONEMA, Cruciferae. Stonecress. Prostrate, gray-foliaged, spring blooming subshrubs for use in the rock garden [5E].

- A. coridifolium*. Lebanon S.; Asia Minor.  
*A. grandiflorum*. Persian S.; Persia (My.-Au.).

*A. iberideum*. Greece, Asia Minor.

*A. pulchellum*. Asia Minor.

AILANTHUS, Simaroubaceae. Trees of rank growth, excellent for difficult city conditions. The pistillate plants are decidedly showy in fruit. When crushed the large pinnate leaves have a disagreeable odor [6D, nursery].

*A. altissima* (*A. glandulosa*). Tree-of-Heaven; China.

*A. a. sutchuenensis*. W. China.

*A. Vilmoriniana*. W. China.

AKEBIA, Lardizabalaceae. Vigorous climbers with attractive persistent foliage and dark red flowers in spring. They grow well in partial shade and will develop into a ground-cover if not given the opportunity to climb [8D].

*A. quinata*. Five-leaf A.; China to Japan and Korea.

*A. trifoliata*. Three-leaf A.; China to Japan.

ALBIZZIA, Leguminosae. Rarely attains tree-like dimensions in this region. Its delicately divided foliage and globular heads of small pink flowers warrant its use where conditions are satisfactory. A well drained soil and protection from cold winds are necessary [5D, 6B].

*A. JULIBRISSIN*. Silk-tree; Persia to Japan (Jn.-Au.).

*A. J. rosea*.

ALNUS, Betulaceae. Alder. Trees and shrubs suitable for wet ground. The showy catkins that appear before the leaves are welcome harbingers of spring [3J, 4J, 4K, nursery].

*A. cordata*. Italian A.; Italy, Corsica.

*A. glutinosa rubrinervia*.\*

*A. hirsuta sibirica*. Manchurian A.; N.E. Asia.

*A. japonica*. Japanese A.; N.E. Asia, Japan.

*A. maritima*. Seaside A.; Del., Md., and Okla.

\* *A. glutinosa*, the Black Alder, is native in Europe, north Africa, and Asia.



- A. Matsumurae*. Japan.  
*A. pendula*. Japan.  
*A. rubra*. Red A.; Alaska to Calif. and Idaho.  
*A. rugosa*. Smooth A.; Me. to Fla. and Tex.  
*A. sinuata*. Alaska to N. Calif.  
*A. viridis*. European Green A.; Mts. of Eu.

ALYSSUM, Cruciferae. Low-growing subshrubs bearing white, pink, or yellow flowers in spring; particularly suited to a rock garden or dry wall [5E].

- A. argenteum*. Yellow-tuft; S. Eu. and Asia Minor.  
*A. saxatile*. Golden-tuft; C. and S. Eu.  
*A. spinosum*. S.W. Eu. and N. Afr.

AMELANCHIER, Rosaceae. Shadbush, Juneberry, Serviceberry. Small ornamental trees and shrubs, the lace-like flowers of which are of short duration but are followed by rather showy black or red fruits, often eaten by the birds. Suitable for naturalistic plantings [5D, 5E, 4L, nursery].

- A. alnifolia*. Sask. to Colo.  
*A. asiatica*. Japan, Korea (My.).  
*A. Bartramiana*. Lab. to Pa. (Ap. or My.).  
*A. canadensis*. Me. to Ga. and La. (My.).  
*A. florida*. Mich. to Wash. (My.).  
*A. laevis*. Newf. to Ga. and Ala. (My.).  
*A. oblongifolia*. Me. to S. C. (My.).  
*A. spicata* (*A. oblongifolia* x *stolonifera*?). (My.).  
*A. stolonifera*. Dwarf Juneberry; Newf. to Mich. and Va. (My.).

AMORPHA, Leguminosae. Shrubs with purplish flowers in spring. Most of them are of little or no ornamental value. *A. fruticosa* and *A. canescens* are most commonly grown [6E, nursery].

- A. californica*. S. and C. Calif. (My. or Jn.).  
*A. canescens*. Lead-plant; Man. to La. and N. Mex. (Jn. or Jy.).

- A. floridana*. N. Fla.  
*A. fruticosa*. Bastard Indigo; E. U. S. (My. or Jn.).  
*A. herbacea*. N. C. to Fla.  
*A. nana* (*A. microphylla*). Sask. to N. Mex.  
*A. virgata*. S. U. S.

AMPELOPSIS, Vitaceae. Useful deciduous self-clinging vines of rank growth and with colorful fall foliage. The large leaves are often skeletonized by Japanese beetles in infested areas. See also *Parthenocissus* [nursery].

- A. aconitifolia*. N. China.  
 A. ARBOREA. Pepper-vine; Va. to Fla. and Mex.  
*A. brevipedunculata Maximowiczii*. E. Asia.  
*A. cordata*. Va. to Fla. and Mex.  
*A. Delavayana*. C. China.  
*A. japonica*. Japan and N. China.  
*A. megalophylla*. W. China.

ANDRACHNE, Euphorbiaceae. A small compact shrub not fully hardy and of little ornamental value [8E].

- A. COLCHICA. Asia Minor.

ANDROMEDA, Ericaceae. An interesting and uncommon shrub with narrow leaves and pink flowers. Requires special care and acid bog conditions. This plant should not be confused with *Pieris*, which is sometimes listed as *Andromeda* [nursery].

- A. glaucophylla*. Bog-rosemary; Newf. to N. J. and Ind.

ARALIA, Araliaceae. Vigorous shrubs and trees with characteristic spiny growth and large doubly compound leaves. *A. spinosa* is sometimes planted because of its contrast to other foliage and for its tropical appearance [6E, 4C].

*A. chinensis nuda*. \*

*A. hispida*. Bristly Sarsaparilla; Newf. to N. C. and Minn.

*A. nudicaulis*. Wild Sarsaparilla; Newf. to Ga. and Colo.

*A. spinosa*. Hercules' Club; N. Y. to Fla.

ARCTOSTAPHYLOS, Ericaceae. Erect or trailing small ever-green shrubs. *A. Uva-ursi* makes an excellent ground-cover in full sun or light shade for a porous soil. It is very difficult to transplant from the wild, and established specimens do not move well [5E].

*A. NUMMULARIA*. Calif.

*A. Uva-ursi*. Bearberry; Eu., N. Asia and N. Amer.

ARISTOLOCHIA, Aristolochiaceae. Rampant twining vines with large heart-shaped leaves. *A. durior* is used for porches [nursery].

*A. durior*. Dutchman's Pipe; Pa. to Ga. and Kans.

*A. Kaempferi*. Japan.

ARONIA, Rosaceae. Chokeberry. Medium-sized shrubs with ornamental white flowers, highly colored fall foliage, and persistent red or blackish fruits [5D, 5E, nursery].

*A. arbutifolia*. Red C.; Mass. to Fla. and Tex. (Ap. or My.).

*A. a. macrocarpa*.

*A. melanocarpa*. Black C.; N. S. to Fla. and Mich. (Ap. or My.).

*A. m. elata*.

*A. prunifolia* (*A. floribunda*). Purple-fruited C.; N. S. to Fla. and Ind.

ARTEMISIA, Compositae. Aromatic shrubs of minor ornamental value, often planted in herb gardens. They prefer full sun [5E].

*A. Abrotanum*. Southernwood; S. Eu.

*A. frigida*. Fringed Wormwood; W. N. Amer., Siberia.

\* *A. chinensis*, the Chinese Angelica-tree, is native in China.

ASIMINA, Annonaceae. A noteworthy small tree with large ornamental foliage and edible fruits that contain sizable brown seeds. The northernmost representative of a large tropical and subtropical family which includes many trees cultivated for their fruits [6F].

*A. triloba*. Pawpaw; N. Y. to Fla. and Tex.

ASPARAGUS, Liliaceae. A vigorous loose climber with needle-like leaves and slightly woody base. Small red berries are conspicuous at the end of summer [5E].

*A. verticillatus*. Persia to Siberia.

ASTRAGALUS, Leguminosae. A trailing subshrub of some ornamental value for use in rock gardens [nursery].

*A. sempervirens*. S. Eu.

ATRIPLEX, Chenopodiaceae. Orach. A gray-foliage subject of comparatively little ornamental value [nursery].

*A. canescens*. W. U. S.

AUCUBA, Cornaceae. An attractive ornamental evergreen shrub with glossy laurel-like leaves. It requires protection from full sunlight and strong winds in this region [6B, 8E].

A. JAPONICA. Japanese Aucuba; Japan.

BACCHARIS, Compositae. A shrub of little ornamental value except in the fall when the seeds are ripe. Adapted for seashore planting [nursery].

*B. halimifolia*. Groundsel-bush; Mass. to Fla. and Tex.

BERBERIS, Berberidaceae. Barberry. The deciduous species, which are listed first, form a large group of attractive spiny plants of many uses. The bright yellow flowers in spring and

the red berries that follow make the barberries garden-worthy. Among the best are *B. amurensis japonica*, *B. mentorensis*, *B. Vernae*, and the white-stemmed *B. dictyophylla*. *B. vulgaris* and its relatives are alternate hosts to the wheat-rust, and are therefore not to be planted in wheat-growing regions. *B. Thunbergii* is of outstanding merit both for hedges and mixed shrub borders, and it develops into an excellent specimen plant when afforded sufficient room [6J, nursery].

- B. aemulans*. W. China.
- B. aetnensis*. S. Eu.
- B. aggregata Prattii*. W. China.
- B. amurensis japonica*. Japan.
- B. angulosa*. Himal.
- B. aristata*. N.W. Himal.
- B. Beaniana*. W. China.
- B. brachypoda*. N.W. China.
- B. Bretschneideri*. Japan.
- B. canadensis*. Allegheny B.; Va. to Ga. and Mo.
- B. cerasina*. N. N. Amer.
- B. chinensis*. Caucasus.
- B. concinna*. Sikkim.
- B. consimilis*. China.
- B. crataegina*. Asia Minor.
- B. dasystachya*. W. China.
- B. declinata* (*B. canadensis?* x *vulgaris*).
- B. diaphana*. Kansu B.; W. China.
- B. dictyoneura*. N.W. China.
- B. dictyophylla*. Chalkleaf B.; W. China.
- B. Dielsiana*. W. China.
- B. Edgeworthiana*. N.W. Himal.
- B. Faxoniana*. W. China.
- B. Francisci-Ferdinandi*. W. China.
- B. Gilgiana*. N.C. China.
- B. Giralddii*. N.C. China.
- B. Henryana*. C. China.

- B. heteropoda*. Turkestan.  
*B. iliensis*. C. Asia.  
*B. Jamesiana*. W. China.  
*B. koreana*. Korea.  
*B. laxiflora* (*B. chinensis?*  $\times$  *vulgaris*).  
*B. Lecomtei*. W. China.  
*B. leptoclada*. W. China.  
*B. lycioides*. Himal.  
*B. macrosepala*. Himal.  
*B. mekongensis*. China.  
*B. mentorensis* (*B. Julianae*  $\times$  *Thunbergii*).  
*B. morrisonensis*. Formosa.  
*B. notabilis* (*B. heteropoda*  $\times$  *vulgaris?*).  
*B. nummularia*. Turkestan, N. Persia.  
*B. parvifolia*. W. China.  
*B. Poireti*. N. China, Amur.  
*B. P. weichangensis*. China.  
*B. polyantha*. W. China.  
*B. Potaninii*. W. China.  
*B. reticulata*. N. China.  
*B. sibirica*. Siberia.  
*B. Sieboldii*. Japan.  
*B. Silva-Taroucana*. W. China.  
*B. thibetica*. W. China.  
*B. Thunbergii*. Japanese B.; Japan.  
*B. T. atropurpurea*.  
*B. Tischleri*. W. China.  
*B. turcomanica densiflora*. N. Persia.  
*B. t. integerrima*. S. Asia Minor.  
*B. Vernae*. N.W. China.  
*B. virescens*. Himal.  
*B. v. fructo-coccinea*.  
*B. vulgaris*. Common B.; Eu.  
*B. v. enuclea*.  
*B. Wilsonae*. W. China.  
*B. yunnanensis*. W. China.

The evergreen barberries grow best in rich soil and among other evergreens where they are sheltered from strong winds. *B. verruculosa*, *B. Gagnepainii*, and *B. Julianae* are among the most satisfactory [8E, nursery].

- B. ATROCARPA. W. China.
- B. BUXIFOLIA. Magellan B.; Chile.
- B. candidula*. C. China.
- B. CAVALIEREI. China.
- B. Chenaultii* (*B. verruculosa* x *Gagnepainii*).
- B. Gagnepainii*. W. China.
- B. Hookeri*. Himal.
- B. Julianae*. Winter B.; C. China.
- B. PRUINOSA. S.W. China.
- B. REPLICATA. S.W. China.
- B. SANGUINEA. W. China.
- B. Sargentiana*. C. China.
- B. Soulieana*. C. China.
- B. STENOPHYLLA (*B. Darwinii* x *empetrifolia*).
- B. s. COMPACTA.
- B. TRIACANTHOPHORA. C. China.
- B. Veitchii*. C. China.
- B. verruculosa*. W. China.
- B. Vilmorinii* (*B. pruinosa* x *diaphana?*).

BERCHEMIA, Rhamnaceae. Scandent shrubs with oval leaves and inconspicuous flowers. They are not ornamental [5E, 6B, nursery].

- B. floribunda megalophylla*.\*
- B. kulingensis*. China.
- B. scandens*. Supple-jack; Va. to Fla. and Tex.

BETULA, Betulaceae. Birch. Small or medium-sized trees, occasionally shrubs, with attractive light green foliage early in spring. The white-barked kinds, which are most commonly

\* *B. floribunda* is native in the Himalayas.

planted, include *B. pendula*, *B. papyrifera*, *B. populifolia*, and *B. mandshurica japonica*. They are subject to borer infestations [5G, 5H, 6H, nursery].

- B. alnoides*. Himal., S.W. China.
- B. Ermani*. N.E. Asia, Japan.
- B. Forrestii*. W. China.
- B. glandulosa*. N. Amer.
- B. lenta*. Cherry B.; Me. to Ala. and Ohio.
- B. lutea*. Yellow B.; Newf. to Ga. and Tenn.
- B. mandshurica* (*B. japonica m.*). Manch., Korea.
- B. m. japonica* (*B. j.*). Japanese White B.; Japan, N. China.
- B. m. szechuanica*. W. China.
- B. Maximowicziana*. Japan.
- B. Middendorffii*. N.E. Asia.
- B. nigra*. River B., Mass. to Fla. and Kans.
- B. papyrifera*. Canoe B.; N.N. Amer.
- B. p. neoalaskana* (*B. n.*). Sask. to Alaska.
- B. p. occidentalis*. B. C. to Mont.
- B. pendula fastigiata*.\*
- B. p. obscura*.
- B. p. oycoviensis*.
- B. populifolia*. Gray B.; N. S. and Ont. to Del.
- B. pubescens*. N. and C. Eu. to Siberia.
- B. p. carpathica*.
- B. Raddeana*. Cauc.
- B. tianschanica*. C. Asia.
- B. tristis*. Kamchatka.
- B. utilis*. Himal.

BIGNONIA, Bignoniaceae. A rapid-growing vine not sufficiently hardy to be recommended for planting around New York. See also *Campsis* [nursery].

*B. CAPREOLATA*. Cross-vine; Va. to Fla. and La.

\* The European White Birch, *B. pendula*, is native in Europe and Asia Minor.



BROUSSONETIA, Moraceae. A dioecious tree with pubescent foliage and orange-red seeds that are conspicuous on the buttonball-like fruits. Branches are injured in severe winters [6C].

B. PAPYRIFERA. Paper-mulberry; China, Japan.

BRUCKENTHALIA, Ericaceae. A dwarf evergreen shrub, heath-like in appearance; suitable for the rock garden [5E].

B. SPICULIFOLIA. Spike-heath; S. Eu. and Asia Minor.

BUDDLEIA, Loganiaceae. Butterfly-bush. Shrubs that attract butterflies when in flower, hence the common name. *B. alternifolia* flowers early on the growth of the preceding year; the others bloom in summer on growth of the current season [6K, nursery].

*B. albiflora*. C. and W. China.

*B. alternifolia*. China (Jn.).

*B.* "Charming." (Jy.-S.).

*B. Davidi*. Orange-eye B.; China (Jy.-S.).

*B. D. amplissima*.

*B. D. erecta*.

*B. D.* "Ile de France."

*B. D. nanhoensis*. Kansu.

*B. D. prostrata*.

*B. D. serotina*.

*B.* "Fascinating."

*B.* "Flaming Violet."

*B. Forrestii*. W. China.

*B.* "Fortune."

*B. intermedia insignis* (*B. Lindleyana* x *japonica*).

*B. Lindleyana sinuto-dentata*.\*

*B.* "Royal Purple."

*B.* "Royal Red."

*B.* "White Bouquet."

\* *B. Lindleyana* is native in eastern China.

**BUMELIA**, Sapotaceae. A small tree, not satisfactorily hardy for general planting around New York; only a collector's item [nursery].

*B. LANUGINOSA*. Chittimwood; Va. to Fla. and Tex.

**BUXUS**, Buxaceae. Box. Long-cultivated evergreens that are excellent for specimen and massed planting but are not reliably hardy unless protected. *B. microphylla koreana*, a low, rather loose-growing shrub, is the hardiest of the genus [6F, nursery].

*B. microphylla koreana*. Korea.

*B. SEMPERVIRENS ANGUSTIFOLIA*. \*

*B. s. ARBORESCENS*.

*B. s. AUREO-VARIEGATA*.

*B. s. HANDSWORTHII*.

*B. s. LATIFOLIA MACROPHYLLA*.

*B. s. MICROPHYLLA*.

*B. s. SUFFRUTICOSA*.

**CALLICARPA**, Verbenaceae. Beauty-berry. The attractive violet fruits are borne in profusion and persist until winter is well advanced [6D, nursery].

*C. Bodinieri Giralddii* (*C. Giralddiana*). China.

*C. dichotoma*. E. and C. China, Korea.

*C. japonica*. Japan.

*C. rubella Hemsleyana*. China.

*C. Shirasawana* (*C. japonica*  $\times$  *mollis*).

**CALLUNA**, Ericaceae. Heather. Low evergreen shrubs, useful for massing in sunny places in well drained peaty soil. They sometimes die out even after they have been established several years. To keep them compact, they should be cut over before the new growth begins [5D].

*C. VULGARIS*. Eu., Asia Minor.

\* *B. sempervirens* is native in southern Europe, north Africa, and western Asia.

C. v. ALBA.  
C. v. ALBA ELATA.  
C. v. ALBA PILOSA.  
C. v. ALBA RIGIDA.  
C. v. ALBA TENELLA.  
C. v. AUREA.  
C. v. CRISPA.  
C. v. CUPREA.  
C. v. FLORA PLENA.  
C. v. FOXII.

C. v. HAMMONDII.  
C. v. HIRSUTA.  
C. v. HUMILIS.  
C. v. HYPNOIDES.  
C. v. MONSTROSA.  
C. v. PURPUREA.  
C. v. ROSEA.  
C. v. SEARLEI.  
C. v. SPICATA.  
C. v. VARIEGATA.

CALYCANTHUS, Calycanthaceae. An aromatic shrub with fragrant brown-red flowers and persistent dry fruits [5E].

*C. floridus*. Carolina Allspice; Va. to Fla. (Jn.-Jy.).

CAMPSIS, Bignoniaceae. Trumpet-creeper. Vigorous self-clinging vines that bear richly colored trumpet-shaped flowers. They are at their best when planted against a wall [nursery].

*C. GRANDIFLORA*. Chinese T.; China (Au.-S.).

*C. TAGLIABUANA* (*C. grandiflora* x *radicans*) "Madame Galen". (Au.-S.).

CARAGANA, Leguminosae. Hardy sun-loving shrubs with yellow pea-shaped flowers and small pinnate leaves usually armed with spines. They are recommended for poor sandy soils. *C. arborescens* is best known [6E, nursery].

*C. ambigua*. Baluchistan and Afghanistan.

*C. arborescens*. Pea-tree; Siberia, Manch. (My.).

*C. a. Lorbergii*.

*C. a. pendula*.

*C. a. Redowskii*.

- C. aurantiaca*. Cent. Asia.
- C. Boisii*. W. China.
- C. Chamlagu*. N. China.
- C. densa*. China.
- C. Franchetiana*. S.W. China.
- C. frutex*. S. Russia to Turkest. and Siber.
- C. Gerardiana*. N.W. Himal.
- C. grandiflora*. S. Russia and Cauc. to Turkest.
- C. Maximowicziana*. W. China.
- C. microphylla*. Siberia, N. China.
- C. oreophila*. W. China.
- C. pygmaea*. N.W. China and Siberia.
- C. tragacanthoides*. N.W. China to Altai and Himal.

CARPINUS, Betulaceae. Hornbeam. Compact rounded trees of medium height. *C. Betulus* makes a tall hedge. It occasionally kills back in winter [6E, 5F, nursery].

- C. BETULUS*. European H.; Eu. to Persia.
- C. caroliniana*. American H., Blue Beech; Que. to Fla. and Tex.
- C. cordata*. Japan, N.E. Asia.
- C. japonica*. Japan.
- C. laxiflora Davidii*.\*
- C. orientalis*. S.E. Eu., Asia Minor.
- C. Tschonoskii*. Japan, N.E. Asia.

CARYA, Juglandaceae. Hickory. Tall native trees with usually edible nuts, the best obtained from *C. ovata*. Their large compound leaves turn yellow before falling. Hickories are among the most difficult trees to transplant [1F, 5D].

- C. cordiformis*. Bitternut; Que. to Fla. and La.
- C. glabra*. Pignut; Me. and Ont. to Fla.

\* *C. laxiflora* is native in Japan.

*C. ovata*. Shagbark H.; Que. to Fla. and Tex.

*C. tomentosa* (*C. alba*). Mockernut; Mass. to Fla. and Tex.

CARYOPTERIS, Verbenaceae. Aromatic shrubs that require winter protection or are propagated each year for summer display. They are most floriferous in a sunny location [nursery].

*C. INCANA*. Blue-beard; Japan to N.W. China (Au.-O.).

*C. MONGOLICA*. N. China, Mongolia (Au.-S.).

CASSIOPE, Ericaceae. A dwarf evergreen shrub adapted to moist, partially shaded situations [5E].

*C. lycopodioides*. Alaska, N.E. Asia, Japan.

CASTANEA, Fagaceae. Chestnut. Small or large trees that bear edible nuts. To replace the American chestnut, *C. dentata*, which has been destroyed by the chestnut blight, breeders are attempting to achieve blight-resistant trees that produce large sweet nuts [1D].

*C. crenata*. Japanese C.; Japan.

*C. Fleetii* (*C. pumila* x *crenata*).

*C. mollissima*. Chinese C.; China and Korea.

*C. pumila*. Chinquapin; Pa. to Fla. and Tex.

CATALPA, Bignoniaceae. Large or small trees with large panicles of white, yellow, or pink flowers and broad heart-shaped leaves. The long, narrow, pendent seed-pods remain in winter [3K, nursery].

*C. bignonioides*. Common C.; Ga. to Fla. and Miss. (Jn.-Jy.).

*C. Bungei*. N. China.

*C. Fargesii*. W. China.

*C. hybrida* (*C. bignonioides* x *ovata*). Hybrid C.

*C. h. japonica*.

*C. ovata*. China (My.-Jn.).

CEANOTHUS, Rhamnaceae. A summer-flowering shrub that dies back each year. It grows best in full sun and in well drained soil [8E].

*C. Delilianus* (*C. americanus*  $\times$  *coeruleus*). (Jn.-Jy.).

CEDRUS, Pinaceae. Cedar. Stately evergreen trees of a pyramidal shape when young. They make good specimens [5D].

*C. atlantica aurea*.\*

*C. a. glauca*.

*C. DEODARA*. Deodar C.; Himal.

*C. libani*. Cedar of Lebanon; Asia Minor, Syria.

CELASTRUS, Celastraceae. Twining shrubs of spreading habit that bear brilliantly colored fruit. They often harbor scale insects [nursery].

*C. ANGULATA*. China.

*C. gemmata*. C. and W. China.

*C. Loeseneri*. C. China.

*C. orbiculata*. Oriental Bittersweet; Japan, China.

*C. Rosthorniana*. C. and W. China.

*C. strigillosa*. Japan.

*C. Vanioti*. C. China.

CELTIS, Ulmaceae. Hackberry. Gray-barked trees of no particular ornamental merit but the ability to grow in a wide variety of soils. Hackberries produce orange fruits that are sweet when first ripe. As the result of a disease, *C. occidentalis* often bears witches'-brooms on its branches [1E, nursery].

*C. australis*. S. Eu., N. Afr., W. Asia.

*C. Biondii*. C. China.

*C. Bungeana*. China, Manch. and Korea.

*C. labilis*. C. China.

*C. laevigata*. Mississippi H.; S. Ind. to Fla. and Tex.

*C. occidentalis*. Que. to N. C. and Fla.

\* The Atlas Cedar, *C. atlantica*, is native in north Africa.

- C. pumila georgiana*. N. J. to Fla. and Mo.  
*C. reticulata*. Wash. to Calif. and Tex.  
*C. sinensis*. E. China, Korea, Japan.  
*C. Tournefortii*. S.E. Eu., W. Asia.

CEPHALANTHUS, Rubiaceae. Buttonbush. An excellent shrub for moist situations. It is valued for its globular heads of showy flowers [5E].

- C. occidentalis*. N. Amer., E. Asia (Jy.-S.).

CEPHALOTAXUS, Taxaceae. Plum-yew. Similar to the yew but with two distinct white bands on the under-surface of the leaf. Rarely planted except by collectors [nursery].

- C. drupacea*. Japanese P.; Japan.  
*C. d. sinensis*. C. and W. China.

CERCIDIPHYLLUM, Cercidiphyllaceae. Katsura-tree. Dioecious trees of medium size and low-branching habit. They have crimson flowers and later in the spring have wine-red foliage. Green in summer, in the fall the leaves turn yellow and scarlet. They should be more frequently used in gardens [2C, nursery].

- C. japonicum*. Japan (Ap.-My.).  
*C. j. magnificum*. Japan.

CERCIS, Leguminosae. Redbud. Handsome large shrubs or small trees that thrive in rich soil. They prefer full sunlight but will grow in partial shade [5D, nursery].

- C. canadensis*. N. J. to Fla. and Tex. (Ap.-My.).  
*C. c. alba*.  
*C. chinensis*. C. China (Ap.-My.).  
 C. OCCIDENTALIS. Calif.  
 C. SILIQUASTRUM. Judas-tree; S. Eu., W. Asia.

CHAENOMELES, Rosaceae. Flowering Quince. Thorny shrubs with large, brilliantly colored, cup-shaped flowers in white and

in varying shades of red and orange. The species and some of the varieties produce large fruits similar to the edible quince [7F, nursery].

*C. japonica*. Dwarf Japanese Q.; Japan (Mr.-Ap.).

*C. j. alpina*.

*C. lagenaria*. Japanese Q.; China (Mr.-Ap.).

*C. l. cathayensis*. C. China.

*C. l.* "Columbia."

*C. l. grandiflora*.

*C. l. g. rosea*.

*C. l. g. rubra*.

*C. l. kermesiana semiplena*.

*C. l. Moerloosei*.

*C. l. nivalis*.

*C. l. pygmaea*.

*C. l. sanguinea plena*.

*C. l. umbilicata*.

*C. l.* "Vermilion."

*C. l. versicolor*.

*C. sinensis*. Chinese Q.; C. China.

CHAMAECYPARIS, Pinaceae. Cypress. Evergreen shrubs and trees that exhibit a wide variety of forms and colors. They are mostly of rapid and loose growth. Many kinds winter-kill frequently in this climate. They are too often used in foundation planting without sufficient regard for their future development [9D, 9E, nursery].

*C. LAWSONIANA*. Lawson C.; Ore. to Calif.

*C. L. ELLWOODII*.

*C. L. FLETCHERI*.

*C. L. FORSTECKIANA*.

*C. L. GLAUCA*.

*C. L. MINIMA GLAUCA*.

*C. L. MONUMENTALIS NOVA*.

*C. L. POTTENSII*.

*C. L. STEWARTII*.

*C. L. YOUNGII*.



*C. nootkatensis*. Nootka C.; Alaska to Ore.

*C. n. glauca*.

*C. n. lutea*.

*C. obtusa*. Hinoki C.; Japan.

*C. o. ACUTA*.

*C. o. ALBO-SPICA*.

*C. o. AUREA YOUNGII*.

*C. o. COMPACTA*.

*C. o. COMPACTA CRISTATA*.

*C. o. ERECTA*.

*C. o. FILICOIDES*.

*C. pisifera*. Sawara C.; Japan.

*C. p. aurea nana*.

*C. p. filifera*.

*C. p. filifera aurea*.

*C. p. filifera nana*.

*C. p. nana*.

*C. p. plumosa*.

*C. p. plumosa argentea*.

*C. p. plumosa nana*.

*C. thyoides*. White Cedar; Me. to Fla. and Miss.

*C. t. andelyensis*.

*C. t. aurea*.

*C. t. ericoides*.

*C. o. FILIFORMIS*.

*C. o. FILIFORMIS NANA*.

*C. o. gracilis aurea*.

*C. o. gracilis nana*.

*C. o. LYCOPODIOIDES AUREA*.

*C. o. MAGNIFICA*.

*C. o. NANA AUREA*.

*C. p. plumosa nana compressa*.

*C. p. plumosa nana variegata*.

*C. p. plumosa sulphurea*.

*C. p. squarrosa*.

*C. p. squarrosa albo-variegata*.

*C. p. squarrosa monstrosa*.

*C. p. squarrosa nana*.

CHAMAEDAPHNE, Ericaceae. A low, broad-leaved evergreen producing racemes of small white flowers. It is adapted to moist peaty soil and will thrive at the brink of a lake [5E].

*C. calyculata*. Leather-leaf; N. Eu., N. Asia and N. Amer.

CHIMAPHILA, Pyrolaceae. A low evergreen with underground runners and small leaves in whorls on the single stems. Excellent for the woodland garden [5E].

*C. umbellata cisatlantica*. Pipsissewa; N. S. to Minn. and Ga.

CHIMONANTHUS, Calycanthaceae. This shrub is not suffi-

ciently hardy to be recommended for planting around New York [8E].

*C. PRAECOX* (*Meratia p.*). China.

CHIOGENES, Ericaceae. A low mat-forming evergreen suited for the rockery [5E].

*C. hispidula*. Creeping Snowberry; N. Amer.

CHIONANTHUS, Oleaceae. Fringe-tree. Attractive large shrubs or small trees that bear a profusion of lace-like flowers in the spring. *C. retusus* is the more tree-like and with us produces flowers earlier than *C. virginicus*. These are among the best of recommended small flowering trees [6H].

*C. retusus*. China, Korea, Japan (My.).

*C. virginicus*. N. J. to Fla. and Tex. (My. or Jn.).

*C. v. maritimus*.

CHRYSANTHEMUM, Compositae. Chrysanthemum. Subshrubs that winter-kill completely in some years. *C. nipponicum* produces daisy-like flowers and long narrow fleshy leaves [5E].

*C. morifolium gracilis*. Hort. origin. (O.).

*C. nipponicum*. Japan (S. or O.).

CISTUS, Cistaceae. Rock-rose. Low evergreen or nearly evergreen shrubs that succeed best in full sun and well drained soil. They are not entirely reliable for this region and must be protected from cold winds [6B, 5E, 8E, nursery].

*C. ALBIDUS*. W. Mediterr. region.

*C. CORBARIENSIS* (*C. salvifolius* x *populifolius*).

*C. LAURIFOLIUS*. Mediterr. region.

*C. SALVIFOLIUS*. Mediterr. region.

*C. villosus* ALBUS.\*

*C. v. tauricus*.

CLADRASTIS, Leguminosae. *C. lutea* is a huge gray-barked tree producing large pendulous panicles of white flowers. It is an excellent species worthy of wider cultivation [9E, nursery].

*C. lutea*. Yellow-wood; N. C. to Ky. and Ga. (Jn.).

*C. platycarpa*. Japan.

CLEMATIS, Ranunculaceae. Virgin's Bower. Flowering vines. The white-flowered *C. paniculata* with small flowers and the pink-flowered *C. montana rubens* are highly ornamental and are easily cultivated. The large-flowered species of *Clematis* are often more difficult. They like cool, moist, but well drained soils and they appreciate lime. Their roots should be shaded and their tops exposed to sunshine. *C. Jackmani* has rich purple flowers and is the easiest of the large-flowered group to grow [8E, nursery].

*C. Addisonii*. Va. to N. C. and Tenn.

*C. alpina*. Eu. to N.E. Asia (Ap.-My.).

*C. apiifolia obtusidentata*. C. China (S.-O.).

*C. connata*. Himal., S.W. China (Au.-O.).

*C. Douglasii*. Colo. to Wash.

*C. Fargesii*. W. China (Jn.-S.).

*C. fusca*. N.E. Asia (Jn.-Au.).

*C. grata argenteilucida* (*C. g. grandidentata*). C. and W. China.

*C. Jackmani* (*C. lanuginosa* x *Viticella*). (Jy.-S.).

*C. lancifolia strictissima*. China.

*C. macropetala*. N. China, Siber.

*C. montana*. Himal., C. and W. China (My.).

*C. m. rubens*.

*C. ochroleuca*. N. Y. to Ga.

*C. paniculata*. Japan (S.-O.).

\* *C. villosus* is native in the Mediterranean region.

- C. patens*. China (My.-Jn.).  
*C. Pitcheri* (*C. Simsii*). S. Ind. to Neb. and Tex.  
*C. pseudoflammula*. Caucasus.  
*C. serratifolia*. Korea (Au.-S.).  
*C. songarica*. Siber. to Turkest. (Au.-S.).  
*C. tangutica*. Golden C.; Mong. to N.W. China (Jn.).  
*C. texensis*. Scarlet C.; Tex. (Jy.-S.).  
*C. uncinata*. C. China.  
*C. Viticella*. S. Eu. to W. Asia (Jn.-Au.).

CLERODENDRON, Verbenaceae. Glory-bower. Large shrubs that require a sheltered situation because the twigs often die back in winter. The inflorescences are produced on the current year's growth, and the showy parts are the reddish calyces and blue fruits. The foliage has a rather objectionable odor [8E].

- C. TRICHOTOMUM*. E. China, Japan (Au.-S.).  
*C. T. FARGESII*. China (Au.-S.).

CLETHRA, Clethraceae. White-alder. Shrubs with attractive racemes or panicles of fragrant white flowers. They prefer moist soil and will grow in partial shade or full sun. Like the Heath family they prefer an acid or peaty soil [5F, 6D, nursery].

- C. acuminata*. Va. to Ga. (Jy.-S.).  
*C. alnifolia*. Sweet Pepperbush; Me. to Fla. (Jy.-S.).  
*C. a. rosea*.  
*C. barbinervis*. Japan (Jy.-S.).  
*C. tomentosa*. N. C. to Fla. and Ala. (Au.-S.).

COCCULUS, Menispermaceae. A twining shrub, almost herbaceous in character and of rampant growth. No decorative value [nursery].

- C. carolinus*. Carolina Moonseed; Va. to Fla. and Tex.

COLUTEA, Leguminosae. Bladder-senna. Large coarse shrubs with yellow or orange flowers and bladder-like pods that contain small seeds [5D, nursery].

- C. breviaolata*. S. France.
- C. gracilis*. Transcaspia.
- C. istria*. Asia Minor.
- C. media* (*C. arborescens*  $\times$  *orientalis*).
- C. melanocalyx*. Asia Minor.
- C. orientalis*. Cauc. to Turkest.
- C. persica*. Kurdistan, Persia.

CORIARIA, Coriariaceae. Though these shrubs are not fully hardy, they are worth growing because of their large panicles of showy brilliant red fruits borne in summer. The flowers are produced on the shoots of the preceding year. They should be planted only in sheltered locations [8E, nursery].

- C. JAPONICA*. Japan (My.).
- C. MYRTIFOLIA*. S. Eu., N.W. Afr.
- C. NEPALENSIS*. Himalaya.

CORNUS, Cornaceae. Dogwood. Shrubs and small trees with numerous small flowers in flat clusters. *C. florida* and *C. Kousa* have large bracts that form the showy part of the inflorescences. *C. stolonifera*, *C. alba* and others have bright red or yellow stems that are conspicuous in winter. Most of the shrubby dogwoods grow well in moist soil [5K, 5L, nursery].

- C. alba argenteo-marginata*.\*
- C. a. sibirica variegata*.
- C. alternifolia*. Pagoda D.; N. S. to Ga. and Ala.
- C. Amomum grandiflora*.†
- C. arnoldiana* (*C. obliqua*  $\times$  *racemosa*).

\* *C. alba*, the Tatarian Dogwood, is native in Siberia and northern China.

† *C. Amomum*, the Silky Dogwood, is native from Massachusetts to Georgia.

- C. australis*. W. Asia.  
*C. a. Koenigii*. Transcauc.  
*C. Baileyi*. Ont. and Pa. to Minn.  
*C. Bretschneideri*. N. China.  
*C. coreana*. Korea.  
*C. Dunbarii* (*C. macrophylla* x *asperifolia*).  
*C. florida*. Flowering D.; Mass. to Fla. and Mex. (My.).  
*C. f. pendula*.  
*C. f. pluribracteata*. *C. f. Welchii*.  
*C. f. rubra*. *C. f. xanthocarpa*.  
*C. foemina*. Va. to Fla. and Tex.  
*C. Horseyi* (*C. macrophylla* x *Amomum*).  
*C. Kousa*. Kousa; Japan, Korea (Jn.).  
*C. K. chinensis*. China (Jn.).  
*C. macrophylla*. Himal., China, Japan.  
*C. mas*. Cornelian Cherry; C. and S. Eu., W. Asia (Mr.-Ap.).  
*C. obliqua*. Que. to Kans.  
*C. officinalis*. Japan, Korea (Mr.-Ap.).  
*C. paucinervis*. C. China.  
*C. poliophylla*. C. China.  
*C. pubescens*. B. C. to Calif.  
*C. racemosa*. Me. to Ga. and Neb.  
*C. rugosa*. N. S. to Va. and N. D.  
*C. sanguinea latifolia*.\*  
*C. s. Methzschii*.  
*C. stolonifera*. Red-osier D.; N. Amer.  
*C. s. coloradensis*. Yukon to N. Mex.  
*C. s. flaviramea*.  
*C. s. nana*.  
*C. Walteri*. C. China.

CORONILLA, Leguminosae. Yellow-flowered shrubs that prefer a well drained rich soil and a sunny site. They resent transplanting [nursery].

\* *C. sanguinea*, the Red or Bloodtwig Dogwood, is native in Europe.

*C. emeroides*. S.E. Eu.

*C. Emerus*. Scorpion Senna; C. and S. Eu.

CORYLOPSIS, Hamamelidaceae. Winter Hazel. Densely branched yellow-flowering shrubs rivaling the common golden-bells in early spring but of more refined appearance and habit. They require medium moist soil conditions and some protection from cold winds [6H, 6D, nursery].

*C. pauciflora*. Japan (Ap.-My.).

*C. platypetala*. C. China (Ap.-My.).

*C. sinensis glandulifera*. C. and W. China (Ap.-My.).

*C. spicata*. Japan (Ap.-My.).

*C. WILLMOTTIAE*. W. China.

CORYLUS, Betulaceae. Hazel. Large shrubs or small trees with conspicuous catkins early in the year. They need a rich soil if they are to fruit well [5E, 3J, nursery].

*C. americana*. American H.; Me. to Sask. and Fla.

*C. Avellana*. European H.; Eu.

*C. A. fusco-rubra*.

*C. A. quercifolia*.

*C. A. urticifolia*.

*C. Colurna*. Turkish H.; S.E. Eu. and W. Asia.

*C. cornuta*. Beaked H.; Que. to Ga. and Mo.

*C. heterophylla*. N.E. Asia, Japan.

*C. Sieboldiana*. Japanese H.; Japan.

*C. S. mandschurica*. N.E. Asia and Japan.

*C. tibetica*. Tibetan H.; C. and W. China.

*C. Vilmorinii* (*C. chinensis* x *Avellana*).

COTINUS, Anacardiaceae. Massive shrubs that bear mist-like plummy panicles of tiny flowers [2C, 5C].

*C. Coggygia*. Smoke-tree; S. Eu. to C. China and Himal.

*C. C. arborescens*.

*C. C. purpureus*.

COTONEASTER, Rosaceae. Shrubs, many of them highly decorative. They have clusters of small white or pink flowers succeeded by orange, red, or black berries. The foliage of some species persists until December. They vary in habit from prostrate creepers to tall shrubs. Among the best are: PROSTRATE — *C. Dammeri*; LOW GROWING — *C. adpressa*, *C. apiculata*, *C. horizontalis*, *C. microphylla*; MEDIUM HEIGHT — *C. Dielsiana*, *C. divaricata*, *C. Zabeli miniata*; TALL — *C. ambigua*, *C. bullata* [6D, 5E, nursery].

- C. acuminata*. Himal.
- C. acutifolia*. N. China.
- C. adpressa*. W. China.
- C. a. praecox*.
- C. affinis*. Himal.
- C. a. bacillaris*. Himal.
- C. ambigua*. W. China.
- C. amoena*. S.W. China.
- C. apiculata*. W. China.
- C. bullata*. W. China.
- C. BUXIFOLIA*. Nilgiri Hills, S. India.
- C. congesta* (*C. microphylla glacialis*). Himal.
- C. DAMMERI*. C. China.
- C. denticulata*. Mex.
- C. Dielsiana*. C. and W. China.
- C. divaricata*. C. and W. China.
- C. foveolata*. C. China.
- C. Franchetii*. W. China.
- C. frigida*. Himal.
- C. glaucophylla*. W. China.
- C. g. serotina*.
- C. g. vestita*.
- C. gracilis*. China.
- C. Harroviana*. W. China.
- C. hebephylla*. S.W. China.
- C. horizontalis*. W. China.



- C. h. perpusilla*. W. China.  
*C. ignava*. E. Turkest.  
*C. integerrima*. Eu., N. Asia to Altai.  
*C. lactea*. W. China.  
*C. Lindleyi*. Himal.  
*C. melanocarpa laxiflora*. C. Asia.  
*C. microphylla*. Himal.  
*C. moupinensis*. W. China.  
*C. nitens*. W. China.  
*C. obscura*. W. China.  
*C. racemiflora soongorica*. Songaria, W. China.  
*C. rosea*. N.W. Himal., Afghan.  
*C. rotundifolia*. Himal.  
*C. rubens*. Yunnan.  
*C. salicifolia floccosa*. W. China.  
*C. s. rugosa*. C. China.  
*C. submultiflora*. Tian-shan and Pamir, China.  
*C. tomentosa*. S.E. Eu., W. Asia.  
*C. Wardii*. S.E. Tibet.  
*C. Zabeli*. C. China.  
*C. Z. miniata*.

CRATAEGOMESPILUS, Rosaceae. A tree of special botanical interest. It is a "graft-hybrid" (chimera) between *Crataegus monogyna* and *Mespilus germanica* [6K].

*G. Dardari Asnieresii*.

CRATAEGUS, Rosaceae. Hawthorn. Small trees, occasionally shrubs with clusters of flowers in spring followed by colorful fruits which on *C. Phaenopyrum* persist throughout the winter [6K, nursery].

- C. aboriginum*. Can.  
*C. allecta*. Mich.  
*C. altaica*. Songaria to Turkest.  
*C. a. fructu-rubra*.

- C. anomala*. N. U. S. and Can.  
*C. aprica*. Va. to Ga. and Tenn.  
*C. arnoldiana*. Mass. to Conn. and N. Y.  
*C. Azarolus*. S. Eu., N. Afr., W. Asia.  
*C. caesa*. Mich.  
*C. Calpodendron* (*C. tomentosa*). Ont. to Ga. and Kans.  
*C. champlainensis*. N. U. S. and Can.  
*C. chlorosarca*. Manch.  
*C. chungtienensis*. China.  
*C. coccinioides*. Mo. to Ind. and Kans.  
*C. compta*. N. Y.  
*C. crus-galli splendens*.\*  
*C. cuneata*. Japan and China.  
*C. dahurica*. S.E. Siber.  
*C. delecta*. N. N. Amer.  
*C. densiflora*. N. U. S. and Can.  
*C. dilatata*. Que. to N. Y. and R. I.  
*C. Douglasii*. B. C. to Cal. and Minn.  
*C. dsungarica*. S.E. Siber., N. China.  
*C. fecunda*. Mo., Ill.  
*C. Fischeri*. C. Asia.  
*C. flabellata*. E. Can.  
*C. Heldreichii*. Greece.  
*C. hupehensis*. W. China.  
*C. intricata*. Mass. to N. Y. and N. C.  
*C. kansuensis aurantiaca*. N. China.  
*C. kulingensis*. Kiangsi, China.  
*C. lauta* (origin uncertain).  
*C. macracantha*. N. Y. and Vt. to Pa.  
*C. macrophylla*. N. N. Amer.  
*C. macrosperma acutiloba*. N. S. and New Eng.  
*C. Maximowiczii*. N.E. Asia.  
*C. mollis*. Ont. to Va. and Kans.  
*C. monogyna*. Eu., N. Afr., W. Asia.

\* This is a form of the Cockspur Thorn, *C. crus-galli*, a native of North America from Quebec to North Carolina and Kansas.



PLATE 1

*Above:* *Rosa spinosissima*.

*Right:* *Cytisus albus*  
in the Thompson  
Memorial Rock  
Garden.



PLATE 2

*Left: Vaccinium corymbosum. Right: Chionanthus retusus. Below: Hamamelis japonica.*

- C. m. biflora*. Glastonbury Thorn.  
*C. m. dolichocarpa*.  
*C. Oxyacantha*. English H.; Eu., N. Afr.  
*C. O. Paulii*. Paul's Scarlet H.  
*C. pagensis*. Okla.  
*C. persistens*. Possibly a hybrid of *C. crus-galli*.  
*C. Phaenopyrum (C. cordata)*. Washington Thorn; Va. to Mo.  
*C. pinnatifida*. N.E. Asia.  
*C. prunifolia*. Origin unknown.  
*C. pura*. N. N. Amer.  
*C. puta*. N. N. Amer.  
*C. rivularis*. Idaho to Nev. and N. Mex.  
*C. sanguinea*. E. Siber.  
*C. spathulata*. Va. to Fla. and Tex.  
*C. succulenta*. Que. to Mass. and Ill.  
*C. viridis*. Md. to Fla. and Tex.  
*C. Wattiana*. Altai Mts. to Baluchistan.  
*C. Wilsonii*. C. China.

CRYPTOMERIA, Pinaceae. Cryptomeria. Pyramidal evergreens, the foliage of which turns a coppery-brown in winter. Not reliably hardy in this region. They sometimes succeed in a well sheltered corner [5D, nursery].

- C. JAPONICA. Japan, China.  
 C. J. ARAUCARIOIDES.  
 C. J. "BENDAI HOWO SUGI."  
 C. J. DACRYDIOIDES.  
 C. J. "JINDAI SUGI."  
 C. J. LOBBII.  
 C. J. NANA AUREA.

CUDRANIA, Moraceae. Large thorny dioecious shrub that resembles the Osage-orange. Not satisfactorily hardy and of no special merit [5D].

- C. TRICUSPIDATA (*Vaniera t.*). China, Korea, Japan.

CUNNINGHAMIA, Pinaceae. China-fir. A vigorous and handsome evergreen tree with sharp-pointed glossy leaves. The tips of the branches are injured in cold winters even when planted in sheltered places [5D].

C. LANCEOLATA. S. and W. China.

CUPRESSUS, Pinaceae. Cypress. Pyramidal evergreen trees not satisfactorily hardy in New York [8F].

C. MACNABIANA. Calif.

CYRILLA, Cyrillaceae. The natural distribution of this species includes a wide tropical range, but only the northernmost forms are hardy with us. This shrub produces crowded racemes of small white flowers that are not unlike those of *Clethra* [nursery].

C. *racemiflora*. Leatherwood; Va. to W. Ind. and S. Amer. (Jn.-Jy.).

CYTISUS, Leguminosae. Broom. Most brooms are not long-lived. They prefer a well drained soil and full sun. The green stems are ornamental in winter and the attractive pea-like flowers are borne profusely in spring. *C. praecox* is most satisfactory at the Garden [5E, 8E, nursery].

C. *albus*. S.E. Eu. (Jn.-Jy.).

C. *austriacus Heuffelii*. Hungary (Jy. or Au.).

C. "BURKWOODII." (My. or Jn.).

C. "CALIFORNIA." (My. or Jn.).

C. *decumbens*. S. Eu. (My. or Jn.).

C. *hirsutus*. S.E. Eu. (My. or Jn.).

C. KEWENSIS (*C. Ardoinii* x *multiflorus*).

C. "LORD LAMBOURNE." (My. or Jn.).

C. "MCGILL." (My. or Jn.).

C. *multiflorus*. White Spanish B.; Spain, N. Afr. (My. or Jn.).

C. *nigricans*. C. and S. Eu. (Jn. or Jy.).

- C. "POMONA." (My. or Jn.).  
 C. *praecox* (C. *multiflorus* x *purgans*).  
 C. *p. albus*.  
 C. *purpureus*. S. Austria, N. Italy (My. or Jn.).  
 C. *p. erectus*.  
 C. *ratisbonensis*. C. Eu. to W. Siber. (My. or Jn.).  
 C. *r. biflorus*. S.E. Eu.  
 C. "SAN FRANCISCO." (My. or Jn.).  
 C. *scoparius*. Scotch B.; C. and S. Eu. (My. or Jn.).  
 C. "ST. MARY'S." (My. or Jn.).  
 C. "STANFORD." (My. or Jn.).  
 C. *supinus*. C. and S. Eu.

DABOECIA, Ericaceae. Irish Heath. Dwarf evergreen shrubs with urn-shaped flowers, rosy-purple in the type, white in the variety. They require a peaty soil and treatment similar to heathers. Suitable for the rockery [5E].

D. CANTABRICA. W. Eu. (Jy.-O.).

D. C. ALBA.

DAPHNE, Thymelaeaceae. Low shrubs, very attractive in flower but often difficult to establish. Full sun and well drained soil to which lime has been added are preferred. Most commonly grown are: *D. Cneorum*, evergreen with fragrant pink flowers; *D. Genkwa*, with lilac flowers, and *D. Mezereum*, with purplish-red flowers [5D, 5E, 8E, nursery].

*D. alpina*. Eu.

*D. Burkwoodii* (*D. caucasica* x *Cneorum*) "Somerset." (My.-Jn.).

*D. Cneorum*. Mts. C. and S. Eu. (Ap.-My.).

*D. C. alba*.

*D. C. albo-marginata*.

*D. Genkwa*. China, Korea (Ap.-My.).

*D. Giraldii*. N.W. China.

D. LAUREOLA. Spurge Laurel; S. Eu., W. Asia.

*D. Mezereum*. Mezereum; Eu. to Cauc. and Altai (Mr.-Ap.).

*D. ODORA* "ROSE QUEEN."\*

*D. PETRAEA*. S. Tyrol.

*D. P. GRANDIFLORA*.

*D. PONTICA*. Asia Minor.

DECAISNEA, Lardizabalaceae. Thick-stemmed shrubs with pinnately compound leaves; said to have attractive blue fruits [nursery].

*D. Fargesii*. W. China.

DECUMARIA, Saxifragaceae. A climbing vine that may succeed where it is accorded rich soil, moisture, and partial shade [nursery].

*D. barbara*. Va. to Fla. and La.

DESMODIUM, Leguminosae. Tick Trefoil. A shrub that is killed to the ground each winter and which flowers each summer on the new growth. Not decorative [nursery].

*D. TILIAEFOLIUM*. Himal.

DEUTZIA, Saxifragaceae. Free-flowering shrubs of easy culture. *D. gracilis*, *D. rosea*, *D. scabra*, and *D. Lemoinei* are most commonly cultivated [6J].

*D. "Candelabrum"* (*D. gracilis* x *Sieboldiana*). (My.-Jn.).

*D. "Candelabrum fastuosa."* (My. or Jn.).

*D. candida* (*D. Lemoinei* x *Sieboldiana*). (My. or Jn.).

*D. carnea* (*D. rosea grandiflora* x *Sieboldiana*). (My. or Jn.).

*D. c. densiflora*.

*D. c. lactea*.

*D. discolor*. C. China (Jn.).

*D. d. conspicua*.

*D. d. major*.

\* This is a form of the species *D. odora*, native in Japan and China.



- D. elegantissima* (*D. purpurascens* x *Sieboldiana*). (My. or Jn.).  
*D. e. arcuata*.  
*D. e. fasciculata*.  
*D. glabrata*. Korea.  
*D. glomeruliflora*. W. China (My. or Jn.).  
*D. gracilis*. Japan (My. or Jn.).  
*D. hybrida* (*D. longifolia* x *discolor*) "Magicien."  
*D. h.* "Mont-Rose."  
*D. hypoglauca*. C. China (Jn.).  
*D. Lemoinei* (*D. parviflora* x *gracilis*). (Jn.).  
*D. L.* "Boule de Neige."  
*D. longifolia*. W. China (Jn.).  
*D. l. Veitchii*.  
*D. macrocephala*. Hort. origin.  
*D. magnifica* (*D. scabra* x *Vilmorinae*). (Jn.).  
*D. m. eburnea*.  
*D. m. eminens*.  
*D. m. erecta*.  
*D. m. formosa*.  
*D. m. latiflora*.  
*D. m. longipetala*.  
*D. Monbeigii*. W. China.  
*D. myriantha* (*D. parviflora* x *setchuenensis*).  
*D. parviflora*. N. China (Jn.).  
*D. reflexa*. C. China.  
*D. rosea* (*D. gracilis* x *purpurascens*). (My. or Jn.).  
*D. r. carminea*.  
*D. r. eximia*.  
*D. r. floribunda*.  
*D. r. grandiflora*.  
*D. r. multiflora*.  
*D. r. robusta*.  
*D. rubens*. W. China.  
*D. scabra*. Japan and China (Jn. or Jy.).  
*D. s. candidissima*.  
*D. s. Fortunei*.  
*D. s. gracillima*.

- D. s. plena.*  
*D. s. suspensa.*  
*D. s. Watereri.*  
*D. Schneideriana.* C. China (Jn. or Jy.).  
*D. Sieboldiana.* Japan (Jn.).  
*D. S. Thunbergiana.*  
*D. staminea.* Himal.  
*D. taiwanensis.* Formosa.  
*D. Vilmorinae.* C. and W. China (Jn.).  
*D. Wilsonii* (*D. discolor?*  $\times$  *mollis*). C. China (Jn.).

DIERVILLA, Caprifoliaceae. Yellow-flowering shrubs that blossom on the wood of the current season. They are not very showy. Species and varieties of *Weigela* are sometimes wrongly referred to the genus *Diervilla*. The weigelas have white, pink or red flowers [7G].

- D. rivularis.* N. C. to Ga. and Ala. (Jy.-Au.).  
*D. sessilifolia.* N. C. to Ga. and Ala. (Jn.-Au.).  
*D. splendens* (*D. sessilifolia*  $\times$  *Lonicera*).

DIOSPYROS, Ebenaceae. Persimmon. Small to medium-sized trees with edible fruit. The native fruits of *D. virginiana* taste best after they have been exposed to early frosts [5D, nursery].

- D. Lotus.* Date-plum; W. Asia to Japan.  
*D. virginiana.* Common P.; Conn. to Fla. and Tex.  
*D. v. pubescens.*

DISANTHUS, Hamamelidaceae. A shrub with leaves similar to those of the redbud. In autumn the foliage assumes brilliant hues [nursery].

- D. cercidifolius.* Mts. of C. Japan.

DORYCNIUM, Leguminosae. A prostrate shrub with small

white flowers and green stems; suited for the rock garden [nursery].

*D. suffruticosum sericeum*. S. Eu.

DRYAS, Rosaceae. Mountain-avens. Choice prostrate evergreens with large white flowers. They are adapted for cultivation in a gritty soil in the rock garden or moraine [5E].

*D. octopetala*. N. N. Amer., N. Eu., N. Asia (Ap.-Jn.).

*D. o. lanata*. (Ap.-My.).

*D. Suendermannii* (*D. octopetala* x *Drummondii*). (Ap.-My.).

ECHINOCEREUS, Cactaceae. A prostrate cactus with large scarlet flowers. Requires sharp drainage and full sun [5E].

*E. triglochidiatus*. Colo. and N. Mex. to Tex.

ELAEAGNUS, Elaeagnaceae. Oleaster. Coarse shrubs or small trees of some decorative value because of their silvery or gray foliage. *E. pungens*, evergreen, requires winter protection [8E, 6K, nursery].

*E. angustifolia orientalis*.\*

*E. commutata*. Silver-berry; E. Can. to Minn. and Utah.

*E. montana*. Japan.

*E. multiflora crispa*.†

*E. PUNGENS*. Japan.

*E. P. SIMONII*.

*E. umbellata parvifolia*. China, Japan.

ELLIOTTIA, Ericaceae. The specimens in the Garden were raised from seed, but are not yet fully tested in this region. This germination is the first instance on record of *Elliottia* having been propagated from seed successfully [nursery].

*E. racemosa*. S. C. and Ga. (Jy.).

\* *E. angustifolia*, the Russian Olive, is native in Europe and western Asia.

† *E. multiflora* is native in China and Japan.

**ELSHOLTZIA**, Labiatae. A shrub with dense spikes of flowers of a difficult lilac-purple color borne in profusion on wood of the current season's growth. It should be cut almost to the ground each spring. Thrives in full sun [6E].

*E. Stauntoni*. N. China (Au.-S.).

**ENKIANTHUS**, Ericaceae. Upright and rounded shrubs with small bell-shaped flowers and brilliant autumn foliage. Excellent in full sun or in the partially shaded shrub border, they appreciate a rather moist, well drained soil rich in leafmold or peat [5E, nursery].

*E. campanulatus*. Japan (My.).

*E. c. Palibinii*.

*E. cernuus rubens*.\*

*E. perulatus*. Japan (My.).

**EPHEDRA**, Ephedraceae. Low shrubs of odd appearance with green stems, similar to those of the brooms [8E, 5E, nursery].

*E. ALATA*. Arabia.

*E. distachya*. S. Eu., N.E. Asia.

*E. d. helvetica*.

**EPIGAEA**, Ericaceae. A creeping broad-leaved evergreen with pale pink, delightfully scented flowers. Adapted to acid soil and partial shade, but difficult to establish in the garden [5E].

*E. repens*. Mayflower, Trailing Arbutus; Newf. to Fla. and Ky. (Ap.-My.).

**ERICA**, Ericaceae. Heath. Low evergreen shrubs that produce their best effect when planted in masses. They appreciate acid soil rich in humus and full exposure to sun [5E].

\* *E. cernuus* is native in Japan.

- E. carnea*. Spring H.; C. and S. Eu. (Ap.-My).  
*E. darleyensis* (*E. carnea* x *mediterranea*).  
*E. stricta*. Corsican H.; S. Eu.  
*E. Tetralix*. Cross-leafed H.; N. and W. Eu. (Jn.-S.).  
*E. vagans*. Cornish H.; Ireland to Portugal (Jy.-S.).  
*E. Williamsii* (*E. Tetralix* x *vagans*). (Jy.-S.).

ERINACEA, Leguminosae. A spiny compact shrub that requires full sun to produce its blue-gray pea-shaped flowers. Said to be difficult to propagate [5E].

- E. pungens*. S.W. Eu., N.W. Afr.

EUCOMMIA, Eucommiaceae. A dioecious tree of medium height that contains rubber in all its parts, particularly in the young growth and in the bark, but not in sufficient quantity to warrant commercial exploitation [2C].

- E. ulmoides*. C. China.

EUONYMUS, Celastraceae. Spindle-tree. Prostrate, medium and large shrubs or small trees that are frequently infected with scale insects. The majority have attractive orange or red fruits in the fall. Some have highly colored fall foliage, particularly *E. alata compacta*. *E. Fortunei*, *E. japonica*, and *E. kiautschovica* are evergreen [6E, 6F, nursery].

- E. alata*. Winged S.; N.E. Asia to C. China.  
*E. a. compacta*.  
*E. americana*. Strawberry-bush; N. Y. to Fla. and Tex.  
*E. Bungeana*. N. China, Manch.  
*E. europaea*. European S.; Eu. to W. Asia.  
*E. e. haematocarpa*.  
*E. e. intermedia*.  
*E. fimbriata*. Himal.

- E. Fortunei Carrieri* (*E. radicans* C.).\*  
*E. F. colorata* (*E. radicans* c.).  
*E. F. minima* (*E. radicans* m.).  
*E. F. radicans* (*E. r.*). Japan, Korea.  
*E. F. vegeta* (*E. radicans* v.). Japan.  
*E. grandiflora*. Himal., China.  
*E. JAPONICA*. S. Japan.  
*E. J. AUREA*.  
*E. J. AUREO-VARIEGATA*.  
*E. J. MICROPHYLLA*.  
*E. kiautschovica* (*E. patens*). E. and C. China.  
*E. latifolia*. S. Eu., W. Asia.  
*E. macroptera*. N.E. Asia, Japan.  
*E. Monbeigii*. Yunnan.  
*E. nikoensis*. Japan.  
*E. obovata*. Can. to Ind. and Ky.  
*E. pauciflora*. N.E. Asia.  
*E. pendula*. Himal.  
*E. sachalinensis*. N.E. Asia.  
*E. sanguinea*. C. and W. China.  
*E. semiexserta*. Japan.  
*E. Sieboldiana*. Japan.  
*E. Vidallii*. Japan.  
*E. yedoensis*. Japan, Korea.  
*E. y. Koehneana*. C. China.  
*E. y. longistela*.

EUPTELEA, Trochodendraceae. A small tree with colorful fall foliage [nursery].

*E. polyandra*. Japan.

EUSCAPHIS, Staphyleaceae. A shrub insufficiently hardy to be recommended [nursery].

*E. JAPONICA*. Japan, C. China.

\* *E. Fortunei* is native in China.

EVODIA, Rutaceae. Small aromatic trees with broad flat clusters of white flowers. *Evodia* differs from the genus *Phellodendron* in having its buds exposed in the axils of the leaves instead of being covered by the base of the petiole [6D].

*E. Danielii*. N. China, Korea.

*E. hupehensis*. C. China.

EXOCHORDA, Rosaceae. Pearl-bush. White-flowering shrubs that thrive in good soil and full sun. Their habit of growth is suited to their development as specimen rather than as border plants. *E. Giraldii Wilsonii* has the largest flowers of the genus [6J].

*E. Giraldii Wilsonii*. C. China (My.).

*E. Korolkowi*. Turkest. (Ap.-My.).

*E. racemosa*. E. China (Ap.-My.).

*E. serratifolia*. Manch. and Korea (My.).

FAGUS, Fagaceae. Beech. Gray-barked trees that make excellent lawn specimens. Compact in growth and attractive in foliage in autumn. Their surface-rooting habit makes it difficult for other plants to succeed in their immediate vicinity [2C, nursery].

*F. grandifolia*. American B.; N. B. to Fla. and Tex.

*F. sylvatica*. European B.; C. and S. Eu. to Crimea.

*F. s. asplenifolia*.

*F. s. atropunicea*. Purple B.

*F. s. fastigiata*.

*F. s. laciniata*. Fernleaf B.

*F. s. pendula*.

FENDLERIA, Saxifragaceae. A low shrub allied to *Philadelphus* but with rose-tinted flowers [nursery].

*F. rupicola*. Tex. and N. Mex.

FIGUS, Moraceae. Fig. A large shrub or small tree that needs winter protection in this region. It produces luxuriant foliage and usually bears edible fruit late in the summer [8E].

*F. CARICA*. Common F.; Asia Minor.

FONTANESIA, Oleaceae. Shrubs with foliage similar to *Ligustrum* but with flat disk-like fruit. Of no ornamental value [5H, nursery].

*F. Fortunei*. China.

*F. phillyreoides*. Asia Minor.

FORESTIERA, Oleaceae. A large upright dioecious shrub. The female plant bears clusters of dark purple elongated fruits [5H].

*F. acuminata*. Ill. to Ga. and Tex.

FORSYTHIA, Oleaceae. Golden-bells. The showiest of the early yellow-flowering shrubs. *F. ovata* is first to bloom and *F. intermedia spectabilis* is most popular [6H].

*F. europaea*. Albania (My.).

*F. Giraladiana*. N. China.

*F. intermedia* (*F. suspensa* x *viridissima*) *spectabilis*. (Ap.-My.).

*F. i.* "Spring Glory."

*F. i. vitellina*.

*F. ovata*. Korea (Ap.-My.).

*F. suspensa*. China (Ap.-My.).

*F. s. Sieboldii*.

*F. viridissima*. China (My.).

*F. v. koreana*. Korea.

FOTHERGILLA, Hamamelidaceae. Shrubs with bottlebrush-like spikes of scented white flowers and colorful fall foliage. They grow best in a sunny position and moist soil [6H, nursery].



*F. Gardeni*. Va. to Ga. (Ap.-My.).

*F. major*. Ga. (My.).

FRANKLINIA, Theaceae. Large shrub with fragrant white flowers and ornamental fall foliage. It thrives best in a sunny position. The fruits remain on the tree for a year or more. *F. alatomaha* was originally discovered growing on the bank of the Altamaha River in Georgia in 1770. It has not been found in the wild state since 1790 [6D].

*F. alatomaha* (*Gordonia a.*). Franklinia; Ga. (Au.-O.).

FRAXINUS, Oleaceae. Ash. Tall pinnately leaved trees of rapid growth, monoecious or dioecious. *F. Ornus* produces attractive white flowers similar to those of the fringe-trees. *F. americana*, *F. pennsylvanica lanceolata*, *F. excelsior* are valuable both for their wood and for ornamental purposes [2K, 2L, 3K, 3L, nursery].

*F. americana*. White A.; N. S. to Fla. and Tex.

*F. a. ascidiata*.

*F. biltmoreana*. N. J. to Ga. and Mo.

*F. Bungeana*. N. China.

*F. campestris*. N. N. Amer.

*F. CAROLINIANA*. Water A.; Va. to Fla. and Tex.

*F. chinensis rhynchophylla*. N.E. Asia.

*F. Darlingtonii*. N. N. Amer.

*F. DIPETALA*. Calif.

*F. excelsior australis*.\*

*F. e. monophylla*.

*F. holotricha*. E. Balkan Pen.

*F. longicuspis*. Japan.

*F. l. sambucina*.

*F. mandshurica*. Manchurian A.; N.E. Asia.

*F. Ornus*. Flowering A.; S. Eu. to W. Asia (My.-Jn.).

\* *F. excelsior*, the European Ash, is native in Europe and Asia Minor.

- F. O. rotundifolia*.  
*F. pennsylvanica*. Red A.; N. S. to Ga. and Miss.  
*F. p. lanceolata*. Green A.; Me. to Fla. and Tex.  
*F. potamophila*. Turkest.  
*F. quadrangulata*. Blue A.; Mich. to Ark. and Tenn.  
*F. rotundifolia*. S. Eu., W. Asia.  
*F. sogdiana*. Turkest.  
*F. syriaca*. Syrian A.; W. and C. Asia.  
*F. tomentosa* (*F. profunda*). Pumpkin A.; N. Y. to Fla. and La.  
*F. velutina coriacea*. Utah, Calif.  
*F. v. Toumeyi* (*F. Toumeyi*). Ariz., N. Mex.

FUCHSIA, Onagraceae. A small, almost herbaceous plant, bearing crimson and purple flowers; suited for the rockery. It may over-winter for several years if protected but is not reliably hardy [8E].

*F. MAGELLANICA* RICCARTONII.\* (Jn.-S.).

GAULTHERIA, Ericaceae. Mostly low, tufted evergreens with small flowers and colored fruits. They are suitable for planting in woodlands or shaded rock gardens [5E, nursery].

- G. cuneata*. W. China.  
*G. humifusa*. Alb. to Wash. and Colo.  
*G. ovatifolia*. B. C. to Ore. and Idaho.  
*G. procumbens*. Checkerberry, Wintergreen; Newf. to Ga. and Mich.  
*G. pyroloides* (*G. pyrolaefolia*). Himal.  
*G. SHALLON*. Shallon; Alaska to S. Calif.

GAYLUSSACIA, Ericaceae. Huckleberry. Shrubs that grow well in acid soil and partial shade. *G. brachycera* is a choice low evergreen with lustrous leathery leaves and spreading underground stems [5E, nursery].

- G. brachycera*. Box H.; Pa. to Va. and Ky.  
*G. frondosa*. Dangleberry; N. H. to Fla.

\* *F. magellanica* is native in Peru and Chile.

GENISTA, Leguminosae. Shrubs with pea-like flowers, usually yellow. They are best pleased with a porous well drained soil and a sunny sheltered position. They are not easy to transplant [5E, nursery].

*G. EPHEDROIDES*. Islands of N.W. Medit.

*G. FLORIDA*. Spain.

*G. germanica*. C. and S. Eu.

*G. HISPANICA*. Spain to N. Italy.

*G. pilosa*. Eu.

*G. radiata*. S.E. Eu.

*G. sagittalis*. C. and S. Eu.

*G. SERICEA*. Italy to Greece.

*G. SILVESTRIS*. S.E. Eu.

*G. s. PUNGENS*.

*G. Spachiana* (*Cytisus S.*). Canary Islands.

*G. tinctoria*. Dyer's Greenweed; S.E. Eu. to W. Asia.

GINKGO, Ginkgoaceae. Maidenhair-tree. Ornamental dioecious trees with fan-shaped leaves. Because of the disagreeable odor of the fruit, male trees should be selected for city and home planting. They grow best in good garden soil and will stand smoky city conditions. They are unaffected by diseases or insect pests [6G].

*G. biloba*. E. China.

*G. b. fastigiata*.

GLEDITSIA, Leguminosae. Honey-locust. Spiny trees with small pinnate leaves and persistent pods ranging from two inches in length in *G. aquatica* to more than twelve inches in *G. triacanthos* [2C, 5D, nursery].

*G. AQUATICA*. Water-locust; S. C. to Fla. and Tex.

*G. caspica*. Transcauc., N. Persia.

*G. heterophylla*. N.E. China.

*G. japonica* (*G. horrida*). Japan, China.

*G. macracantha*. C. China.

*G. sinensis*. E. China.

*G. TEXANA* (*G. triacanthos* x *aquatica*).

*G. triacanthos*. Honey-locust; Pa. to Fla. and Tex.

**GLOBULARIA**, Globulariaceae. Prostrate subshrub with spherical heads of blue flowers. Excellent for planting in rock gardens [5E].

*G. cordifolia*. S. Eu.

**GREWIA**, Tiliaceae. Large shrubs, rarely grown. The reddish-orange berry-like fruits of *G. biloba parviflora* persist to spring [6E].

*G. biloba parviflora*. N. China, Korea.

*G. oppositifolia*. N.W. Himal.

**GYMNOCLADUS**, Leguminosae. Tall trees with brown bark and thick twigs. Their large doubly pinnate leaves about two feet long turn brilliant yellow in fall. Thick pods containing large bean-like seeds hang from the trees throughout the winter [2C, 8C].

*G. chinensis*. C. China.

*G. dioicus*. Kentucky Coffee-tree; N. Y. to Tenn. and Neb.

**HALESIA**, Styracaceae. Silverbell-tree. One of the most beautiful of the small flowering trees. It bears a great profusion of white bell-shaped flowers followed by brown angular fruits which hang from the branches until midwinter [7D].

*H. carolina*. W. Va. to Fla. and Tex. (Ap.-My.).

**HALIMODENDRON**, Leguminosae. A low sun-loving shrub that prefers a dry situation [nursery].

*H. halodendron*. Salt-tree; Transcauc. to Turkest. and Altai.



PLATE 3

*Upper left:*  
*Picea glauca*  
*conica* (a  
dwarf)

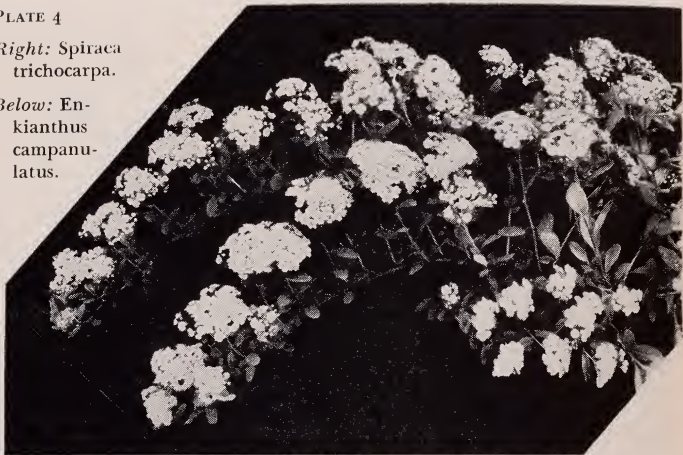
*Upper right:*  
*Ginkgo biloba*

*Left:*  
*Phelloden-*  
*dron*  
*Lavallei*

PLATE 4

*Right: Spiraea  
trichocarpa.*

*Below: En-  
kianthus  
campanu-  
latus.*



HAMAMELIS, Hamamelidaceae. Witch-hazel. Large handsome shrubs that are valued for their unusually early or unusually late flowers. Thrive best in moist soil; will stand partial shade [6H].

*H. japonica*. Japan (F.-Ap.).

*H. j. rubra*.

*H. macrophylla*. S. C. to Fla. and Tex.

*H. mollis*. C. China (F.-Ap.).

*H. vernalis*. Mo. to La. and Okla. (F.-Ap.).

*H. virginiana*. Can. to Ga. and Neb. (O.-N.).

HEDERA, Araliaceae. Ivy. Popular evergreen vines requiring a sheltered situation, some shade, and moist soil. Not all are reliably hardy. *H. Helix baltica* is the hardiest [7G, 5E].

*H. colchica dentata*.\*

*H. Helix*. English I.; Eu. to Cauc.

*H. H. amurensis*.

*H. H. atropurpurea*.

*H. H. baltica*.

*H. H. colchica*.

*H. H. CONGLOMERATA*.

*H. H. donerailensis*.

*H. H. "Emerald Gem."*

*H. H. hibernica*.

*H. H. MARMORATA*.

*H. H. MINIMA*.

*H. H. palmata*.

*H. H. pedata*.

*H. H. "PITTSBURGH."*

*H. H. "SYLVANIAN BEAUTY."*

*H. RHOMBEA*.

HEDYSARUM, Leguminosae. Straggly upright shrub prefer-

\* *H. colchica* is native in Asia Minor and from the Caucasus to Persia.

ring full sunlight and well drained soil. For the collector's garden [nursery].

*H. multijugum*. Mongolia.

**HELIANTHEMUM**, Cistaceae. Sun-rose. A genus of low free-flowering shrubs for sunny sites and well drained soils. Suitable for the rock garden. Require winter protection [5E].

*H. apenninum roseum*. S. Eu. (My.-Jy.).

*H. a. velutinum*.

*H. nummularium*. Eu., W. Asia (My.-Jy.).

*H. n. mutabile*.

*H. n. roseum*.

**HELWINGIA**, Cornaceae. A shrub of considerable botanical interest, having flowers apparently produced from the center of its leaves. It lacks hardiness and is of no ornamental value [8E].

**H. JAPONICA**. China, Japan.

**HIBISCUS**, Malvaceae. Shrubby Althea. Large shrubs valued for their flowers late in summer, blooming from July to September. They grow well in a variety of soils and tolerate light shade. The varieties listed below are all forms of the Rose-of-Sharon, *H. syriacus*, a native of China and India [6B, nursery].

*H. syriacus albus plenus*.

*H. s. amplissimus*.

*H. s. anemonaeflorus*.

*H. s. carneus plenus*.

*H. s.* "Coelestis."

*H. s.* "Comte des Flandres."

*H. s.* "Duc de Brabant."

*H. s.* "Duchesse de Brabant."

*H. s. elegantissimus*.

*H. s. fastuosus*.



- H. s.* "Ila Herve."  
*H. s.* "Jeanne d'Arc."  
*H. s.* "Leopold II."  
*H. s. luteolus plenus.*  
*H. s. ruber florus plenissimus.*  
*H. s.* "Rubis."  
*H. s.* "Snowdrift."  
*H. s.* "Souv. de Chas. Breton."  
*H. s. speciosissimus.*  
*H. s. speciosus.*  
*H. s. variegatus.*  
*H. s. violaceus.*

HOLODISCUS, Rosaceae. A decorative shrub with plume-like panicles of white flowers [nursery].

*H. discolor.* Rock-spirea; B. C. to Calif. and Mont. (Jy.).

HOVENIA, Rhamnaceae. A small tree with handsome foliage. It requires protection when young [3J].

*H. dulcis.* Japanese Raisin-tree; China.

HYDRANGEA, Saxifragaceae. Hydrangea. Valuable ornamental shrubs with large clusters of flowers. *H. petiolaris* is a high-climbing, self-clinging vine. *H. quercifolia* has beautiful oak-like foliage and white flowers. Unfortunately it is not entirely hardy. The leaves of many species are eaten by the Japanese beetles [6J].

- H. arborescens.* N. Y. to Iowa (Jn.-Jy.).  
*H. a. cordata.* Ohio.  
*H. aspera.* W. China, Himal.  
*H. Bretschneideri.* N. China (Jy.).  
*H. B. glabrescens.*  
*H. cinerea.* N. C. and Tenn. to Ala. (Jn.-Jy.).  
*H. c. sterilis.*  
*H. Domotoi.* Hort. origin.

- H. heteromalla*. Himal. (Jn.-Jy).  
*H. h. mollis*.  
 H. INVOLUCRATA. Japan (Jy.-Au.).  
*H. macrophylla*. Japan (Jn.-Jy.).  
*H. paniculata*. Japan, China (Jy.-Au.).  
*H. p. grandiflora*. Peegee H.  
*H. p. tardiva*. (Jy.-S.).  
*H. petiolaris*. Japan, China (Jn.-Jy.).  
 H. QUERCIFOLIA. Ga. and Fla. to Miss. (Jn.).  
*H. radiata*. N. and S. Carolina (Jn.-Jy.).  
 H. SARGENTIANA. C. China (Jy.-Au.).  
*H. serrata acuminata*.\*  
*H. xanthoneura*. W. China (Jy.).  
*H. x. setchuenensis*. W. China.  
*H. x. Wilsonii*.

HYPERICUM, Guttiferae. St. John's-wort. Low to medium-sized shrubs valued for their profusion of yellow flowers. They are at home in sunny places and moist soils [5E, 6H].

- H. Androsaemum*. Tutsan; W. and S. Eu., W. Asia (Jn.-S.).  
*H. arnoldianum* (*H. lobocarpum* x *galioides*).  
*H. Buckleyi*. N. C. to Ga. (Jy.-Au.).  
*H. chinense*. China, Japan (Jn.-S.).  
*H. densiflorum*. N. J. to Fla. and Tex. (Jy.-S.).  
*H. Dyeri* (*H. lysimachoides*). Himal. (Jy.-Au.).  
*H. frondosum* (*H. aureum*). S. C. to Ga. and Tex. (Jy.-Au.).  
*H. galioides*. Del. to Ga. and Tex. (Jy.-S.).  
 H. HIRCINUM. Mediterr. region (Jy.-S.).  
 H. HOOKERIANUM. Sikkim, W. China (Au.-S.).  
*H. inodorum*. S.E. Eu., Cauc.  
*H. lobocarpum*. N. C. and Tenn. (Au.-S.).  
 H. MOSERIANUM (*H. patulum* x *calycinum*). (Jy.-S.).  
*H. olympicum*. S.E. Eu., Asia Minor.  
*H. o. citrinum*.  
*H. prolificum*. N. J. to Iowa and Ga. (Jy.-S.).

\* *H. serrata* is native in Japan and Korea.

*H. reptans*. Himal.

*H.* "Sungold."

*H. Vanfleetii* (*H. prolificum* x *frondosum*).

IBERIS, Cruciferae. Candytuft. Low evergreen subshrubs adapted to rock-garden conditions. They thrive in ordinary soils and in full sun [5E].

*I. corifolia*. S. Eu.

*I. Pruitii*. Sicily.

*I. saxatilis*. S. Eu. (My.).

*I. sempervirens*. S. Eu., W. Asia (My.).

*I. s.* "Little Gem."

IDESIA, Flacourtiaceae. The only hardy tree of a large tropical family. It is vigorous when young and produces large panicles of red fruits [6D, nursery].

*I. polycarpa*. S. Japan, C. and W. China (My.-Jn.).

*I. p. vestita*. W. China.

ILEX, Aquifoliaceae. Holly. The deciduous hollies are red-fruited and prefer an abundance of moisture and full sun. Because of their unisexual character, both sexes must be planted together to ensure fruiting [6F, nursery].

*I. decidua*. Possum-haw; Va. to Fla. and Tex.

*I. dubia pseudomacropoda*.\*

*I. laevigata*. Winterberry; Me. to Pa. and Va.

*I. longipes*. N. C. and Tenn. to Ga.

*I. montana macropoda* (*I. dubia m.*). Japan.

*I. serrata*. Japan.

*I. s. argutidens*.

*I. verticillata*. Black-alder; Can. to Wis. and Fla.

The evergreen hollies are mostly shrubs and small trees with lustrous ornamental foliage and red or black fruit. Many, in-

\* *I. dubia* is native in the southeastern states.

cluding the red-berried *I. opaca* and *I. Aquifolium*, have the sexes on separate plants, but on some the flowering habits have not yet been determined [6F, 8D, nursery].

- I. ALTAACLARENSIS (*I. Aquifolium* x *Perado*).
- I. AQUIFOLIUM. English H.; Eu., N. Afr., W. Asia.
- I. A. CAMELLIAEFOLIA.
- I. A. "GOLDEN QUEEN."
- I. A. "SILVER QUEEN."
- I. A. "VAN TOL."
- I. A. WILSONII.
- I. aquipernyi* (*I. Aquifolium* x *Pernyi*).
- I. CORALINA. C. and W. China.
- I. CORNUTA. China.
- I. C. BUFORDII.
- I. CRENATA. Japanese H., Japan.
- I. C. CONVEXA.
- I. C. HELLERI.
- I. C. "LONGFELLOW."
- I. C. MICROPHYLLA.
- I. C. NANA COMPACTA.
- I. C. NUMMULARIA.
- I. C. "TENNYSON."
- I. FARGESII. W. China.
- I. glabra*. Inkberry; N. S. to Fla. and Mo.
- I. LATIFOLIA. Tarajo; Japan.
- I. opaca*. American H.; Mass. to Fla. and Tex.
- I. o. Baileyi*.
- I. o.* "East Palatka."
- I. o. Howardi*.
- I. o.* "Hume No. 1."
- I. o.* "Hume No. 2."
- I. o.* "Pitman."
- I. o.* "Tabor."
- I. PEDUNCULOSA. Japan.
- I. P. CONTINENTALIS. C. China.

- I. Pernyi*. C. and W. China.  
 I. PLATYPHYLLA BALEARICA (*I. Aquifolium* b.).  
 I. PYROLAEFOLIA. Japan.  
 I. ROTUNDA. Japan, Korea.  
 I. SUBRUGOSA. China.  
 I. VOMITORIA. Yaupon; Va. to Fla. and Tex.  
*I. yunnanensis*. W. China.

INDIGOFERA, Leguminosae. Indigo. Attractive small and medium-sized shrubs with a profusion of pea-like flowers and pleasing pinnate foliage. Their usually long flowering period is sometimes shortened in dry seasons [5E, nursery].

- I. amblyantha*. China (Jn.-S.).  
*I. hebeptala*. Himal. (Au.-S.).  
*I. incarnata* (*I. decora*). China, Japan (Jn.-Jy.).  
*I. Kirilowii*. China, Korea (Jn.).  
*I. pendula*. W. China (Au.-S.).  
*I. Potaninii*. N.W. China (Jn.-Jy.).  
*I. pseudotinctoria*. Japan, E. and C. China (Jy.-S.).

ITEA, Saxifragaceae. Highly colored fall foliage and dense racemes of fragrant white flowers make this shrub valuable. In nature it prefers moist soils but seems well satisfied with drier conditions in the garden [8E, 5D].

- I. virginica*. Sweet Spire; N. J. to Fla. and La. (Jn.-Jy.).

IVA, Compositae. A shrub that grows in wet situations. Of no ornamental value [nursery].

- I. frutescens oraria* (*I. oraria*). Marsh-elder; Mass. to Md.

JASMINUM, Oleaceae. Jasmine. Green-stemmed shrubs with yellow or pink flowers. The hardiest is *J. nudiflorum* which is

covered with bright yellow flowers very early in the year [6H, nursery].

*J. BEESIANUM*. Rosy J.; W. China (My.).

*J. FRUTICANS*. S. Eu., N. Afr., W. Asia (Jn.-Jy.).

*J. HUMILE*. W. China (Jn.-Jy.).

*J. nudiflorum*. Winter J.; China (F.-Ap.).

*J. STEPHANENSE* (*J. Beesianum*  $\times$  *officinale grandiflorum*). (My.-Jn.).

**JUGLANS**, Juglandaceae. Walnut. Medium and large-sized deeply rooting trees that require a deep, rich soil [1E, nursery].

*J. cathayensis*. Chinese W.; C. China.

*J. cinerea*. Butternut; N. B. to Ga. and Ark.

*J. mandshurica*. Manchurian W.; Manch., Amurland.

*J. nigra*. Black W.; Mass. to Fla. and Tex.

*J. rupestris*. Tex.; N. Mex.

*J. Sieboldiana*. Japan.

*J. S. cordiformis*. Japan.

**JUNIPERUS**, Pinaceae. Juniper. Spiny-leaved evergreens that vary in habit from prostrate ground-covers to tall-growing fastigiate trees. Many do not thrive under city conditions but *J. chinensis Pfitzeriana*, *J. communis*, and *J. horizontalis* will usually grow satisfactorily. Some forms are very subject to attacks of red spiders during the summertime. The nomenclature of the dwarf junipers in cultivation is greatly confused [8F, nursery].

*J. chinensis*. Chinese J.; China, Mong., Japan.

*J. c. alba*.

*J. c.* "Bleak House."

*J. c. Fortunei*.

*J. c. globosa*.

*J. c. japonica*.

*J. c. Keteleeri*.

*J. c. Luptoni*.

*J. c. mas*.

*J. c. pendula*.

*J. c. Pfitzeriana*.

*J. c. pyramidalis*.

*J. c. Sheppardi*.

*J. c. Smithii*.

*J. c. sylvestris*.

*J. c. variegata*.

- J. communis*. Common J.; N. Amer., Eu., Asia.  
*J. c. cracovia*.  
*J. c. depressa*. Prostrate J.  
*J. c. oblonga*.  
*J. c. saxatilis* (*J. c. montana*). Mountain J.  
*J. c. suecica nana*. Swedish J.  
*J. conferta*. Shore J.; Sakhal., Japan.  
*J. EXCELSA ISOPHYLLA*. \*  
*J. FORMOSANA*. Formosan J.; Formosa, China.  
*J. horizontalis*. Creeping J.; N. S. to Alb. and N. J.  
*J. h. alpina*.  
*J. h.* "Bar Harbor." Bar Harbor J.  
*J. h. Douglasii*. Waukegan J.  
*J. h. plumosa*.  
*J. OCCIDENTALIS*. Wash. to Calif.  
*J. pachyphloea*. Alligator J.; Ariz. and N. Mex. to Mex.  
*J. procumbens*. Japan.  
*J. p. nana*.  
*J. pseudosabina*. Altai Mts., Turkest.  
*J. rigida*. Needle J.; Japan, Korea to N. China.  
*J. r. columnaris*.  
*J. Sabina*. Savin; Mts. of Eu. to Cauc. and Siberia.  
*J. S. fastigiata*.  
*J. S. tamariscifolia*.  
*J. S. variegata*.  
*J. S.* "Von Ehron."  
*J. scopulorum*. Western Red Cedar; Alb. to Tex.  
*J. squamata Fargesii*. W. China.  
*J. s. Meyeri*. China.  
*J. virginiana*. Red Cedar; Can. to Fla.

\* *J. excelsa*, the Greek Juniper, is native from southwestern Europe to Asia Minor and the Caucasus.

*J. v. albo-spica.*  
*J. v. Burkii.*  
*J. v. Canaertii.*  
*J. v. glauca.*  
*J. v. glauca pendula.*  
*J. v. globosa.*  
*J. v. Kosteri.*

*J. v. nana pendula.*  
*J. v. pendula.*  
*J. v. plumosa argentea.*  
*J. v. pyramidalis.*  
*J. v. pyramidalis Hillii.*  
*J. v. Schottii.*  
*J. v. tripartita.*

**KALMIA**, Ericaceae. Evergreen or nearly evergreen shrubs that grow well on non-alkaline soils. *K. latifolia* thrives in shade but produces best flower displays when planted in the open. The flowers exhibit much variation in color, size, etc. and it is worth while to select plants for special plantings [5E, 5D, nursery].

*K. angustifolia.* Sheep-laurel; Newf. to Ga. (Jn.-Jy.).  
*K. hirsuta.* Va. to Fla.  
*K. latifolia.* Mountain-laurel; Que. to Fla. (My.-Jn.).  
*K. l. fuscata.*  
*K. polifolia.* Bog K.; N. Amer. (My.-Jn.).  
*K. p. microphylla.* W. N. Amer.

**KALMIOPSIS**, Ericaceae. A rare dwarf shrub that bears deep rose-colored flowers. Considered difficult to grow in the East [5E].

**K. LEACHIANA.** Ore.

**KALOPANAX**, Araliaceae. Distinctive trees characterized by their bold foliage and stout thorns [6E, nursery].

*K. pictus.* W. Asia.  
*K. p. Maximowiczii* (*Acanthopanax ricinifolius* M.). Japan.

**KERRIA**, Rosaceae. Much branched, easily grown shrubs with green stems and attractive yellow flowers [nursery].

*K. japonica.* C. and W. China (Ap.-My.).  
*K. j. pleniflora.*



KOELREUTERIA, Sapindaceae. Ornamental trees with pinnate leaves and large terminal panicles of yellow flowers followed by light brown bladder-like fruits and bronze foliage in fall. Easily cultivated and deserving of greater popularity [6B, nursery].

*K. bipinnata*. W. China.

*K. integrifolia*. China.

*K. paniculata*. China-tree; China, Korea, Japan (Jy.-Au.).

KOLKWITZIA, Caprifoliaceae. A shrub similar to the weigela but of more graceful habit [7F].

*K. amabilis*. Beauty-bush; C. China (My.-Jn.).

LABURNOCYTISUS, Leguminosae. A graft-hybrid (chimera) between *Laburnum anagyroides* and *Cytisus purpureus*. It does not make a good specimen in this region [nursery].

L. ADAMI.

LABURNUM, Leguminosae. Small trees that produce large hanging panicles of golden flowers. *L. alpinum* is the hardiest [5E, 8D].

*L. alpinum*. Scotch Laburnum; Mts. of S. Eu. (Jn.).

*L. a. autumnale*.

*L. anagyroides*. Golden-chain; S. Eu. (My.-Jn.).

*L. Watereri* (*L. anagyroides* x *alpinum*). (My.).

LARIX, Pinaceae. Larch. Tall pyramidal deciduous conifers that are most ornamental when the light green leaves first make their appearance in spring [5H, nursery].

*L. decidua*. European L.; N. and C. Eu.

*L. Gmelini*. Dahurian L.; E. Siberia.

*L. laricina* (*L. americana*). American L.; Alaska and Can. to Pa.

*L. leptolepis* (*L. Kaempferi*). Japanese L.; Japan.

- L. occidentalis*. Western L.; B. C. to Mont. and Ore.  
*L. Potaninii*. Chinese L.; W. China.  
*L. sibirica*. Siberian L.; N.E. Russia to Siberia.

LEDUM, Ericaceae. Evergreen shrubs suitable for moist places in the native garden or rock garden [5E, nursery].

- L. glandulosum*. Alberta to Calif.  
*L. groenlandicum*. Labrador Tea; Greenl. to Alb. and Pa.  
*L. palustre*. Wild Rosemary; N.E. Eu., N. Asia.

LEIOPHYLLUM, Ericaceae. Sand-myrtle. Low, small-leaved evergreen shrubs for full sun or partial shade. Clusters of tiny white flowers are borne abundantly [5E].

- L. buxifolium*. Box S.; N. J. to Fla. (My.-Jn.).  
*L. b. Hugerii*. N. C., S. C.  
*L. b. prostratum* (*L. Lyoni*). Mts. of N. C. and Tenn.

LEITNERIA, Leitneriaceae. A dioecious shrub with narrow leathery leaves. It spreads rapidly by means of suckers. Not ornamental [nursery].

- L. floridana*. Corkwood; S. Mo. to Tex. and Fla.

LEPTODERMIS, Rubiaceae. A low shrub bearing tubular lavender flowers late in the season [nursery].

- L. oblonga leptophylla*. N. China (Jn.-S.).

LESPEDEZA, Leguminosae. Bush Clover. Shrubs that usually die back somewhat each winter. Flowers are produced on the current year's growth. *L. bicolor* and *L. Thunbergii* are most frequently planted [5E, nursery].

- L. bicolor*. N. China to Manch. and Japan (Jy.-S.).  
*L. cuneata* (*L. sericea*). China and Japan (Au.-S.).  
*L. cyrtobotrya*. Japan, China.  
*L. Davidii*. China (Au.-S.).

- L. Maximowiczii* (*L. Buergeri praecox*). Korea (Jy.-Au.).  
*L. Thunbergii* (*L. formosa*). China, Japan (S.-O.).  
*L. virgata*. Japan.

LEUCOTHOE, Ericaceae. Evergreen and deciduous shrubs that thrive in partial shade and in moist situations. *L. Grayana*, *L. racemosa*, and *L. recurva* are deciduous. *L. Catesbaei* is valuable for massed planting, especially on banks, because of its lustrous evergreen leaves and its racemes of small white flowers [5D, nursery].

- L. axillaris*. Va. to Fla. and Miss.  
*L. Catesbaei*. Va. to Ga. and Tenn.  
*L. Grayana*. N. and C. Japan.  
*L. Keiskei*. Japan.  
*L. POPULIFOLIA*. S. C. to Fla.  
*L. racemosa*. Mass. to Fla. and La.  
*L. recurva*. Va. to Ga. and Ala.

LEYCESTERIA, Caprifoliaceae. A green-twiggled, vigorous, root-hardy shrub that has ornamental purple bracts and red-purple fruits. Flowers are borne on the wood of the current season [6F].

- L. FORMOSA*. Himal., S.W. China (Au.-S.).

LIBOCEDRUS, Pinaceae. A compact columnar evergreen tree of slow growth. It has ornamental rich green foliage [nursery].

- L. decurrens*. Incense Cedar; Ore. to Nev. and Calif.

LIGUSTRUM, Oleaceae. Privet. Much branched large shrubs of rapid growth. Many have attractive clusters of black berries throughout the winter. *L. lucidum* and *L. japonicum* are evergreen. *L. ovalifolium* is a commonly used hedge plant [6H, 8E, nursery].

- L. acuminatum macrocarpum*. Japan.  
*L. acutissimum*. C. China.  
*L. amurense*. Amur P.; N. China.  
*L. compactum*. Himal., S.W. China.  
*L. Delavayanum*. W. China.  
*L. Iбота Vicaryi*.\*  
*L. insulare*. (Orig. uncertain).  
*L. JAPONICUM AUREUM MARGINATUM*.†  
*L. J. EXCELSUM SUPERBUM*.  
*L. J. ROTUNDIFOLIUM*.  
*L. LUCIDUM*. Glossy P.; China, Korea, Japan.  
*L. L. "NOBILE."*  
*L. obtusifolium*. Japan.  
*L. ovalifolium*. California P.; Japan.  
*L. o. argenteum elegans*.  
*L. o. aureo-marginatum robustum*.  
*L. o. aureum elegantissimum*.  
*L. Quihoui*. China.  
*L. sinense*. Chinese P.; China.  
*L. vulgare*. Common P.; Eu., N. Afr.  
*L. v. buxifolium*.  
*L. v. "Lodense."*  
*L. v. xanthocarpum*.

LINDERA, Lauraceae. Large shrubs useful for planting in moist places in sun or in partial shade. The yellow flowers, red berry-like fruits, and yellow fall foliage of *L. Benzoin* make it an attractive plant. The twigs and leaves are aromatic when bruised [4C, nursery].

- L. Benzoin* (*B. aestivale*). Spice-bush; Me. to Fla. and Tex. (Mr.-My.).  
*L. B. pubescens* (*B. aestivale p.*). S. C. to Miss. and Mo.  
*L. megaphylla* (*Benzoin grandifolium*). C. and W. China.

\* *L. Iбота* is native in Japan.

† *L. japonicum*, the Japanese Privet, is native in Japan and Korea.

LINNAEA, Caprifoliaceae. Twinflower. A prostrate, small-leaved evergreen with pink tubular blossoms. Adapted to the rockery or woodland but often difficult to establish [nursery].

*L. borealis americana*. N. Amer.

LIQUIDAMBAR, Hamamelidaceae. Large symmetrical trees with star-shaped foliage that turns a reddish-bronze in fall [6C, nursery].

*L. styraciflua*. Sweet-gum; Conn. to Fla. and Mex.

*L. S. ROTUNDILOBA*.

LIRIODENDRON, Magnoliaceae. Tulip-tree. One of the tallest, straightest trees of this region. *L. Tulipifera* forms an excellent specimen tree and bears large orange and green flowers that resemble tulips and smell faintly of freshly cut watermelon. In the fall, the foliage assumes a fine yellow coloration. The tulip-tree is not easy to transplant. It should be moved with a good ball of earth [2C, 6C, nursery].

*L. chinense*. C. China.

*L. Tulipifera*. Mass. to Fla. and Miss. (My.-Jn.).

*L. T. fastigiatum*.

LONICERA, Caprifoliaceae. Honeysuckle. Easily grown attractive vines and shrubs. The honeysuckles are noteworthy for their fragrant tubular flowers and colorful berries. *L. japonica Halliana* is commonly used as a ground-cover and soil-binder on parkways and roadsides. The species itself sometimes becomes a pest. *L. alseuosmoides* is a vine with almost evergreen foliage. *L. nitida* and *L. pileata* are evergreen shrubs. Honeysuckles are especially subject to attack by aphids. Vines in particular suffer unless effective control measures are used [6G, 8D, nursery].

- L. adenophora*. W. China.  
*L. albiflora*. Ark. and Tex.  
*L. alpigena*. Mts. of C. and S. Eu. (My.).  
*L. alseuosmoides*. W. China.  
*L. Altmannii*. Turkest. (My.).  
*L. amoena alba* (*L. tatarica* x *Korolkowii*).  
*L. angustifolia*. Kashmir to Sikkim.  
*L. arborea*. Spain, N. Afr.  
*L. a. persica*. S.E. Eu. to Afghan. and Turkest.  
*L. bella* (*L. Morrowii* x *tatarica*).  
*L. b. albida*. *L. b. atrorosea*. *L. b. candida*.  
*L. canadensis*. Fly H.; Que. to Pa. and Minn. (Ap.-My.).  
*L. chaetocarpa*. W. China (My.).  
*L. chrysantha*. N.E. Asia to C. Japan (My.-Jn.).  
*L. c. latifolia*.  
*L. c. villosa*.  
*L. coerulea*. Eu., N. Asia to Japan (Ap.-My.).  
*L. c. glabrescens* (*L. c. praecox*). E. to N.E. Asia.  
*L. c. graciliflora*. Turkest.  
*L. conjugialis*. Wash. to Calif. and Nev.  
*L. deflexicalyx*. W. China, Tibet (Jn.).  
*L. d. xerocalyx*. S.W. China.  
*L. demissa*. Japan (My.-Jn.).  
*L. dioica*. Que. to N. C. and Iowa (My.-Jn.).  
*L. discolor*. Kashmir to Afghan.  
*L. etrusca*. Mediterr. region (Jn.-Jy.).  
*L. Ferdinandi*. N. China (My.-Jn.).  
*L. flava*. N. C. to Mo. and Okla. (My.-Jn.).  
*L. fragrantissima*. E. China (Mr.-Ap.).  
*L. Giraldii*. N.W. China.  
*L. gracilipes glabra*. Japan (Ap.-My.).  
*L. HECKROTHII*. Hort. origin.  
*L. Henryi*. W. China.  
*L. heteroloba*. N.W. China.  
*L. hirsuta*. Que. to Pa. to Neb. (Jn.-Jy.).  
*L. hispida*. Turkest. to W. China (Ap.-My.).

- L. iberica*. Transcauc., Persia (Jn.).  
*L. japonica Halliana*.\* (Jn.-S.).  
*L. Koehneana*. W. China.  
*L. Korolkowii*. Turkest. (My.-Jn.).  
*L. K. aurora*.  
*L. K. floribunda*.  
*L. Maackii erubescens*. China (Jn.).  
*L. Maximowiczii*. Manch., Korea (My.-Jn.).  
*L. M. sachalinensis*. Sakhal., Korea.  
*L. minutiflora* (*L. Morrowii* x *xylosteoides*).  
*L. modesta*. W. China.  
*L. Morrowii*. Japan.  
*L. M. xanthocarpa*.  
*L. muscaviensis* (*L. Morrowii* x *Ruprechtiana*).  
*L. Myrtilus*. Afghan. to Sikkim.  
*L. nervosa*. N.W. China.  
*L. NITIDA*. W. China.  
*L. orientalis caucasica*. Transcauc., Armenia.  
*L. Periclymenum*. Woodbine; Eu., N. Afr., Asia Minor.  
*L. PILEATA*. C. and W. China.  
*L. p. yunnanensis*.  
*L. prolifera*. Ohio to Tenn. and Wis. (Jn.-Jy.).  
*L. prostrata*. W. China.  
*L. pseudochrysantha* (*L. Xylosteum* x *chrysantha*).  
*L. quinquelocularis translucens*.†  
*L. ramosissima*. Japan.  
*L. rupicola*. Himal.  
*L. Ruprechtiana*. Manch. to N. China (My.-Jn.).  
*L. R. xanthocarpa*.  
*L. salicifolia* (*L. Ruprechtiana* x *xylosteoides*).  
*L. sempervirens*. Trumpet H.; Conn. to Fla. and Tex. (My.-Au.).  
*L. Standishii*. China (Mr.-Ap.).  
*L. S. lancifolia*.  
*L. syringantha Wolfii*. N.W. China (My.-Jn.).

\* *L. japonica* is native in eastern Asia.

† *L. quinquelocularis* is native in the Himalayas.

- L. tatarica*. Tatarian H.; S. Russia to Altai and Turkest. (My.-Jn.).  
*L. t. alba*.  
*L. t. elegans*.  
*L. tenuipes*. Japan.  
*L. thibetica*. W. China (My.-Jn.).  
*L. trichosantha*. W. China, Tibet (Jn.).  
*L. utahensis*. B. C. to Ore. and Utah.  
*L. Webbiana*. S.E. Eu., Afghan., Himal. (Ap.-My.).  
*L. xylosteoides* (*L. tatarica* x *Xylosteum*).  
*L. Xylosteum*. European Fly H.; Eu. to Altai (My.-Jn.).

LUETKEA, Rosaceae. A low subshrub of little value except in a collection of rock-garden plants [5E].

- L. pectinata*. Alaska to Calif. (Jy.-Au.).

LYCIUM, Solanaceae. Thorny shrubs with gracefully arching branches that bear violet flowers and red berries. They are easy to grow and thrive when planted at the seaside [6H].

- L. chinense ovatum*. Chinese Matrimony-vine; E. Asia (Jn.-S.).  
*L. halimifolium*. Common Matrimony-vine; S.E. Eu. to W. Asia (Jn.-S.).

LYONIA, Ericaceae. Low pink-flowered shrub of open habit that blossoms best in sandy soils and in sunny places [nursery].

- L. mariana* (*Xolisma m.*). Stagger-bush; R. I. to Fla. (My.-Jn.).

MAACKIA, Leguminosae. Medium-sized summer-flowering trees with pinnate foliage and conspicuous horizontal lenticels on the bark of the trunk [2C, 5E].

- M. amurensis*. Manch. (Jy.).  
*M. chinensis*. C. China.

MACLURA, Moraceae. Osage-orange. A dioecious tree that bears round green fruits about the size of a large orange, but poisonous to eat. In the Middle West and in some other sec-



tions of the country it is frequently used as a tall thorny hedge [6H].

*M. pomifera*. Ark. to Okla. and Tex.

MAGNOLIA, Magnoliaceae. Magnolias are magnificent flowering trees. The handsomest early-flowering species include *M. stellata* and *M. denudata*, both Asiatics, and the hybrid *M. Soulangeana*. The native American *M. acuminata*, *M. tripetala*, and *M. Fraseri* bear their flowers when in leaf and attain a large size at maturity [2C, 2D, 6B, nursery].

*M. acuminata*. Cucumber-tree; N. Y. to Ga. and Ill. (My.).

*M. Ashei*. Fla. (Jn.).

*M. cordata* (*M. acuminata* c.). Ga.

*M. denudata*. C. China (Ap.-My.).

*M. Fraseri*. Va. to Ga. and Ala. (Jn.).

*M. GRANDIFLORA*. Bull Bay; N. C. to Fla. and Tex. (My.-Au.).

*M. Kobus*. Japan (Ap.-My.).

*M. K. borealis*. Japan (Ap.-My.).

*M. liliflora*. China (My.-Jn.).

*M. l. nigra*. Japan (My.-Jn.).

*M. MACROPHYLLA*. Large-leaved Cucumber-tree; Ky. to Fla. and La.

*M. obovata*. Japan (My.-Jn.).

*M. salicifolia*. Japan (Ap.-My.).

*M. Sieboldii* (*M. parviflora*). Japan, Korea (Jn.-Jy.).

*M. Soulangeana* (*M. denudata* x *liliflora*). (My.).

*M. S. alba*.

*M. S. Alexandrina*.

*M. S. Niemetzii*.

*M. S. amabilis*.

*M. S. rustica*.

*M. S. Lennei*.

*M. S. speciosa*.

*M. stellata*. Starry M.; Japan.

*M. s. rosea*.

*M. tripetala*. Umbrella M.; Pa. to Ala. and Miss. (My.-Jn.).

*M. virginiana*. Sweet Bay; Mass. to Fla. and Tex. (Jn.-Jy.).

MAHOBERBERIS, Berberidaceae. An almost evergreen bi-

generic hybrid shrub of stiff erect growth. The foliage is handsome [8E].

*M. Neuberti* (*Mahonia aquifolium* x *Berberis vulgaris*).

MAHONIA, Berberidaceae. Broad-leaved evergreen shrubs. *M. Aquifolium* is the most popular of the genus and will grow in dense shade. It has showy clusters of ornamental yellow flowers [8E, 5E, 3G, nursery].

*M. Aquifolium*. Holly M.; B. C. to Ore. (Ap.-My.).

*M. BEALEI*. China.

*M. FREMONTII*. Desert M.; W. Tex. to Colo. and Calif.

*M. NERVOSA*. Oregon Grape; B. C. to Calif.

*M. NEVINII*. Calif.

*M. repens*. B. C. to N. Mex. and Calif.

*M. SWASEYI*. Tex.

*M. TRIFOLIATA*. Agarita; N. Mex. and Tex. to Mex.

MALUS, Rosaceae. Apple. Mostly small trees with beautiful flowers and fruits. Among the more decorative kinds are *M. ioensis plena* and *M. spectabilis Riversii*, which bear double pink flowers; *M. Sieboldii*, which produces yellow or red fruit, and *M. Sargentii* with red fruit. Many of the crab-apples are used in preserves [6], 5E, nursery].

*M. adstringens* (*M. baccata* x *pumila*).

*M. angustifolia*. Southern Crab-apple; Va. to Fla. and Miss.

*M. arnoldiana* (*M. floribunda* x *baccata*).

*M. atrosanguinea* (*M. Halliana* x *Sieboldii*).

*M. baccata aurantiaca*.\*

*M. b. ceratocarpa*.

*M. b.* "Orange."

*M. b. fructu-flavo*.

*M. b. pruniformis*.

*M. b. lasiostyla*.

*M. b.* "The Fairy."

*M. b. himalaica*. W. Himal., S.W. China.

*M. b. mandshurica*. C. Japan to Amur and C. China.

\* Horticultural hybrids of *M. baccata*, which is native in northeastern Asia and northern China, are known as Siberian Crabs.

- M. coronaria*. Garland Crab-apple; N. Y. to Ala. and Mo.  
*M. c. Nieuwlandiana*.  
*M. Ellwangeriana*.  
*M.* "Excellency Thiel."  
*M. fusca*. Oregon Crab-apple; Alaska to Calif.  
*M. glaucescens*. N. Y. to N. C. and Ala.  
*M. Halliana Parkmanii*. Hall Crab-apple; China?  
*M. Hartwigii* (*M. Halliana*  $\times$  *baccata*).  
*M. hupehensis*. China, Assam.  
*M. hybrida* "Beauty of Montreal."  
*M. h. John Brownii*.  
*M. h.* "Transcendent." T. Crab-apple.  
*M. ioensis*. Prairie Crab-apple; Ind. to Minn. and Mo.  
*M. i. plena*. Bechtel's Crab-apple.  
*M. kansuensis*. N.W. China.  
*M.* "Lady Northcliff."  
*M. magdeburgensis* (*M. spectabilis*  $\times$  *pumila*).  
*M.* "Marshal Oyama."  
*M.* "Oekonomierat Echtermeyer."  
*M. orthocarpa*. Japan.  
*M. Prattii*. C. and W. China.  
*M. prunifolia edulis*. N.E. Asia.  
*M. p. fructu-luteo*.  
*M. p. Rinki*. Ringo Crab-apple; E. Asia.  
*M. p. xanthocarpa*.  
*M. pumila*. Common A.; Eu., W. Asia.  
*M. p. Niedzwetzkyana*. S.W. Siber., Turkest.  
*M. purpurea aldenhamensis* (*M. pumila* *Niedzwetzkyana*  $\times$  *atro-sanguinea*).  
*M. p. Eleyi*.  
*M. robusta* (*M. baccata*  $\times$  *prunifolia*) "Dolga."  
*M. Rockii*. W. China.  
*M. Sargentii*. Japan.  
*M. Scheideckeri* (*M. floribunda*  $\times$  *prunifolia*).  
*M. Sieboldii*. Toringo Crab-apple; Japan.  
*M. sikkimensis*. Himal.  
*M. spectabilis*. China.

*M. s. Riversii*.

*M. toringoides*. W. China.

*M. Tschonoskii*. Japan.

*M. yunnanensis*. W. China.

*M. y. Veitchii*. C. China.

*M. Zumi* (*M. baccata mandshurica* × *Sieboldii*). Japan.

**MAMMILLARIA**, Cactaceae. A spiny cactus with yellow to reddish flowers, thriving on sandy soil and in full sunlight [5E].

*M. missouriensis* (*Neobesseyia m.*). S. D. to Tex. and Colo.

**MARSDENIA**, Asclepiadaceae. A sun-loving rambling shrub with clusters of white flowers; it may be trained up a wall to advantage [nursery].

*M. erecta*. S.E. Eu., W. Asia (Jn.).

**MENZIESIA**, Ericaceae. A shrub similar in appearance to *Vaccinium* but of less ornamental value [nursery].

*M. glabella*. B. C. to Minn. and Wyo.

**MESPILUS**, Rosaceae. Medlar. A small tree not unlike *Crataegus* in habit and with edible fruit [6J].

*M. germanica minor*\* (My.).

**MITCHELLA**, Rubiaceae. Partridge-berry. A prostrate evergreen with trailing stems and small red berry-like fruits. It grows best in partial shade where moisture is abundant [5E].

*M. repens*. N. S. to Fla. and Tex.

**MOLTKIA**, Boraginaceae. A low shrub with violet-blue flowers. Of interest to the collector of rock-garden plants [5E].

*M. petraea*. S.E. Eu. (Jn.).

**MORUS**, Moraceae. Mulberry. Rounded trees that bear sweet

\* *M. germanica* is native from southeastern Europe to Persia.

fruits which are eaten by birds. *M. alba* naturalizes itself in this region [6H, nursery].

*M. alba*. White M.; China.

*M. nigra*. Black M.; W. Asia.

MYRICA, Myricaceae. Dense shrubs with fragrant foliage. *M. pensylvanica* will grow in a wide variety of soils and is particularly ornamental in the fall when it exhibits showy gray fruit [5D, nursery].

*M. CERIFERA*. Wax-myrtle; N. J. to Fla. and Tex.

*M. Gale*. Sweet Gale; N. N. Amer., Eu. to N.E. Asia.

*M. G. subglabra*. N. Amer., Eu.

*M. pensylvanica* (*M. caroliniensis*). Bayberry; Newf. to Md.

NANDINA, Berberidaceae. A handsome shrub of tropical appearance. It has large panicles of red fruit. Only suited for very sheltered positions at New York [5E].

*N. DOMESTICA*. C. China to Japan.

NEILLIA, Rosaceae. Ornamental shrubs with flowers and foliage similar to those of spireas. *N. sinensis* and *N. thibetica* have pink flowers [nursery].

*N. sinensis*. C. China (My.-Jn.).

*N. thibetica*. W. China.

*N. THYRSIFLORA*. Himal.

NEVIUSIA, Rosaceae. An attractive spirea-like shrub with white lace-like flowers [nursery].

*N. alabamensis*. Snow-wreath; Ala. (Jn.-Jy.).

NYSSA, Nyssaceae. Tupelo, Sour-gum. Glossy-leaved lowland tree; usually the first tree to color a brilliant crimson in late summer [6F].

*N. sylvatica*. Me. to Fla. and Tex.

OPUNTIA, Cactaceae. Prickly-pear. Procumbent cacti with brightly colored flowers and pear-shaped usually edible fruits [5E].

*O. fragilis*. B. C. and Wis. to Tex.

*O. humifusa* (*O. compressa*). Mass. to Ala. and Mo.

*O. phaeacantha*. Ariz. and Tex.

*O. polyacantha*. N. D. to Alb. and Tex.

*O. rhodantha*. Colo.

ORIXA, Rutaceae. Dense aromatic shrub with glossy leaves [6E].

*O. japonica*. Japan.

OSMANTHUS, Oleaceae. Evergreen shrub with holly-like leaves and small fragrant flowers. Unlike the hollies (*Ilex*), this plant has opposite leaves [8E].

*O. ILICIFOLIUS*. Japan.

OSMAREA, Oleaceae. A bigeneric hybrid shrub with evergreen foliage. It is not reliably hardy [8E].

*O. BURKWOODII* (*Phillyrea decora*  $\times$  *Siphonosmanthus Delavayi*).

OSMARONIA, Rosaceae. A large shrub with grayish-green foliage; not sufficiently hardy to warrant general planting in our locality [nursery].

*O. CERASIFORMIS*. Osoberry; B. C. to Calif.

OSTRYA, Betulaceae. Hop-hornbeam. Medium-sized trees with hanging fruits that resemble hops [6E].

*O. carpinifolia*. European H.; S. Eu., Asia Minor.

*O. virginiana*. American H.; Ont. to Fla. and Tex.

OXYDENDRUM, Ericaceae. A beautiful pyramidal tree bearing finger-like, somewhat pendulous panicles of white flowers and richly colored fall foliage. Flowers are produced even on plants that are only a few feet high [6B, 5F].

*O. arboreum*. Sorrel-tree; Pa. to Fla. and La. (Jy.-Au.).

PACHISTIMA, Celastraceae. Low evergreen shrubs. *P. Canbyi* only can be recommended. It forms low compact mats in full sun. In partial shade it also thrives but forms a looser growth; sometimes affected by scale insects [5E].

*P. Canbyi*. Va. and W. Va.

*P. MYRSINITES*. B. C. to Calif. and N. Mex.

PACHYSANDRA, Buxaceae. Subshrubs that thrive in sun or partial shade. *P. terminalis* makes an excellent evergreen ground-cover even near trees where root competition is a problem [5E, 5B].

*P. procumbens*. Allegheny Spurge; W. Va. to Fla. and La.

*P. terminalis*. Japanese Spurge; Japan.

PAEDERIA, Rubiaceae. A suckering shrub not recommended for general planting [nursery].

*P. scandens* (*P. chinensis*). China, Japan.

PAEONIA, Ranunculaceae. Tree-peony. Shrubs with large colorful flowers. Numerous varieties of *P. suffruticosa* are popular in gardens. They grow best in a rich loam [8E, 5E, nursery].

*P. Delavayi*. W. China.

*P. suffruticosa*. N.W. China (My.-Jn.).

PARROTIA, Hamamelidaceae. A good-looking small tree the bark of which peels off in large flakes as does that of the plane-

tree. The early small red flowers and bright yellow fall foliage make it worthy of more frequent cultivation [6H].

*P. persica*. Persia (Mr.-Ap.).

PARROTIOPSIS, Hamamelidaceae. A small tree with beautifully colored leaves in the fall. It has large white flowers but our tree has not produced these yet [6H].

*P. Jacquemontiana*. Himal. (My.).

PARTHENOCISSUS, Vitaceae. Vigorous vines excellent for clinging to walls or rambling in partially shaded areas. Very subject to Japanese beetle attacks [nursery].

*P. quinquefolia*. Virginia Creeper, Woodbine; Mass. to Fla. and Mex.

*P. tricuspidata*. Boston Ivy; Japan, C. China.

*P. t. Lowii*.

PAULOWNIA, Scrophulariaceae. *P. tomentosa* is a large tree with bold foliage and huge trusses of violet flowers which open only in favorable years [7C, nursery].

*P. FORTUNEL*. China.

*P. tomentosa*. Empress-tree; China (My.).

PERIPLOCA, Asclepiadaceae. A vigorous climber that needs a sunny position. The seed pods are similar to those of the milkweed [nursery].

*P. GRAECA*. Silk-vine; S. Eu., W. Asia.

PEROVSKIA, Labiatae. A dense aromatic shrub with gray branches and leaves. Though dying back each year, it generally attains a height of approximately 3 feet. It is valued for its



blue flowers and lateness of bloom. Suitable for a dry sunny situation [nursery].

*P. atriplicifolia*. Afghan. to W. Himal. and Tibet (Jy.-S.).

PETROPHYTUM, Rosaceae. Prostrate evergreen shrubs that are useful for planting in choice positions [5E].

*P. caespitosum*. S. D. to Calif. and N. Mex. (Jy.-Au.).

*P. cinerascens*. Wash.

PETTERIA, Leguminosae. A shrub with yellow flowers similar to *Cytisus* [nursery].

*P. ramentacea*. Istria to Albania.

PHELLODENDRON, Rutaceae. Cork-tree. Decorative round-topped trees with aromatic pinnate foliage and ornamental clusters of black berry-like fruits; rapid-growing when young [8C, 6D, nursery].

*P. chinense*. C. and W. Japan.

*P. japonicum*. C. Japan.

*P. Lavalleyi*. Japan.

*P. piriforme*. Orig. unknown.

PHILADELPHUS, Saxifragaceae. Mock-orange. Many-branched shrubs suitable for border or specimen planting. The double white-flowered *P. virginalis* and the pink-centered *P. purpureo maculatus* varieties bloom in great profusion [6J].

*P. argyrocalyx*. N. Mex.

*P. Burkwoodii* (*P. purpureo-maculatus* x *virginalis*).

*P. caucasicus*. Caucasus.

*P. confusus*. Wash.

*P. coronarius*. Italy to Cauc. (Jn.).

*P. c. deutziaeflorus*.

*P. c. duplex*.

*P. c. myrtifolius*.

*P. c. primulaeflorus*.

*P. c. pumilus*.

*P. c. salicifolius*.

*P. c. speciosissimus*.

- P. Coulteri*. Mex.  
*P.* "Coup d'Argent."  
*P. cymosus* (*P. Lemoinei* x *grandiflorus*?) "Atlas."  
*P. c.* "Bannière." *P. c.* "Nuée Blanche."  
*P. c.* "Conquête." *P. c.* "Rosace."  
*P. c.* "Fleur de Neige." *P. c.* "Sylviane."  
*P. c.* "Norma." *P. c.* "Voie Lactée."  
*P. Delavayi*. Yunnan (Jn.).  
*P. Falconeri* (*P. coronarius* x *laxus*?). (Jn.).  
*P. floridus*. N. C., Ga. (Jn.).  
*P.* "Fraicheu."  
*P. Gordonianus*. B. C. to Idaho and N. Calif. (Jn.-Jy.).  
*P. G. columbianus*.  
*P. grandiflorus*. N. C. and Tenn. to Fla. (Jn.).  
*P. g. speciosissimus*.  
*P. Henryi*. Yunnan, China.  
*P. hirsutus*. N. C. to Ga. and Ala. (My.-Jn.).  
*P. incanus*. W. China (Jy.).  
*P. i. Sargentianus*.  
*P. i. Sargentianus Kulingensis*.  
*P. inodorus*. N. C. to Ga. and Miss.  
*P. insignis* (*P. pubescens* x *californicus*?). (Jn.-Jy.).  
*P. laxus*. Ga.  
*P. Lemoinei* (*P. microphyllus* x *coronarius*) "Avalanche."  
*P. L.* "Boule d'Argent."  
*P. L.* "Erectus."  
*P. Lewisii*. Mont., Wash., and Ore.  
*P. L. pyramidale*.  
*P. Magdalenae*. W. China (Jn.).  
*P. magnificus* (*P. grandiflorus* x *pubescens*).  
*P. mexicanus*. Mex.  
*P. microphyllus*. Colo. to N. Mex. and Ariz.

- P. nepalensis*. Himal. (Jn.).  
*P. nivalis* (*P. pubescens* x *coronarius*). (My.-Jn.).  
*P. n. plenus*.  
*P. n. subplenus*.  
*P. pekinensis*. N. China to Korea (Jn.).  
*P. p. brachybotrys*.  
*P. p. dasycalyx*.  
*P. p. kansuensis*. N.W. China.  
*P. pendulifolius* (*P. pubescens* x *laxus*?).  
*P. polyanthus* (*P. Lemoinei* x *insignis*?) "Favorite." (Jn.).  
*P. p.* "Gerbe de Neige."  
*P. p.* "Velleda."  
*P. pubescens*. Tenn. to Ala. and Ark. (Jn.-Jy.).  
*P. purpurascens*. W. China (Jn.).  
*P. PURPUREO-MACULATUS* (*P. Lemoinei* x *Coulteri*). (Jn.).  
*P. p.* "Amalthée."  
*P. p.* "Belle Etoile." *P. p.* "Fantaisie."  
*P. p.* "Bicolor." *P. p.* "Nuage Rose."  
*P. p.* "Etoile Rose." *P. p.* "Romeo."  
*P. satsumanus*. Japan (Jn.).  
*P. s. nikoensis*.  
*P. Schrenkii*. Manch. to Korea (My.-Jn.).  
*P. S. mandschuricus*.  
*P. sericanthus*. C. and W. China (Jn.).  
*P. s. Rehderianus*. W. China.  
*P. subcanus* *Wilsonii*.\* (Jn.).  
*P. tenuifolius*. Manch. to Korea (Jn.).  
*P. tomentosus*. Himal. (Jn.).  
*P. virginialis* (*P. Lemoinei* x *nivalis plenus*?). (Jn.).  
*P. v.* "Albâtre."  
*P. v.* "Argentine." *P. v.* "Enchantment."  
*P. v.* "Bouquet Blanc." *P. v.* "Glacier."  
*P. v.* "Bouquet Rose." *P. v.* "Virginal."  
*P. Zeyheri* (*P. coronarius* x *inodorus*?). (Jn.).

\* *P. subcanus* is native in central and western China.

PHILLYREA, Oleaceae. Broad-leaved evergreen shrubs requiring a sheltered situation and winter protection. Old established plants may live through the winter with little injury [8E, nursery].

*P. ANGUSTIFOLIA*. S. Eu., N. Afr.

*P. DECORA*. W. Asia.

PHOTINIA, Rosaceae. Shrubs and small trees bearing masses of red berries. *P. villosa* has orange-red foliage in fall and is the most commonly planted of the genus. *P. serrulata* is evergreen and requires much protection to exist around New York [8E, 6E, nursery].

*P. Beauverdiana*. C. and W. China.

*P. B. notabilis*.

*P. parvifolia* (*P. subumbellata*). E. and C. China.

*P. SERRULATA*. China.

*P. villosa*. Japan, Korea, China (Jn.).

*P. v. Zollingeri*.

PHYLLODOCE, Ericaceae. Dwarf evergreen shrub difficult to grow. Worth trying in the rock garden [5E].

*P. empetriformis*. B. C. to Calif. (My.-Jy.).

PHYSOCARPUS, Rosaceae. Ninebark. Mostly large shrubs with arching branches that bear numerous clusters of white flowers and persistent fruiting structures. The bark of old vigorous shoots often peels [6J].

*P. amurensis*. Manch., Korea.

*P. australis*. Va. to S. C.

*P. bracteatus*. Colo.

*P. capitatus*. B. C. to Idaho and Calif.

*P. opulifolius luteus*. Que. to Tenn. and Mich. (Jn.-Jy.).

*P. stellatus*. S. C., Ala., Ga.

PICEA, Pinaceae. Spruce. Coniferous trees unsuited for city conditions. *P. Omorika*, with flat needles, and *P. orientalis*, notable for its dark green foliage, are among the best [7C, 8C, 8D, nursery].

- P. Abies*. Norway S.; N. and C. Eu.
- P. A. borealis*.
- P. A. Clanbrasilliana*.
- P. A. conica*.
- P. A. Ellwangeriana*.
- P. A. Gregoryana*.
- P. A. Maxwellii*.
- P. A. microsperma*.
- P. A. pendula*.
- P. A. procumbens*.
- P. A. pumila*.
- P. asperata*. W. China.
- P. bicolor*. Alcock S.; Japan.
- P. b. reflexa*.
- P. brachytyla rhombisquamea* (*P. ascendens*). W. China.
- P. Engelmanni*. Engelmann S.; B. C. to N. Mex.
- P. E. glauca*.
- P. glauca*. White S.; Alaska to Lab. and N. Y.
- P. g. albertiana*. Alberta S.; Alaska and B. C. to Mont.
- P. g. conica*.
- P. g. densata*. Black Hills S.; S. Dak.
- P. Glehnii*. Sakhalin S.; Sakhalin, Japan.
- P. jezoensis*. Yeddo S.; Manch., Sakhalin, N. Japan.
- P. Koyamai*. Japan, Korea.
- P. mariana*. Black S.; Alaska to Lab. and Va.
- P. m. Doumetii*.
- P. montigena*. W. China.
- P. m. aspera*.
- P. morrisonicola*. Formosa.
- P. obovata*. Siberian S.; N. Eu. to Kamchatka and Manch.

- P. Omorika*. Serbian S.; S.E. Eu.  
*P. orientalis*. Oriental S.; Cauc., Asia Minor.  
*P. polita*. Tigertail S.; Japan.  
*P. pungens*. Colorado S.; Colo. to N. Mex.  
*P. p. argentea*.  
*P. p. glauca*.  
*P. p. Kosteriana*.  
*P. p. nana*.  
*P. p. viridis*.  
*P. purpurea*. W. China.  
*P. rubens*. Red S.; N. S. to N. C.  
*P. sitchensis*. Sitka S.; Alaska to Calif.  
*P. SMITHIANA*. Himalayan S.; Himal.  
*P. Wilsonii*. C. and W. China.

PIERIS, Ericaceae. Evergreen shrubs of great beauty especially when in flower. The two species commonly known as Andromeda are the hardiest [5E].

- P. floribunda*. Mountain Andromeda; Va. and Ga. (Mr.-My.).  
*P. FORMOSA*. E. Himal.  
*P. japonica*. Japanese Andromeda; Japan (Mr.-My.).  
*P. TAIWANENSIS*. Formosa.

PINUS, Pinaceae. Pine. Principally trees; a few species and varieties merely shrubby. *P. Thunbergii*, *P. nigra*, and *P. Mugo* varieties are good for seaside planting. Many of the harder pines are excellent for wind-breaks. Worthy of wider cultivation are: *P. Cembra*, *P. Peuce*, *P. Bungeana*, *P. aristata*, and *P. Jeffreyi*. The pines are among the most satisfactory of the cone-bearing trees grown at the New York Botanical Garden [6E, 6F, 7D, 7E, 7F, nursery].

- P. albicaulis*. White-bark P.; B. C. to Calif. and Wyo.  
*P. aristata*. Hickory P.; Calif. to Colo.  
*P. Armandi*. China, Formosa, Korea.  
*P. attenuata*. Knob-cone P.; Ore. to Calif.



PLATE 5

*Top:* *Fuchsia magellanica riccartonii*. *Bottom:* *Styax Obassia*.



PLATE 6

*Top:* *Pinus flexilis* in the Pinetum. *Bottom:* *Prunus yedoensis*, the "Yoshino" cherry.



- P. Balfouriana*. Foxtail P.; Calif.  
*P. Banksiana*. Jack P.; Huds. B. to N. Y. and Minn.  
*P. Bungeana*. Lace-bark P.; N.W. China.  
*P. Cembra*. Swiss Stone P.; C. Eu., N.E. Russia and N. Asia.  
*P. cembroides edulis*. Nut P.; Wyo. to Mex.  
*P. c. monophylla*. Calif. to Colo. and Ariz.  
*P. contorta*. Shore P.; Alaska to Calif.  
*P. c. latifolia*. Lodgepole P.; Rocky Mts.  
*P. COULTERI*. Calif.  
*P. densiflora*. Japanese Red P.; Japan.  
*P. d. umbraculifera*.  
*P. ECHINATA*. Short-leaf P.; N. Y. to Fla. and Tex.  
*P. flexilis*. Limber P.; Alb. to Calif. and Tex.  
*P. f. reflexa*.  
*P. Griffithii* (*P. excelsa*). Himalayan P.; Himal. to Afghan.  
*P. HALEPENSIS*. Aleppo P.; Mediterr. region.  
*P. H. BRUTIA*. S. Eu., W. Asia.  
*P. Heldreichii leucodermis* (*P. l.*). Graybark P.; Balkan Pen., Italy.  
*P. Jeffreyi*. Jeffrey's P.; Ore. to Calif.  
*P. koraiensis*. Korean P.; Japan, Korea.  
*P. Lambertiana*. Sugar P.; Ore. to Calif.  
*P. Massoniana*. S. China.  
*P. monticola*. Mountain White P.; B. C. to Idaho and Calif.  
*P. Mugo*. Mountain P.; Mts. of C. and S. Eu.  
*P. M. Mughus*. Alps to Balkan Pen.  
*P. nigra*. Austrian P.; C. and S. Eu., Asia Minor.  
*P. n. austriaca*. Austria to Balkan Pen.  
*P. n. calabrica*.  
*P. n. caramanica*. Crimean P.; Asia Minor.  
*P. n. cebennensis*. Pyrenees and S. France.  
*P. n. Poiretiana*. Corsican P.; S. Eu.  
*P. parviflora*. Japanese White P.; Japan.  
*P. p. glauca*.  
*P. Peuce*. Macedonian P.; Balkan Mts.  
*P. ponderosa*. Western Yellow P.; B. C. to Mex.  
*P. pumila*. N.E. Siberia, Japan.

- P. pungens*. Table Mountain P.; N. J. to Ga.  
*P. resinosa*. Red P.; N. S. to Pa. and Mich.  
*P. rigida*. Pitch P.; N. B. to Ga.  
 P. SABINIANA. Digger P.; Calif.  
*P. Strobilus*. White P.; Newf. to Ga. and Iowa.  
*P. S. fastigiata*.  
*P. S. nana*.  
*P. sylvestris*. Scots P.; Eu. to Siberia.  
*P. s. argentea*.  
*P. s. rigensis*.  
*P. s. Watereri*.  
*P. tabulaeformis*. Chinese P.; N. to W. China.  
*P. Taeda*. Loblolly P.; N. J. to Fla. and Tex.  
*P. Thunbergii*. Japanese Black P.; Japan.  
 P. TORREYANA. Soledad P.; S. Calif.  
*P. virginiana*. Scrub P.; N.Y. to Ga. and Ohio.  
*P. yunnanensis*. W. China.

PLATANUS, Platanaceae. Plane-tree. Often planted as street trees, particularly *P. acerifolia*. The trunks are showy when the outer layer of bark flakes off in late summer [7B].

- P. acerifolia* (*P. occidentalis* x *orientalis*). London P.  
*P. occidentalis*. Buttonwood; Me. to Fla. and Tex.  
*P. orientalis*. Oriental P.; W. Asia and S.E. Eu.

POLYGONUM, Polygonaceae. *P. Auberti* is a vigorous, white-flowered vine. *P. vacciniifolium* is a prostrate subshrub that has attractively colored foliage in the fall [5E, nursery].

- P. Auberti*. Silver lace-vine; W. China. (Jy.-S.).  
 P. VACCINIFOLIUM. Himal.

PONCIRUS, Rutaceae. Interesting because of its green stems, large green spines, and its flowers and fruits which resemble those of the true orange [6F].

- P. TRIFOLIATA. Hardy Orange; N. China, Korea (My.).

POPULUS, Salicaceae. Poplar. Fast-growing trees often used for screen plantings. None is suitable for small gardens. They are objectionable as city street trees because their vigorous roots often clog sewage pipes [3C, nursery].

*P. alba*. White P.; Eu. to W. Siberia and C. Asia.

*P. a. Richardii*.

*P. canadensis* (*P. deltoides* x *nigra*) *aurea*.

*P. c. Eugenei*.

*P. c. marilandica*.

*P. c. regenerata*.

*P. deltoides*. Cottonwood; Que. to N. D., Fla. and Tex.

*P. Maximowiczii*. N.E. Asia, Japan.

*P. nigra betulifolia*. Black P.; Eu.

*P. n. italica*. Lombardy P.

*P. "Rumford"* (*P. nigra* x *laurifolia*).

*P. Simonii fastigiata*. N. China.

*P. szechuanica*. W. China.

*P. tomentosa*. Chinese White P.; N. China.

POTENTILLA, Rosaceae. Cinquefoil. The varieties of *P. fruticosa* are low shrubs that produce yellow or white flowers and bloom for many weeks. *P. tridentata* is a prostrate spreading species with white flowers suitable for the rock garden [5E, nursery].

*P. fruticosa*. N. hemisphere (My.-Au.).

*P. f. mandshurica*. Manch.

*P. f. montana*.

*P. f. parvifolia*. C. Asia.

*P. f. Veitchii*. C. and W. China.

*P. tridentata*. Lab. to Tenn. to Man.

PRINSEPIA, Rosaceae. Spiny shrubs that produce their leaves very early in spring. The flowers are not conspicuous as they are largely hidden by the foliage [nursery].

- P. sinensis*. Manch.  
*P. uniflora*. N.W. China.

PRUNUS, Rosaceae. Trees and shrubs, deciduous except *P. caroliniana*, *P. Laurocerasus*, and *P. lusitanica*. This genus contains some of the most floriferous garden plants. Notable are the varieties of *P. serrulata*, *P. persica*, *P. glandulosa*, and *P. japonica*. In addition the fruits of many are both attractive and edible [6I, 5L, 5E, nursery].

- P. allegheniensis*. Allegheny Plum; Conn. to Pa.  
*P. americana*. Mass. to Ga. and N. Mex.  
*P. Amygdalo-persica* (*P. Amygdalus* x *Persica*).  
*P. angustifolia*. Chickasaw Plum; Md. to Fla. and Tex.  
*P. Besseyi*. Western Sand Cherry; Man. to Kans. and Colo.  
*P. canescens*. C. and W. China.  
*P. CAROLINIANA*. N. C. to Tex.  
*P. cerasifera atropurpurea* (*P. c. Pissardi*). Purple-leaf Plum.  
*P. c. divaricata*. Cherry Plum; W. Asia, Caucasus.  
*P. Cocomilia*. Italy.  
*P. crataegifolia*. W. China.  
*P. glandulosa*. Dwarf Flowering Almond; C. and N. China, Japan (Ap.).  
*P. g. sinensis*. E. Asia.  
*P. Gravesii*. Conn.  
*P. Grayana*. Japan.  
*P. hortulana*. Ky., Tenn. to Iowa and Okla.  
*P. incana*. S.E. Eu., W. Asia.  
*P. incisa*. Japan (Ap.).  
*P. i. serrata*.  
*P. japonica*. C. China, E. Asia (Ap.).  
*P. j. Engleri*. Manch.  
*P. j. Nakaii*. Korea.  
*P. j. Thunbergii*.  
*P. latidentata trichostoma*. W. China.  
*P. LAUROCERASUS REYMANNI*.\*

\* This is a variety of the Cherry Laurel, *P. Laurocerasus*, a native of Europe and Asia Minor.

P. L. SCHIPKAENSIS COMPACTA.\*

P. LUSITANICA. Portugal Laurel; Spain, Port.

P. *Maackii*. Manch., Korea.

P. *Mahaleb*. Mahaleb Cherry; Eu., W. Asia.

P. *maritima*. Beach Plum; Me. to Va. (My.).

P. *m. flava*.

P. *Maximowiczii*. Manch., Korea, Japan.

P. *Munsoniana*. Ky., Tenn. to Kans. and Tex.

P. *nipponica*. Japan.

P. *Padus sibirica*.†

P. *Persica*. Peach; China.

P. *P. albo-plena*. Flowering Peach (Ap.-My.).

P. *P. rosea-plena*.

P. *pubigera*. W. China.

P. *pumila*. Sand Cherry; N. Y. to Wis. and Ill.

P. *p. susquehanae*. Me. to Pa. and Minn.

P. *salicina*. China.

P. *serotina*. Black Cherry; Ont. to Fla. and Tex.

P. *serrula*. W. China.

P. *serrulata*. Japanese Flowering Cherry; Japan, Korea, China (Ap.-My.).

P. *s. albo-plena*.

P. *s.* "Kwanzan" ("Seki-yama").

P. *s.* "Amanogawa."

P. *s.* "Mikuruma-gaeshi."

P. *s.* "Benishi."

P. *s.* "Momi-jigari."

P. *s.* "Fugenzo" ("Jas. H. Veitch").

P. *s.* "Mrs. A. E. Wohlert."

P. *s.* "Gyoiko."

P. *s.* "Ochichima."

P. *s.* "Higurashi."

P. *s.* "Ojochin."

P. *s.* "Hosokawa Beni."

P. *s.* "Paul Wohlert."

P. *s.* "Hosokawa-nioi."

P. *s.* "Rosea."

P. *s.* "Ichiyo."

P. *s.* "Rosy Morn."

P. *s.* "Kurama-yama."

P. *s.* "Ruth Wohlert."

\* This is a form of *P. Laurocerasus schipkaensis*, a variety which was found growing wild near Shipka Pass in the Balkan Mts.

† The European Bird Cherry, *P. Padus*, is native in Europe, northern Asia, and Japan.

- P. s.* "Shiro-fugen."  
*P. s.* "Shiro-higan."  
*P. s.* "Shirotae" ("Mount Fuji").  
*P. s.* "Shogetsu" ("Oku-miyako").  
*P. sibirica*. Siberian Apricot; E. Siber., Manch., N. China.  
*P. Sieboldii*. Japan.  
*P. spinosa puberula*.\*  
*P. subhirtella*. Higan Cherry; Japan (Ap.).  
*P. s. autumnalis*. (Ap.; O.-N.).  
*P. tomentosa*. N. and W. China, Japan, Himal. (Ap.).  
*P. ursina*. Asia Minor, Syria.  
*P. utahensis* (*P. Besseyi* x *angustifolia* Watsoni).  
*P. virginiana leucocarpa*.†  
*P. yedoensis*. Yoshino-zakura; Japan (Mr. or Ap.).  
*P. y.* "Daybreak."  
*P. y.* "Shojo."  
*P. y.* "Taizan-fukun."

PSEUDOLARIX, Pinaceae. Golden Larch. A deciduous-leaved conifer very similar to the larches, differing principally in the cone scales, which also are deciduous. The fall coloration gives rise to its common name [6C].

*P. amabilis*. E. China.

PSEUDOTSUGA, Pinaceae. Douglas Fir. A very handsome evergreen tree that does well in the eastern states and has been proved one of the most satisfactory conifers at the New York

\* The Blackthorn or Sloe, *P. spinosa*, is native in Europe, north Africa, and western Asia.

† The common Chokecherry, *P. virginiana*, is native from eastern Canada to North Carolina and Kansas.

Botanical Garden. The mountain form is hardier but grows more slowly than does the form native to the West Coast [9D].

*P. taxifolia*. B. C. to Calif. and Mex.

*P. t. glauca*.

PTELEA, Rutaceae. Large, rather coarse shrubs, with trifoliolate leaves and interesting circular, flattened fruits [3J, 5C].

*P. serrata*. Ga.

*P. trifoliata*. Hop-tree; Ont. to Fla. and Minn.

*P. t. mollis*. Tex. to N. C. and Ill.

PTEROCARYA, Juglandaceae. Wing-nut. Trees with large pinnate leaves. Tender, at least when young [nursery].

P. STENOPTERA. China.

PTEROCELTIS, Ulmaceae. A tree that is killed back in winter when young. Because of this it has not exceeded the dimensions of a shrub at the Garden [nursery].

P. TATARINOWII. N. and C. China.

PTEROSTYRAX, Styracaceae. *P. hispida*, the hardier of the two, has large, light green leaves, whitish on the undersides. The large pendulous clusters of small white flowers are attractive. *P. corymbosa* suffers in winter and has not bloomed at the Garden [nursery].

P. CORYMBOSA (*Halesia c.*). Japan.

P. HISPIDA. Epaulet-tree. Japan (Jn.).

PYRACANTHA, Rosaceae. Firethorn. Semi-evergreen shrubs with brilliant red or orange fruits. Adaptable as wall shrubs. *P. coccinea Lalandii* is the hardiest and most commonly grown in this region [5E, nursery].

- P. COCCINEA*. Italy to W. Asia (My.-Jn.).  
*P. c. LALANDII*.  
*P. CRENATO-SERRATA* (*P. Gibbsii*). C. and W. China (My.-Jy.).  
*P. CRENULATA*. Himal.  
*P. c. ROGERSIANA*. S.W. China.

PYRUS, Rosaceae. Pear. Medium or small trees, handsome in flower but susceptible to fire blight disease [5J, 6K].

- P. amygdaliformis persica*. W. Asia.  
*P. betulaefolia*. N. China.  
*P. Bretschneideri*. N. China.  
*P. Calleryana*. China.  
*P. congesta* (*P. betulaefolia* x *elaegnifolia*).  
*P. nivalis*. Snow P.; S. Eu.

QUERCUS, Fagaceae. Oak. Large or small deep-rooting trees. The leaves vary greatly in size and shape. Narrow-leaved forms such as *Q. Phellos* and *Q. imbricaria* deserve to be more widely grown, and also the large-leaved *Q. dentata* and *Q. macrocarpa*. The evergreen *Q. glauca* has over-wintered at the Garden with only slight injury to the tips of the leaves for the last three winters [1D, 1E, nursery].

- Q. acutissima* (*Q. serrata*). Japan, Korea, China, Himal.  
*Q. alba*. White O.; Me. to Fla. and Tex.  
*Q. bicolor*. Swamp White O.; Que. to Ga.  
*Q. borealis maxima*. Red O.; N. S. to Fla. and Tex.  
*Q. Cerris*. Turkey O.; S. Eu., W. Asia.  
*Q. Chenii*. China.  
*Q. coccinea*. Scarlet O.; Me. to Fla. and Mo.  
*Q. Dalechampii* (*Q. lanuginosa Tenorei*). S.E. Eu. to Italy.  
*Q. dentata*. Japan, Korea, China.  
*Q. ellipsoidalis*. Man. to Mich. and Iowa.  
*Q. e. sphaerocarya*.  
*Q. exacta* (*Q. imbricaria* x *palustris*).  
*Q. falcata* (*Q. rubra*). Spanish O.; N. J. to Fla. and Tex.



- Q. glandulifera*. Japan, Korea to W. China.  
*Q. glauca*. Asia.  
*Q. Havardi*. E. Tex.  
*Q. heterophylla* (*Q. Phellos* x *borealis maxima*). N. J. to Tex.  
*Q. imbricaria*. Shingle O.; Pa. to Ga. and Neb.  
*Q. Jackiana* (*Q. bicolor* x *alba*).  
*Q. lyrata*. Overcup O.; N. J. to Fla. and Tex.  
*Q. macrocarpa*. Burr O.; N. S. to Man., and Tex.  
*Q. marilandica*. Black-Jack O.; N. Y. to Fla. and Tex.  
*Q. mongolica*. Mongolian O.; China, Korea, Japan.  
*Q. m. grosseserrata*. Japan, Sakhalin.  
*Q. montana*. Chestnut O.; Me. to Ala.  
*Q. Nuttallii*. Miss., Mo. to Tex.  
*Q. palustris*. Pin O.; Mass. to Ark. and Wis.  
*Q. Phellos*. Willow O.; N. Y. to Fla. and Tex.  
*Q. Prinus*. Basket O.; Del. to Fla. and Tex.  
*Q. PYRENAICA* (*Q. Toza*). S. Eu.  
*Q. robur*. English O.; Eu., N. Afr., W. Asia.  
*Q. r.* "Concordia."  
*Q. r. fastigiata*.  
*Q. Rudkini* (*Q. marilandica* x *Phellos*).  
*Q. Saulii* (*Q. montana* x *alba*).  
*Q. Schuettei* (*Q. bicolor* x *macrocarpa*).  
*Q. Shumardii Schneckii*. Ill. and Ohio to Tex.  
*Q. stellata*. Post O.; Mass. to Fla. and Tex.  
*Q. velutina*. Black O.; Me. to Fla. and Tex.

RHAMNUS, Rhamnaceae. Buckthorn. Spiny or spineless shrubs, some of value as hedge plants. The flowers are not showy and are followed by small black fruits [1D, 5E, nursery].

- R. cathartica*. Common B.; Eu., Asia.  
*R. crenata*. Japan and Korea to C. China.  
*R. Erythroxylon*. Siberia.  
*R. fallax*. Carniolan B.; S.E. Eu.  
*R. Frangula*. Alder B.; Eu., W. Asia, N. Afr.  
*R. infectoria*. Avignon-berry; S. Eu.

- R. Pallasii*. W. Asia.  
*R. rupestris*. S.C. Eu.  
*R. saxatilis*. Rock B.; C. and S. Eu.

RHODODENDRON, Ericaceae. Evergreen or deciduous shrubs, many of which are especially valued for garden decoration. They vary from a little more than one foot to twenty feet in height. With a few notable exceptions the hybrids and varieties are more popular than the species, partly because many of the latter are not entirely suited to this climate and also because too few growers have been willing to experiment with their cultivation. They require acid soil. Many flower satisfactorily when grown in full sun but the foliage is more attractive in light shade. The lace bug is one of the worst pests of rhododendrons and must be promptly controlled. This large genus includes *Azalea*, many forms of which are deciduous.

The following species, varieties, and clones are evergreen [8E, 5C, 4B, nursery].

- R. ALTAICUM*. Altai Mts.  
*R. arbutifolium* (*R. ferrugineum* x *minus*).  
*R. AUGUSTINI*. C. and W. China.  
*R. brachycarpum*. Japan, Korea (Jn.).  
*R. calophytum*. W. China.  
*R. campanulatum*. Sikkim, Nepal.  
*R. carolinianum*. N. C. (My.-Jn.).  
*R. c. album*. N. C.  
*R. catawbiense*. Mountain Rose-bay; Va. to Ga. (My.-Jn.).  
*R. c. album*.  
*R. c.* "Boursault."  
*R. c. grandiflorum*.  
*R. caucasicum*. Cauc. (My.).  
*R. c. ochroleucum*.  
*R. CHARIANTHUM*. W. China.  
*R. CINNABARINUM*. Himal.

- R. concinnum*. W. China (Jn.).  
*R. cuneatum*. Yunnan.  
 R. DALHOUSIAE. Himal.  
 R. DAVIDSONIANUM. W. China.  
*R. decorum*. W. China (My.-Jn.).  
*R. discolor*. C. China (Jn.).  
*R. Fargesii*. C. China (My.-Jn.).  
*R. ferrugineum*. Mts. of C. Eu.  
 R. FICTOLACTEUM. China.  
*R. Fortunei*. E. China (My.-Jn.).  
 R. HIPPOPHAEOIDES. W. China (My.).  
*R. hirsutum*. Mts. of Eu.  
*R. Houlstonii* (*R. Fortunei* H.). C. China (My.-Jn.).  
*R. Keiskei*. Japan (My.).  
*R. laetevirens* (*R. carolinianum* x *ferrugineum*). (My.-Jn.).  
*R. lapponicum*. Mts. of N. Am., N. Eu., N. Asia.  
 R. LATOUCHEAE. Malay Pen.  
 R. LEPIDOTUM. Himal. to W. China.  
*R. longistylum*. W. China.  
 R. MACROPHYLLUM (*R. californicum*). B. C. to Calif.  
*R. maximum*. N. S. to Ga. (Jn.-Jy.).  
*R. m. x discolor*.  
*R. Metternichii*. Japan.  
*R. micranthum*. N. Korea to Manch. and N. China (Jn.).  
*R. minus*. S. C. to Ga. and Ala. (Jn.-Jy.).  
*R. Morelianum* (*R. catawbiense* x *ponticum*) "Everestianum" (My.-  
*R. orthocladum*. N. Yunnan. Jn.).  
 R. OVATUM. E. China.  
 R. PONTICUM. Asia Minor, Balkan Pen., Spain (My.-Jn.).  
 R. P. MACRANTHA.  
 R. PRAEVERNUM. C. China (Ap.).  
*R. pubescens*. W. China.  
*R. racemosum*. W. China (My.-Jn.).  
*R. ravum*. Yunnan.  
*R. rigidum*. Yunnan.  
 R. SEARSIAE. W. China.

*R. Smirnowii.* Cauc. (My.).  
*R. sulfureum.* Yunnan.  
 R. TRAILLIANUM. W. China.  
 R. VILLOSUM. W. China.  
*R. Wongii.* China.  
 R. YUNNANENSE. W. China.  
 R. Y. PRAECOX.

### Named Evergreen Clones

Abraham Lincoln.	James MacIntosh.
Album Elegans.	Kettledrum.
Album Novum.	Kissena.
America.	Lady Armstrong.
Amphion.	Lady Clermont.
Atrosanguineum.	Lady Grey Egerton.
Beaufort.	Lee's Dark Purple.
Boule de Neige.	LOUIS PASTEUR.
Caractacus.	Macranthum.
Charles Bagley.	MME. DE BRUIN.
Charles Dickens.	MRS. CHARLES PEARSON.
Conestoga.	Mrs. C. S. Sargent.
Conewago.	Mrs. Milner.
CORRY KOSTER.	Mrs. P. den Ouden.
Decatros.	Nova Zembla.
Delicatissimum.	Old Port.
Dr. H. C. Dresselhuys.	Parson's Gloriosum.
Dr. H. J. Lovink.	Parson's Grandiflorum.
Dr. V. H. Rutgers.	PRESIDENT LINCOLN.
Edward S. Rand.	Prince Camille de Rohan.
F. Bettex.	Purpureum.
F. D. Godman.	Purpureum Elegans.
Florence.	ROBERT P. BARUCH.
General Grant.	Roseum Elegans.
GOETHE.	Roseum Superbum.
HUGO KOSTER.	Van der Hoop.
H. W. Sargent.	Van Weerden Poelman.
Ignatius Sargent.	

The following rhododendrons are deciduous [5K, 5E, 5D, nursery.]

- R. Albrechtii*. Japan.  
*R. arborescens*. Pa. to Ga. and Ala. (Jn.-Jy.).  
*R. calendulaceum*. Flame Azalea; Pa. to Ga. and Ky. (My.-Jn.).  
*R. camtschaticum*. N.E. Asia, Alaska to B. C.  
*R. canadense*. Rhodora; Newf. to Pa. (Ap.-My.).  
*R. gandavense* (*R. luteum* x *Mortieri*). (My.-Jn.).  
*R. g.* "Altaclarensis."  
*R. g.* "Beauté Celeste." *R. g.* "Nancy Waterer."  
*R. g.* "Bouquet de Flore." *R. g.* "Pallas."  
*R. g.* "Coccinea Speciosa." *R. g.* "Raphael de Smet."  
*R. indicum*. Japan.  
*R. i.* "Beni Kirishima."  
*R. japonicum*. Japan (Ap. or My.).  
*R. Kosterianum* (*R. japonicum* x *molle*).  
*R. LINEARIFOLIUM*. Japan.  
*R. L. MACROSEPALUM*. Japan.  
*R. luteum*. Asia Minor, Cauc., E. Eu.  
*R. macrosepalum purpureum*.  
*R. Mariesi*. S.E. and C. China (Jn.).  
*R. molle*. China (Ap. or My.).  
*R. m.* "Babeuff."  
*R. m.* "C. B. Van Nes."  
*R. m.* "Hugo Hardyzer."  
*R. mucronatum*. Japan (My.-Jn.).  
*R. m. Sekidera*.  
*R. mucronulatum* (*R. dauricum m.*). N.E. Asia, Japan.  
*R. nudiflorum*. Pinxter-flower; Mass. to N. C. and Ohio (Ap.-My.)  
*R. obtusum amoenum*. (My.).  
*R. o. arnoldianum*. *R. o.* "Hinomayo."  
*R. o.* "Beni-giri." *R. o. japonicum*.  
*R. o.* "Christmas Cheer." *R. o. Kaempferi*. Japan.  
*R. o.* "Flame." *R. o. K.* "Carmen."  
*R. o.* "Hatsu-giri." *R. o. K.* "Cleopatra."  
*R. o.* "Hinodegiri." *R. o. K.* "Fedora."

- R. o. K.* "Louise."  
*R. o. K.* "Mary."  
*R. o. K.* "Othello."  
*R. o. K.* × (*scabrum* × *Maxwellii*).  
*R. o. multicolor.*  
*R. o.* "Snow."  
*R. occidentale.* Ore., Calif. (Jn. or Jy.).  
*R. pentaphyllum nikoense.* Japan.  
*R. reticulatum.* Japan.  
*R. roseum* (*R. nudiflorum* r.). Que. to Va. and Mo. (My.).  
*R. Sanderi* (*R. obtusum* × *Simsii*).  
*R. Schlippenbachii.* Korea, Manch., Japan (My.).  
*R. SIMSII.* China, Formosa.  
*R. Tschonoskii.* Japan, Korea (Jn.).  
*R. Vaseyi.* N. C. (Ap.–My.).  
*R. viscosopalum Daviesii* (*R. viscosum* × *molle*).  
*R. viscosum.* White Swamp Honeysuckle; Me. to S. C. (Jn.–Jy.).  
*R. v. glaucum.*  
*R. Weyrichii.* Japan, Korea.  
*R. yedoense poukhanense.* Korea.

**RHODOTYPOS**, Rosaceae. A showy shrub with white flowers, each of which is followed by a cluster of four black glossy drupes. It tolerates partial shade. Easily distinguished from the allied genus *Kerria* by its white flowers and opposite leaves [6H].

*R. scandens* (*R. kerrioides*). Jetbead; C. China, Japan.

**RHUS**, Anacardiaceae. Sumac. Shrubs or occasionally trees that have pinnate or trifoliate leaves which become brilliantly colored in fall. Several cause severe skin poisoning [6G, 7J, nursery].

- R. aromatica* (*R. canadensis*). Fragrant S.; Ont. to Fla. and La.  
*R. a. illinoensis.* Mo. to Ill.  
*R. CHINENSIS* (*R. javanica*). China, Japan.

- R. diversiloba*. B. C. to Calif.  
*R. glabra*. Smooth S.; Me. to B. C. and Fla.  
*R. radicans* (*R. Toxicodendron*). Poison Ivy; N. J. to Fla. and Ark.  
*R. r. Rydbergii*. Tex. to Mont.  
*R. sylvestris*. China, Japan, Korea.  
*R. trichocarpa*. Japan, China.  
*R. typhina*. Staghorn S.; Que. to Ga. and Iowa.  
*R. verniciflua*. Varnish-tree; Japan, China, Himal.  
*R. vernix*. Poison S.; Ont. to Fla. and La.

RIBES, Saxifragaceae. Currants and Gooseberries. Because some are alternate hosts to the white pine blister-rust it is forbidden by law to grow them in many places. Several species are dioecious. *R. aureum* has scented yellow flowers [5L, nursery].

- R. alpestre*. Himal., W. China.  
*R. alpinum*. Alpine C.; Eu.  
*R. a. diacanthoides*.  
*R. a. microphyllum*.  
*R. aureum*. Golden C.; Wash. to Calif. and N. Mex. (Ap.-My.).  
*R. a. chrysococcum*.  
*R. a. palmatum*.  
*R. burejense*. N.E. Asia.  
*R. cereum*. B.C. to Calif. and Idaho.  
*R. cynosbati*. N. B. to Man. and Ala.  
*R. diacanthum*. N. Asia.  
*R. divaricatum*. B. C. to Calif.  
*R. echinellum*. Fla.  
*R. emodense*. Himal., C. China.  
*R. fasciculatum chinense*. N. China to Korea and Japan.  
*R. fragrans*. E. Siberia, Manch.  
*R. Gayanum*. Chile.  
*R. glaciale*. Himal., China.  
*R. glandulosum*. Fetid C.; Newf. to B. C. to N. C.  
*R. Gordonianum* (*R. sanguineum* x *odoratum*).  
*R. Houghtonianum* (*R. rubrum* x *sativum*).

- R. inebrians*. S. Dak. to Calif. and N. Mex.  
*R. innominatum* (*R. divaricatum* x *Grossularia*).  
*R. Koehneanum* (*R. sativum* x *multiflorum*).  
*R. leptanthum*. Colo. to N. Mex. and Utah.  
*R. manshuricum villosum*. N.E. Asia.  
*R. Meyeri turkestanicum*. C. Asia to N.W. China.  
*R. multiflorum*. E. Eu.  
*R. odoratum*. Buffalo C.; S. D. to Tex. and Ark.  
*R. orientale*. Eu., Asia.  
*R. oxyacanthoides*. N. N. Amer.  
*R. o. leucoderme*.  
*R. petraeum Litwinowii*. Eu.  
*R. rubrum*. Northern Red C.; Eu., N. Asia.  
*R. SANGUINEUM*. B. C. to Calif.  
*R. stenocarpum*. N.W. China.  
*R. tenue*. Himal., W. China.  
*R. urceolatum* (*R. multiflorum* x *petraeum*).  
*R. ussuriense*. Manch. to Korea.  
*R. utile* (*R. Grossularia* x *cynosbati*).  
*R. viscosissimum*. B. C. to Calif. and Colo.  
*R. Warscewiczii*. E. Siber.

**ROBINIA**, Leguminosae. Trees and shrubs with pinnate leaves and pendulous racemes of white, pink, or red-purple flowers. All are of greater or lesser ornamental value. The majority send up suckers at a considerable distance from the plant. These are often objectionable. Robinias grow well in poor, dry, sandy soils [6E, 2C, nursery].

- R. Boyntonii*. N. C. and Tenn. to Ga. and Ala. (My.-Jn.).  
*R. fertilis*. N. C. to Ga. (Jn.).  
*R. grandiflora*. N. C., Ala., and Ga. (Jn.).  
*R. Hartwigii*. N. C. to Ala. (Jn.).  
*R. hispida*. Va. and Ky. to Ga. and Ala. (My.-Jn.).  
*R. Holdtii* (*R. luxurians* x *Pseudoacacia*).  
*R. Kelseyi*. N. C. (My.-Jn.).  
*R. luxurians*. Colo. to N. Mex. and Utah (Jn.-Au.).



PLATE 7

*Left:* Robinia Pseudoacacia De-  
caisneana.

*Center:* Philadelphus cvmosus  
"Atlas."

*Bottom:* Syringa amurensis ja-  
ponica.



*Directly above:* Cotoneaster  
rotundifolia.



PLATE 8

*Left:*  
Stewartia  
ovata  
grandi-  
flora.

*Below:*  
Magnolia  
Fraseri.



- R. Margaretta* (*R. Pseudoacacia* x *hispidata*?). S. C.  
*R. Pseudoacacia*. Black Locust; N. Y. to Ga. and Okla. (My.-Jn.).  
*R. P. Decaisneana*.  
*R. viscosa*. N. C. to Ala. (My.-Jn.).

ROSA, Rosaceae. Rose. The species or "wild" roses provide many showy spring-flowering shrubs, including climbers and trailers. The fruits or "hips" of many are large, abundant, and brightly colored; in some species they persist through the entire winter. These fruits are rich in vitamin C and some kinds are used for making preserves. The spines and prickles also vary greatly in size, color, and density, and in a few instances, in themselves, make the plant attractive [2J, 8C, nursery].

- R. acicularis Bourgeauiana*. Mackenzie and Ont. to Colo. (My.-Jn.).  
*R. a. Engelmannii*. N. D. and Mont. to Colo.  
*R. a. nipponensis*. E. Asia.  
*R. Alberti*. Turkest.  
*R. baicalensis*. Baikal, Siberia.  
*R. Beggeriana*. N. Persia to Altai and Songaria.  
*R. B. nigrescens*.  
*R. californica*. Ore. to Calif.  
*R. c. ardens*.  
*R. canina albiflora*. Eu. (Jn.).  
*R. c. lutetiana*. Eu. (Jn.).  
*R. carolina*. Me. to Fla. and Tex. (Jn.-Jy.).  
*R. caudata*. W. China.  
*R. chinensis minima* (*R. Roulettii*). Fairy R.; China.  
*R. cinnamomea*. Cinnamon R.; Eu., Asia.  
*R. coriifolia frutetorum*.\*  
*R. corymbifera platyphylla* (*R. dumetorum* p.).† (Ap.-Jn.).  
*R. corymbosa*. Eu.  
*R. corymbulosa*. W. China.  
*R. cymosa* (*R. microcarpa*). China.

\* *R. coriifolia* is native in Europe and western Asia.

† *R. corymbifera* is native in Europe and western Asia.

- R. Davidi*. W. China.  
*R. D. elongata*.  
*R. dilecta* (*R. odorata* x *borboniana*).  
*R. dumalis*. Eu., W. Asia.  
*R. Eglanteria*. Sweet-brier; Eu.  
*R. elasmacantha*. Asia.  
*R. elymaitica*. N. Persia.  
*R. filipes*. W. China.  
*R. graciliflora*. W. China.  
*R. gypsicola*. Hungary.  
*R. haematodes*. Caucasus.  
*R. Helenae*. C. China.  
*R. highdownensis* (*R. Moyesii* x ?).  
*R. horrida*. S.E. Eu., Cauc., Asia Minor.  
*R. Macounii*. B. C. and Sask. to Tex.  
*R. manca*. Colo.  
*R. marginata*. Eu., W. Asia.  
*R. Marretii*. Sakhalin.  
*R. Maximowicziana Jackii*. Korea (Jn.-Jy.).  
*R. melina*. Colo., Utah.  
*R. micrantha*. Eu., Mediterr. (Jn.).  
*R. Moyesii*. W. China (Jn.).  
*R. M. Fargesii*.  
*R. multiflora*. Japan, Korea.  
*R. multiflora* x *pendulina*.  
*R. neomexicana*. S.W. U. S.  
*R. nitida*. Newf. to Conn. (Jn.-Jy.).  
*R. nutkana*. Alaska to Calif. and Wyo.  
*R. n. hispida*. B. C. to Utah.  
*R. omeiensis*. W. China (My.-Jn.).  
*R. o. atrosanguinea*.  
*R. o. pteracantha*.  
*R. palustris*. N. S. to Fla. and Miss. (Jn.-Au.).  
*R. p. Nuttalliana*.  
*R. pendulina*. Eu.  
*R. p. oxyodon*. Cauc.

- R. phoenicea*. Asia Minor.  
*R. pisocarpa*. B.C. to Calif. and Idaho.  
*R. Roxburghii*. China, Japan.  
*R. rugosa*. China, Korea, Japan.  
*R. r. alba*.  
*R. saturata*. C. China.  
*R. Serafinii*. Mediterr.  
*R. sertata*. C. and W. China.  
*R. setigera*. Prairie R.; Ont. to Fla. and Tex.  
*R. s. inermis*.  
*R. setipoda*. C. China.  
*R. slancensis*. Serbia.  
*R. Spaethiana* (*R. rugosa* x *palustris*).  
*R. spinosissima altaica*.\* (My.-Jn.).  
*R. stylosa*. Eu.  
*R. uchiyamana*. Japan.  
*R. ultramontana*. B. C. to Calif. and Wyo.  
*R. virginiana alba*.†  
*R. Watsoniana*. Japan.  
*R. Wichuraiana*. Memorial R.; Japan to China (Jy.-S.).  
*R. Woodsii*. B. C. to Kans. and Utah.

RUBUS, Rosaceae. Deciduous shrubs with simple or compound leaves. They are vigorous growers, usually prickly. *R. deliciosus* has large white flowers. *R. lasiostylus*, *R. leucodermis*, and *R. thibetanus* are distinctive white-stemmed species [6I, 5E, nursery].

- R. allegheniensis*. N. S. to N. C. and Ark.  
*R. ampelinus*. China.  
*R. caesius*. European Dewberry; Eu., Asia.  
*R. coreanus*. Korea, Japan, China.  
*R. corylifolius*. Eu.  
*R. deliciosus*. Colo.

\* *R. spinosissima*, the Burnet or Scotch Rose, is native in Europe and western Asia.

† *R. virginiana* is native from Newfoundland to Missouri and Alabama.

- R. flosculosus*. C. China.  
*R. gracilis*. Himal., China.  
*R. Henryi*. C. and W. China.  
*R. hispidus*. Swamp Dewberry; N. S. to Ga. and Mich.  
*R. idaeus aculeatissimus*. B. C. to Colo. and Mich., E. Asia.  
*R. illecebrosus*. Strawberry-raspberry; Japan.  
*R. inopertus*. C. and W. China.  
*R. japonicus*. Japan.  
*R. laciniatus*. Hort. origin (Jn.-Jy.).  
*R. Lambertianus*. C. China.  
*R. lasiostylus*. C. China (My.-Jn.).  
*R. leucodermis*. B. C. to Calif. and Utah.  
*R. macrophyllus*. Eu.  
*R. mesogaeus*. C. China.  
*R. odoratus*. Flowering Raspberry; N. S. to Ga. and Mich.  
*R. parviflorus*. Alaska to Calif. and Ont. to Mex.  
*R. p. Fraserianus*. B. C.  
*R. phoenicolasius*. Korea, Japan, N. China.  
*R. spectabilis*. W. N. Am.  
*R. tibetanus*. W. China (My.-Jn.).  
*R. Thompsonii*. Sikkim.  
*R. turcomanicus*. Russia.  
*R. ulmifolius*. Eu.  
*R. u. inermis*.  
*R. ursinus*. Californian Dewberry; Calif.  
*R. xanthocarpus*. W. China.

SALIX, Salicaceae. Willow. Rapidly growing trees and shrubs, most of which thrive in moist soils. The male and female catkins are borne on separate plants. The graceful *S. babylonica* and *S. alba vitellina* and the colored-stemmed *S. purpurea* and *S. Elaeagnos* are among the more ornamental members of the genus. *S. Matsudana tortuosa* is a curiosity because of the "permanent wave" of its twigs and branches [6F, 6G, nursery].

*S. adenophylla*. Furry W.; Lab. to Pa. and Ill.

- S. alba chermesina*.\*  
*S. a. vitellina*.\*  
*S. babylonica*. Weeping W.; China.  
*S. b. crispa*.  
*S. Bockii*. W. China.  
*S. caprea*. Goat W.; Eu. to N.E. Asia and Persia.  
*S. coccinea*. Orig. unknown.  
*S. Ehrhartiana* (*S. pentandra* × *alba*). Eu.  
*S. Elaeagnos* (*S. incana*). Eu., Asia Minor.  
*S. fragilis*. Crack W.; Eu., W. Asia.  
*S. gracilistyla*. Japan, Korea.  
*S. herbacea*. Dwarf W.; Eu., N. Asia, N. N. Am.  
*S. irrorata*. Colo. to N. Mex. and Ariz.  
*S. Matsudana*. N. Asia.  
*S. M. tortuosa*.  
*S. M. umbraculifera*.  
*S. myrsinifolia*. Eu. to W. Asia and W. Siberia.  
*S. nigra*. Black W.; N. B. to Fla. and Calif.  
*S. oxica*. Turkest.  
*S. pentandra*. Bay W.; Eu. to Cauc.  
*S. purpurea nana*.†  
*S. p. sericea*.  
*S. repens nitida* (*S. r. argentea*).‡  
*S. rubra* (*S. purpurea* × *viminalis*). Eu.  
*S. sesquitertia* (*S. purpurea* × *aurita* × *phyllicifolia*). Eu.  
*S. tristis*. Me. to Fla. and Tenn.  
*S. uva-ursi*. Bearberry W.; Lab. to Alaska and N. Y.

SAMBUCUS, Caprifoliaceae. Elder. Easily grown shrubs adaptable to a wide variety of situations. *S. racemosa* and *S. pubens* are notable for their ornamental red berry-like drupes. *S. canadensis* and *S. nigra* display large creamy flower clusters followed by black berries that are used to make wine [6I, nursery].

\* *S. alba*, the White Willow, is native in Europe, N. Africa, and E. Asia.

† The Purple Osier, *S. purpurea*, is native in Europe, N. Africa, and Asia.

‡ *S. repens*, the Creeping Willow, is native in Europe and northern Asia.

- S. canadensis*. American E.; N. S. to Fla. and Tex. (Jn.-Jy).  
*S. c. acutiloba*.  
*S. coerulea*. B. C. to Calif. and Utah.  
*S. latipinna*. Korea.  
*S. melanocarpa*. B. C. to Calif. and Idaho.  
*S. nigra*. European E.; Eu., W. Afr., W. Asia.  
*S. n. laciniata*.  
*S. n. viridis*.  
*S. pubens*. Red-berried E.; N. B. to Ga. and Colo.  
*S. racemosa*. European Red E.; Eu., W. Asia.  
*S. r. flavescens*.  
*S. Sieboldiana*. Japan, China.

SANTOLINA, Compositae. Low, pleasantly aromatic, evergreen shrubs. They are suitable for the rock garden. *S. Chamaecyparissus* is often used for edging and carpet-bedding [5E].

- S. Chamaecyparissus*. Lavender-cotton; S. Eu.  
*S. pinnata*. Italy.  
*S. virens*. S. Eu.

SARCOCOCCA, Buxaceae. Attractive low evergreen shrubs, not hardy without some protection. The flowers are small and white, the sexes borne on separate plants [8E, nursery].

- S. HOOKERIANA HUMILIS*. W. China.  
*S. SALIGNA*. Himal.

SASSAFRAS, Lauraceae. Aromatic trees with variously lobed leaves that color a brilliant red in late summer. When the trees mature, they are picturesque. *S. Tzumu* kills back somewhat each year when young [5D].

- S. albidum* (*S. variifolium*). Sassafras; Mass. to S. C. and Tenn.  
*S. TZUMU*. C. China.



SCHISANDRA, Magnoliaceae. Handsome scandent shrubs suitable for training against a wall. The sexes are on separate plants, the pistillate bearing spikes of red berry-like fruits [8E, nursery].

*S. chinensis*. N. E. Asia, Japan (My.-Jn.).

*S. sphenanthera*. W. China.

SCHIZOPHRAGMA, Saxifragaceae. A beautiful climber, similar in appearance to *Hydrangea petiolaris* but differing in that the sterile flowers have but one large sepal instead of the four of *Hydrangea* [nursery].

*S. hydrangeoides*. Japan.

SCIADOPITYS, Pinaceae. Umbrella Pine. Slow-growing hardy tree that thrives best in partial shade. The rigid needles are arranged in whorls like the ribs of an umbrella [5D].

*S. verticillata*. C. Japan.

SECURINEGA, Euphorbiaceae. A botanically interesting shrub with greenish-yellow flowers; of little ornamental value [nursery].

*S. suffruticosa*. N.E. Asia to C. China.

SEQUIADENDRON, Pinaceae. In the wild it becomes one of the largest trees in the world. It is not reliably hardy here [nursery].

*S. GIGANTEUM* (*Sequoia gigantea*). Big-tree; Calif.

SHEPHERDIA, Elaeagnaceae. Much-branched shrubs. *S. argentea* is thorny and has silvery leaves and scarlet fruit which is made into a jelly, especially where it is native [5E, nursery].

*S. argentea*. Buffalo-berry; Man. to Minn. and Kans.

*S. canadensis*. Newf. to Alaska to N. Mex.

SIBIRAEA, Rosaceae. Low glaucous shrubs with large clusters of white flowers that resemble those of a spirea [nursery].

*S. laevigata*. Siberia.

*S. l. croatica*. S.E. Eu.

SKIMMIA, Rutaceae. Dwarf evergreen shrubs that grow well in sheltered situations in partial shade. They have lustrous laurel-like leaves and bright red persistent berry-like fruits in summer and fall [8E, nursery].

*S. FOREMANII ROGERSII* (*S. japonica* x *Reevesiana*).

*S. JAPONICA*. Japan.

*S. REEVESIANA*. China.

SMILAX, Liliaceae. Greenbrier. Semi-evergreen thorny ramblers with rounded leaves [6K].

*S. hispida*. Ont. to N. C. and Tex.

*S. laurifolia*. False China-brier; N. J. to Fla. and Tex.

*S. Sieboldii*. Japan, Korea.

SOPHORA, Leguminosae. Handsome plants with pinnate foliage and panicles of pea-like flowers. *S. japonica* is a low branching, round-topped tree that bears showy white flowers. *S. viciifolia* is a rounded lavender-flowered shrub [2C].

*S. japonica*. Japan Pagoda-tree; China, Korea (Au.-S.).

*S. viciifolia*. W. China (My.).

SORBARIA, Rosaceae. Large vigorous shrubs with pinnate leaves and decorative panicles of white flowers [nursery].

*S. Aitchisonii*. Afghan., Kashmir (Jy.-Au.).

*S. sorbifolia*. N. Asia (Jn.-Jy.).

*S. s. stellipila*. E. Asia.

SORBARONIA, Rosaceae. A bigeneric hybrid of obscure origin; intermediate between its parents [nursery].

*S. hybrida* (*Sorbus aucuparia* x *Aronia arbutifolia*).

SORBUS, Rosaceae. Medium-sized trees of easy cultivation. They bear flat clusters of white flowers and clusters of red or orange berry-like fruits. The leaves are often skeletonized by Japanese beetle infestations and the trunk and branches are often attacked by borers [51, nursery].

*S. americana*. American Mountain-ash; Newf. to N. C. and Mich.

*S. amurensis*. N.E. Asia.

*S. Aria*. White Beam-tree; Eu.

*S. A. edulis*.

*S. aucuparia*. Rowan-tree; Eu. to W. Asia and Siber.

*S. a. edulis*.

*S. commixta*. Korea, Sakhalin, Japan.

*S. decora*. Lab. to Minn. and N. Y.

*S. discolor*. N. China.

*S. Esserteauiana* (*S. Conradinae*). W. China.

*S. Folgneri*. C. China.

*S. hybrida* (*S. aucuparia*  $\times$  *intermedia*). Scandinavia.

*S. h. Gibbsii*.

*S. h. Meinichii*.

*S. intermedia subpinnata*.\*

*S. japonica*. Japan, Korea.

*S. Koehneana*. C. China.

*S. latifolia* (*S. Aria*  $\times$  *torminalis*). C. Eu.

*S. Mougeottii*. C. Eu.

*S. M. subsimilis*.

*S. pallescens*. W. China.

*S. pohuashanensis*. N. China.

*S. Prattii*. W. China.

*S. P. subarachnoidea*.

*S. Rehderiana*. W. China.

*S. rufo-ferruginea* (*S. commixto* r.). Japan.

*S. serotina*. Japan.

\* *S. intermedia* is native in northern Europe.

- S. splendida* (*S. americana* × *aucuparia*).  
*S. thuringiaca* (*S. aucuparia* × *Aria*).

SPARTIUM, Leguminosae. A green-stemmed shrub with large yellow fragrant flowers. It prefers lime and requires a sheltered location with good air drainage. It will grow on dry soils [8E].

S. JUNCEUM. Spanish Broom; Mediterr. region, Canary Isls. (Jn.-Jy.).

SPIRAEA, Rosaceae. Handsome flowering shrubs of varying heights and with a color range that includes white, pink, and deep rose. They grow well in ordinary garden soil. Choice early-flowering kinds include *S. Thunbergii*, *S. prunifolia plena*, *S. Vanhouttei*, *S. cantoniensis*. Most of the late-flowering spiraeas have an objectionable suckering habit [6J, nursery].

- S. albiflora*. Japan (Jy.-Au.).  
*S. amoena*. N.W. Himal. (Jy.).  
*S. betulifolia*. N.E. Asia to C. Japan (Jn.).  
*S. b. aemiliana*.  
*S. Billiardii* (*S. Douglasii* × *salicifolia*). (Jn.-Au.).  
*S. B. eximia*. *S. B. pseudo-Douglasii*.  
*S. B. Lenneana*. *S. B. triumphans*.  
*S. blanda* (*S. chinensis* × *cantoniensis*).  
*S. Blumei*. Japan, Korea (Jn.).  
*S. brachybotrys* (*S. canescens* × *Douglasii*).  
*S. brumalis* (*S. alba* × *amoena*?).  
*S. bullata*. Japan (Jy.-Au.).  
*S. Bumalda* (*S. japonica* × *albiflora*) "Anthony Waterer." (Jn.-Jy.).  
*S. cana*. S.E. Eu. to Italy.  
*S. canescens*. Himal. (Jn.).  
*S. cantoniensis*. China, Japan (My.).  
*S. chamaedryfolia*. N.E. Asia (My.-Jn.).  
*S. chinensis*. E. China (My.-Jn.).  
*S. decumbens*. S. Eu. (Jn.).  
*S. Douglasii*. B. C. to Calif. (Jy.-Au.).  
*S. Fritschiana*. C. China to Korea.

- S. Henryi*. C. and W. China (Jn.).  
*S. hypericifolia*. S.E. Eu., Asia (My.).  
*S. latifolia*. Newf. to N. A. (Jn.-Au.).  
*S. longigemmis*. N.W. China (Jn.).  
*S. macrothyrsa* (*S. Douglasii* x *latifolia*). (Jn.-Au.).  
*S. media*. S.E. Eu. to Asia (My.).  
*S. m. oblongifolia*.  
*S. Menziesii angustifolia*.\* (Jn.-Au.).  
*S. Miyabei glabrata*. C. China (Jn.).  
*S. mollifolia*. W. China (Jn.-Jy.).  
*S. nipponica*. Japan (Jn.).  
*S. n. tosaensis*. Japan.  
*S. notha* (*S. corymbosa* x *latifolia*).  
*S. nudiflora* (*S. amoena* x *chamaedryfolia ulmifolia*).  
*S. pruhoniciana* ("Anthony Waterer" x *japonica ovalifolia*).  
*S. prunifolia plena*. Bridal Wreath; Japan (My.-Jn.).  
*S. revirescens* (*S. japonica* x *amoena*) *grandiflora* (Jn.-Jy.).  
*S. r. parviflora*.  
*S. rubra* (*S. amoena* x *Douglasii*).  
*S. salicifolia superba*.† (Jn.-Jy.).  
*S. Sargentiana*. W. China (Jn.).  
*S. superba* (*S. albiflora* x *corymbosa*). (Jn.-Jy.).  
*S. Thunbergii*. Japan, China (My.-Jn.).  
*S. tomentosa*. Hardhack; N. S. to Ga. and Kans.  
*S. trichocarpa*. Korea (My.-Jn.).  
*S. Vanhouttei* (*S. cantoniensis* x *trilobata*). (My.-Jn.).  
*S. Veitchii*. C. and W. China (Jn.-Jy.).  
*S. Watsoniana* (*S. Douglasii* x *splendens*).  
*S. Wilsonii*. C. and W. China (Jn.).

STACHYURUS, Stachyuraceae. This shrub requires a sheltered location, otherwise the flowers are winter-killed [6B].

S. CHINENSIS. China.

\* *S. Menziesii* is native from Alaska to Oregon.

† *S. salicifolia* is native in southeastern Europe and parts of Asia.

STAPHYLEA, Staphyleaceae. Bladdernut. Shrubs with trifoliate or pinnate leaves and terminal panicles of attractive flowers followed by interesting bladder-like fruits [nursery].

*S. Bumalda*. Japan (Jn.).

*S. colchica*. Cauc. (My.-Jn.).

*S. c. Coulombieri*.

*S. emodi*. Himal.

*S. pinnata*. European B.; C. and S. Eu. (My.-Jn.).

*S. trifolia*. American B.; Que. to Ga. and Mo.

STEPHANANDRA, Rosaceae. Graceful shrubs with handsomely cut foliage and loose panicles of white flowers. *S. incisa* makes a good hedge plant [6K, 8D].

*S. incisa*. Japan, Korea (My.).

*S. Tanakae*. Japan (Jn.-Jy.).

STEWARTIA, Theaceae. Large shrubs or small trees that bear sizable fragrant white flowers with showy stamens in summer. Unfortunately, the flowers are often destroyed by Japanese beetles [6D, nursery].

*S. koreana*. Korea (Jn.-Jy.).

*S. Malacodendron*. Va. to Fla. and La. (Jn.-Jy.).

*S. monadelpha*. Japan (Jn.-Jy.).

*S. ovata* (*S. pentagyna*). N. C. and Tenn. to Fla. (Jy.-Au.).

*S. o. grandiflora* (*S. pentagyna* g.). Ga.

*S. Pseudo-camellia*. Japan (Jn.-Au.).

*S. sinensis*. C. China (Jn.-Jy.).

STRANVAESIA, Rosaceae. Vigorous partially evergreen shrubs with leathery, glossy leaves. If planted in a sheltered site they produce flat clusters of white flowers which are succeeded by red berry-like fruits [8E, nursery].

*S. DAVIDIANA*. W. China (Jn.).

*S. D. UNDULATA*. W. and C. China.

STYRAX, Styracaceae. Snowbell, Storax. Small white-flowering trees or shrubs of distinction. The large-leaved *S. Obassia* bears pendulous racemes of showy scented flowers. They rightly deserve to be more widely used [6D, 6E, nursery].

- S. AMERICANA*. Va. to Fla. and La.
- S. japonica*. China, Japan (My.-Jn.).
- S. Obassia*. Japan (My.-Jn.).
- S. Shiraiana*. Japan.

SYMPHORICARPOS, Caprifoliaceae. Attractive fruiting shrubs that can be grown in a wide variety of soils. The large white-berried *S. albus laevigatus* is a graceful shrub with branches that are pendulous when laden with fruit. Their suckering habit is objectionable in the mixed shrub border [6H, nursery].

- S. albus*. Snowberry; N. S. to Alb. and Va.
- S. a. laevigatus*. Alaska to Calif. and Colo.
- S. Chenaultii* (*S. microphyllus*  $\times$  *orbiculatus*).
- S. hesperius* (*S. mollis acutus*). B. C. to Ore.
- S. MICROPHYLLUS*. Mex.
- S. mollis*. Calif.
- S. orbiculatus*. Indian Currant; N. J. to Ga. and Tex.
- S. o. leucocarpus*.
- S. oreophilus*. Ore. to Calif. and Ariz.

SYMPLOCOS, Symplocaceae. Sweetleaf. A densely branched shrub that eventually may attain the proportions of a small tree. The clusters of small white flowers are followed by ornamental sapphire-blue fruits [6D].

- S. paniculata*. Asiatic S.; Himal. to China and Japan (My.-Jn.).

SYRINGA, Oleaceae. Lilac. Popular shrubs or small trees that bear an abundance of large panicles of beautiful, often fragrant blossoms. They grow satisfactorily in a wide variety of

soils but thrive in a rich loam, naturally alkaline or to which lime has been added. The earliest to flower is *S. oblata dilatata*. *S. microphylla* often flowers a second time in summer. In recent years many promising ornamental hybrids have been originated by crossing Asiatic species. "Nerissa," "Olivia," "Paulina" and "Isabella" are typical of the hybrids [8C, 9D, nursery].

- S. amurensis*. Manch., N. China (Jn.).
- S. a. japonica* (*S. japonica*). Japan (Jn.).
- S. chinensis* (*S. persica x vulgaris*). (My.).
- S. c. alba*.
- S. c. bicolor*.
- S. c.* "President Hayes."
- S. Henryi* (*S. villosa x Josikaea*) "Lutèce."
- S. hyacinthiflora* (*S. oblata x vulgaris*). (Ap.-My.).
- S. h.* "Berryer" (Ap.-My.).
- S. h.* "Lamartine" (*S. oblata Giraldi x vulgaris*). (Ap.-My.).
- S. h.* "Vauban" (Ap.-My.).
- S. Josikaea*. Hungarian L.; Hungary, Galicia (Jn.).
- S. J. eximia*.
- S. J.* "H. Zabel."
- S. Julianae*. W. China (My.-Jn.).
- S. Komarowii*. China (Jn.).
- S. Meyeri*. N. China (My.-Jn.).
- S. microphylla*. N. China (Jn.).
- S.* "Nerissa." (Jn.).
- S. oblata dilatata*. Korea (Ap.-My.).
- S.* "Olivia." (Jn.).
- S.* "Paulina." (Jn.).
- S. persica*. Persian L.; Persia to N.W. China.
- S. p. alba*.
- S. p. laciniata*.
- S. pinetorum*. S.W. China.
- S. pinnatifolia*. Pinnate L.; W. China (My.-Jn.).
- S. Potanini*. W. China.
- S. Prestonae* (*S. reflexa x villosa*) "Isabella." (Jn.).



- S. reflexa*. Nodding L.; C. China (Jn.).  
*S. Sweginzowii*. N.W. China (Jn.).  
*S. tomentella*. W. China (Jn.).  
*S. velutina*. N. China, Korea (My.).  
*S. villosa*. N. China (My.-Jn.).  
*S. vulgaris*. Common L.; S.E. Eu. (My.-Jn.).  
*S. Wolfi*. Manch., Korea (My.-Jn.).  
*S. yunnanensis*. Yunnan L.; Yunnan (My.-Jn.).

### Named clones of *Syringa vulgaris*

- |                           |                             |
|---------------------------|-----------------------------|
| Adelaide Dunbar.          | Edmond About.               |
| Alexander Hamilton.       | Edmond Boissier.            |
| Alphonse Lavallée.        | Ekenholm.                   |
| Andenken an Ludwig Späth. | Elihu Root.                 |
| Arthur William Paul.      | Emile Lemoine.              |
| Aucubaefolia.             | Etoile de Nancy.            |
| Azurea plena.             | Felleberg.                  |
| Boussingault.             | Flore bicolor.              |
| Calvin C. Laney.          | Frau Wilhelm Pfitzer.       |
| Capitaine Baltet.         | Géant des Batailles.        |
| Charles Baltet.           | Geheimrat Singlemann.       |
| Charles X.                | General Kitchener.          |
| Coerulea superba.         | General Sheridan.           |
| Colbert.                  | Georges Bellair.            |
| Comte de Kerchove.        | Gigantea.                   |
| Congo.                    | Goliath.                    |
| Corinne.                  | Guizot.                     |
| Croix de Brahy.           | Henry Wadsworth Longfellow. |
| Dame Blanche.             | Hugo Koster.                |
| De Croncels.              | James Booth.                |
| De Jussieu.               | Jan van Tol.                |
| De Saussure.              | Jean Bart.                  |
| Desfontaines.             | Jules Simon.                |
| Deuil d'Emile Galle.      | Katherine Havemeyer.        |
| Diderot.                  | Lambouline.                 |
| Duc de Massa.             | Le Gaulois.                 |

Lemoinei.	President Harding.
Leopold II.	President Poincaré.
Le Printemps.	President Viger.
Lilarosa.	Prince de Beauvau.
Louis Henry.	Prince Imperial.
Louis van Houtte.	Princess Camille de Rohan.
Macrostachya.	Professor E. H. Wilson.
Marceau.	Professor E. Stoekhardt.
Maréchal de Bassompierre.	Professor Sargent.
Marie Legraye.	Quadricolor.
Mathieu de Dombasle.	René Jarry-Desloges.
Maurice Barres.	Ronsard.
Maximowicz.	Rosea grandiflora.
Mme. Amélie Duprat.	Senateur Volland.
Mme. Antoine Buchner.	Siebold.
Mme. Casimer Perier.	Souvenir de Gaspard Calot.
Mme. Catherine Bruchet.	Souvenir de Henri Simon.
Mme. Florent Stepman.	Spectabilis.
Mme. Jules Finger.	Tournefort.
Mons. J. de Messemaeker.	Triomphe d'Orléans.
Mons. Lepage.	Vallettiana.
Mons. van Aerschot.	Vergissmeinnicht.
Montaigne.	Versaliensis.
Mont Blanc.	Verschaffeltii.
Nana.	Vestale.
Paul Deschanel.	Ville de Troyes.
Paul Hariot.	Violetta.
Paul Thirion.	Viviand-Morel.
Perle von Stuttgart.	William Robinson.
Philemon.	

TAMARIX, Tamaricaceae. Tamarisk. Rapid-growing shrubs with heath-like foliage and tall plumes of pink flowers on slender arching stems. They grow well in a variety of soils but resent transplanting. To obtain the maximum bloom or where the allotted area is limited, they should be pruned back hard

each year immediately after they have flowered. They are recommended for seaside planting [8D, 8E, nursery].

*T. hispida*. Kashgar T.; Caspian region (Jn.-Jy.).

*T. parviflora*. S. Eu. (My.-Jn.).

**TAXODIUM**, Pinaceae. Large deciduous coniferous trees with feathery foliage that is light green in spring. They are native in marshy lands but grow well in ordinary soil at the Garden [7G].

*T. ascendens*. Pond Cypress; Va. to Fla. and Ala.

*T. distichum*. Bald Cypress; Del. to Fla. and La.

**TAXUS**, Taxaceae. Yew. Ornamental evergreen shrubs and small trees that are adaptable for many garden purposes. They have dark green linear leaves and soft red fruits about the size of a pea. Suited for shade or full sun. The hardiest of the *T. baccata* varieties is *T. b. repandens* which is a useful low-spreading shrub. *T. cuspidata*, its varieties, and hybrids are the most useful yews in this area. The dense upright *T. media* *Hicksii* and *T. media* *Hatfieldii* make excellent hedges [5E, 7B, nursery].

*T. baccata*. English Y.; Eu., N. Afr., W. Asia.

#### Varieties of *Taxus baccata*

*adpressa*.

*aurea*.

*cheshuntensis*.

*compacta*.

*Dovastonii*. Dovaston Yew.

*erecta*.

*ericoides*.

*expansa*.

*gracilis*.

*Jacksonii*.

*lutea*.

*Nidpathii*.

*repandens*.

*stricta* (*fastigiata*). Irish Y.

*variegata*.

*Washingtoni*.

*T. BREVIFOLIA*. Western Y.; B. C. to Calif. and Mont.

*T. canadensis*. Canada Y.; Newf. to Va. and Iowa.

*T. c. stricta*.

*T. cuspidata*. Japanese Y.; Japan, Korea.

#### Varieties of *Taxus cuspidata*

*Andersonii*.

*minima*.

*aurescens*.

*nana*.

*columnaris*.

*nigra*.

*densa*.

*ovata*.

*fastigiata*.

*pyramidalis*.

*luteo-baccata*.

*Thayerae*.

*T. media* (*T. cuspidata* × *baccata*).

*T. m. Hatfieldii*.

*T. m. Hicksii*. Hicks Y.

*T. m. McBethii*.

*T. m. Vermeulen*.

*T. m. Wellesleyana*.

TEUCRIUM, Labiatae. Germander. Prostrate shrubs adapted to the rock garden and for use as low edgings. They bear masses of rosy-lavender flowers in summer [5E].

*T. Chamaedrys*. Eu., W. Asia (Jn.-S.).

*T. montanum*. Eu., W. Asia (Jy.-Au.).

THUJA, Pinaceae. Arborvitae. A group of handsome evergreen trees and shrubs that includes many modified, dwarf and odd forms. They thrive in almost any soil and are frequently used in foundation plantings. *T. orientalis* is tender in exposed positions. *T. plicata* remains green throughout the winter; the other arborvitae turn brown [9D, 9E, nursery].

*T. koraiensis*. Korean A.; Korea.

*T. occidentalis*. American A.; N. S. to N. C. and Ill.

Varieties and clones of *Thuja occidentalis*

<i>alba.</i>	<i>hudsonica.</i>
<i>aureo-spicata.</i>	"Little Gem."
<i>aureo-variegata.</i>	<i>lutea.</i>
<i>Batemannii.</i>	<i>lutescens.</i>
<i>Bodmeri.</i>	<i>nana.</i>
<i>Boothii.</i>	<i>Ohlendorffi.</i>
"Columbia."	<i>pendula.</i>
<i>conica densa.</i>	<i>pulcherrima.</i>
<i>Douglasii pyramidalis.</i>	<i>pumila.</i>
<i>Ellwangeriana.</i>	<i>recurvata.</i>
<i>E. aurea.</i>	<i>Reidii.</i>
<i>fastigiata.</i>	<i>robusta.</i>
<i>filiformis.</i>	<i>Rosenthalii.</i>
<i>globosa.</i>	<i>spiralis.</i>
<i>Hoopesii.</i>	<i>Vervaeneana.</i>
<i>Hoveyi.</i>	

T. ORIENTALIS. Oriental A.; N. and W. China, Korea.

T. O. AUREA.

T. O. BEVERLEYENSIS.

T. O. DECUSSATA.

T. o. "Kallay's Golden."

T. O. STRICTA.

T. O. TEXANA GLAUCA.

*T. plicata.* Giant A.; Alaska to Calif. and Mont.

*T. p. atrovirens.*

*T. p. Hillieri.*

*T. Standishii.* Japanese A.; Japan.

THUJOPSIS, Pinaceae. Coniferous evergreen shrub with flattened branchlets and broad scale-like leaves [nursery].

*T. dolobrata.* Hiba Arborvitae; C. Japan.

THYMUS, Labiatae. Thyme. Aromatic, attractive, low-growing, rock-garden plants, many of which are excellent for plant-

ing between stepping-stones and in other well drained sunny positions [5E].

*T. glaber.* Eu.

*T. Serpyllum.* Mother-of-Thyme; Eu., W. Asia, N. Afr.

*T. S. albus.*

*T. S. aureus.*

*T. S. coccineus.*

*T. S. lanuginosus.*

*T. S. montanus.*

*T. S. pulchellus.*

*T. S. transylvanicus.*

*T. vulgaris.* Common T.; S. Eu.

TILIA, Tiliaceae. Linden. Large spreading stately trees suitable for planting as specimens and in avenues. They have ornamental heart-shaped leaves and fragrant flowers that attract honey-bees in June. Most of the lindens lose their leaves early [6E, nursery].

*T. americana (T. glabra).* American L.; Can. to Ala. and Tex.

*T. amurensis.* Manch., Korea.

*T. cordata.* Small-leaved European L.; Eu.

*T. dasystyla.* Cauc., W. Asia.

*T. euchlora (T. cordata? x dasystyla).* Crimean L.

*T. Henryana.* C. China.

*T. petiolaris.* Pendent Silver L.; S.E. Eu.?

*T. platyphyllos.* Large-leaved L.; Eu.

*T. p. laciniata.*

*T. tomentosa.* Silver L.; S.E. Eu., W. Asia.

*T. Tuan.* C. China.

TORREYA, Taxaceae. Torreya. A rare evergreen tree of modest size, similar to the yew but distinguished from it by its more rigid and sharply pointed leaves [5E].

*T. nucifera.* Japanese T.; Japan.

TRIPTERYGIUM, Celastraceae. A scandent shrub with large leaves similar to those of *Celastrus*. Creamy white flowers are borne in large hydrangea-like panicles and are followed by showy greenish-white three-winged fruits [nursery].

*T. Regelii*. Manch., Korea, Japan (Jn.-Jy.).

TSUGA, Pinaceae. Hemlock. Handsome coniferous evergreens, usually pyramidal when young. They grow best when protected from strong winds and when planted in fairly moist soil [6H, nursery].

*T. canadensis*. Common H.; N. S. to Ga. and Ala.

*T. c. atrovirens*.

*T. c. densifolia*. Redding H.

*T. c. Fremdi*.

*T. c. gracilis*.

*T. c. Hicksii*.

*T. c. nana*.

*T. c. pendula*.

*T. caroliniana*. Carolina H.; W. Va. to Ga.

*T. diversifolia*. Japanese H.; Japan.

*T. Sieboldii*. Japan.

ULMUS, Ulmaceae. Elm. Medium and tall trees that will grow in a wide variety of soils, but best where the soil is reasonably moist. *U. americana* is most commonly used. It is a noble tree for providing shade and for avenue planting. The small-leaved *U. parvifolia* gives a pleasing effect and deserves a greater popularity in this region [6D, 9D, nursery].

*U. americana*. White E.; Newf. to Fla. to Rocky Mts.

*U. crassifolia*. Cedar E.; Miss. to Ark. and Tex.

*U. fulva*. Slippery E.; Que. to Fla. to Dak. and Tex.

*U. hollandica* (*U. glabra* x *carpinifolia*). Dutch E.

*U. parvifolia*. Chinese E.; China, Korea, and Japan.

*U. procera*. English E.; Eng., W. and S. Eu.

*U. pumila pilosa*.\*

*U. serotina*. Red E.; Ky. to Ala. and Ga.

VACCINIUM, Ericaceae. A genus of densely branched shrubs including several dwarfs. They grow well in acid soils in partial shade or in full sun. The delicate bell-shaped flowers are followed by juicy berries that are edible in many species. Many improved forms are now being grown commercially, especially of *V. corymbosum*. The evergreen *V. Vitis-idaea* makes a very dwarf creeping shrub with bluish bells and later dark red berries [5D, nursery].

*V. arboreum*. Farkleberry; Va. to Fla. and Tex. (Jn.-Jy.).

*V. canadense*. Canada Blueberry; Lab. to Va. and Mo.

*V. corymbosum*. Highbush Blueberry; Me. to Fla. and La. (My.).

*V. c. albiflorum* (*V. c. amoenum*).

*V. c. glabrum* (*V. c. pallidum*).

*V. CRASSIFOLIUM*. N. C. to Ga.

*V. erythrocarpum*. Va. to Ga.

*V. Myrtilus*. Whortleberry; Eu., N. Asia, N.W. Amer.

*V. Oldhami* (*V. ciliatum*). Japan, Korea.

*V. OVATUM*. B. C. to Calif.

*V. Oxycoccus*. N. Eu., N. Asia, and N. N. Amer.

*V. PADIFOLIUM*. Madeira.

*V. scoparium*. Grouseberry; B. C. to Calif. and Colo.

*V. stamineum*. Deerberry; Mass. to Fla. and La. (My.-Jn.).

*V. Torreyanum* (*V. vacillans*). Mass. to Va. and Minn.

*V. Vitis-idaea*. Cowberry; Eu., N. Asia.

VIBURNUM, Caprifoliaceae. An extensively cultivated group of shrubs containing many choice garden plants. Most species produce clusters of white flowers followed by handsome red, orange, or blue-black fruits. The recently introduced *V. fragrans* is the earliest to flower and is sweetly scented. *V. Carlesii*

\* *U. pumila*, the Siberian Elm, is native in eastern Siberia, northern China, and Turkestan.



is also fragrant and early. Several species, including *V. acerifolium*, *V. fragrans*, *V. prunifolium*, *V. Sargentii*, *V. trilobum* and *V. Wrightii*, have bright-colored fall foliage; some, such as *V. rhytidophyllum*, have persistent leathery leaves [6H, 5E, nursery].

- V. acerifolium*. Dockmackie; N. B. to N. C. and Minn. (My.-Jn.).
- V. betulifolium*. C. and W. China.
- V. BUDDLEIFOLIUM*. C. China.
- V. Carlesii*. Korea (Ap.-My.).
- V. dentatum*. Arrow-wood; N. B. to Minn. and Ga. (My.-Jn.).
- V. dilatatum*. E. Asia (My.-Jn.).
- V. d. pilosum*.
- V. d. xanthocarpum*.
- V. erosum*. Japan, China.
- V. fragrans*. N. China (Ap.-My.).
- V. furcatum*. Japan.
- V. hupehense*. C. China.
- V. ichangense*. C. and W. China.
- V. Lantana*. Wayfaring-tree; Eu., W. Asia (My.-Jn.).
- V. Lentago*. Sheep-berry; Hudson Bay to Ga. and Miss. (My.-Jn.).
- V. lobophyllum*. C. and W. China.
- V. molle*. Ind. to Ky. and Mo. (Jn.).
- V. mongolicum*. E. Siber., N. China.
- V. nudum*. Smooth Withe-rod; N. Y. to Fla. and La. (Jn.-Jy.).
- V. obovatum*. Va. to Fla.
- V. Opulus*. European Cranberry-bush; Eu., N. Afr., N. Asia (My.-Jn.).
- V. O. nanum*.
- V. O. roseum*. Common Snowball (My.-Jn.).
- V. O. xanthocarpum*.
- V. orientale*. W. Asia, Cauc.
- V. prunifolium*. Black-haw; Conn. to Fla. and Tex. (Ap.-My.).
- V. pubescens*. Mass. to Va.
- V. p. Canbyi*. Del. to Pa.
- V. Rafinesquianum* (*V. affine hypomalacum*). Que. to Ga. and Ill.
- V. rhytidophyllum*. C. and W. China.

- V. Sargentii*. N.E. Asia (My.-Jn.).
- V. S. calvescens*.
- V. S. flavum*.
- V. scabrellum*. Pa. to Fla. and Tex.
- V. schensianum*. N.W. China (My.-Jn.).
- V. setigerum* (*V. theiferum*). C. and W. China (My.-Jn.).
- V. s. aurantiacum*.
- V. Sieboldii*. Japan (My.-Jn.).
- V. sympodiale*. China.
- V. tomentosum*. Japan, China (My.-Jn.).
- V. t. sterile*. Japanese Snowball.
- V. trilobum*. Cranberry-bush; N. N. Amer. (My.-Jy.).
- V. urceolatum*. Japan (My.-Jn.).
- V. Veitchii*. C. China (My.-Jn.).
- V. Wrightii*. Japan (My.-Jn.).
- V. W. Hessei*. Japan.

VINCA, Apocynaceae. Periwinkle. A low-spreading evergreen that serves well as a ground-cover in sun or partial shade in ordinary soil. In spring it bears attractive violet-blue flowers [5E].

- V. minor*. Small P.; Eu., and W. Asia.
- V. m. rosea plena*.

VITEX, Verbenaceae. Ornamental aromatic shrubs with erect racemes of pale violet flowers in summer. The tips of the branches die back each winter, but blossoms are produced on the current year's growth. They require a warm sunny position [7F, nursery].

- V. AGNUS-CASTUS. Chaste-tree; S. Eu., W. Asia (Jn.-S.).
- V. NEGUNDO CASTANAEFOLIA. W. Asia (Jn.-S.).
- V. N. INCISA. (Jn.-S.).
- V. ROTUNDIFOLIA. Asia.

VITIS, Vitaceae. Grape. Vigorous vines that bear large leaves that sometimes vary in size and shape on the same plant. The

leaves become highly colored in autumn. They are often skeletonized by Japanese beetles, therefore these vines cannot be recommended where beetles are prevalent [nursery].

- V. arizonica*. Canyon G.; Calif. to Tex. and Mex.
- V. betulifolia*. C. and W. China.
- V. Davidi*. China.
- V. flexuosa*. Japan, Korea, China.
- V. Labrusca*. Fox G.; N. Eng. to Ga. and Ind.
- V. Longii*. Bush G.; Okla. to N. Mex. and Tex.
- V. Piasezkii Pagnuccii*. C. China.
- V. riparia syrticola* (*V. vulpina* s.). Mich. to N. Y. and Ind.
- V. rotundifolia*. Muscadine; Mo., Del., Fla., and Mex.
- V. rupestris*. Sand G.; Pa. to Okla. and Tex.
- V. Thunbergii adstricta*.\*
- V. T. lobata*.
- V. vulpina* (*V. cordifolia*). Frost G.; Pa. to Fla. and Tex.

WEIGELA, Caprifoliaceae. Useful flowering shrubs with arching branches and flowers that range in color from white through pink to red. They do not thrive in dry soils; they make their best displays in full sun where they are free from the competition of coarse-growing woody plants. Weigelas benefit from pruning immediately after the flowers begin to fade. The *W. hybrida* varieties are of complex origin and are propagated by cuttings. Many of the named hybrids closely resemble each other [7G].

- W. coraeensis*. Japan (My.-Jn.).
- W. decora*. Japan.
- W. floribunda*. Japan (My.-Jn.).
- W. f. versicolor*.
- W. florida*. N. China, Korea (My.-Jn.).
- W. f. variegata*.
- W. japonica*. Japan (My.-Jn.).

\* *V. Thunbergii* is native in China and Japan.

*W. j. sinica*. C. China.  
*W. Maximowiczii*. Japan.

### Clones of *Weigela hybrida*

Abel Carrière.	Gratissima.
Biformis.	Hendersonii.
Bristol Ruby.	Isoline.
Buisson Fleuré.	Loweii.
Caméléon.	Marc Tellier.
Descartes.	Mme. Lemoine.
Dr. Bulliard.	Montblanc.
Emile Galle.	Othello.
Eva Rathke.	Pavillon Blanc.
Féerie.	Séduction.
Floréal.	Stelzneri.
Girondia.	Styriaca.
Gracieux.	

WISTERIA, Leguminosae. *Wistaria*. Excellent vines with large pendulous trusses of blue, purple, or white flowers, desirable for covering pergolas and trellises. They are adaptable to a wide variety of soils; full sunlight is essential to flower production. Plants that refuse to flower may sometimes be encouraged to bloom by severing the outer roots in mid-June or by systematic pruning [6B, 6C, nursery].

*W. floribunda*. Japanese W.; Japan (My.-Jn.).

*W. f.* "Beni-fugi."

*W. f.* "Naga noda."

*W. f. praecox* ("Issai").

*W. f. rosea*.

*W. frutescens*. Va. to Fla. and Tex. (Jn.-Jy.).

*W. macrostachya*. Mo. to Tenn. and Tex. (Jn.-Au.).

*W. sinensis*. Chinese W.; China (My.-Jn.).

*W. s. alba*.

*W. s. plena*.

XANTHORHIZA, Ranunculaceae. Yellow-root. A spreading shrub about two feet high with small purplish-brown flowers in drooping racemes. After flowering, handsome pinnate leaves appear. This shrub makes a luxuriant growth when given a semi-shaded position [nursery].

*X. simplicissima* (*Zanthorrhiza apiifolia*). N. Y. to Fla. and Ky.

YUCCA, Liliaceae. Yucca. Plants of tropical appearance that have sword-like leaves arranged in dense rosettes. Their tall branching stalks bear white flowers which are very ornamental. In a well drained soil they thrive and can withstand an appreciable amount of dryness [5E, nursery].

*Y. filamentosa*. Adam's Needle; S. C. to Miss. and Fla. (Jy.-Au.).

*Y. f. variegata*.

*Y. glauca*. S. D. to N. Mex. (Jy.-Au.).

ZANTHOXYLUM, Rutaceae. Prickly aromatic shrubs with handsome pinnate leaves and glossy black seeds. They bear flat inflorescences of many small white blossoms [6E, nursery].

*Z. schinifolium*. E. China, Korea, Japan.

*Z. setosum*. China.

*Z. simulans*. N. and C. China.

ZELKOVA, Ulmaceae. A graceful tree with ascending wide-spreading branches and a smooth-barked trunk; allied to the elms [1G].

*Z. serrata*. Japan.

ZENOBIA, Ericaceae. A shrub that prefers acid soil and when favored by a sheltered position bears beautiful lily-of-the-valley-like flowers [nursery].

*Z. PULVERULENTA*. N. C. to Fla. (My.-Jn.).

*Z. P. NUDA*.

ZIZYPHUS, Rhamnaceae. A spiny shrub that requires a sheltered position in this region. Not recommended for general planting in the New York area [nursery].

Z. JUJUBA. Common Jujube; S.E. Eu. to China.



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**CULTURE AND OUTDOOR DISPLAY** of large collections of annuals, perennials, rock-garden plants, and special flowers, besides the hardy trees and shrubs listed in this booklet.

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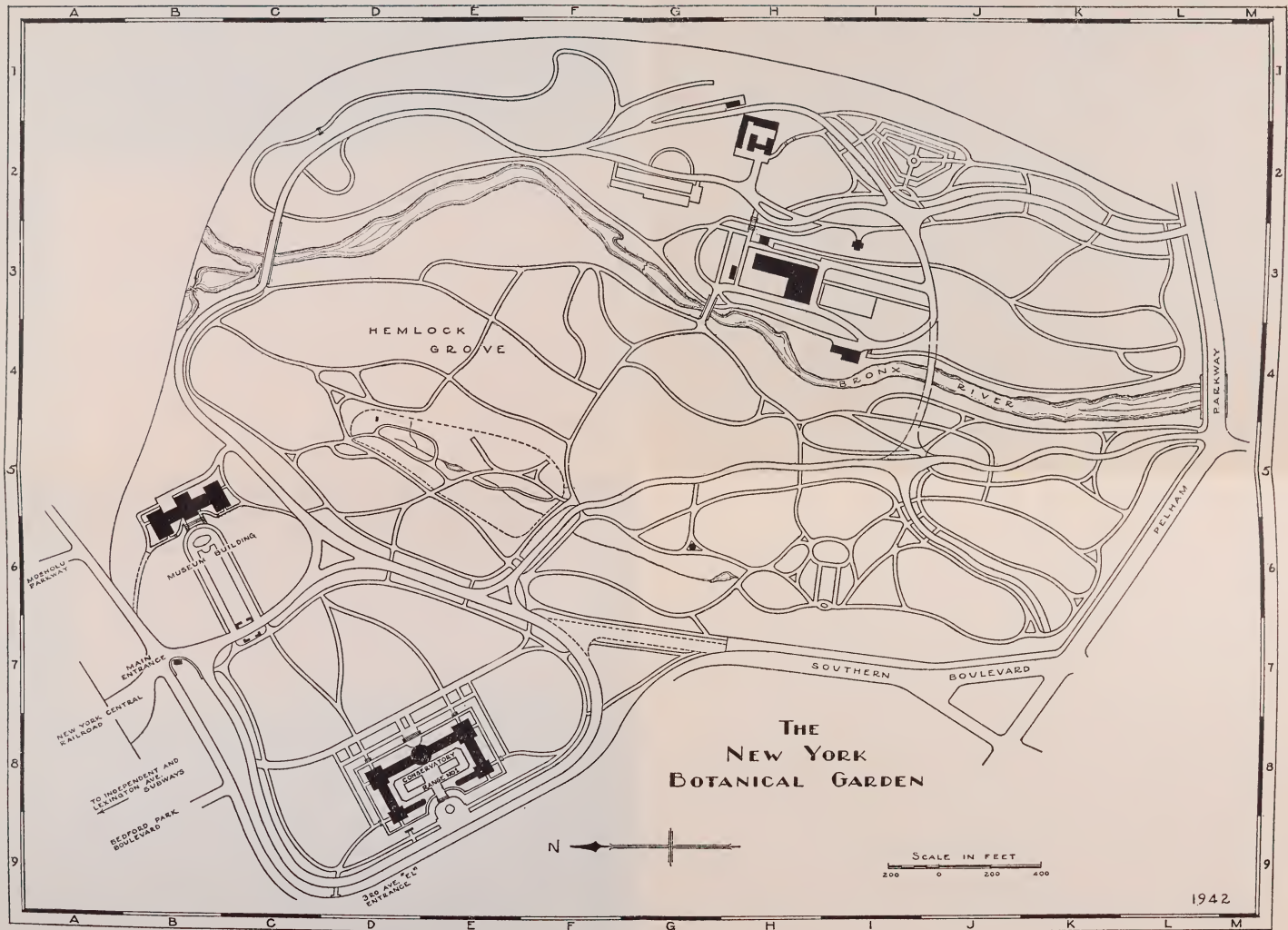
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**BY INDEPENDENT SUBWAY:** Take a C, CC, or D train to Bedford Park Blvd., leave from the rear (the southern) end of the train, and walk straight east along Bedford Park Blvd. to the Garden.

**BY THE IRT LINE:** Take the Third Avenue Elevated either to the Bronx Park or the 200th Street station. Or, take the East or West Side subway to Third Avenue and change there to the Elevated. *Do not try to take the subway all the way, unless visiting the Rose Garden.*

**BY SURFACE CAR:** Take the Webster Avenue line to Bedford Park Blvd.

**BY TRAIN:** Take the New York Central to the Botanical Garden station.

**BY AUTOMOBILE:** Drive up the Grand Concourse to Bedford Park Blvd. and turn east; or drive down Bronx River Parkway to the end and turn west. There is ample parking space for automobiles on the grounds.

