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Bulletin No. 30: Native Shrubs for Landscaping

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Native Shrubs for Landscaping

The Connecticut College Arboretum

New London, Connecticut



Shadbush



NATIVE SHRUBS FOR LANDSCAPING

SALLY L. TAYLOR
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WILLIAM A. NIERING

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THE CONNECTICUT COLLEGE ARBORETUM

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FOREWORD

Why a native shrub bulletin? There are several reasons. Few people realize how many beautiful native shrubs exist in the surrounding forests, meadows and wetlands. They can provide fragrant, showy flowers, spectacular autumn colors and excellent fruit for attracting birds. The shrubs are also quite resistant to most insects and diseases which means relatively low maintenance. Among these plants you can find a wide variety of shapes and sizes: low, medium and tall shrubs, those that grow in clumps and others that are clonal, forming a dense mass planting.

Many of the landscape shrubs currently in use are exotic species from Europe or Asia. It is probably worth noting that a number of such introduced plants, such as Oriental Bittersweet, Autumn Olive and Multiflora Rose, have escaped cultivation and become serious threats to native species and their habitats. This bulletin is aimed at introducing our natives as an untapped asset for landscaping. Natives can be combined with introduced shrubs in traditional ways or featured in an energy conservation strategy to decrease the size of one's lawn, as explained in our earlier bulletin, *Energy Conservation on the Home Grounds: The Role of Naturalistic Landscaping*. Another rationale has been developed by the National Wildlife Federation, which advocates creating a mini-wildlife landscape on one's property by using extensive shrub plantings.

Finally, as we continue to alter the natural landscapes around us, these attractive native shrubs are beginning to disappear. By buying propagated, not wild-collected, plants for use in landscaping we can help to preserve this rich gene pool for future generations. Although not all the plants we feature are readily purchased at local nurseries, public demand will favor their future availability. The Arboretum is currently working closely with Prides Corner Farms, a wholesale nursery in eastern Connecticut that is offering more and more native shrubs each year. We hope this bulletin will further stimulate the appreciation, propagation and conservation of our native plant heritage.

William A. Niering

William A. Niering,
Director



Native shrubs for water's edge or wetlands.

INTRODUCTION

For many years the Connecticut Arboretum has promoted the use of native shrubs in landscape design. The Arboretum's woody plant collection and our two naturalistic landscape demonstration areas established in the early 1950s all feature native shrubs. These woody species are hardy and relatively free of insect and disease problems and are especially well adapted to the climate and various soil conditions of the Northeast. As indicated in the Foreword, there is a need to maintain natural diversity in a world where species are becoming extinct at an ever increasing rate.

With some knowledge of the cultural requirements and growth habits of our native shrubs you can create a low maintenance all-season planting that will harmonize with your landscape setting. Among the natives there are plants with a diversity of attributes colorful textures of leaf and bark, spectacular floral displays, brilliant fall color, striking winter silhouettes and interesting fruits with high wildlife value. This guide is written with the suburban and rural homeowner in mind, but the plants and their landscape uses are equally suitable for commercial and public grounds. While the plants we describe are most suitable for the Northeast and mid-Atlantic states, many are hardy over a broader range. Further information concerning these plants can be found in the selected references at the end of this bulletin. We anticipate that the Arboretum Collections will also provide a firsthand opportunity to see how really beautiful many of our native shrubs are in a naturalistic landscape.

BASIC LANDSCAPE DESIGN PRINCIPLES

Native shrubs can blend beautifully with introduced woody plants that you may also wish to have in your landscape plan. Arboretum Bulletin No. 24, *Garden Guide to Woody Plants*, gives an annotated list of both introduced and native trees, shrubs and ground covers for landscaping. It is most important to know the site requirements of the plants you plan to use as well as how to mass the plants while visualizing how they will look when mature. Expansion of these ideas should help in making your use of native plants a success.

Site Requirements. Our plant descriptions indicate where each species grows best in nature and the kind of site each prefers, i.e. dry or wet and open or shaded situations. Closely matching the site requirements in nature to sites on your home grounds will help to assure the development of beautiful specimens.

Arrangement of Plants. Mass plantings separated by open areas are much more pleasing than randomly spotting shrubs here and there. Border plantings establish a framework for any good landscape design. Group several plants of the same kind together in order to make a strong visual statement. In shrub borders a mixture of evergreen and deciduous forms of varying heights, the taller growing species in the back and the smaller toward the front, will result in a pleasing plan.



Native shrubs for shaded or partially shaded sites.

Visualizing the Mature Planting. There is a tendency to plant material too close together, to give the feeling of an instant mature landscape. If you are prepared to move plants to avoid overcrowding, this is fine, but if you wish to make a permanent planting plan, leave plenty of space between plants allowing for their mature size. Obviously, tall shrubs should not be planted in front of windows where the view will be blocked. Try to visualize what the planting will look like two decades from now. Will you like it? Will an important vista be cut off or will the plants be too crowded to show their distinctive landscape attributes? By planning ahead you will enjoy your landscape for many years.

Naturalistic Landscaping. A very naturalistic landscape setting can be developed around your home with native species as outlined in an earlier Arboretum bulletin, No. 21 *Energy Conservation on the Home Grounds—The Role of Naturalistic Landscaping*. If there is "unaltered" natural vegetation on your grounds, you have an excellent opportunity to favor attractive native shrubs that have been planted by the birds or the wind.

Plate 28 shows one of the Arboretum's Naturalistic Landscape Demonstration Areas after more than 15 years (photo from 1967) with the striking red fall color of Highbush Blueberry. Now, after more than three decades, the Blueberry, Huckleberry, Red Cedar, Sumac and other species allowed to flourish at the site are still very attractive. A tastefully designed naturalistic landscape around a suburban home is shown in Plate 16. Note the use of low ground covers around natural rock outcrops.

Many of the native species thrive best in open or semi-open sites where they get plenty of light. Therefore, some judicious clearing may be needed to accentuate or embellish this natural landscape near your home. The wildlife potential of such manipulation can further enhance your home grounds and preserve these beautiful plants for many decades.



Native shrubs for dry, open, sunny sites.

HOW TO OBTAIN NATIVE SHRUBS

Although not all of our favorite native shrubs are readily available from nurseries, we hope this bulletin will help to generate more demand and stimulate their propagation. Nursery grown plants are usually sold in containers so they can be successfully transplanted whenever the ground is not frozen. A Nursery Source List is included in this bulletin which lists retail and wholesale nurseries that can supply many of these shrubs.

We do not recommend digging from the wild unless the plants are threatened by land alteration and you have the permission of the owner. If plants are taken from the wild one must be careful not to remove the last few individuals of a given species which may locally impoverish the natural population. Open or semi-open post-agricultural areas are often the easiest places to dig plants. Cut a circle around the small shrub 6 to 8 inches from the stem with the back of the shovel. By digging outside the cut out area one can usually get a good intact root ball. Tying up the ball of soil and roots with burlap or plastic prior to moving will further assure survival. On very large specimens, root pruning a year prior to digging is recommended. This involves pre-cutting the roots with a shovel or spade around the plant so the roots will be more concentrated near the stems when dug up at a later time.

PLANTING AND CARE

Digging The Hole and Planting. All shrubs selected for landscaping should have vigorous root systems and should be planted in a hole about twice as large as the root ball. When planting container stock, be sure to loosen the soil ball and free the roots, then prune off any roots which have touched the container wall and begun to encircle the root mass. This is important because it helps prevent circular growing roots from girdling the plant as it gets larger. Partially fill the bottom of the hole with a mixture of good topsoil, peat moss or

composted leaves and composted cow manure in approximately equal proportions. Soil amended in this way can also be used to fill around the root ball and create a small circular berm around the shrub to hold water. Be sure that the crown of the plant, the point where the stem emerged from the soil in the original location or container, is at or slightly above the surrounding ground level. One of the most common reasons for the death or slow post-transplant recovery is planting too deeply.

Watering. It is critical to water the shrub well after planting to settle the soil around the fine rootlets, where nutrient and water uptake from the soil occurs. Then water deeply once a week during the first growing season if rains are inadequate.

Mulching. Mulching slows water loss from the soil surface, adds organic matter and helps to control weed growth. Mulch with wood chips, bark, or leaves to several inches in depth around the plant stems. In time, the plant will create its own mulch as leaves fall, and these should be left in place.

Fertilizing. Never fertilize at planting time, except for the compost or manure added to the planting hole. Most of these native shrubs will continue to grow satisfactorily without the addition of commercial fertilizers. However, if you wish to apply fertilizer, use granular 5-10-5 (5% nitrogen, 10% phosphorus, 5% potassium) in the spring, scattered around the stems and raked in gently. This can be done even when there is some snow cover, because the fertilizer slowly dissolves and settles around the roots. There are specially formulated fertilizers available for evergreens which release soil nutrients at lower soil pH for such plants as Rhododendron and Mountain Laurel. Remember that a high nitrogen fertilizer (with a high first number of the three given) will induce excessive shoot and leaf growth, often at the expense of flowers. When using fertilizer, remember that less is often better. Best of all, use leaf compost or manure.

Pruning. Pruning will not harm any of the shrubs described here. There is no mystery about when to prune if one considers the way woody plants grow and flower. In most cases, terminal buds produce an inhibitory substance (hormone) which prevents lower, lateral buds from growing. Pruning stimulates new stem and leaf growth below cuts by removing the source of inhibition. By pruning before growth begins in the spring, flower buds may be removed if they were already formed the previous season. So, in general, prune spring shrubs directly after flowering; those which flower later may be pruned at any time between fall and spring. Late summer pruning may induce new growth which is susceptible to frost damage in the fall. Occurrence of frost damage depends on how late pruning is done and how early the first frost occurs. In any case, frost damage to new growth is more unsightly than fatal.

Growth Forms. Most shrubs are either "cloners" or "clumpers". Cloners such as Bayberry, Lowbush Blueberry and Gray Dogwood, spread by horizontal underground stems or roots. These underground parts produce new shoots and the individual shrubs expand the area they occupy. This method of growth is also referred to as stoloniferous, thicket-forming or suckering. Since each stem is

(or was) part of a single individual and is thus genetically identical, ecologists refer to such a multi-stemmed plant as a clone. Plants which expand in this manner are controlled most easily by regular cutting or mowing around the patch. Other shrubs—clumpers—stay more or less in one place even when multi-stemmed. Arrowwood, Pinxter Flower Azalea, Highbush Blueberry and Mountain Laurel are plants of this type. An individual shrub may slowly expand a little by sending up more and more shoots from its crown, but horizontal underground “runners” do not occur.

USING THIS BULLETIN

The native shrubs chosen as featured plants in this bulletin are those which we know best and prize above others. Following these expanded descriptions is a section, “Other Native Shrubs”, which briefly details additional attractive and useful shrubs. Inclusion in the “Other Shrubs” listing usually means we are less familiar with the plant or that it may be rather demanding in its cultural requirements. We do not wish to imply that these shrubs are in any way undesirable.

The sections “Landscape Uses...” and “Selected Shrubs in Brief” are a summary list and table, respectively, which are designed to make selection of native shrubs even easier.

An insert of color photographs forms the center pages of this publication. Above each individual color plate is the common name of the shrub pictured and the page on which its description is located. For shrubs which are pictured, a plate number is given in the descriptive text after the first mention of the species name. The index uses both common and scientific names of shrubs and includes both the page where the description is located and the plate number for shrubs with photographs.

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NATIVE SHRUB DESCRIPTIONS

AZALEA

There are several beautiful native deciduous azaleas which rival the showy, introduced types common in most nurseries. Pinxter Flower, Pink-shell, Flame and Swamp Azalea are the hardiest, largest and best of the natives for use in New England landscapes. Native azaleas are most effective as a splash or mass of color at the edge of a wooded area, or in a naturalistic mass planting. Although they may reach 8 - 10 feet when mature, some of these can also be incorporated into foundation plantings where tall shrubs are needed.

Their cultural requirements are similar to the evergreen Rhododendrons: acid soils rich in organic matter, peat moss or compost mixed with the mineral soil. After planting, mulch the shrubs with a 4 inch layer of bark, woodchips or composted leaves.

Azaleas bloom best in light shade and do not need protection from winter winds. The flowering season for azaleas extends from early May to late July. The Nancy Moss Fine Garden, north of the Arboretum's Laurel Walk, displays mass plantings of many native azaleas, including the shrubs described here.

Pinxter Flower, *Rhododendron periclymenoides*, formerly *R. nudiflorum* (Plate 1), blooms in early May, producing clusters of fragrant, tubular pink flowers as the leaves unfold. Five slender, deeper pink stamens project well beyond the floral tube, creating a delicate wispy effect. Growing to a height of 6 - 8 feet, it can be used in foundation or mass plantings. It is the most common pink azalea in the oak-dominated forests of southern New England. The equally attractive Rose-shell Azalea, *R. prinophyllum* (front cover), is sweet scented and usually a darker pink.

Pink-shell Azalea, *R. vaseyi*, blooms in middle to late May, before the leaves appear. Blossom clusters at the branch tips are light pink, with individual flowers larger than those of Pinxter Flower. Due to the sprawling growth pattern, this large shrub is most suitable for mass plantings at the edge of a wooded area. A white cultivar, forma *album*, is less commonly available from nurseries.

Flame Azalea, *R. calendulaceum* (Plate 3), flowers in late May to early June, after the leaves unfold. Its flowers are a striking yellow to reddish-orange. Native to the southern Appalachians, it forms spectacular spring flowering displays on the grassy mountain balds. Flame Azalea is one of the parents of the famous Ghent Hybrids.

Swamp Azalea, *R. viscosum* (Plate 5), bears white clusters of fragrant flowers which appear in midsummer when few shrubs are in bloom. The foliage is shiny, with bright green leaves smaller than the pink-flowering azaleas. Typically found in our Red Maple swamps, it is sometimes called Clammy Azalea because of its sticky floral parts. This is an ideal shrub to plant in wet or poorly drained sites.

BAYBERRY

Bayberry, *Myrica pensylvanica* (Plate 23), is a deciduous shrub known to the earliest American settlers as a source of candle wax from the waxy covering on the tiny grayish-white berries clustered tightly along the stems of the female plants. Both stems and leaves are aromatic when crushed. Plants spread rapidly by underground stems through poor, acid, sandy soil, to form sizeable thickets 5 - 10 feet in height.

This is an ideal plant for sunny, coastal sites. It can also help stabilize dry slopes prone to erosion. Nodules form on Bayberry roots which contain bacteria capable of extracting nitrogen from the soil atmosphere. The plant makes its own fertilizer and slowly increases surrounding soil fertility, as legumes do.

Bayberry cannot tolerate shading. It does best in open sites and can be rejuvenated by cutting it back hard, which stimulates more underground lateral stem growth. Stems root readily at the nodes where new leaves form, and new plants can be established by pinning down a prostrate stem node tightly against the soil—a process called simple layering.

This shrub is an important wildlife plant. Chestnut-sided warblers nest in bayberry thickets, and grouse and pheasant are attracted to the fruits.

A close relative of Bayberry is Sweet Fern, *Comptonia peregrina*, a low, spreading shrub often used in highway bank plantings for erosion control. It too is aromatic and is valuable for sandy, infertile sites. Sweet Fern is one of the first shrubs to naturally seed in on subsoil or exposed, disturbed sites.

BEACH PLUM

Beach Plum, *Prunus maritima*, (Plate 6), is a shrub of the New England coastal areas which is of special interest for its edible fruit. It grows well in sandy, dry, windswept sites, and produces a profusion of white flowers in early May. In August, a showy, purplish, edible plum can be harvested for making jelly and Barnacle Soup. Beach Plum grows to about 6 feet in height and makes an excellent massed seaside planting or a hedge to prevent erosion because it can tolerate salt spray. Since transplanting from the wild is not often successful, nursery grown plants are recommended. Beach Plum requires cross-pollination to insure fruit production so it is necessary to have more than one plant if plums are desired. The Rose Family collection south of the Laurel Walk features several mature specimens.

A closely related shrub, Sand Cherry, *Prunus besseyi*, is native to the sandy soil areas of the upper Midwest. Like Beach Plum, it bears small, white flowers in May, followed by small, dark purple fruits which attract birds. Hansen's Bush Cherry is a form of this species sold in the nursery trade, but since it is propagated from seed, the plants are somewhat variable. It is also useful as a hedge material.

After making Beach Plum jelly with the juice, the pulp can be used to make Barnacle Soup as follows: 1/4 cup barley, 3 cups water, 1 cup beach plum pulp, 1 cup sugar, 1/4 teaspoon cinnamon. Cook the barley, then add the remaining ingredients. Cook until thick and clear.

BLUEBERRY

Highbush Blueberry, *Vaccinium corymbosum*, is the aristocrat of our native shrubs. It has broad seasonal interest, from the brilliant long persisting red foliage to red winter twigs to the small, bell-like white flowers in spring and the blue fruits of summer. These characteristics combine to make Highbush Blueberry an outstanding shrub for a border, or as a specimen placed where the twisting, angled branching pattern creates the appearance of a large bonsai. This attractive effect, which results from its natural growth form, can be emphasized with judicious pruning. Although this blueberry thrives in acid muck or peaty wetland soils, it can also be grown successfully in dry, open sites.

Old 10-foot specimens with a "bonsai" appearance are featured in the Naturalistic Landscape Demonstration area on the Matthies Tract of the Arboretum (Plate 28). Other examples can be seen just north of the Nancy Moss Fine Native Azalea Garden. Highbush Blueberry has also been effectively used as part of mass plantings around several Connecticut College buildings.

Lowbush Blueberry, *V. angustifolium* (Plate 32), is becoming recognized by landscape architects as an excellent ground cover, and is now available from specialty nurseries. Shade tolerant, it is low-growing (1/2 - 2 feet), and spreads by underground stems. The white, bell-like flowers are not conspicuous, but the fruits in late summer are attractive and delicious to eat. This plant, which has been of economic importance to New England blueberry growers, is available as selected cultivars. It thrives best in poor, acid, peaty soil. Experiment with it by trying several locations until you find the best spot for it.

Another species of **Lowbush Blueberry**, *V. vacillans*, is also a common woodland plant in southern New England but has not been used very often in landscaping. This Blueberry is larger than the previous species, is also clonal, and is often confused with Black Huckleberry, *Gaylussacia baccata* (Plate 27). Huckleberry can be identified by its red flowers, by the tiny resin dots present on its leaves and twigs and by the glossy black fruit with ten large seeds. Blueberries have no resin dots and fruits are dark blue with a whitish bloom and numerous small seeds.

BOX HUCKLEBERRY

Box Huckleberry, *Gaylussacia brachycera* (Plate 31), is a low-growing (to 8 inches) evergreen member of the Heath Family which makes an excellent ground cover in partial shade. Its leaves are small, shiny, oval, and finely toothed. Small, pinkish, bell-flowers and black fruit resemble those of its relative, the common woodland shrub Black Huckleberry, *Gaylussacia baccata* (Plate 27) which is prized for its spectacular red autumn color in open, sunny sites.

Box Huckleberry self-propagates by spreading underground stems. In the wild, it occasionally forms large patches in the central and southeastern states. One such clone in Pennsylvania covers about 300 acres, and is believed to be

over 10,000 years old. This diminutive plant requires a well-drained, acid soil, high in organic matter. It provides excellent food and cover for ground-feeding birds like the towhee and thrush. The low-spreading growth habit and evergreen foliage make this one of the best ground covers. It can be mowed occasionally to keep the stems short and the foliage dense.

DOGWOOD

The shrubby Dogwoods are a group of related plants which are excellent for massing as thickets or screens. They produce showy clusters of creamy white flowers and abundant fruits which attract a diversity of wildlife including such birds as the cardinal, catbird, goldfinch, flicker, cedar waxwing, wood thrush, robin, turkey, ruffed grouse and bobwhite. These hardy shrubs serve as excellent background plantings or borders along property lines. The red-stemmed Dogwoods are especially effective in winter against a snowy backdrop. They thrive in moist or wet soils, and reach 6 - 10 feet in height where they are left to grow naturally.

Red-osier Dogwood, *Cornus sericea*, with its smooth, bright red branches in winter, is the most showy of the native red-stemmed forms. In time, an expanding thicket of vertical stems arises from a single plant. Cutting the oldest stems back to the ground occasionally will assure a continuous supply of young red twigs. It produces interesting white to pale blue fruits.

Silky Dogwood, *C. amomum* (Plate 22), is found most commonly in wetlands, especially along streams. It has slightly hairy reddish twigs, and is somewhat less showy than the Red-osier. It is very hardy in both wet and dry sites, and produces abundant blue fruit.

Gray Dogwood, *C. racemosa*, has clusters of white fruits on red stalks. This gray-stemmed shrub tolerates dry sites, but can also grow in wet areas. It is stoloniferous, and capable of forming sizeable patches.

FOTHERGILLA

The **Fothergillas**, or Witch-Alders, are very attractive southern shrubs hardy in southern New England. They deserve to be used more often, especially the most striking, *Fothergilla monticola* (Plate 17). It has distinctive white honey-scented floral clusters that appear in mid-May. The unusual brush-like appearance of the flowers results from tiny clusters of petal-less flowers. Some forms of this species are spreading in habit, others more upright and pyramidal reaching 6-8 feet in height. The Dwarf Fothergilla, *F. gardenii*, has slightly smaller flowers, and grows to only 3 feet in height.

The Fothergilla leaf is a small version of the common Witch Hazel *Hamamelis virginiana*, to which it is related. The reddish-orange fall foliage, which requires full sunlight for optimum brilliance, is another outstanding landscape quality. Seasonally wet soil does not harm Fothergillas and they are ideal for plantings with evergreens. Designs incorporating a

flowering ground cover like Sweet Woodruff (*Galium odoratum*) are especially attractive. Every gardener should consider planting one or more Fothergilla.

INKBERRY

The smooth, shiny evergreen leaves of **Inkberry**, *Ilex glabra* (Plate 29), make an excellent mass background planting behind colorful azaleas or other deciduous shrubs. When the inconspicuous male and female flowers are open, the plants will be alive with the hum of myriad tiny flying insect visitors. Small, glossy black fruits form at the juncture between leaf and stem on female plants, and persist long into the winter. Since hollies have male and female flowers on separate plants, it is recommended that one male plant be located within 50 feet of up to half a dozen female plants. This multistem holly has an upright habit and can reach 6-10 feet in height.

With periodic pruning, Inkberry can be maintained as an attractive bushy evergreen. The cultivar 'Compacta' is a more dense and lower growing form than the wild species. A white-fruited cultivar, 'Ivory Queen', is also available in the nursery trade.

Inkberry does well in poorly drained shady sites, since its natural habitat is in wet woods, bogs and swamps from Nova Scotia to Florida. It must have some protection from severe winds since it will burn and occasionally die back if it is too exposed. However, it recovers well from such a setback.

In the Arboretum, Inkberry can be found in the Holly collection just north of the lower end of the Laurel Walk and along Williams Street.

JUNIPER

Selected cultivars of Juniper make the best ground covers for open, dry, sunny sites, creating a dense mat which can also serve as erosion control plantings on steep banks. Two attractive cultivars of the common New England shrub, **Pasture Juniper**, *Juniperus communis*, are 'Hornibrooki' and 'Repanda' (Plate 24). The foliage of the former develops a reddish brown tinge in the winter, while the latter typically retains its green color. Both are wide-spreading plants which only grow to about 2 feet in height and make excellent ground covers. The native species *J. communis* var. *depressa*, frequently found in pastures, varies greatly in growth habit and texture and is relatively short lived. It is desirable for informal, naturalistic landscapes and should be favored in land clearing schemes since its berry-like cones are excellent wildlife food.

Other low-growing Junipers are derived from **Bar Harbor Juniper**, *J. horizontalis*, and **Rocky Mt. Juniper**, *J. scopulorum*, a commercially available western native that does well in the Northeast. Bar Harbor Juniper is a prostrate, creeping plant with an attractive blue-green color.

Spider mites occasionally attack Junipers but can be easily controlled by

spraying soapy water on infested plants. The Junipers are exceptionally cold hardy, and are widely distributed throughout the North Temperate Zone.

LEUCOTHOE

Drooping Leucothoe (Dog Hobble, Fetterbush), *Leucothoe fontanesiana*, and **Coast Leucothoe**, *L. axillaris* (Plate 12), are low broad-leaved evergreen shrubs of great value in home landscaping. The larger, Drooping Leucothoe, may be more difficult to use than Coast Leucothoe because its wide-arching branches can root at the tips, creating extensive masses. Coast Leucothoe, a smaller shrub reaching 3-4 feet high and equal width, has a tidier growth habit. Both plants have long clusters of small, white bell-like flowers in late May borne either at the stem tips or along the branch at the juncture between leaf and stem. The dark green glossy leaves are somewhat like Mountain Laurel but narrower, and the stems are reddish. These are excellent plants for informal plantings, especially as companions to Azaleas, Mountain Laurel, and small-leaved Rhododendrons. Their low stature also commends them for planting around house foundations.

Leucothoe can be pruned heavily, and removal of older stems stimulates the bright red new growth which is quite ornamental. They are tolerant of shade but also grow well in the sun. The cultivar *L. fontanesiana* 'Rainbow' has variegated leaves, and grows more slowly than the typical form.

Drooping Leucothoe grows under three large Tulip Trees along the pond trail just south of the bottom of the Laurel Walk in the Arboretum. Coast Leucothoe can be observed in a shrub border planting in the Caroline Black Botanic Garden directly east of the College entrance on Route 32. Both have been used occasionally in the campus landscape.

MOUNTAIN LAUREL

Mountain Laurel, *Kalmia latifolia* (Plates 2 & 8), the State Flower of Connecticut and Pennsylvania, is one of the most beautiful, long-lived and useful broad-leaved evergreen shrubs. From early to mid-June its deep pink, pleated buds open to whitish pink, saucer-like flowers. Arranged in rounded clusters at the ends of branches, the flowers provide a vivid contrast to the shiny deep green, elliptic leaves. Mountain Laurel grows best in acid soil, and can reach 7-15 feet high, although periodic pruning can maintain it at 4-6 feet. It tolerates full sun, but grows best in the partial shade of oak forests. In deep shade, as under hemlocks, flowering is poor and the plants eventually die out. Few insects bother Laurel, although it is occasionally attacked by a leaf spot disease which does no lasting damage. It responds beautifully to light pruning and removal of the seed capsules after flowering favors flower bud formation for next year. Specimens that outgrow their location can be rejuvenated by cutting the stems back to 6 inches above the ground, preferably in spring, which induces resprouting and formation of a new, vigorous, multistemmed plant.

In recent years, new selections and hybrids of Mountain Laurel have been developed by Richard Jaynes of Hamden, Connecticut. Cultivars with brilliant red buds, multi-hued pink flowers, glossier leaves, and smaller growth forms now exist. Some of the best are 'Quinnipiac', 'Myrtifolia', and 'Carousel'.

The Josephine Shain Memorial Garden, located just south of the Arboretum Main Entrance, features *Kalmia* cultivars. Peak flowering is in early June. This is also the best time to appreciate the Arboretum Laurel Walk, which connects the Main Entrance to the Pond.

Mountain Laurel can be used effectively as mass planting near large structures, as on the Connecticut College campus, or as a mass border planting where its flowering season is enhanced by additional small-leaved Rhododendrons. It seldom performs well in cities or areas with hot, dry, open growing conditions, but within a natural setting with acid soil and open shade, it is a wonderfully rewarding plant.

PAXISTIMA

Paxistima, *Paxistima canbyi*, is a low, compact, broad-leaved evergreen ground cover with tiny, toothed leaves. Spreading by underground stems, it is an excellent facer for taller shrubs and ground cover plant for a shrub border, especially when used with azaleas and dwarf conifers. After several growing seasons as the plant expands, the woody stems which lie along the ground can be pruned back to increase foliar density. At maturity the shrub reaches only 1 foot in height but may spread 4-5 feet. With inconspicuous flowers and fruit this is an excellent plant for finishing the edges of plantings. Paxistima requires little attention once established and it is underused considering its beauty as a miniature evergreen.

RHODODENDRON

There are three native evergreen Rhododendrons which can serve the homeowner well, if used in the right locations.

Rosebay, *Rhododendron maximum*, is the largest, with leaves 6-8 inches long. It grows and flowers best in the shade, reaching great size as an understory shrub of the Atlantic White Cedar swamps of southern New England. In early July, large clusters of deep pink buds open to form trusses of white or pinkish tubular flowers scattered over the plant. Rosebay is best used as a backdrop for other plantings in a wooded setting or on the shady side of large buildings, where it can grow freely to its natural height of 12-15 feet. Where Rosebay grows in the open in bright sun, the leaves tend to be yellowish and sparse, with the edges burned from winter sun and wind. It tolerates wet sites better than other evergreen Rhododendrons. Forma *album*, with white flowers, and forma *purpureum*, with deep pink flowers, are sometimes available. A very old planting of Rosebay can be seen along the south side of the Arboretum Laurel Walk.

Carolina Rhododendron, *R. carolinianum* (Plate 7), is a smaller version of the Rosebay, reaching only 6 feet in height. It has smaller, oval-shaped leathery leaves which are brown-scaly beneath. Producing clusters of rosy to pale pink flowers mid-May, it grows well in dry, acid woodland soil, and can tolerate a sunnier exposure than Rosebay. The cultivar 'Windbeam' is more floriferous than the species, producing tight, uniform deep pink blooms. In fact, Carolina Rhododendron can be found in the parentage of many of the low-growing, hardy hybrids produced by specialty growers. The low stature of this species makes it useful both for foundation plantings and shrub borders. Carolina Rhododendron may be seen with the Drooping Leucothoe just south of the bottom of the Laurel Walk and with Coast Leucothoe in a shrub border in the Caroline Black Botanic Garden.

Both Rosebay and Carolina Rhododendron have a pronounced leaf curl when the temperature is below freezing; the tightly rolled leaves seem to shiver along with the viewer. This is a natural mechanism which prevents water loss and leaves flatten out again when temperatures rise.

Catawba Rhododendron, *R. catawbiense*, is intermediate between the two previous species in both leaf size and final height of the shrub (12 feet) The texture and color of the leaves closely resemble Rosebay but the dark, purple-pink flower clusters are the largest of the three species described here. It grows naturally in the Smoky Mountains, creating brilliant splashes of color in the spring. Variety *album* and the cultivar 'Cunningham' are white flowering forms; numerous additional selections exist which exploit other flower color variations. An old planting of Catawba Rhododendron cultivars provides a screen in the southwest corner of the Caroline Black Botanic Garden. Much younger specimens may be found near the Nancy Moss Fine Native Azalea Garden in the Heath Family area of the Arboretum.

Evergreen Rhododendrons may be pruned by cutting some branches back after each season's growth, thus encouraging production of abundant flower clusters and a tighter, more shapely plant. When necessary, old specimens can be pruned heavily; a mature plant may be cut back to about 6-8 inches above the ground in early spring, and it will usually resurge to form a new plant. These various Rhododendrons are especially successful when planted on north-facing slopes, and mulched heavily to protect the shallow, fibrous root system. They blend well with wildflowers like Foamflower and Trillium, and small trees such as Flowering Dogwood and Redbud in any naturalistic woodland setting.

ROSE

There are two relatively similar upland native wild roses — **Virginia Rose**, *Rosa virginiana* (Plates 9& 10), and **Pasture Rose**, *R. carolina*. Growing to 3-4 feet high, both produce single, pink, highly fragrant flowers in June. The delicate compound leaves, brilliant scarlet to orange fall foliage, combined with red fruits (hips), make them excellent shrubs for naturalistic landscaping. The fruits are rich in Vitamin C and can be used for jams, or steeped to make rose

hip tea. The slightly taller (5-6 feet) **Swamp Rose**, *Rosa palustris*, resembles the two upland Roses but is adapted to wetland sites.

The native roses spread readily by underground stems and are best restricted to a given area by mowing or edging. An old patch which has become straggly can be rejuvenated by cutting down the stand in early spring; new, vigorous stems will soon appear. It is simple to establish a new stand by transplanting a small rooted stem in early spring from the edge of a wild patch. Native roses in the Arboretum grow in the Rose Family area south of the Laurel Walk near the Shadbush and Serviceberry plantings.

Years ago, the fragrant flower petals were picked and dried to make sachets, but were never used for extraction of oils for perfumes, as was done with the European roses.

The familiar Beach Rose, *R. rugosa*, frequently planted to stabilize sand dunes along the New England coast, was introduced from the Orient about 1845 and has become extensively naturalized. It grows well in dry soil with Bayberry and Beach Plum. Multiflora Rose, *Rosa multiflora*, another species from Asia which has naturalized in North America, spreads rapidly and should never be intentionally planted.

ST. JOHNSWORT

If one had to choose the best yellow-flowered native shrub for landscaping, few could compare with the shrubby **St. Johnswort**, *Hypericum prolificum* (Plate 21). It blooms for over a week in mid-summer with clustered, 1 inch yellow flowers which completely cover the shrub. The five petals of each flower are reflexed, bending back to show the many brilliant yellow stamens in the center of the flower.

The narrow, grayish-green leaves give a fine-textured appearance to this dense, round shrub. The spherical growth form and low stature (to 5 feet) make it ideal for foundations and shrub borders. Pruning needs are minimal, except for the occasional removal of dead wood. Tough and hardy, it tolerates dry, rocky soils and blooms well in full sun to partial shade.

Shrubby St. Johnswort is native to the eastern, but not coastal, U.S. and has naturalized freely in the Arboretum north of the Viburnum collection. Other attractive and hardy St. Johnsworts sometimes available from nurseries are Golden St. Johnswort, *H. frondosum*, Dense Hypericum *H. densiflorum*, and Kalm's St. Johnswort, *H. kalmianum*.

SHADBUSH

The Shads, or Serviceberries, are among the earliest flowering shrubs and small trees in southern New England. For a few days in late April, their white strap-like petals create a frothy understory in woodlands and along fence rows and roadsides. The deep red-purple edible fruits, which look like a cluster of

miniature apples, ripen in June and are so eagerly eaten by birds they disappear rapidly. These multi-stemmed shrubs develop their best brilliant orange-red fall color where they grow in full sun. The smooth, gray striped bark is especially ornamental in winter.

Shads are relatively tolerant of salt spray and are ideal for planting near the shore; they are useful in urban areas, as specimens in courtyards and near patios, and along woodland edges. Shads are featured in the Arboretum south of the Laurel Walk.

Shadbush, *Amelanchier canadensis*, (plate inside front cover), is a tall multi-stemmed shrub typical of New England old fields and thickets which normally reaches 10-15 feet in height.

Serviceberry, *A. arborea* or *A. laevis* (Plate 18), is a very similar but larger form which usually grows 25-30 feet tall. Eight species of Shad are native in the eastern United States. The hybrid Apple Serviceberry, *A. grandiflora*, is a cross between the two species described above, and is one of the best for landscaping since it has the largest flower clusters. New hybrids of Shad are becoming increasingly available from nurseries.

SHEEP LAUREL

Sheep Laurel, *Kalmia angustifolia*, is a pink-flowering miniature relative of Mountain Laurel. Also known as Lambkill, it blooms in June, with showy clusters of blossoms along the stem, not at the tips like Mountain Laurel. It is a small (to 3 feet), multistemmed, semi-evergreen, spreading shrub with narrow, light green leaves. It prefers acid soils near or in wetlands, but can also tolerate dry, open sites.

Leaves of all *Kalmia* are toxic to grazing animals, hence the common name. As early as 1750 the Swedish botanist Peter Kalm, for whom *Kalmia* is named, commented that its leaves poisoned sheep, cows, calves, oxen and horses, but "are the food of stags when snow covers the ground."

In landscaping, Sheep Laurel can best be used along woodland paths and as a ground cover for small areas. There are a number of Sheep Laurel planted in the Josephine Shain Memorial Garden just south of the Arboretum Main Entrance, including wild types and the cultivar 'Hammonasset' (Plate 4). The latter is somewhat smaller and more dense than the species with rich, bluish-rose flowers. A white-flowered form *alba* is also available from the nursery trade.

SPICEBUSH

Typical of Red Maple swamps, **Spicebush**, *Lindera benzoin* (Plate 11), is an early flowering shrub which can tolerate wetland soils with a high water table. Its flowers are tiny, clustered along bare branches before the leaves appear, creating a delicate yellow, misty appearance. The foliage has a spicy, aromatic fragrance when crushed and turns a bright yellow in the fall. Their shiny red

fruits are readily eaten by birds. This large (to 12 feet), spreading shrub can add variety and seasonal interest to a wetland landscape. Spicebush can be found in front of Buck Lodge and in many other damp, shady sites in the Arboretum.

SPIRAEA

There are two native Spiraeas which may be used in naturalistic landscaping. Their clusters of small flowers and leaves somewhat resemble their more commonly used and more showy relatives. These small (to 4 feet) shrubs are suitable to a wide range of soil types and soil moisture conditions and are frequently found in sunny old fields or in poorly drained sites. They spread by underground stems, and are very cold tolerant, ranging as far north as Newfoundland.

Meadowsweet, *Spiraea latifolia*, produces pyramidal, terminal clusters of small, white to pale pink flowers from June to August. The 1-3 inch long leaves are smooth, and coarsely toothed. Small, dry, brown fruits persist after flowering, a distinctive feature in identifying the plant in the field.

Steeplebush, *Spiraea tomentosa* (Plate 13), is characterized by spires or steeple-shaped clusters of tiny deep pink-purple flowers from July to September. The underside of the leaves is very woolly.

Both Spiraeas are well suited to the naturalistic landscape, although neither has been commonly used. These shrubs can spread clonally and will respond favorably to occasional mowing by sending up new stems and making an even denser stand.

SWEET PEPPERBUSH

The fragrance of **Sweet Pepperbush** or Summersweet, *Clethra alnifolia* (Plate 15), is one of the pleasures of a midsummer walk, especially near a wetland where this shrub thrives. Terminal candle-like spikes (3-8 inches long) of small, white flowers are followed by long clusters of small, brown seed capsules which remain on the plant over winter and make it easy to recognize year-round. The leaves tend to form terminal whorl-like clusters and are not subject to insect or mildew damage. Fall color is an attractive, clear yellow.

Sweet Pepperbush forms spreading thickets of numerous, upright stems 3-6 feet tall. This growth habit makes it useful as a filler in shrub borders and as part of massed screen plantings. It responds well to pruning, and can be readily divided by cutting away a segment of root and shoot with a spade, and replanting the piece. A typical wetland shrub, it does best in moist spots with full sun, but tolerates partial shade and somewhat drier soils. Excellent cultivars include a pink flowered form 'Rosea', and white flowered 'Paniculata', which has larger flower clusters than the wild form. As a fragrant, hardy, early August blooming shrub, this native is unique, and deserves a spot in every garden. Visitors to the Arboretum will find the eastern

shore of the Arboretum Pond dominated by Sweet Pepperbush.

Cinnamon Clethra, *C. acuminata*, a native of the southeastern U.S., is less well known but equally at home in a naturalized garden. It has beautiful bark, long clusters of fragrant, cream-colored flowers, and is tolerant of wet sites.

SWEETSHRUB

Sweetshrub, or Carolina Allspice, *Calycanthus floridus*, is a shrub associated with American gardens since Colonial times. It was especially popular during Civil War days, when it was often used with Lilac as a foundation planting near homes.

The urn-shaped flowers, which appear in late May, are reddish-brown in color and are arranged in pairs opposite one another along the stems. The foliage can be very fragrant when crushed, but not all plants have this character, so it is best to sacrifice a few leaves when purchasing the plant to be certain. It forms a dense bush with large, glossy ovate leaves which turn clear yellow in the fall.

Sweetshrub spreads by suckering, and a single plant can extend to cover a large area, in rich soil. It is an excellent choice for dense border screening, and forms a good background for azaleas, since it requires little care except for occasional pruning to renew the 6-foot stems. The choice of the colonists was a good one, because few plants tolerate some shade but also thrive in the open sun, in almost any kind of soil, and have no common insect or disease enemies. A planting can be seen in the Caroline Black Botanic Garden, and in the Landscape Demonstration Area in the Arboretum just north of the Outdoor Theatre.

VIBURNUM

A good shrub planting to attract birds should never be without several of the native Viburnums. They are outstanding wildlife plants and especially useful as the backbone of mass and border plantings. Members of the Honeysuckle Family, all flower in late May to early June, and produce flat-topped clusters of small whitish-green flowers at the ends of the branches. Most of these opposite-leaved shrubs are intolerant of drought and therefore not suitable for situations like seaside plantings, where moisture drains rapidly from the soil.

The familiar **Arrowwood**, *Viburnum recognitum*, bears flat clusters of tiny white flowers in May, followed by blue berries in August. The leaves are distinctly veined, and sharp-toothed. In a good year, branches will bend at the tip under the weight of the fruit clusters. The form of the shrub is very vertical and multistemmed to 10 feet high. In the wild, Arrowwood forms thickets in a variety of sites including roadsides, forest edges, or as an invader of abandoned fields. Most tolerant of dry sites, its best landscape use is as part of a screen planting, since its texture and color blend well with other shrubs. Fall color is a pleasing purplish-red.

Nannyberry, *V. lentago*, is a taller Viburnum (to 20 feet), with attractive shiny leaves and clusters of purplish-red fruits hanging from long stalks. It is a thicker former, spreading more aggressively than Arrowwood, which tends to remain more clumped. The winter flower buds of Nannyberry are unusually long with a bulbous base.

Blackhaw, *V. prunifolium*, has shiny, oval, fine-toothed leaves, and a more tree-like, single stem form, reaching 15 feet high. Its right-angled, stiff branching pattern is most distinctive. Flowers are in small, terminal umbrella-shaped clusters, followed by fruits which change color from yellow to red to blue-black as they mature. It is a most useful small tree, with especially rich red fall color. Blackhaw is native west of Connecticut, but has naturalized extensively in the Arboretum around the original plantings.

Withered or Wild Raisin, *V. cassinoides* (Plate 19), produces great quantities of small blue-black fruits in flat-topped clusters which attract grouse, pheasant and songbirds. The small, white, scented flowers which precede the fruits are arranged in stalked clusters at the tips of stems in May. It forms a rounded, dense, rather compact shrub which grows to about 8 feet tall. In the winter, the slender dark gray stems are especially beautiful against a snowy backdrop.

Cranberry Viburnum, *V. trilobum* (Plate 30), is a tall shrub with distinctive three-lobed leaves. The flat floral clusters in May have showy sterile flowers around the margins and small fertile flowers in the center. The drooping clusters of bright red fruit are extremely showy. They can be harvested for jams or jellies in September, if you get to them before the birds. The fruits can remain on the plant well into the winter, since they do not drop readily. Eaten raw, they are exceptionally sour. Cranberry Viburnum can be found at the edges of woodlands in the wild. It has a scattered distribution, and does not form extensive thickets.

Two other Viburnums which deserve mention are the **Maple-leaved**, *V. acerifolium* (Plate 25), and **Hobblebush**, *V. alnifolium*. The former is a low-growing (to 5 feet), shade tolerant, clonal shrub typically found in our hardwood forests. Its small blue-black fruits are rapidly harvested by birds. Leaves are three-lobed, and fall color is a dusky purplish-pink. Hobblebush is larger (to 10 feet), with unusually large, heart-shaped leaves. The flowers are particularly ornamental due to the large sterile blossoms around the margin of each cluster. Red fruits turn dark blue-black when mature. It is the distinctive forest shrub of northern New England. The name derives from the habit of branches rooting at the tips, then sending up another stem, creating a thicket which is difficult to traverse. Both of these Viburnums are suitable for landscaping in a wooded setting.

The Viburnum collection in the Connecticut Arboretum is directly north of the Laurel Walk, below the Nancy Moss Fine Native Azalea Garden.

1 Pinxter Flower Azalea, *p. 8*



2 Mountain Laurel 'Goodrich', *p. 13*



3 Flame Azalea, *p. 8*



4 Sheep Laurel 'Hammonasset', *p. 17*



5 Swamp Azalea, *p. 8*



6 Beach Plum, *p. 9*



7 Carolina Rhododendron, *p. 15*



8 Mountain Laurel, *p. 13*



9 Virginia Rose, p. 15



10 Virginia Rose, p. 15



11 Spicebush, p. 17



12 Coast Leucothoe, p. 13



13 Steeplebush Spiraea, p. 18



14 Mountain Andromeda, p. 22



15 Sweet Pepperbush, p. 18



16 Naturalistic Landscaping, p. 4



17 Fothergilla, p. 11



18 Serviceberry, p. 17



19 Witherod Viburnum, p. 20



20 Shrubby Cinquefoil, p. 23



21 Shrubby St. Johnswort, p. 16



22 Silky Dogwood, p. 11



23 Bayberry, p. 9



24 Pasture Juniper 'Repanda', p. 12



25 Maple-leaved Viburnum, p. 20



26 Winterberry, p. 21



27 Black Huckleberry, p. 23



28 Naturalistic Landscaping Area, p. 4



29 Inkberry, p. 12



30 Cranberry Viburnum, p. 20



31 Box Huckleberry, p. 10



32 Lowbush Blueberry, p. 10



WINTERBERRY

Winterberry, *Ilex verticillata* (Plate 26), is a common deciduous New England Holly of swampy areas, but it will also tolerate dry soils. It is most notable for its long-lasting clusters of bright red fruits that persist on bare branches well after its leaves drop. It forms multistemmed thickets, with clumps reaching 6-10 feet high.

Hollies are either male or female, and fruiting displays are limited to the female plants, which must be pollinated by nearby (25-50 feet) male plants. When purchasing plants, the presence of fruits is a guarantee that you have a female.

There are many excellent cultivars of Winterberry currently available. Some of the best are 'Xmas Cheer', 'Old Heavyberry', 'Winter Red', 'Sparkleberry' and the dwarf form 'Red Sprite'. A yellow fruited form 'Chrysocarpa' is also sold.

Winterberry is a great addition to any winter landscape and also provides a mid-winter food source for small mammals and birds. It has no serious insect pests and requires little maintenance except for occasional pruning for shape or renewal of stems. A large specimen grows in the Landscape Demonstration Area behind the Outdoor Theatre.

OTHER NATIVE SHRUBS

Andromeda, Mountain

Pieris floribunda

slow growing dense evergreen to 6 ft.; dull green leaves; small white flowers in early spring borne in erect clusters; ornamental all winter (Plate 14); very hardy.

Azalea, Plum-leaved

Rhododendron prunifolium

flowers orange-red in July -Aug., one of the last azaleas to flower; large shrub to 10 ft.

Azalea, Sweet

Rhododendron arborescens

hardy white azalea, branches and foliage smooth, fragrant flowers in late June; glossy red fall foliage; 6-10 ft.

Arbutus, Trailing

Epigaea repens

low, woody, creeping stems; fragrant light pink flowers in early spring; round, leathery evergreen leaves; State flower of Massachusetts.

Bearberry

Arctostaphylos uva-ursi

groundcover to 5 in. tall with shiny, semievergreen leaves, tiny white or pinkish flowers, dark red fall fruits; grows best in sand; subject to dieback, stem and leaf problems if soil is not well drained; dark purple winter color.

Buckeye, Bottlebrush

Aesculus parviflora

red anthered, showy white flowers, in clusters up to 1 ft. long in July and Aug.; stems to 12 ft.; slow growing, clonal, long-lived.

Buttonbush

Cephalanthus occidentalis

grows in flooded areas; good glossy foliage; white flowers in globular heads in summer; fruit a round ball; 6 - 8 ft. tall.

Chokeberry, Black

Aronia melanocarpa

white spring flowers, shining black fruits in Aug.; striking red fall foliage; clonal.

Chokeberry, Red

Aronia arbutifolia

dense clusters of small white flowers in May; red fruits and brilliant red foliage in fall; erect and multistemmed to 7 ft.; spreads aggressively; resembles previous species.

- Cinquefoil, Three-toothed**
Potentilla tridentata
low, evergreen groundcover to 6 in., spreading; small white flowers on long stalks in June; tolerant of dry sites.
- Cinquefoil, Shrubby**
Potentilla fruticosa
feather-shaped leaves with narrow, tapering downy leaflets; yellow flowers in summer (Plate 20); small shrub to 4 ft.; good cultivars include: 'Daurica'; 'Tangerine'; 'Katherine Dykes'; 'Jackmanii'; white flowered 'Mount Everest'; one of best 'Goldfinger', with brilliant yellow flowers all summer.
- Elderberry, American**
Sambucus canadensis
coarsely spreading to 12 ft. tall; large white flower clusters in June; small blue fruits in Aug. used for wine and jelly; damp sites.
- Hazelnut, American**
Corylus americana
erect clonal shrub 6 - 10 ft. tall; fruits ornamental, reddish; long, pendulous male catkins (flowers) in early spring.
- Hazelnut, Beaked**
Corylus cornuta
slightly smaller version of *C. americana*, with interesting beaked fruit.
- Huckleberry, Black**
Gaylussacia baccata
erect, clonal, to 3 ft.; spring flowers reddish in dense drooping clusters; edible, seedy black fruit, brilliant red fall foliage (Plate 27).
- New Jersey Tea**
Ceanothus americanus
low, wide, dense deciduous shrub to 4 ft.; balls of tiny white flowers in July; difficult to transplant but useful in sunny, dry sites.
- Sandmyrtle, Box**
Leiophyllum buxifolium
twiggy, compact mound to 2 ft.; needle-like evergreen leaves; small white or pinkish flowers in late spring; grows best in dry, sandy soil.
- Sumac, Fragrant**
Rhus aromatica
low shrub to 3 ft. with aromatic compound leaves; short spikes of yellow flowers in spring; rich red autumn foliage; red fruits in fall; tolerates dry soil, spreads clonally.

- Sumac, Shining**
Rhus copallina
coarse leaves and branches to 10 ft.; clone forming; dark green, glossy, compound leaves with winged midrib, brilliant scarlet in fall; red fruits.
- Sumac, Smooth**
Rhus glabra
erect, clonal, open branching, to 15 ft.; smooth twigs, red fruits and leaves in fall.
- Sumac, Staghorn**
Rhus typhina
large, erect, coarse, clonal shrub or tree to 30 ft.; branches densely covered with velvety hairs; foliage and fruits deep red in fall.
- Sweet Fern**
Comptonia peregrina
small stoloniferous shrub to 3 ft.; gray-green, aromatic fern-like leaves; very tolerant of dry sites. Common on poor soils along highways.
- Water Willow**
Decodon verticillatus
grows in standing water; spreads by rooting at branch tips; purplish flowers late July-Aug. red fall color; to 3 ft.; actually in Loosestrife not Willow family.
- Witch Hazel, Vernal**
Hamamelis vernalis
spreading deciduous shrub 6 - 10 ft. tall and as wide; flowers late Feb. - early March; short yellow to red petals from a dark red center; moist soil, full sun to part shade.
- Witch Hazel, Common**
Hamamelis virginiana
large, spreading, deciduous shrub of the forest understory; most conspicuous when yellow flowers appear as leaves falling in Oct.; shade tolerant, prefers moist soil.
- Willow, Pussy**
Salix discolor
showy gray flower clusters (catkins) turn yellow at maturity in March; bluish-green leaves give foliage a silvery look; native to stream sides and wetlands but tolerates drier sites; to 20 ft., very cold hardy.
- Wintergreen**
Gaultheria procumbens
woodland evergreen groundcover to 6 in. tall; leathery leaves; solitary nodding white flowers in summer; edible red fruit in Sept.; needs shade and acid soil to thrive.

Wintergreen, Spotted

Chimaphila maculata

low, evergreen, creeping, woodland plant with mottled leaves and 4 in. tall clusters of very fragrant white flowers in summer.

Yellow-root, Shrub

Xanthorrhiza simplicissima

small, upright clonal shrub to 3 ft.; drooping clusters of small, star-shaped, brownish-purple flowers in early spring.; foliage deciduous and resembles celery; yellow fall color; excellent groundcover, tolerant of shade and drought.

LANDSCAPE USES OF NATIVE SHRUBS

SHRUBS FOR DRY, SUNNY SITES

Plants in this category are suitable for sandy, inland and coastal sites as well as rocky, hot, dry, exposed areas.

Bayberry	<i>Myrica pensylvanica</i>
Beach Plum	<i>Prunus maritima</i>
Bearberry	<i>Arctostaphylos uva-ursi</i>
Low Blueberry	<i>Vaccinium angustifolium</i> , <i>V. vacillans</i>
New Jersey Tea	<i>Ceanothus americanus</i>
Pasture Juniper	<i>Juniperus communis</i>
Sweet Fern	<i>Comptonia peregrina</i>

SHRUBS FOR MOIST SITES

Moist sites are found near the edges of wetlands such as ponds, swamps, marshes, bog, rivers and streams, and topographically along the lower slopes of hills. Most of these shrubs will also tolerate somewhat drier conditions.

Chokeberry	<i>Aronia arbutifolia</i> , <i>A. melanocarpa</i>
Elderberry	<i>Sambucus canadensis</i>
Fothergilla	<i>Fothergilla major</i> , <i>F. gardenii</i>
Highbush Blueberry	<i>Vaccinium corymbosum</i>
Inkberry	<i>Ilex glabra</i>
Meadowsweet	<i>Spiraea latifolia</i>
Pussy Willow	<i>Salix discolor</i>
Rosebay	<i>Rhododendron maximum</i>
Sheep Laurel	<i>Kalmia angustifolia</i>
Shrubby Dogwood	<i>Cornus sericea</i> , <i>C. amomum</i> , <i>C. racemosa</i>
Spicebush	<i>Lindera benzoin</i>
Steeplebush	<i>Spiraea tomentosa</i>
Swamp Azalea	<i>Rhododendron viscosum</i>
Sweet Azalea	<i>Rhododendron arborescens</i>
Sweet Pepperbush	<i>Clethra alnifolia</i>
Winterberry	<i>Ilex verticillata</i>
Witch Hazel	<i>Hamamelis virginiana</i>

SHRUBS FOR WETLANDS

Seasonally flooded sites are those with standing water for part of the year, usually in late winter and spring. Shrubs listed here are suitable for planting at

the very edge of a water body but most cannot tolerate water over their roots for the entire year. Exceptions to this are Water Willow and Buttonbush.

Buttonbush	<i>Cephalanthus occidentalis</i>
Highbush Blueberry	<i>Vaccinium corymbosum</i>
Inkberry	<i>Ilex glabra</i>
Sheep Laurel	<i>Kalmia angustifolia</i>
Spicebush	<i>Lindera benzoin</i>
Swamp Azalea	<i>Rhododendron viscosum</i>
Sweet Pepperbush	<i>Clethra alnifolia</i>
Water Willow	<i>Decodon verticillatus</i>
Winterberry	<i>Ilex verticillata</i>

SHRUBS FOR SHADED SITES

Shade is continuously variable from the high, open shade of the oak trees in your yard to the dense, dark understory of a hemlock forest. Almost without exception, shrubs will produce more flowers and fruit with increasing light. Some shrubs will grow and develop normally in shady sites but never produce a memorable floral display. Those listed here are adapted to life in the deciduous forest understory.

Azaleas	<i>Rhododendron perichlymenoides</i> , etc.
Bottlebrush Buckeye	<i>Aesculus parviflora</i>
Coast Leucothoe	<i>Leucothoe axillaris</i>
Drooping Leucothoe	<i>Leucothoe fontanesiana</i>
Hazelnut	<i>Corylus americana</i> , <i>C. cornuta</i>
Maple-leaved Viburnum	<i>Viburnum acerifolium</i>
Mountain Laurel	<i>Kalmia latifolia</i>
Rhododendrons	<i>R. maximum</i> , <i>R. catawbiense</i>
Spotted Wintergreen	<i>Chimaphila maculata</i>
Trailing Arbutus	<i>Epigaea repens</i>
Wintergreen	<i>Gaultheria procumbens</i>
Yellow-root	<i>Xanthorrhiza simplicissima</i>

NATIVE EVERGREEN SHRUBS

These shrubs are probably most appreciated during winter. Depending on their size, they may be used in foundation planting, as ground covers, screening, and as a background for more showy species.

Bearberry	<i>Arctostaphylos uva-ursi</i>
Coast Leucothoe	<i>Leucothoe axillaris</i>
Drooping Leucothoe	<i>Leucothoe fontanesiana</i>
Inkberry	<i>Ilex glabra</i>

Mountain Laurel
Mountain Andromeda
Partridgeberry
Pasture Juniper
Rhododendron
Trailing Arbutus
Wintergreen

Kalmia latifolia
Pieris floribunda
Mitchella repens
Juniperus communis
R. carolinianum, R. maximum, etc.
Epigaea repens
Gaultheria procumbens

SHRUBS FOR SPRING BLOOM

Azaleas
Beach Plum
Blueberries
Coast Leucothoe
Drooping Leucothoe
Fothergilla
Mountain Laurel
Shadbush, Serviceberry
Spicebush
Viburnums

Rhododendron periclymenoides, etc.
Prunus maritima
Vaccinium corymbosum, etc.
Leucothoe axillaris
Leucothoe fontanesiana
Fothergilla major, F. gardenii
Kalmia latifolia
Amelanchier canadensis, A. arborea
Lindera benzoin
Viburnum recognitum, etc.

SHRUBS FOR SUMMER BLOOM

Azaleas
Buttonbush
Cinquefoil
Elderberry
New Jersey Tea
Rose
Rosebay
Shrubby Dogwoods
Shrubby St. Johnswort
Sweet Pepperbush
Sweetshrub
Water-willow

Rhododendron bakeri, R. prunifolium
Cephalanthus occidentalis
Potentilla fruticosa, P. tridentata
Sambucus canadensis
Ceanothus americanus
Rosa carolina, R. virginiana
Rhododendron maximum
Cornus sericea, etc.
Hypericum prolificum
Clethra alnifolia
Calycanthus floridus
Decodon verticillatus

SHRUBS WITH ORNAMENTAL FRUIT AND WILDLIFE VALUE

Bayberry
Beach Plum
Blueberries
Chokeberry
Elderberry
Inkberry, Winterberry, Hollies

Myrica pensylvanica
Prunus maritima
Vaccinium corymbosum, etc.
Aronia melanocarpa, etc.
Sambucus canadensis
Ilex spp.

Rose	<i>Rosa carolina, R. virginiana</i>
Shadbush, Serviceberry	<i>Amelanchier canadensis, A. arborea</i>
Shrubby Dogwoods	<i>Cornus amomum, etc.</i>
Spicebush	<i>Lindera benzoin</i>
Sumacs	<i>Rhus copallina, R. glabra, etc.</i>
Viburnums	<i>Viburnum recognitum, etc.</i>

SHRUBS WITH ATTRACTIVE AUTUMN COLOR

Autumn color is not spectacular all years or in all locations because the coloration of the leaves depends on a number of climatic and ecologic variables. In southern New England late Septembers and early Octobers with warm, sunny days and cool, crisp nights are a necessity. Only shrubs in locations which receive substantial amounts of sunlight throughout the day can be expected to produce vibrant colors.

Black Huckleberry	<i>Gaylussacia baccata</i>
Fothergilla	<i>Fothergilla major</i>
Highbush Blueberry	<i>Vaccinium corymbosum</i>
Plum-leaved Azalea	<i>Rhododendron prunifolium</i>
Shadbush	<i>Amelanchier canadensis</i>
Spicebush	<i>Lindera benzoin</i>
Sumacs	<i>Rhus copallina, R. glabra, etc.</i>
Viburnum	<i>Viburnum cassinoides, V. prunifolium, etc.</i>

SHRUBS FOR FRAGRANT BLOOMS

Rose	<i>Rosa carolina, R. virginiana</i>
Rose-shell Azalea	<i>R. prinophyllum</i>
Sweet Pepperbush	<i>Clethra alnifolia</i>
Sweet Azalea	<i>Rhododendron arborescens</i>

LOW SHRUBS SUITABLE FOR GROUND COVER

Bearberry	<i>Arctostaphylos uva-ursi</i>
Box Huckleberry	<i>Gaylussacia brachycera</i>
Cinquefoil	<i>Potentilla fruticosa, P. tridentata</i>
Partridgeberry	<i>Mitchella repens</i>
Pasture Juniper	<i>Juniperus communis</i>
Sheep Laurel	<i>Kalmia angustifolia</i>
Spotted Wintergreen	<i>Chimaphila maculata</i>
Trailing Arbutus	<i>Epigaea repens</i>
Wintergreen	<i>Gaultheria procumbens</i>

SELECTED SHRUBS IN BRIEF

Soil Moisture: W = Wet, M = Moist, D = Dry.

Light Requirements: S = Sun, Sh = Shade, E = Edge.

Flowering Time By Month.

Height: GC = Ground Cover, L = Low, M = Medium, T = Tall.

Growth Habit: C = Clump form, S = Stoloniferous or clonal

Deciduous Shrubs:	Soil Moisture	Light	Flwr. Time	Ht.	Growth Habit
Azalea, Flame	M	E	May	M	C
Azalea, Pinxter	M	E	May	M	C
Azalea, Rose-shell	M	E	May	M	C
Azalea, Swamp	W	E	July	M	C
Bayberry	D	S	May	M	S
Beach Plum	M	S	May	M	C
Blueberry, Highbush	M	S	May	M	C
Blueberry, Lowbush	D	S	May	GC	S
Dogwood, Gray	M	S	July	M	S
Dogwood, Red Osier	W, M	S	June	M	S
Dogwood, Silky	W	S	July	M	S
Fothergilla	M	S	May	M	C
Fothergilla, Dwarf	M	S	May	L	C
Rose, Carolina	D	S	June	L	S
Rose, Swamp	W	S	July	L	S
Rose, Virginia	D	S	June	L	S
St. Johnswort, Shrubby	D	S	July	L	S
Serviceberry	M	S	Apr	T	C
Shadbush	M	S	Apr	M	C
Spicebush	W	E, Sh	Apr	M	C
Spiraea, Meadowsweet	M	S	July	L	S
Spiraea, Steeplebush	M	S	Aug	L	S
Sweet Pepperbush	W	E, Sh, S	July	M	S
Sweetshrub	M	E	May	M	S
Viburnum, Arrowwood	M	S	May	M-T	C
Viburnum, Blackhaw	M	E	May	T	C
Viburnum, Cranberry	M	E	May	M	C
Viburnum, Hobblebush	M	Sh	May	M	S
Viburnum, Maple-leaved	M	Sh	May	L	S
Viburnum, Nannyberry	M	E	May	T	S
Viburnum, Witherod	M	E	May	M	C
Winterberry	W	S-E	June	M	S

Evergreen Shrubs:	Soil Moisture	Light	Flwr. Time	Ht.	Growth Habit
Box Huckleberry	M	E-Sh	May	GC	S
Inkberry	M-W	E	May	M	C
Juniper, Pasture	D	S	-	GC	C
Leucothoe, Coast	M	E	May	L	S
Leucothoe, Drooping	M	E	May	M	S
Mountain Laurel	M	E	May	M	S
Paxistima	M	S-E	May	GC	S
Rhododendron, Carolina	M-D	E-S	May	L	C
Rhododendron, Catawba	M	E	May	M	C
Rhododendron, Rosebay	M-W	E-Sh	July	T	C
Sheep Laurel	M	E-S	June	GC	S

ANNOTATED REFERENCE LIST

IDENTIFICATION OF NATIVE SHRUBS

Illustrated Guide to Trees and Shrubs. A Handbook of the Woody Plants of the Northeastern United States and Adjacent Regions. Arthur Harmount Graves. Harper and Row Publishers, New York. 1956. 271 pp.

One of the best references for identifying trees and shrubs, especially when only twigs or leaves are available. Excellent illustrations and keys. Currently out of print, but available at libraries and used book dealers.

The Shrub Identification Book. George W.D. Symonds. M. Barrows and Company, New York. 1963. 379 pp.

Photos of all plant parts make this the easiest guide for beginners.

Trees and Shrubs of New England. Mary Dwelley. Down East books, Camden, Maine. 1980. 274 pp.

This is probably the best book for northern New England, and it contains many helpful hints for distinguishing species within complex groups like Willows and Raspberries. No keys, but fairly good color illustrations.

SELECTION AND USE OF SHRUBS IN THE LANDSCAPE

Shrubs and Vines For American Gardens. Donald Wyman. The Macmillan Company, New York. 1969. 613 pp.

Highly recommended as a first reference on both introduced and native landscape shrubs for the northeast. The information is based on the author's tenure as Horticulturist at the Arnold Arboretum of Harvard University.

The Country Journal Book of Hardy Trees and Shrubs. Harrison L. Flint. Country Journal Publishing Company, Brattleboro, Vermont. 1983. 164 pp.

A very nicely done book which is especially useful for the colder regions. Contains many native shrubs.

Manual of Woody Landscape Plants. Michael A. Dirr. Stipes Publishing Company, Champaign, Illinois. 1983. 826 pp.

A reasonably priced book full of very useful information on culture, propagation and landscape use.

Landscape Plants for Eastern North America. Harrison L. Flint. John Wiley and Sons, New York. 1983. 677 pp.

This book describes 1500 species of landscape plants, including many natives. The illustrations and text are clear. Especially useful are the size and habitat sketches, and mention of problems and maintenance.

PLANT NAMES

Hortus Third. Staff of the L.H. Bailey Hortorium, Cornell University. Macmillan Publishing Company, New York. 1976. 1290 pp.

A concise dictionary of plants cultivated in the United States and Canada, this is the standard reference for plant nomenclature in horticulture. All scientific names in this bulletin conform to *Hortus Third*.

NURSERY SOURCE LIST FOR NATIVE SHRUBS

The following nurseries carry one or more of the plants described in this bulletin; none will have all. Unless otherwise indicated these are mail order, retail businesses. The Arboretum or its staff has purchased plants from all on the list. While it is advisable to purchase shrubs propagated from sources in your local area, or at least in the same hardiness zone, this is frequently not possible. Your local retail nursery can get almost any shrub by special order, so don't be afraid to ask for plants you don't see displayed.

Appalachian Gardens, Box 82, Waynesboro, PA 17268

Bovee's Nursery, 1737 S.W. Coronado St., Portland, OR 97219

Carlson Gardens, Box 305, South Salem, NY 10590

Cummins Garden, 22 Robertsville Rd., Marlboro, NJ 07746

Dutch Mountain Nursery, 7984 N. 48th St., Augusta, MI 49012

Eastern Plant Specialties, Box 40, Colonia, NJ 07067

Environmentals¹, Box 730, Cutchogue, NY 11935

Forest Farm, 990 Tethrow Rd., Williams, OR 97544

Gossler Farms Nursery, 1200 Weaver Rd., Springfield, OR 97478

Greer Gardens, 1280 Goodpasture Island Rd., Eugene, OR 97401

Prides Corner Farms, Inc.¹, Waterman Rd., Lebanon, CT 06249

F.W. Schumacher Co., Inc.², 36 Spring Hill Rd., Sandwich, MA 02563

Summerhill Nurseries, Inc.¹, Summerhill Rd., N. Madison, CT 06443

Wayside Gardens, Hodges, SC 29695

Weston Nurseries³, P.O. Box 186, Hopkinton, MA 01748

Woodlanders, Inc., 1128 Coleton Ave., Aiken, SC 29801

¹wholesale only, no mail order

²Seed only

³No mail order

CONNECTICUT ARBORETUM BULLETINS

- No. 9. **Six points of Especial Botanical Interest in Connecticut.** 32 pp. 1956. The areas described are the Barn Island Marshes, the Connecticut Arboretum, the North Haven Sand Plains, Catlin Wood, Cathedral Pines, and the Bigelow Pond Hemlocks. 1.00
- No. 12. **Connecticut's Coastal Marshes: A Vanishing Resource.** 36 pp. 1961. Testimony of various authorities as to the value of our tidal marshes and a suggested action program. Second printing with supplement 1966. 1.50
- No. 15. **The Flora of the Connecticut Arboretum.** 64 pp. 1966. Includes annotated checklist of over 850 species and an article on the vegetation of the Arboretum. 1.00 (out of print)
- No. 17. **Preserving Our Freshwater Wetlands.** 52 pp. 1970. Reprints of a series of articles on why this is important and how it can be done. 1.00
- No. 18. **Seaweeds of the Connecticut Shore. A Wader's Guide.** 36 pp. 1972. Illustrated guide to 60 different algae with keys to their identification. New edition 1985. 3.00
- No. 19. **Inland Wetland Plants of Connecticut.** 24 pp. 1973. Some 40 species of plants found in marshes, swamps and bogs are illustrated. 1.00
- No. 20. **Tidal Marsh Invertebrates of Connecticut.** 36 pp. 1974. Descriptions and illustrations of over 40 species of mollusks, crustaceans, arachnids, and insects found on our tidal marshes. 1.50
- No. 21. **Energy Conservation on the Home Grounds — The Role of Naturalistic Landscaping.** 28 pp. 1975. 1.00
- No. 22. **Our Dynamic Tidal Marshes: Vegetation Changes as Revealed by Peat Analysis.** 12 pp. 1976. 1.50
- No. 23. **Plants and Animals of the Estuary.** 44 pp. 1978. Descriptions and illustrations of over 70 estuarine species. 1.50
- No. 24. **Garden Guide to Woody Plants — A Plant Handbook.** 100 pp. 1979. Lists and descriptions of over 500 different trees and shrubs useful for landscaping. 2.50

No. 25. **Salt Marsh Plants of Connecticut.** 32 pp. 1980. Illustrated guide to 22 plants which grow in our tidal wetlands. 1.50

No. 26. **Recycling Mycelium: A Fermentation Byproduct Becomes an Organic Resource.** 32 pp. 1981. Documents the beneficial role of industrial mycelial residues as soil amendments on ornamental plants, agricultural crops, and in natural vegetation. 1.00

No. 27. **Birds of Connecticut Salt Marshes.** 48 pp. 1981. Illustrations and descriptions of 24 birds commonly seen on our tidal marshes. 1.50

No. 28. **The Connecticut Arboretum: Its First Fifty Years 1931 — 1981.** 56 pp. 1982. Historical accounts of the formation and growth of the Arboretum. 2.50

No. 29. **Mushrooms of New England.** 49 pp. 1984. Descriptions of 89 species of fungi, 62 illustrated. 2.50

No. 30. **Native Shrubs for Landscaping.** 40 pp. 1987. Descriptions and lists of the best native shrubs for home, commercial and institutional landscaping. Color photographs. 5.00

No. 31. **Birds of the Connecticut College Arboretum.** 50pp. 1990. An annotated list with seasonal records, and an account of the bird research program. Illustrated. Replaces Bulletin No. 10. 5.50

No. 32. **The Connecticut College Arboretum - Its Sixth Decade and a Detailed History of the Lands.** 96 pp. 1991. 47 photos. Arboretum History 1981-1990 plus detailed descriptions of each tract of land composing the Arboretum. Supplements Bulletin No. 28. 5.00

Checklist of Woody Plants of the Connecticut Arboretum. 13 pp. 1980, addendum 1984. A listing of trees and shrubs in the Native Woody Plant Collection by name and location. 1.00

The Wild Gardener in the Wild Landscape - The Art of Naturalistic Landscaping. 232pp. 1991. An Illustrated, in-depth, ecological approach to naturalistic landscaping. Reprint of 1966 edition. Color photos. (For mail orders enclose \$1.65 p & h). 25.95

Artistic Map of the Connecticut Arboretum showing features and trails. 1.00

Available from the Connecticut College Arboretum, Box 5511 Connecticut College, New London, CT 06320. Include \$1.00 postage and handling for each bulletin. Arboretum members may deduct 40% from the cost of bulletins. Bulletins and books are also available at the Arboretum Office, 206 New London Hall, and the College Bookshop.

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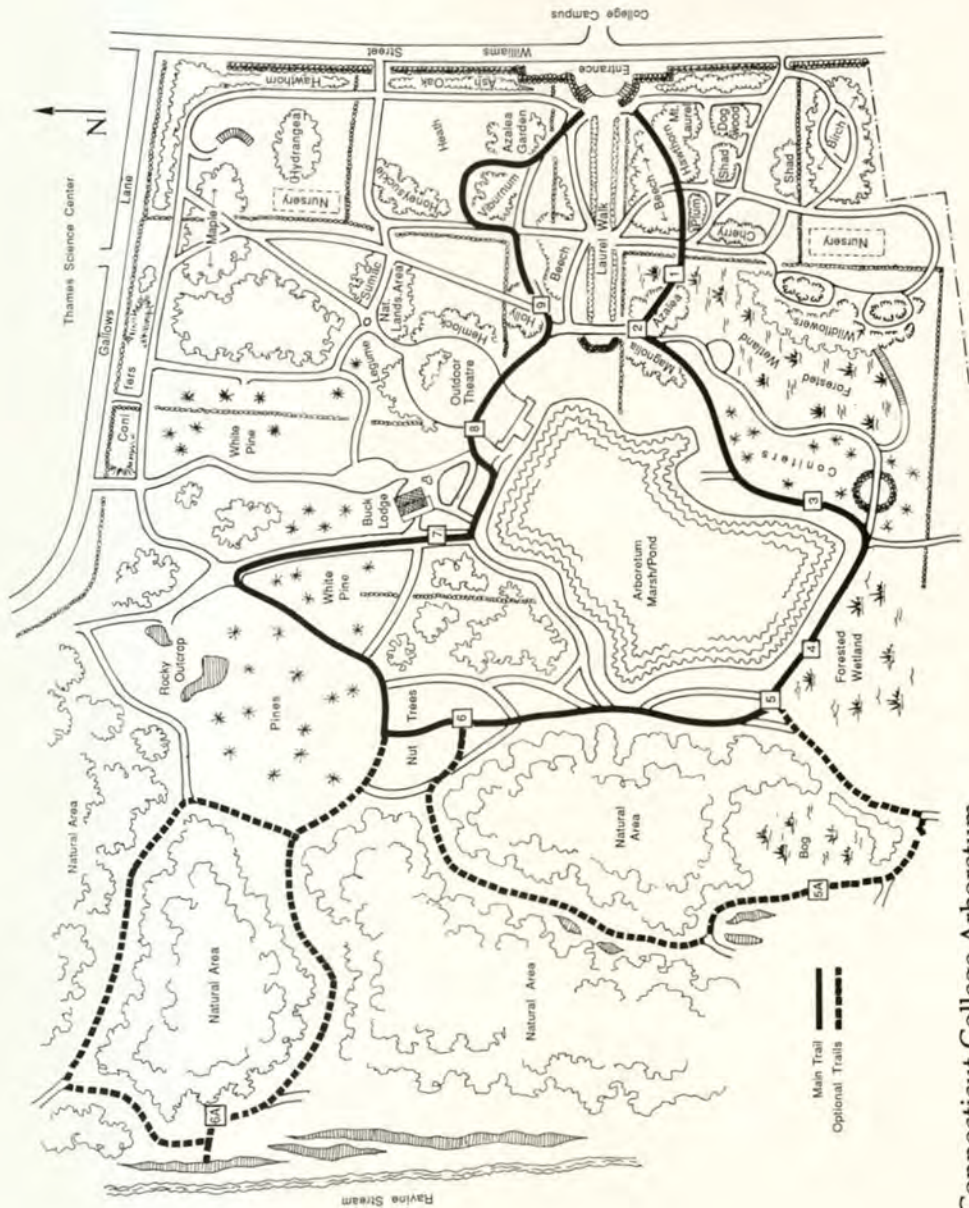
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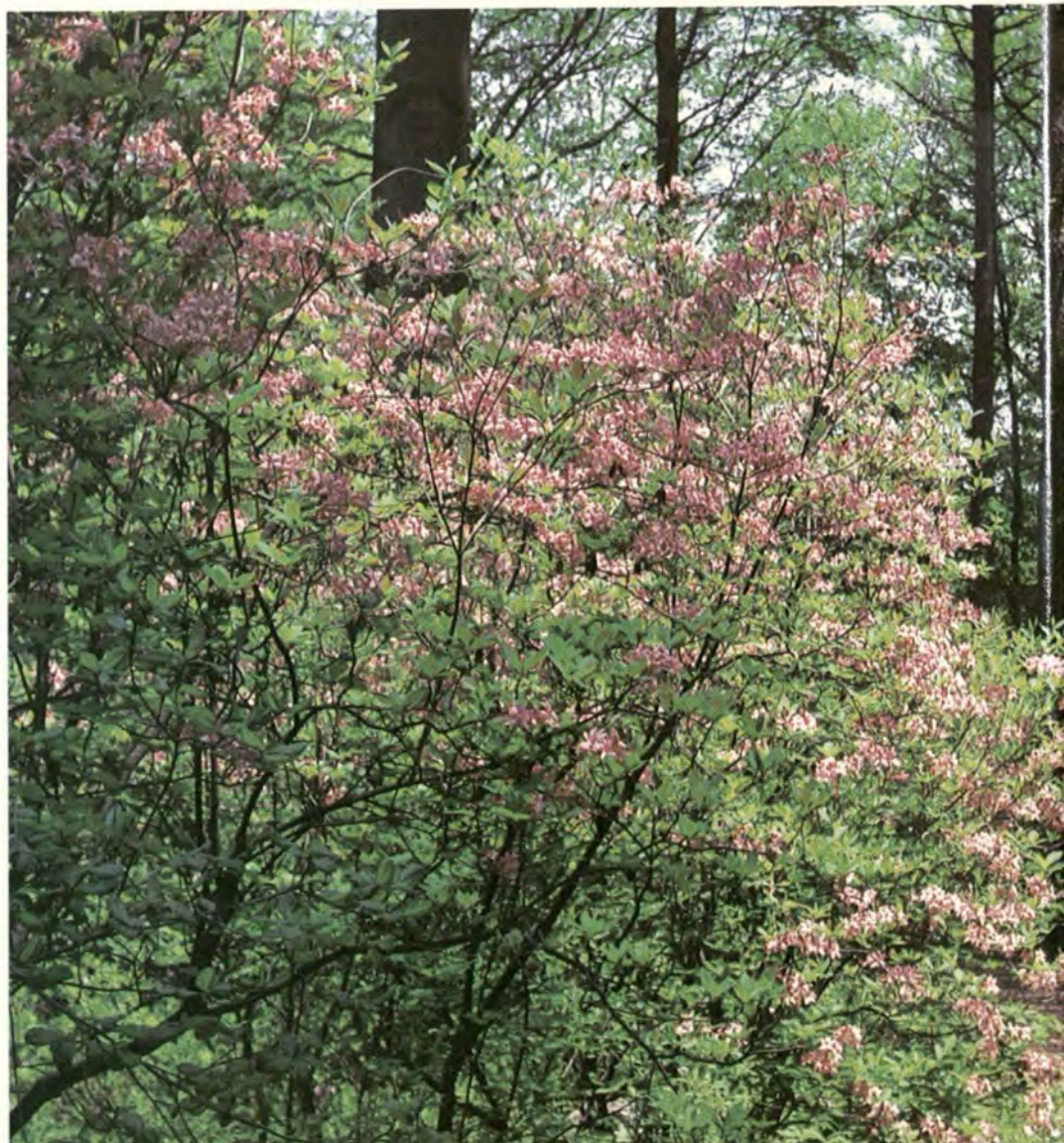


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