Tsuga caroliniana. The Carolina Hemlock as it grows in the Arboretum is generally considered the most graceful and beautiful cone-bearing tree in the collection. It is a native of the Blue Ridge, the eastern range of the Appalachian Mountains on which it grows from southwestern Virginia to northern Georgia usually in scattered groves on the rocky banks of streams generally at elevations between two thousand five hundred and three thousand feet. It escaped the attention of the numerous botanists who explored the southern Appalachian Mountains during the last half of the eighteenth and the first half of the nineteenth century, and its distinct character was first noticed in 1850 by Dr. L. B. Gibbes, of Charleston, South Carolina, although it was not until thirty-one years later that it was described by Dr. Engelmann. This Hemlock was first raised at the Arboretum in 1880 and the tallest tree here is now nearly forty feet high. On the Blue Ridge the Carolina Hemlock is usually not more than forty or fifty feet high, although occasionally trees up to seventy feet in height occur, and the trunk has rarely a greater diameter than two feet. It is a much smaller tree therefore than the northern Hemlock. The branches are more pendulous and the leaves are darker green and more lustrous than those of this tree. The leaves, too, are usually notched at the apex and slightly toothed, while those of the northern tree are usually rounded at the apex and not toothed. The two trees are, however, best distinguished by their cones; those of the southern tree are not stalked and their scales are much longer than broad with obtusely pointed bracts; and those of the northern tree are stalked, and the scales are about as long as wide with bracts broad and truncate at the apex.
Many persons see and admire the Carolina Hemlock in the Arboretum every year, but it is still rare in cultivation, and probably ten thousand Colorado Blue Spruces (Picea pungens) are planted in this country every year for one Carolina Hemlock. Among a large number of seedlings of the Carolina Hemlock raised at the Arboretum in 1881 two individuals are dwarf in habit. They show no tendency to form a leader and look as if they would continue to grow more rapidly in breadth than in height. In their gracefully drooping branches they are more beautiful even than the dwarf Tsuga canadensis which has usually been considered the handsomest of dwarf conifers.

**Cladrastis.** For more than a century the American Yellow Wood (Cladrastis lutea), one of the most beautiful trees when in flower of the North American forest, was supposed to be the only representative of this genus of the Pea Family, but in 1890 another species (C. sinensis) was found in the forests of western Szechuan and in 1901 Wilson discovered it in western Hupeh while collecting for the Veitches of London, by whom a plant was sent to the Arboretum in 1910. This plant has proved perfectly hardy and began to flower a few years ago, but it has never bloomed so abundantly as it has this season. Not as beautiful as the American species, it is of extreme interest as another important connection between the floras of eastern North America and eastern Asia.

Cladrastis sinensis in its native forests is sometimes a tree eighty feet high, with leaves composed of from nine to thirteen oblong to oblong-lanceolate leaflets usually rounded at the base, yellowish green, pubescent on the lower surface along the midrib, and from two to four inches in length, with a pubescent rachis and petiole. The flowers are produced in loose, upright, much-branched, nearly erect panicles from five to twelve inches long and from four to eight inches in diameter, and are white or white slightly tinged with pink and about half an inch long. This appears to have remained an extremely rare tree in cultivation, especially in the United States. Later another species was discovered in Hupeh (C. Wilsonii) which probably is not in cultivation.

**Lemoine Hybrid Philadelphus.** Several years ago the French plant breeder Lemoine crossed Philadelphus coronarius with the Rocky Mountain P. microphyllus and obtained an entirely new race to which the general name of Philadelphus Lemoinei was given. The original bush is intermediate between the parents in size and in the size of the flowers. The flowers are pure white, very fragrant and produced in profusion. From this plant Lemoine raised many seedlings and secondary hybrids, and these vary from the original P. Lemoinei in size and in the size and shape of the flowers. Taken as a whole the Lemoine hybrid Philadelphus form one of the most beautiful groups of garden plants that has been created by man. There are a number of these plants in the Arboretum collection and they have been considered perfectly hardy here, but they are sometimes injured in severe winters. P. Lemoinei itself and many of its varieties are uninjured, but a few of the second hybrids have been killed to the ground but are now growing again from the roots.
The last of the Azaleas. As the yellow or flame-colored flowers of *Rhododendron calendulaceum* fade those of another Appalachian species, *R. arborescens*, begin to open. The deliciously fragrant flowers are white with bright red stamens and style, and do not open until after the leaves have grown nearly to their full size. The home of this plant is on the Appalachian Mountains on which it is found from western Pennsylvania to northern Georgia, in the neighborhood of streams in the rich soil of sheltered valleys growing to the height of fifteen or twenty feet. On the Carolina Mountains it is often not more than three or four feet tall, forming at altitudes of about five thousand feet above the sea great thickets often acres in extent. Its value as a garden plant is not generally understood or appreciated. The flowers vary greatly in size and in the length and diameter of the corolla-tube, and although the corolla is generally pure white a form is now known in which it is suffused with rose (var. *Richardsonii*), in another it is more or less striped with rose, in another tinged more or less deeply with yellow, and in another it is marked with a yellow blotch. All these forms are well worth a place in a collection of Azaleas, and it is possible that if seedlings were raised perhaps more varied and distinct forms might occur among them. There is a group of this Azalea on the Valley Road in front of the Linden Group and another on the opposite side of this road. A mass of the plant, too, has been planted on the western slope of Azalea Path. The last of the Azaleas, *R. viscosum*, begins to open its flowers a few days later than those of *R. arborescens*; they are white and more fragrant than those of *R. arborescens* with a long slender corolla-tube. There is also a form on which the flowers are tinged with rose-purple. The clammy Azalea, or Honeysuckle, as it is called in this country, is an inhabitant of swamps and is common in the Cape region of Massachusetts and southward. In cultivation it grows as freely and flowers as abundantly on dry hillsides as it does in its native swamps, and masses of it on the lower side of Azalea Path are now covered with opening flower-buds.

**Viburnum Canbyi.** This is the last of the Viburnums to blossom in the Arboretum where its flowers are just opening. It is a native of eastern Pennsylvania and of Delaware, and has recently been found in Indiana; it is the largest and handsomest of the blue-fruited American species of which *V. dentatum* is the best known. It is a plant which is improved by cultivation, and there are great round-topped specimens in the Arboretum twelve or fifteen feet high and broad, and splendid objects at all seasons. Such plants can be seen on the right hand side of the entrance to the Administration Building and on the Meadow Road. The earliest Viburnum, *V. alnifolium*, flowered here the first of May, and from that day to this Viburnums have been flowering in the Arboretum.

**Sambucus canadensis.** This is the last of the native shrubs to make a conspicuous show of flowers in the Arboretum, and as the corollas of the late Viburnums begin to fall the wide, flower-like clusters of *S. canadensis* begin to whiten. Few native shrubs make a greater showing of flowers and fruits, and the numerous Elders sown by birds on the banks of Bussey Brook in the valley north of Hemlock Hill,
and by the little ponds near the junction of the Meadow and Bussey Hill Roads add much to the beauty of the Arboretum in July. Growing with *S. canadensis* in the Shrub Collection is a form with leaflets deeply divided into narrow segments (var. *acutiloba*) and more curious than beautiful. There are here also a form with yellow fruit (var. *chlorocarpa*) and var. *maxima* which originated a few years ago in a European nursery and which has flower-clusters three times as large as those of the wild plant and such large and heavy bunches of fruit that the branches can hardly support them. A variety with yellow leaves (var. *aurea*) is also in the collection. More objectionable than many yellow-leaved shrubs because it is hardier and grows more rapidly to a larger size than some of them, this plant now disfigures many European gardens and is too often seen in those of this country.

*Schizophragma hydrangeoides*, now that it has at last, after more than forty years of failure, found a place that suits it on the east side of the Administration Building, is growing rapidly and promises to cover as much space as the great plant of the Japanese Climbing Hydrangea which is its neighbor. It is already half way to the top of the building, and its value as a flowering plant in July is now shown by its conspicuous flower clusters. The leaves are smaller than those of the Climbing Hydrangea, more circular in shape, more coarsely toothed and darker and duller in color. The inflorescence, which is terminal on short, lateral branchlets, which stand out from the stems, is interesting but not perhaps as showy as that of the Hydrangea, for instead of the surrounding ring of neutral flowers there are only two neutral flowers to each of the divisions to the large compound cluster of perfect flowers; these neutral flowers are snow white, ovate, often an inch or more long, and hang on long slender stems an inch in length. *S. hydrangeoides* seems to be a rare plant in American and European gardens, and in this country *Hydrangea petiolaris* is often sold for it.

**Roadside Plants.** Much attention has been paid here for several years in experimenting to secure the best plants to occupy the narrow beds between the driveways and the gravel paths which follow them, and thus far the most satisfactory plant found for this purpose has been *Rosa virginiana*, often called *R. lucida*, the seashore Rose of New England, an upright shrub from two to three feet in height which is covered with leaves, lustrous in the spring and turning yellow late in October. A plant which came here many years ago from Mt. Desert Island on the coast of Maine, and now distinguished as var. *lamprophylla*, is a handsomer plant than the typical form, of denser habit and with darker green lustrous leaves. The large pink flowers and the showy red hips are similar to those of the common form. Another plant which has been most successfully used for this purpose is the Fragrant Sumach (*Rhus canadensis*). This is a widely distributed North American shrub which rarely grows more than five feet tall, and when planted in good soil is often broader than high with lower branches spreading flat on the ground and upper branches erect, spreading or drooping. In early spring before the leaves appear the branches are covered with clusters of small bright yellow flowers which in June are followed by dull red fruits which are much hidden by the small compound leaves.