Plants green in the late autumn. The beauty of the autumn foliage is increased by the fact that the leaves of few plants remain green late in the season without change of color and make a beautiful contrast with highly colored plants like the Oaks and Maples, the leaves of which turn so brilliantly to shades of yellow and red before falling. The most conspicuous of these trees is the European Salix vitellina, often erroneously called Salix alba, and the well known weeping Salix babylonica, called Napoleon’s Willow because cuttings are supposed to have been brought from Napoleon’s tomb at St. Helena. A fast growing Willow of eastern Asia, Salix Matsudana, which is a large and common tree in the streets of Peking, has grown rapidly in the Arnold Arboretum where it promises to become a large tree and where it holds its leaves as late as the European species. More beautiful is our Sweet Bay or Swamp Bay, Magnolia virginiana (glauca) which is one of the most beautiful trees of eastern North America, but unfortunately at the north is sometimes only a shrub and rarely more than twenty to thirty feet high. The leaves, which are covered when they unfold with long white silky hairs, are bright green, lustrous and glabrous above and nearly white below, and without change of color do not fall in Massachusetts until late in November or in early winter, and few American trees have more fragrant creamy white flowers opening during several weeks in the spring and early summer. The northern station of this tree was in Essex County, Massachusetts, in swamps of what is now the town of Magnolia, and it ranges southward usually in the neighborhood of the coast to the southeastern states where it often grows ninety feet high, differing from the northern tree in the thick
silky white pubescence on the pedicels and branchlets. The common Oak of western Europe, *Quercus robur*, and its variety *pedunculata*, also retain their leaves until late in the autumn without change of color. There are many varieties of these trees, including fastigiate and pendulous forms, but they are all short-lived in the eastern states and do not promise to become as large and important trees as they are in Europe.

A few shrubs also retain their leaves until the beginning of winter without change of color. The best known of these is the European Privet, *Ligustrum vulgare*, which retains its dark green leaves well into the winter and is perhaps the handsomest of all black-fruited shrubs in the Arboretum. During the first half of the nineteenth century it was a common garden plant in the northern United States where it was much used for hedges, and is now sparingly naturalized. Equally handsome but much less known is *Rhamnus Purshiana*, a taller shrub or occasionally a tree attaining the height of forty feet. A native of the Pacific coast from British Columbia to Mexico, this handsome shrub ranges eastward to Montana and Texas, and promises to be a useful plant in this part of the country. Another plant conspicuous by its green leaves at this season of the year is a form of the western Chinese *Evonymus Bungeana* (var. *semipersistens*), a large, round-topped shrub with leaves remaining on the branches until the middle of winter. The so-called Wayfaring-Tree, *Viburnum Lantana*, from Europe also holds its green leaves late in the autumn. It is a shrub, or occasionally in Europe a small tree with handsome dark green leaves which fall usually late in November. This beautiful plant bears rather small clusters of pure white flowers which are followed by bright red fruits changing to almost black.

A few vines also retain their leaves without change of color until late in the autumn or in early winter. The best known and most generally planted of these is *Lonicera japonica* which sometimes climbs to a height of twelve or fifteen feet with fragrant yellow flowers. There is a variety of this handsome plant with leaves marked with yellow (var. *aureo-reticulata*). The variety *Halliana*, introduced into this country by Dr. Hall and probably first cultivated in the Parsons Nursery, differs in flowering in the autumn. Another climbing Honeysuckle which retains its green leaves until late in the autumn is *Lonicera Henryi* from western China, probably little known yet in this country is to be seen among the vines in the Shrub Collection and on Bussey Hill among other Chinese plants. *Smilax hispida* is another vine widely distributed in North America from Ontario and Minnesota to Louisiana and Texas, with deciduous leaves which usually remain green without any change of color until late in November. Two Japanese vines, *Akebia quinata* and *A. lobata*, still retain the bright color of their summer foliage; the former, with leaves composed of five leaflets and with small dark purple flowers, is well known in American gardens. *A. lobata* is less well known in this country and differs from *A. quinata* in the three, not five rather larger leaflets which turn late in the autumn just before falling to a handsome bronze color. These vines rarely produce fruit here, which resembles in shape a short thick banana, is pale violet in color and contains many small seeds imbedded in sweet juicy pulp. Of *A. lobata* the Japanese are fond as the fruit
is found in great quantities in the markets of northern Japan. This species has never produced fruit in the Arboretum and occasionally has been killed nearly to the ground in severe winters.

**Beech Trees.** Of the northern genus Fagus the Arboretum now contains eight of the ten species which have been recognized by botanists. They inhabit eastern North America, eastern Europe, the Caucasus, western China and Japan. The leaves of most of the Beeches turn yellow in the autumn, exceptions being forms of *F. sylvatica* and its varieties.

The great Beech tree of the world is the European *Fagus sylvatica* which is distributed over a large part of Europe except in the extreme north growing to great perfection in England, Denmark, parts of Germany, and on the mountains of the Balkan peninsula, often forming pure forests and growing to the height of one hundred feet. It is a hardy and handsome tree in New England, where perfectly at home, growing faster and making a handsomer tree than the American species, it is probably the best European tree to grow in this climate. There is no record, unfortunately, of the date of the introduction of this tree into the United States, but, judging by the size of some of the trees here, it must have been at least one hundred years ago. The finest European Beeches in the neighborhood of Boston, and probably the finest collection of these trees in the United States, are on Longwood Mall, a strip of turf extending east from Kent Street and between Chatham and Beech Streets in Brookline. This Mall was laid out by David Sears at the time he was engaged in developing his Longwood property between eighty and ninety years ago, and it is probable that these Beech trees were planted at about that time. They are all short-stemmed specimens from sixty to seventy feet tall, with wide-spreading branches which on some of the trees sweep the ground. Several varieties of the European Beech have been found growing naturally in the woods in Europe and are propagated and sold by nurserymen. The best known of these varieties is the so-called Purple Beech with leaves which are pale red in early spring and deep red at maturity, falling in the autumn without change of color. This tree was found originally growing in the forests in three or four places in central Europe, and the first account of it was published in 1680. Seedlings raised from the Purple Beech sometimes have purple leaves and often different shades of color, and to some of these forms names have been given. The Purple Beech unfortunately is more generally planted than the typical green leaved form, and with many tree-planters has been a favorite in the northeastern states. An interesting form of the European Beech (var. *pendula*) is a comparatively low tree with horizontal and slightly pendulous branchlets from which hang almost vertically secondary branches, all forming a tent-like head almost as broad as high. This tree was at one time somewhat planted in this country, and the largest specimen known to the Arboretum is growing on what was once a part of the Parsons Nursery in Flushing, Long Island, which has recently been obtained for a park by the city of Flushing. The variety *remilfolia* is usually classed among the weeping Beeches but is really a shrub as broad or broader than it is high.
The Fern-leaf Beech (var. *heterophylla*) distinguished by its variously shaped leaves which on the same branch are long and narrow and usually more or less deeply lobed, pinnate or lacinate, is growing well in the Arboretum where it promises to become a handsome tree. The Arboretum knows two fine specimens of this variety in the United States. One of these grows on Bellevue Avenue, in Newport, Rhode Island, on the grounds of the Redwood Library and Reading Room. This tree was planted in 1834 and has a trunk nearly four feet in diameter, and a spread of branches about seventy feet across. The second is growing on Mr. Hendon Chubb’s estate, in Llewellyn Park, near Orange, New Jersey, and is supposed to be seventy-five years old. This tree, which has branches drooping to the ground, is forty feet high with a head forty-five feet in diameter. A form of the European Beech (var. *fastigiata*) on which all the branches grow erect and form a narrow pyramidal head, promises to be a useful addition to trees of this habit, like the fastigiate Red and Sugar Maples, the fastigiate European Oak, and the fastigiate Tulip-tree. There is a great difference here in the time the different forms of the European Beech assumes its autumn colors. On some trees the leaves are still entirely green and on others the green is slightly tinged with yellow or a general brownish color. The leaves of the purple-leaved forms retain their color until they fall.

**Climbing Plants.** The Ivy, which is perfectly hardy forty miles south of Boston in the City of Providence, has been kept alive with difficulty in a sheltered place in the Arboretum; raised from seeds gathered at Riga in Russia, probably as cold a place as it grows in naturally. Its only substitute in this climate is *Evonymus radicans* var. *vegeta*, the handsomest form of this Japanese species which readily clings to the walls of a brick building and can be grown as a shrub by a little cutting or made into a low hedge, and when not too closely cut is thickly covered in the autumn with abundant and beautiful fruit. Further south, as on Long Island, this useful plant is badly injured by a scale insect.