Three species, at least, of Hawthorns show their greatest beauty in early November. These species are *Crataegus cordata*, *C. nitida* and *C. persistens*. The first of these plants, the so-called Washington Thorn, is a narrow, rather slender tree which in favorable situations grows to the height of twenty or thirty feet. The leaves are nearly triangular in outline, of medium size and very lustrous. The flowers, which open about the middle of June, are small, creamy white, and are produced in small, compact but very numerous clusters; these are followed by small, scarlet, shining fruits which ripen late in October and remain on the trees without change of color until the spring. As the fruit assumes its bright color the leaves turn gradually to brilliant shades of orange and scarlet. This tree, therefore, which is much less beautiful when it is in flower than many other Hawthorns, is surpassed in the late autumn by few members of the genus. *Crataegus cordata* is a native of the southern Appalachian region from Virginia to Alabama, and is also abundant in southern Missouri. Formerly much cultivated as a hedge plant in the middle states, it is now sparingly naturalized in eastern Pennsylvania and in Delaware. The largest plants of this Hawthorn in the Arboretum are on the side of the Bussey Hill Overlook, and there is a good plant on Hickory Path near Centre Street. *Crataegus nitida* is a native of the bottom-lands of the Mississippi River in Illinois opposite the city of St. Louis, and is a larger tree of entirely different habit. The branches are wide-spreading and slightly pendulous, and form a large, rather open, round-topped head. The leaves are narrow, long-pointed and very lustrous, and, as is often the case with American Hawthorns, those at the ends of the branches are usually two or three times larger than the leaves on fertile branchlets. The flowers are pure white, of medium size, and produced in very numerous clusters which cover the upper side of the branches. The scarlet drooping fruit, which is also of medium size, ripens late just as the leaves turn orange and scarlet. In habit, in brilliancy of foliage, in its autumn colors, and in its abundant flowers and showy fruit *Crataegus nitida* is one of the handsomest of the American Hawthorns which has grown to a large size in the Arboretum. There are several good specimens of this tree on the bank on the east side of the Shrub Collection. *Crataegus persistens* retains its leaves which are now as green as they were at midsummer, after those of all the other Hawthorns have fallen, and the crimson fruit remains without change of color on the branches until late in the winter, making this tree the most conspicuous of all the winter-fruiting plants which have yet proved hardy in New England. This tree in habit and in the shape and general appearance of the leaves resembles some of the Cockspur Thorns of eastern North America. Raised at the Arboretum from seeds sent from the Paris Museum, its native country is still unknown. No plant at all like it has been found in the United States, although it is certainly a species of the New World. The fact that it retains its leaves so late in the autumn indicates a southern origin, and, if it is not a hybrid, it is possible that it may still be found in some of the elevated valleys of central Mexico. But whatever its origin, this is a tree of perfect hardiness and exceptional ornamental value. The
largest plant in the country and the type of the species can be seen among several large Hawthorns at the foot of the bank on the park-way near the Forest Hills entrance of the Arboretum, where it can be easily recognized as it is now the only plant in this collection with perfectly green leaves. Here, too, are several good plants of Crataegus nitida.

Unfortunately the European Holly, Ilex Aquifolium, and its numerous varieties which are splendid ornaments of parks and gardens in more temperate regions, is not hardy in New England. This is also true of the evergreen Hollies of China and of the broad-leaved evergreen species of southern Japan, and only three species of these plants can be grown here. These are the red-fruited Ilex opaca of the eastern United States, and the black-fruited I. glabra and I. crenata. Ilex opaca is interesting as it is the only broad-leaved evergreen tree which is hardy in New England. In general habit and in its fruit it resembles the European species, but on this American tree the leaves are dull and not lustrous like those of the European species. The bright red berries remain on the branches through the winter, however, and make it an ornamental tree here of the first class. There are several specimens in different parts of the Arboretum, and a large plant now covered with fruit among the Laurels at the northern base of Hemlock Hill. Ilex glabra is a round-topped shrub occasionally five or six feet high and is very common on sandy land in the neighborhood of the coast from New England to Texas. It is very hardy and is chiefly valuable for its small shining leaves which nearly completely hide the small black fruits which remain on the branches during the winter. This is certainly one of the most valuable of the evergreen shrubs which can be grown in this climate. A fine mass of it can be seen on the Bussey Hill Road opposite the Laurels at the northern base of Hemlock Hill. Ilex crenata is a taller growing and narrower plant than I. glabra, with darker green leaves and rather larger fruits. The leaves vary greatly in size on different individuals, and the plants with smaller leaves have proved hardier in the Arboretum than the broader-leaved forms. There are several plants of this Japanese Holly on Azalea Path which have grown to their present size from seeds planted here twenty years ago.

The number of broad-leaved evergreen shrubs which can be grown in this climate is small, but the leaves of a few deciduous-leaved species are not injured by early frosts and remain green so late in the season that they are valuable for the autumn garden. One of the most useful of these plants is the European Privet, Ligustrum vulgare, a plant formerly much cultivated in this country and now occasionally naturalized in the eastern states. The leaves are now as dark green as they were at midsummer, and their beauty is increased by the larger handsome clusters of shining black berries on the ends of the branches. This is a large, very hardy and fast-growing shrub which in recent years has been somewhat overlooked owing to the introduction of numerous Japanese and Chinese Privets which are all, however, far less valuable ornamental plants. There is a form of the European Privet with yellow fruits which is not particularly handsome, and forms varying from the normal plant in habit. They can all be seen in the Shrub Collection.
A Evonymus known as *E. Hamiltonianus*, var. *semipersistens*, a shrub of uncertain origin but probably Chinese, is valuable because the leaves are still as green as they were early in the season. The flowers of this plant, like those of all the species of Evonymus, are small, and the fruit is unusually small, inconspicuous and late ripening; and it is only for the green of its leaves in late autumn that this plant is valuable. A good specimen can be seen in the Evonymous Group on the right-hand side of the Meadow Road. All the forms of the common Lilac (*Syringa vulgaris*) are still as green as they were at midsummer, and the leaves of *Magnolia glauca* are still nearly as bright and shining as they were two months ago.

The mild winter and the abundant rains of the early spring, and of October have been favorable to conifers, and many of the trees in the Pinetum have never looked better than they do today. This, of course, is not a good climate for conifers and some of the most beautiful and interesting of these trees cannot be grown here at all, including nearly all the species from western North America and those from the southern United States and Mexico. The coniferous trees of the countries of the Mediterranean Basin, and of South America, Tasmania and New Zealand, too, are not hardy here. Those of northeastern North America and the Rocky Mountains are the species on which we can best depend, and among these the White Pine, the Red Pine, the Canadian and the Carolina Hemlocks, the Red Cedar, the Arborvitae, the Colorado White Fir (*Abies concolor*), the Colorado Douglas Fir (*Pseudotsuga Douglasii*) can be counted among the most beautiful conifers in the world. All the species of central and northern Europe are hardy here but are often short-lived. So far as it is possible to judge by an experience only of from twenty to thirty years all the Siberian and north of China conifers are promising here, as are nearly all the Japanese species, although some of these are more valuable ornamental trees here than others. Of the great number of new conifers recently raised here from seed collected in western China, the most important probably of all the Arboretum introductions it is still too soon to speak, but, judging by the climate where these trees grow, it is not improbable that some of these Firs and Spruces may succeed in New England.

These bulletins will now be discontinued until the spring.

An illustrated guide to the Arboretum containing a map showing the position of the different groups of plants has recently been published. It will be found useful to persons unfamiliar with the position of the different groups of plants. Copies of this guide can be obtained at the Administration Building in the Arboretum, from the Secretary of the Massachusetts Horticultural Society, 300 Massachusetts Avenue, Boston, from The Houghton, Mifflin Company, 4 Park Street, Boston, at the Old Corner Bookstore, Bromfield Street, Boston, and at the office of the Harvard Alumni Bulletin, 50 State Street, Boston. Price, 30 cents.

The Arboretum will be grateful for any publicity given these Bulletins.