The genus Quercus, to which Oak-trees belong, is widely distributed through the northern hemisphere and some of the species are unsurpassed in beauty and magnificence among the trees contained in this hemisphere. Comparatively little attention has been paid to them as ornamental trees in this country; one is reminded of this fact at this season of the year when the splendor of the autumn color of several of the species in this climate is shown, and regrets that so few Oaks are found in our plantations. A walk at this time in the Arboretum through Oak Path from a point on the Meadow Road nearly opposite the Centre Street Gate to its junction with Azalea Path on the southern slope of Bussey Hill will be found interesting and instructive. This walk passes by the first Oaks which were planted in the Arboretum. Beautiful views toward the west, including the Juniper Collection and Hemlock Hill, can be obtained from it, and before it joins Azalea Path it will pass by some of the handsomest Azaleas in the Arboretum.

Oaks have the reputation of growing slowly, and owing to this reputation have been neglected by planters. Fifty odd years ago when the Arboretum was started few persons in the United States planted Oak-trees, and it was practically impossible to obtain in American nurseries even the commonest native species. Some of the species raised from seeds were first planted in the Arboretum nearly fifty years ago when only a few inches tall. The largest of them now are taller with thicker trunks than other hardwood trees planted about the same time here, like Hickories, Walnuts, Maples, Elms, etc. The tallest of the Oaks planted in the Arboretum are Pin Oaks (Quercus palus-
tris), and the tree with the thickest trunk is a hybrid between the White and the Burr Oaks called Quercus Bebbiana.

This is a poor region, however, in which to judge the value of many Oaks as ornamental trees. It is too cold here and only a few species have proved hardy in New England, and of the fifty-five species which become trees in the United States it has been found possible to keep alive in the Arboretum only seventeen species. Of the shrubby species there are in the Arboretum only the Chinquapin Oak (Quercus prinoides) and three or four of the Rocky Mountain species which grow very slowly here and give little promise of value as ornamental plants. Some of the handsomest of the American Oaks, including all the species confined to the southern states, to the Pacific coast region, and to Arizona and New Mexico, cannot be seen growing in the Arboretum. No evergreen Oak can support this climate, and the Oaks of western Europe are usually short-lived in eastern America. The deciduous-leaved Oaks of western Europe and those of northern Japan, Korea, northern and western China, grow well in the Arboretum and a few of these already produce good crops of fruit. The largest Asiatic Oaks in the Arboretum are plants of Quercus variabilis and Q. dentata on the Oak Path near its southern end. The principal collection of Asiatic Oaks, however, is on the southern slope of Bussey Hill between Azalea Path and the Bussey mansion. In the mixed plantation of trees near the summit of Peter's Hill are many Oak-trees, including large plants of the Japanese species raised from seed brought from Japan in 1892. Scattered through the Oak plantations are several hybrids of the American species, and no opportunity is lost to increase the number of these hybrids which are now known to occur between various species growing in different parts of the country. The oldest of these hybrids now known in the neighborhood of Boston is on the Sargent estate in Brookline; it is of uncertain origin, but no doubt was planted by Mr. Thomas Lee as early as 1820. This tree is now known as Q. Sargentii and reproduces itself quite accurately, and as a young plant grows very rapidly. There are already good-sized trees in some of the Arboretum borders. All of these hybrid Oaks are interesting, and some of them are handsome trees, like Q. Comptonae in Natchez, Mississippi, for example, a hybrid of Q. lyrata and the southern Live Oak, Q. virginiana, one of the most splendid Oak trees in the world but unfortunately of too tender blood to bear the severity of a New England winter.

The early spring is one of the seasons when our northern Oaks can be studied to good advantage, for the color of the very young leaves and the amount and character of their hairy covering is different on every species. These characters are constant from year to year, and it is easier to distinguish, for example, a Black Oak (Quercus velutina) from a Scarlet Oak (Q. coccinea) by the unfolding leaves than it is by the mature leaves which on some individuals of these species are difficult to distinguish. In the autumn the leaves of Oak trees turn later than most of our deciduous trees; the color, however, is assumed irregularly on different individuals of the same species, and on some of them they are green while on others they are scarlet or yellow. Oak trees form the brilliant feature certainly of the North American forest in late autumn, and if for no other reason should be planted for the autumn color of their foliage; it is surprising that they are not more
generally planted, especially as the autumn colors of many of them, like some individuals of the White Oak and the Scarlet Oak, are not surpassed by those of any trees in the northern forests. It is true that nearly all Oak trees, with the exception perhaps of the common Red Oak, are difficult to transplant unless this is done when the plants are very young seedlings, but when finally transplanted when only one or two years old they grow, as has been seen in the Arboretum, as rapidly or more rapidly than any other deciduous trees hardy here, with the exception perhaps of Willows and Poplars. For the decoration of parks, parkways and roadsides they are superior to other trees, especially Elms and Ashes, for they grow as rapidly or more rapidly when once established and are rarely ruined by wind which every year in northern city parks destroys hundreds or even thousands of Elms, which are perhaps the most popular trees to use in this country for this purpose because they can be transplanted when of large size. Lightning, of course, injures an Oak as often and as seriously as it does any other tree, but apart from lightning Oak trees are rarely injured by accidents, and the insects which attack them are no less easy to handle than the insects which have been so destructive to Elms.

The new parkways in the neighborhood of Boston have in the last twenty years been generally planted with Red Oaks and fifty years hence these should make magnificent spectacles, and long survive the American and European Elms which have been so often used for this purpose. There is not a single Oak-tree certainly of any age on Boston Common; and the comparatively few Oak-trees growing at Mt. Vernon either before Washington's time or which have sprung up since bear no evidence that he ever planted an Oak of any species, although Mt. Vernon is well suited to produce Oaks of ornamental value. In the extreme southern states, especially in Natchez, Mississippi, and Louisiana, planters a hundred years ago fortunately planted Live Oaks and these are probably now the finest Oak-trees which have been planted in the United States. It is interesting that one of the handsomest Oak-trees in the United States is the hybrid *Quercus Comptonae* which appeared many years ago on Dr. Duncan's plantation near Natchez. This tree, which was destroyed a year or two ago by a storm, has produced a few seedlings which are growing near Natchez, and occasionally in Louisiana, and which are now great trees unsurpassed in beauty.

Some one should take up the hybridization of Oaks seriously, especially the Chinese and Japanese species, for judging by our small experience with hybrid Oaks efforts to increase the forms in this manner promises to add valuable material to our plantations in the northern hemisphere. Occasionally hybrids will be found growing naturally, but it is not probable that unknown hardy species are likely to be discovered except possibly in the great unexplored region in northern Tibet and on the high mountains of northern Kansu in northwestern China.

Enkianthus. The Japanese species of this Asiatic genus of the Heath Family all grow well in the Arboretum and the group of these plants on the lower side of Azalea Path furnish pleasure to many persons in spring when they are covered with bell-shaped flowers, and in late October when the leaves are bright scarlet. The handsomest of these
plants in the autumn, *Enkianthus perulatus*, is a compact round-headed shrub with white flowers. This is a popular plant in Japan and can be seen in many Japanese gardens cut into a round ball. It has never produced seeds in the Arboretum, and has remained exceedingly rare in this country. More common is *E. campanulatus*, which is sometimes in Japan a tree twenty-five or thirty feet tall and which in the Arboretum has grown from seed in thirty years into a narrow shrub eight or ten feet tall. The yellow flowers tinged with red, or in one variety pure white, hanging gracefully in long racemes, are attractive. This plant produces quantities of seeds every year, and there is no reason why it should not become a common garden plant in those parts of America where the soil is free of lime.

*Ligustrum vulgare*. Attention has been often called in these Bulletins to the value of the common European Privet, *Ligustrum vulgare*. In recent years much attention has been paid by botanists and gardeners to the Privets of eastern Asia, where many species have been discovered. None of these, however, are as valuable in this climate as the European species which is perhaps the handsomest of all the hardy black-fruitied shrubs. The bright shining fruit is borne in compact clusters which stand up well on the ends of the branches above the dark green lustrous leaves and remain on the plants during the early winter months and after the dark green leaves have fallen. Formerly this was a common garden plant in the northern states and is now sparingly naturalized in some parts of the country. There is a form with yellow fruit which is much less beautiful than the type, and there is a variety *foliolosa* in the Arboretum collection which has rather narrower leaves and larger fruit. This shrub, although apparently little known in our gardens, is one of the handsomest of all the shrubs here at this season of the year.

*Crataegus phaenopyrum*, formerly called *C. cordata*, the Washington Thorn, is not as well known as it was perhaps one hundred years ago when less attention was given to American Hawthorns, and it appears to have been frequently used then in the middle states as a hedge plant. Near the group of *Crataegus punctata* on the Bussey Hill Overlook are two large plants. It is a narrow tree sometimes thirty feet tall, with erect branches and small, nearly triangular lustrous leaves which are now beginning to turn bright scarlet. The small globose fruits are also turning scarlet and will remain on the branches until spring with little loss of beauty. This is the latest of all the species of Hawthorn in the Arboretum to flower. The only drawback to this handsome little tree is found in the brittleness of the branches which are often broken by high winds.