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The Arboretum is often asked for information about a class of plants which in distinction from conifers are popularly called "broad-leaved evergreens." The general absence of these plants from the gardens of the northeastern United States astonishes European visitors to this country, and their prominence in the gardens of Great Britain, Italy, and other temperate parts of Europe often makes American travellers in those countries despondent over the possibility of having really good gardens here; the prominence, too, which has been given in late years here to architecture in garden-making has increased the demand for these broad-leaved evergreens, for they are essential for the decoration of a true architectural garden. This, however, is not a country where many of these plants can be successfully cultivated. The winters are too cold, the leaves give up too much moisture to March winds when the roots are still inactive in frozen soil, and the summers are too hot and dry.

The *Ilex* (*Quercus Ilex*), the chief ornament in the gardens of Italy, the so-called Laurel of English gardens, and the Portuguese Laurel, which are such only in name, being really evergreen Cherry-trees, the Bay and the Laurestinus, unless cramped in pots, will never be seen in American gardens. This is a region for plants which lose their leaves in the autumn and here many of these plants flourish as in no other part of the world.

The number of broad-leaved evergreens which can really be depended on in eastern Massachusetts is small. The most important are the Rhododendrons and the Kalmia or Laurel. The most successful here of all the plants of this class is the broad-leaved Laurel, *Kalmia latifolia*. It is hardier and less particular about soil, and easier to cultivate than even the hardiest Rhododendrons, like *Rhododendron maximum* and *Rhododendron catawbiense*; and, moreover, it is one of the most beautiful flowering plants in the world. The little native Sheepkill Laurel, *Kalmia angustifolia*, and the less well known Kalmias of northern swamps, *K. polifolia* and *K. microphylla* are broad-leaved evergreens also, although these plants are seldom cultivated. The Laurels, like the Rhododendrons and other plants of the Heath Family, cannot be grown in soil strongly impregnated with lime, so their use is restricted to a comparatively small part of the country. To the Heath Family we are indebted for a few other plants of this class. The handsomest of these is *Pieris* or *Andromeda floribunda*, a broad low bush with small dark green leaves and abundant conspicuous clusters of dull white flowers. This plant grows naturally on a few of the high mountains of the southern Appalachian region and has been long known in gardens. It is very hardy here and, after the Kalmias and Rhododendrons, perhaps the most desirable of the broad-leaved evergreens for this region. A Japanese species, *Pieris japonica*, which in Japan sometimes attains the size of a small tree, is also hardy, but it blossoms early in the season, and the flowers, which are larger and handsomer than those of the native species, are too often destroyed by frost.

As an under shrub in shady places, for it does not bear exposure to the sun, is another plant of the Alleghanies, *Leucothoe Catesbyi*, which is perfectly hardy. It has slender arching stems, which grow to the height of several feet and are clothed with large, lustrous, pointed leaves, and the white flowers in axillary clusters are abundant and attractive. To this Family, too, belong the Wintergreen, or Checkerberry, *Gaultheria procumbens*, and the Trailing Arbutus or Mayflower, *Epigaea repens*, but these are difficult to cultivate and probably will never take much place in the general garden decoration. More generally useful is another plant of the same Family, the Bearberry, *Arctostaphylos Uva-ursi*, which with its long prostrate stems forms a great mat on sandy and gravelly banks in the northern states and in northern Europe. Although rarely cultivated in this country, this is an excellent plant for covering poor soil and just now its bright red fruits make a handsome contrast with the small light green shining leaves.

Interesting, too, among broad-leaved evergreens is *Gaylussacia brachycera*, the Box-leaved Huckleberry. This is one of the rarest shrubs of the eastern United States, being found in three stations only, for it is known to grow naturally only in southern Pennsylvania, southern Delaware, and in West Virginia. It is found in dry soil in the shade of the forest, spreading over considerable areas by its underground stems. This plant grows only a few inches high, but it is very hardy, adapting itself readily to cultivation, and in the Arboretum grows as well in full exposure to the sun as it does in the shade.

The Ledums, or as they are popularly called Labrador Tea, are small evergreen plants of the northern hemisphere related to the Rhododendrons. Two or three of the species are hardy but difficult to cultivate and require especial care in selected positions; and this is true of two other small evergreen shrubs of the Heath Family native to eastern America, *Leiophyllum buxifolium* of the pine barrens from New Jersey southward, and *Loiseleuria procumbens* of the alpine summits of the White Mountains and northward.

The Old World Holly-tree, *Ilex aquifolium*, which in many forms is often one of the chief ornaments of European gardens, is not hardy here and its American relative, *Ilex opaca*, a native of the Massachusetts coast and southward, with dull leaves, is a much less beautiful plant. It is, however, the only broad-leaved evergreen which becomes a tree in New England. The Inkberry, *Ilex glabra*, a common shrub in the coast region from Nova Scotia to Texas, where it is found usually in poor soil, is one of the best of the broad-leaved evergreens hardy here, although its small black fruits are nearly covered by the shining foliage. It is more valuable here than the Japanese black-fruited Holly, *Ilex crenata*, although some forms of this plant are fairly hardy here.

The Ivy, unless carefully protected, cannot be successfully grown east of Cape Cod although at Providence, only forty miles from Boston, where the influence of the Gulf Stream is more strongly felt than it is here, the Ivy is perfectly hardy; and we have as an evergreen vine only the forms of the climbing Japanese Evonymus, *Evonymus radicans*. These plants are perfectly hardy when once established; they grow rapidly and although not so beautiful a covering for walls as the Ivy, they are our

only substitute for it. The best form is the var. *vegetus* which was introduced many years ago into the Arboretum from northern Japan. This form has broader leaves than the others, and flowers and produces its fruit more freely.

The Mahonias, or evergreen Barberries of our northwestern coast and of Japan and the Himalayas, are not hardy here except in favorable positions, and cannot be recommended for general cultivation; and of these plants we can depend only on the dwarf species of the Rocky Mountains, *Berberis* or *Mahonia repens*. This plant grows only a few inches high and the leaves are lighter green and less lustrous than the better known Oregon Grape, *Berberis* or *Mahonia Aquifolium*.

Two little shrubs of the Celastrus Family must be included in this list. These are *Pachystima myrsinites* of the Rocky Mountains and *Pachystima Canbyi* of the mountains of West Virginia. The former is widely distributed and a common plant in its region. It grows to the height of from twelve to eighteen inches and its leaves resemble those of some of the forms of the Box. It is, however, less hardy here than its Virginia relative which in the Arboretum forms a broad mass of small leaves only a few inches high and does not suffer from full exposure to the sun.

The different forms of the Box-tree of the Orient, *Buxus sempervirens*, except in exceptional positions, are not hardy in eastern Massachusetts, although west of Cape Cod many of them can be successfully grown, and only the little known Japanese species *Buxus japonica* seems really hardy here.

This completes the short list of broad-leaved evergreens which can be grown in eastern Massachusetts unless the Heather, one or two species of Heath, the stemless forms of Yucca and the Chamaedaphne, or Leather Leaf, can be called broad-leaved evergreens. This last plant, which is common in northern swamps, holds some of its leaves until spring. Although it grows naturally in wet ground, it does well when transferred to drier situations. Among the evergreens might almost be inserted, however, *Magnolia glauca*. In the south this tree, which grows much larger there than it does in the north, retains its leaves until late into the spring, but here they do not lose their beauty and do not fall until December.

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, and at the Old Corner Bookstore, Bromfield Street, Boston.

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