the branches at some distance from the ground grow more rapidly than those at the base of the trunk, and overshadow and gradually kill them. The oldest of these trees in cultivation were raised from seed collected by Dr. C. C. Parry in 1862 and are thus only fifty-three years old. One of these original trees is growing in the Arboretum on the southern slope of Bussey Hill where, although it is a pathetic object, it is kept to show the planters of this tree what they may expect of it long before it attains half its natural size. For many years there have been growing in the Arboretum what have been considered the finest specimens in cultivation of the second of the Colorado Spruces, *P. Engelmannii*; they formed narrow and compact pyramids with slender trunks furnished to the ground with short branches, and it was believed until recently that this tree which is so handsome on the high slopes of the Colorado mountains would prove to be the most desirable of all Spruce-trees for this climate. In the last two or three years, however, the lower branches of these trees have begun to die and, although the trees appear otherwise perfectly healthy and are still growing rapidly, their beauty as specimen trees is much injured.

Exotic Conifers. The conifers of western and northern Europe are generally hardy here but often short-lived. The Firs, Spruces and Pines of Japan are nearly all hardy in this climate, and although we have had a much shorter experience with the Chinese conifers than with those from Japan there is every hope that many of them will prove hardy in this climate and that some of them may be valuable ornamental trees.

The Cedar of Lebanon. The Cedar of Lebanon (*Cedrus Libani*) in the Arboretum shows the importance of careful selection of the seeds from which to raise trees for any particular climate. One of the Fir trees of Asia minor, *Abies cilicica*, has been growing for many years in New England where it has proved to be one of the best of all conifers of its class to cultivate here as an ornamental tree. With this Fir the Cedar of Lebanon grows in Asia Minor on the Anti-Taurus, far north of the Lebanon Range in Palestine and in a much colder climate. As the Palestine Cedar is not hardy here in New England the Arboretum had seeds of this tree collected on the Anti-Taurus with the view of attempting to introduce a hardy race of Cedars into New England. The seeds were sown here in the spring of 1902 and a large number of plants were raised. They all proved perfectly hardy, not one having suffered from drought or cold. Some, however, have been lost in attempts at transplanting, for no other tree here has proved so difficult to move. The average height of all these young Cedars in the Arboretum is now about thirteen feet. The tallest is twenty-one feet high and there is another specimen twenty feet high. It is doubtful if any other conifer can be grown in New England from seed to the height of twenty-one feet in thirteen years.

Torreya nucifera. Of the genus *Torreya*, which is related to the Yews, there are four species found in Florida, California, Japan and China. The Japanese species *T. nucifera* is well established in the

Arboretum, and one of the trees produced a few of its green olive-like fruits this year. In Japan this *Torreya* is a magnificent tree sometimes ninety feet high with a massive trunk and a dense crown of dark green shining leaves. It should be better known in this climate where it is apparently one of the rarest of exotic trees. The best specimen, probably, in the United States is in the Hunnewell Pinetum at Wellesley in this state. The peculiarity of this tree is that it does not begin to grow until July. In spite, however, of its short growing season it makes long annual shoots and increases rapidly in height. There is a group of this tree among the Laurels at the base of Hemlock Hill; there is a plant of *Torreya californica* among the exotic conifers near the top of Hemlock Hill where it has been kept alive for several years by careful winter protection. As an ornamental tree it has no value in this climate.

Chinese Cotoneasters. Several of the Chinese Cotoneasters in the collection of Chinese plants on the southern slope of Bussey Hill will be objects of much beauty for several weeks, for many of them retain their fruit until winter and their leaves are only now beginning to take on their brilliant autumn colors. The most beautiful of them perhaps now is the red-fruited *Cotoneaster Dielsiana*. *C. divaricata*, another red-fruited species, will be more beautiful in ten days' time when the leaves will be bright scarlet. *C. horizontalis* and its variety *perpusilla* with their dark green leaves and small bright red fruits, will not lose their autumn beauty much before Christmas. These two plants with their prostrate stems spreading into broad, compact mats are well suited for the rock garden or to train against low walls.

Hawthorns. Many of the American Hawthorns have now dropped their leaves. Two conspicuous exceptions are *Crataegus nitida* and *C. cordata*. The leaves of these two trees are turning red and set off to advantage their small, bright red fruits. There are large specimens of the former in the old Crataegus Collection on the bank between the Shrub Collection and the Parkway, and *C. cordata* can be seen on the Overlook and on Hickory Path near Centre Street. If a selection of twelve of the handsomest American Hawthorns for New England gardens were to be made these two should be among them.

Pyrus ovoidea. In a few days the leaves of this Chinese Pear-tree will turn bright scarlet. The late autumn coloring of the leaves of this tree is not surpassed by that of any other plant in the Arboretum, and it is well worth a place in any garden for this alone. It is interesting, too, because the leaves of no other Pear-tree turn to brilliant colors, and because the yellow juicy fruit, unlike that of other pears, is smaller at the apex than at the base. There is a good specimen of this tree in the Pear Collection on the left hand side of Forest Hills Road near the Forest Hills entrance.

Stewartia pseudocamellia. This is a small Japanese tree with erect growing branches, which produces in summer small, pure white, cup-shaped flowers and at this season of the year is interesting and attractive on account of the dark bronze purple color of the ripening leaves. There is a specimen in the Shrub Collection and another on Azalea Path.

The Bulletins of 1915 will be discontinued with this issue.

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