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# ARNOLD ARBORETUM

HARVARD UNIVERSITY

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## BULLETIN

OF

## POPULAR INFORMATION



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## BULLETIN NO. 60.

Most of the conifers still retain the delicate colors of the foliage of their young branchlets, and this is a good time for the lover and planter of these trees to examine the Arboretum pinetum.

Eastern North America is not a good region for these trees. Many of them cannot long bear our hot dry summers, cold winters, and the cold nights, the hot sun and the winds of a New England March. For ornamental planting here better and more permanent results are obtained by the use of deciduous leaved trees and shrubs than by the general planting of conifers and broad-leaved evergreens. Two of the handsomest of coniferous trees, however, are native to this part of the country, the White Pine (*Pinus strobus*) and the Hemlock (*Tsuga canadensis*), and where these two trees thrive the lover of evergreen trees need not lack material for his plantations. It can be said generally that the conifers of northeastern North America, the Rocky Mountains, northern, central and southeastern Europe, Siberia, northern China and northern Japan, are hardy in this climate, and that those of the southern United States, Mexico, Central America and the countries south of the equator, the Himalayas and southeastern Asia are not hardy; that only a few of the species of western North America can be safely planted in this climate, and that so far as it is possible to judge by our experience here many of the Pines, Spruces, Firs and Larches which cover the mountain slopes of the Chinese-Tibetan frontier promise to be hardy in New England. In the Arboretum there is probably the largest collection of species and varieties of conifers which can be found in eastern North America, although in a few collections like that at Wellesley in this state, and in the Hoopes Pinetum at West Chester, Pennsylvania, there are larger specimens of several species. Many exotic species are hardy and grow rapidly and vigorously here, but only time can tell whether any of these trees will ever reach here a large size and become permanently valuable as ornamental or timber-trees.

The most interesting thing, perhaps, which the Arboretum has taught about conifers is the fact that when a species is widely distributed over regions of different climates plants raised from the seeds of the trees growing in the coldest parts of the area of distribution of the species are the hardiest. For example, the Douglas Spruce (*Pseudotsuga taxifolia*) from the shores of Puget Sound, where this tree grows to its largest size, is not hardy here, but the same tree from the high mountains of Colorado is one of the hardiest and most promising of the exotic conifers which have been planted in New England. *Abies grandis* from the cold Coeur d'Alène Mountains of Idaho has been growing for years in the Arboretum, while the same tree from the northwest coast-region cannot be kept alive here. The same is true of the so-called Red Cedar or giant Arbor-vitae (*Thuja plicata*) of the northwest. Plants from Idaho are perfectly hardy in the Arboretum and now promise to grow to a good size, while those from the coast are tender here. The experience of the Arboretum with the Cedar of Lebanon is interesting, for this is a famous tree which it is desirable to establish wherever it can be induced to grow. The Cedar of Lebanon of European nurseries is raised from seeds produced in Europe by the descendants of the trees brought originally from the Lebanon in Syria.



Occasionally one of these trees can be seen in the neighborhood of New York and Philadelphia, but it is not hardy in New England. The Cedar of Lebanon also grows on the Anti-Taurus in Asia Minor, a much colder and more northern region than the Lebanon, and in 1901 the Arboretum had seeds collected from the trees in this northern station, and these were sown in the spring of 1902. None of the plants raised from this seed, although planted in exposed situations, have ever suffered and some of them are now from fifteen to eighteen feet high. This experiment may have important results, but a century at least will be needed to show its real success or failure.

Of exotic conifers usually planted in this country it is found that the life here of the Scotch Pine (*Pinus sylvestris*) is usually not more than thirty or forty years. The tree grows very rapidly here, it is perfectly hardy, and, beginning to produce seeds when only a few years old, self-sown seedlings often appear in considerable quantities. The so-called Norway Spruce (*Picea Abies* or *excelsa*) is another hardy, fast-growing European tree which in this climate generally begins to die at the top when forty or fifty years old and is not a success here. Experiments are being made in the Arboretum with seeds of these trees collected from wild trees in Norway and Sweden in the hope that plants raised from these seeds will be more permanent here than European nursery stock which has usually been planted in this country.

The Colorado Blue Spruce, so-called, (*Picea pungens*) promises to be a disappointment. This tree grows naturally near the banks of streams in Colorado, where it is not very common, and never forms forests or large groves; and at the end of a few years it becomes thin and scrawny, with a few short branches found only near the top of the tree. Plants up to twenty or thirty years of age in Colorado and in cultivation are symmetrical, compact and very handsome. No conifer of recent introduction has been raised in such large quantities by nurserymen here and in Europe, and few ornamental trees have been more generally planted in the last twenty years. This must be considered a misfortune, for judging by old trees in Colorado and by the oldest trees in cultivation, this Spruce cannot be for any length of time a valuable addition to our plantations. It was discovered by Dr. Parry in 1862, and one of the trees raised from seeds which he sent at that time to Asa Gray is growing on the southern slope of Bussey Hill in the Arboretum. This specimen very well shows what this tree looks like at fifty years of age. The other Colorado Spruce, *Picea Engelmannii*, although it grows more slowly, promises to be a more permanently valuable ornamental tree than *Picea pungens*; certainly as it grows in Colorado, where it once formed great forests, at high altitudes, it is one of the most beautiful of all Spruces. The trees in the Arboretum were raised here from seeds collected in Colorado in 1879 and are believed to be the finest specimens in cultivation. They are narrow, compact, symmetrical pyramids and until a year or two ago were furnished with branches to the ground; now they are beginning to lose their lower branches and therefore are losing some of their beauty as specimen trees.

It is found here that the northern White Spruce (*Picea canadensis*) grows rapidly and is very handsome for about thirty years, and then begins to become thin and unsightly probably because our climate is too warm for this cold country tree. It is found here, too, that the Red Spruce (*Picea rubra*), the great timber-producing Spruce-tree of



the northeastern United States, is rather difficult to establish and grows more slowly than any other conifer in the collection, and that the two Balsam Firs of the eastern states (*Abies balsamea* and *A. Fraseri*) are in cultivation short-lived and are of no value as ornamental trees; and that this is true, too, of one of the Rocky Mountain Firs, *Abies lasiocarpa*, and of the Siberian *Abies sibirica*.

Of native conifers in the collection, which now after a trial of from twenty to thirty years promise to be most valuable in this climate, the Rocky Mountain form of *Abies concolor* is the most beautiful at thirty years of age of all the Firs which can be grown here. *Abies brachyphylla* from Japan, with leaves dark green above and silvery white below, *Picea omorika* from the Balkans, a narrow pyramidal tree which seems to grow as well in western Europe as it does in New England, are promising trees. *Abies cilicica* from Asia Minor, *Pinus parviflora* from Japan, and *P. Koraiensis*, from Siberia, Manchuria and Korea, a valuable timber tree in its native country, are also promising. *Pinus monticola* from western America, the western representative of our eastern White Pine, is perfectly hardy here, but as an ornamental tree is in no way superior to the eastern species. *Tsuga caroliniana* from the Blue Ridge of North and South Carolina, although smaller is a more graceful and beautiful tree than our northern Hemlock. First raised from seeds in the Arboretum in 1881, it gives every promise of being one of the most desirable ornamental conifers which can be grown in this climate. The collection of the forms of the native Arbor-vitae (*Thuja occidentalis*) in the Arboretum is a large one and is now in excellent condition, and well worth a visit by any one interested in the seminal varieties some trees are capable of producing. This tendency to variation, appears, too, in the Japanese Retinosporas (*Chamaecyparis obtusa* and *pisifera*) which are planted next to the Arbor-vitae.

Although Yews are not technically conifers, it may be said that the Japanese *Taxus cuspidata* and its variety *brevifolia* have come through another winter entirely uninjured, and that there is no reason for modifying the statement already made in these bulletins, that these are the most valuable plants which Japan has contributed to New England gardens, in which the Japanese Yew seems destined to become our best hedge plant. A low form of *Taxus baccata* (var. *repandens*) has proved very hardy in the Arboretum, and for this climate appears to be the most desirable form of the European Yew.

Of trees related to the Yews the hardiest here, with the exception of the well-known Gingko-tree, is the Japanese Torreya, *T. nucifera*. This in Japan is a large tree with a tall trunk and a dense head of dark green foliage. It should appeal to Americans as it bears the name of a distinguished American botanist, and to the student of trees it is interesting because it is the latest of all the conifers or conifer-like trees to begin its annual growth, the leaf-buds now only just beginning to expand. There is a group of these Torreyas among the Laurels at the base of Hemlock Hill, and near them is growing the largest specimen of the Japanese Yew in the Arboretum.

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



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