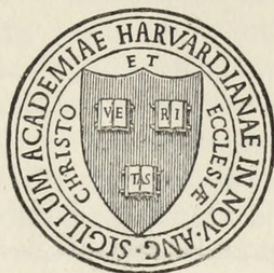


ARNOLD ARBORETUM  
HARVARD UNIVERSITY



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**Plants of wide distribution.** An herbarium which will show the distribution and forms of woody plants is an essential and perhaps the most important part of an establishment in which it is the purpose and duty to grow every specimen of tree or shrub which can be grown in the climate of eastern Massachusetts. It has already been found that several plants raised from seeds collected from one part of their range have proved hardy here and that those from other parts cannot support the Massachusetts climate. For example, the Douglas Spruce (*Pseudotsuga*) from the Pacific states is not hardy, but the same tree from the Rocky Mountains of Colorado, where it was discovered in 1862, has proved one of the most valuable conifers which can be grown in the eastern states. One of the handsomest of the Fir-trees, *Abies concolor*, grows on the Sierra Nevada of California and on the Rocky Mountains of southern Colorado. Both forms are in the Arboretum but the Colorado tree is much more vigorous and beautiful than the California form, and is now the handsomest Fir-tree in the Arboretum. The greatest of all Hemlock-trees (*Tsuga heterophylla*), often growing near the coast in Washington and Oregon to the height of two hundred feet, ranges inland through northern Idaho to Montana. Unfortunately plants from Montana have not yet been tested in the Arboretum, but two seedling plants gathered by Professor Jack at Glacier in eastern British Columbia have been growing here since 1904. Cupressus is an important genus of Conifers confined to western North America, Mexico, southeastern Europe, southwestern Asia, the Himalayas and China; one species, *Cupressus Macnabiana*, finds its northern home on the mountains of southern Oregon on which it ascends to altitudes of



nearly fifty-three hundred feet. Seeds gathered here in 1907 have produced plants which have grown well here up to this time and make an important addition to the Arboretum collection. One of the most important discoveries of the Arboretum is the fact that the Cedar of Lebanon can be successfully grown in Massachusetts. For centuries it was believed that this tree grew naturally only on Mt. Lebanon in Palestine and all the trees in cultivation were raised from seeds gathered on the Lebanon or from the trees grown from these seeds in England or France that grew in those countries to great size and beauty. The trees from Palestine were never hardy in New England, or really healthy in any part of the eastern states. A comparatively few years ago it was discovered that the Cedar of Lebanon formed forests on the Anti-taurus Mountains in Asia Minor about five hundred miles north and in a much colder region than the Lebanon. In 1901 the Arboretum sent a collector from Smyrna to the Anti-taurus to collect seeds of this tree. He succeeded in making a large collection which was distributed in the United States and in Europe. The seeds planted in the Arboretum grew well but the trees have grown irregularly in size; the tallest are now more than thirty feet high and among them are beautiful specimens. These trees can probably be considered perfectly hardy. During one exceptionally severe winter the leaves of a few of them were all killed but they were soon replaced by a new crop of leaves.

It is probable that the Arboretum can be greatly improved by the study and introduction of the geographical forms of many of the trees of the Old World, particularly of Europe and central China. The deciduous-leaved Oaks and the common Ash of western Europe grow here but never make fine trees, and are usually unsatisfactory and short-lived. Trees of these species have usually come to the United States from English nurseries and undoubtedly were raised from English-grown seeds. This is also true of the so-called Norway Spruce (*Picea Abies*) and the Scots Pine (*Pinus sylvestris*). These trees are widely distributed, and it is necessary to know more here of the limits of their distribution by the aid of a larger herbarium than the Arboretum now possesses of northern and western Europe, Siberia and the southern slopes of the Altai Mountains. Many of the trees of the valley of the Yangtse River in central China, which are growing well in Europe, have not proved hardy in the Arboretum, and it is desirable to follow their range north in order to obtain if possible hardier forms of these trees. This it is hoped may be in part accomplished at least by the Arboretum's present expedition into northern Tibet and extreme north-western China under the experienced leadership of Mr. J. F. Rock who is exploring a region into which no botanist has before penetrated. In some of the remote valleys of Persia and the eastern Himalayas plants should be looked for which will flourish in the Arboretum, and the exploration of such regions under intelligent botanical leadership is bound to be useful to this country, just as the exploration of the flora of every part of Japan and of central western China has enriched the forests, parks and gardens of the world. The making of an herbarium covering the trees of the world and showing their distribution is the work which should now occupy the chief attention of the Arboretum. It should not be long delayed for many species of trees are bound to disappear as the earth's surface is cleared for the cultivation



of food-crops for the human race, and especially the production of rubber to meet the demands which are made on it by the increased and rapidly increasing number of automobiles now in use. Such a world-wide exploration will require many years to accomplish, possibly a century, and will cost a great deal of money.

**Koelreuteria paniculata.** This Chinese tree is just beginning to open its yellow flowers which are perhaps the most conspicuous of those of any of the summer-flowering trees which are hardy in this climate. It is a round-headed tree rarely more than thirty feet high, with large, compound, dark green leaves and large erect clusters of golden yellow flowers which are followed by great clusters of bladder-like fruits. This tree, which is hardy in Massachusetts, has been a good deal planted in this country, especially in the gardens of the middle states. In American nursery catalogues it often appears under the name of "Japanese Lacquer-tree," although it is not a native of Japan and has not lacquer-producing sap.

**The Sorrel-tree (*Oxydendrum arboreum*).** This tree is the only representative of a genus of the Heath Family and one of the few genera of eastern American trees which is not represented in eastern Asia. The Sorrel-tree is a common tree of the forests of the Appalachian Mountains from southwestern Pennsylvania southward. It grows also but less abundantly from southern Ohio and Indiana to northern Florida, southern Alabama and Mississippi, and in eastern Louisiana. Growing under the most favorable conditions the *Oxydendrum* is a tree from fifty to sixty feet in height with a tall straight trunk sometimes twenty inches in diameter. The leaves are dark green, very lustrous and seven or eight inches long, and their bright color in the autumn is not surpassed by any other American tree; they are pleasantly acidulous, a character to which the tree owes its vernacular name. The flowers, which are shaped like those of an *Andromeda*, are erect on the branches of spreading or drooping clusters, and these are followed by pale capsular fruits which are conspicuous in contrast with the brilliant autumn foliage. Here at the north the Sorrel-tree begins to flower when only five or six feet high, and it is not probable that it will ever grow here to the size this tree attains on the lower slopes of the high southern mountains where many of the trees of eastern North America grow to their greatest size. There is a group of these trees among the Laurels (*Kalmia*) at the northern base of Hemlock Hill.

***Cornus asperifolia*.** This Cornel flowers a week or ten days later than the Silky Cornel and is still covered with its small cream-colored flowers in loose, broad or narrow, often paniced pubescent cymes, the peduncles an inch in length; these are followed by red-stemmed clusters of subglobose white fruit tipped with the remnants of the style and about a quarter of an inch in diameter. This is a widely distributed plant from southwestern Ontario southward to Ohio, Kentucky, Tennessee and Mississippi to western Florida, and westward to southeastern South Dakota, southeastern Nebraska, central Kansas, northwestern Oklahoma and western Texas. It is the tallest here of the American Cornels, with the exception of *Cornus florida*, often growing



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