lection only the species of the northern, central and eastern parts of the continent, for the interesting species of the south and southeast are not hardy in the Eastern States, although they flourish on the Pacific Coast. Of the species of the Himalayas only a White Pine, *Pinus excelsa*, can be induced to grow here. The Pines of the Chinese Empire, with the exception of the tropical or semitropical *Pinus Massoniana*, are established in the Arboretum. They are *Pinus sinensis*, with three distinct geographical varieties, which when better known may prove distinct species, *P. Armandi* and *P. Bungeana*. All the Pines of Siberia, Manchuria, Korea, and of Japan proper, can be seen growing and in fairly good condition in the Arboretum.

Larix, although widely distributed through the northern and elevated parts of the Northern Hemisphere, contains only a few species. They are all growing in the Arboretum with the exception of the Himalayan *Larix Griffithii* which is not hardy, and the alpine species of western North America and western China, *Larix Lyallii* and *L. Potaninii*, which although hardy have not been able to adapt themselves to sea-level conditions. Hybrid Larches are known and are growing in the Arboretum.

Picea, which grows in most northern regions, does not range southward, although it occurs on the southern slopes of the Himalayas and on the high mountains which form the border between western China and Thibet. Although many of the Spruces lose their beauty early in this climate they can all be grown in eastern Massachusetts with the exception of the two Himalayan species, the Formosa *Picea morrisonicola* and the two species of Pacific North America, *Picea sitchensis* and *P. Breweriana*. The three European Spruces are in the collection one of these the so-called Norway Spruce (*Picea Abies*) has been more generally planted in the northeastern states than any other Spruce. It is hardy and grows rapidly for forty or fifty years, and then usually begins to fail in the top and soon becomes unsightly. The general planting of this tree in New England during the last sixty or seventy years must be considered a misfortune. The handsome Balkan Spruce (*Picea omorika*) which has now been growing in the Arboretum for thirty-eight years, is still in good condition and gives every promise of being a valuable tree in this climate. Unfortunately, however, it is attacked by the borer which does so much injury to the native White Pine. The Spruce of the Caucasus (*Picea orientalis*), which resembles in general appearance the native Red Spruce, has been growing in Massachusetts for more than fifty years; like the Balkan Spruce it too often loses its leader by the attacks of borers. The oldest specimen of the Siberian Spruce (*Picea obovata*) in the Arboretum collection was raised here from seed forty-three years ago. It has grown slowly but is in good health and retains all its branches. No less than seventeen Spruces discovered in China and Manchuria during the last twenty years are established in the Arboretum, and among them only *Picea Sargentiana* has not proved to be perfectly hardy in this climate. Most of these Spruces are large, handsome and valuable trees in their native forests and there seems to be no reason why some of them at least should not succeed here permanently. At least fifty years more,

however, will be needed to settle this question. One of the Spruces of northern Japan, *Picea jezoensis*, and its southern form (var. *hondoensis*) have grown miserably in Massachusetts up to the present time and give little promise of ever being valuable in this climate. The rare Tiger-tail Spruce (*Picea polita*) grows rapidly and is a perfectly hardy tree, but often begins to lose its lower branches before it is thirty feet tall. The northern *Picea Glehnii*, introduced by the Arboretum from seeds obtained by Professor Sargent in Hokkaido in 1892, now promises to be a handsome tree in this climate. The handsomest of the Japanese Spruces, judged by the few trees cultivated in Massachusetts, is *Picea bicolor*, or as it is more commonly called, *P. Alcockiana*. This tree, which is rare in Japan, was discovered in 1862 during the first ascent of Fuji-san by Europeans. Seeds were collected at this time and sent to Europe and it is probable that the few large trees of this Spruce cultivated in the United States and Europe were raised from these seeds. The trees cultivated in Europe under this name are usually *Picea jezoensis* var. *hondoensis*, and the Arboretum knows only five of these trees in the United States, two in the Hunnewell Pinetum, one also planted by Mr. Hunnewell in the grounds of the Town Hall at Wellesley, and two on the Phillips Estate in North Beverly, Massachusetts. In the Arboretum there are only small unsatisfactory grafted plants, and for years the Arboretum has tried without success to obtain a supply of seeds from Japan, for, judging by our present knowledge of the behavior of Spruces in this climate, *Picea bicolor* promises to be the handsomest which can be grown in this part of the country.

Abies. Fir-trees, like the Spruces, are widely distributed with many species through northern and elevated regions of the Northern Hemisphere, growing rather further south than the Spruces, as one Fir-tree grows in Mexico, one in Spain, one in northern Africa and several in southeastern Europe and Asia Minor. Many of the Firs are large and handsome trees, but the genus has not contributed much to the beauty of our northern plantations. Many of the handsomest and most interesting species are not hardy here, and several of the others are not presentable for more than a few years. Judging from the results which have now been obtained with these trees there are only two Firs which can be depended on to retain their beauty here for more than fifty years. These are the western American White Fir (*Abies concolor*), especially the form which grows on the mountains of southern Colorado, and the Japanese *Abies homolepis* or *brachyphylla*, a splendid tree with dark green leaves white on one surface and large purple cones. The variety of this tree with green cones (var. *umbellata*) has grown more rapidly in the Arboretum than the purple-coned tree, but it is a tree of more open habit and with lighter green leaves, and is less valuable as an ornamental tree. *Abies cilicica* from Asia Minor and *A. cephalonica* from southeastern Europe have grown well in Massachusetts for many years; although they have now nearly recovered, these two trees suffered severely in the cold winter of 1917-18.

Thuja, the name of the Arbor Vitaes, is a small genus confined to eastern and western North America, Japan, Korea and north China.

1919. "Picea." *Bulletin of popular information - Arnold Arboretum, Harvard University* 5(17), 66–67. <https://doi.org/10.5962/p.321002>.

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