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Conifers. Representatives of only fourteen genera of the twenty-nine genera into which conifers are now usually divided can be grown in the northeastern states. None of the five genera which are confined to the Southern Hemisphere can be grown here, and of the two genera *Callitris* and *Libocedrus* which have representatives north and south of the equator only the North American *Libocedrus* is growing in the Arboretum. Seven of the genera of eastern Asia consist of a single species, but unfortunately only three of these interesting trees, *Pseudolarix*, *Sciadopitys* and *Cryptomeria*, find places in northern collections. Of the other genera with hardy representatives only *Taxodium* is confined to North America, the others being widely distributed through the Northern Hemisphere. Important genera of the Northern Hemisphere with more than one species which cannot be grown in the Arboretum are the Chinese *Keteleeria* and *Cunninghamia*, *Sequoia* and *Cupressus*.

Pinus among the conifers contains the largest number of species and, with the exception of *Juniperus*, is the only northern genus which extends into the tropics. It is not surprising, therefore, that of the some seventy species of *Pinus* which botanists now generally recognize less than half are in the Arboretum collection where there are now growing twenty-seven species with numerous distinct geographical varieties. The collection contains all the species of the northeastern and middle United States, eastern Canada and the Rocky Mountains, but only four or five of the Pacific Coast species. The Pines of Mexico, which is one of the headquarters of the genus, are represented only by *Pinus ayacahuite*. Europe has contributed to the col-

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,

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