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Pyramidal Trees. Several of the species of trees of the northern hemisphere have produced individuals with erect growing branches which give them an abnormal fastigiate habit. Such trees are interesting in illustrating the variation in habit of trees, and several of them are valuable when used with discretion to produce certain effects in decorative planting. The best known of these trees is the Lombardy Poplar, a form of the Black Poplar of Europe (*Populus nigra* var. *italica*). Some authors have supposed that this tree originated in one of the countries of western Asia, but it is now more generally believed that it sprang up in northern Italy early in the eighteenth century. The trees are all males and have all been propagated from cuttings; and it is not improbable that all of these trees now scattered over a large part of the world are descended from a single individual. It is a very hardy, fast-growing tree, and is able to adapt itself to very different climatic conditions. Nowhere perhaps can such fine specimens be seen as are now growing in the central valley of Chile, and it is equally at home in all parts of North America. The Lombardy Poplar is a great favorite with some members of the younger school of American landscape gardeners, but fortunately in this part of the country it often suffers severely from the attacks of a borer so that it is not probable that large trees will ever become too common here. There is also a fastigiate form of the Silver Poplar of Europe and western Asia (*Populus alba*, var. *pyramidalis*, but better known as *P. Bolleana*). This tree is a native of central Asia but has become common in the United States and Europe in the forty years since it was first sent to Germany. It is as fastigiate in habit as the Lombardy Poplar, and has the advantage over it in the greater variation, shape and color of

the leaves. There is a Poplar with pale nearly white bark which resembles the Lombardy Poplar in habit and foliage and which has been called *Populus thevestina*. It occurs in Servia, the Crimea and Algeria. The young plants in the Arboretum are hardy and are growing well. One of the narrowest and most remarkable of all these trees is the fastigate form of the Sugar Maple, *Acer saccharum*, var. *monumentale*, which was found in 1885 in a cemetery in Newton, Massachusetts. There is a good specimen of this interesting tree established in the Maple Collection. It may prove valuable for planting by the sides of narrow roads. There is a form of the Red Maple (*Acer rubrum*, var. *columnare*) in the collection. This is rather broader than the fastigate Sugar Maple but is a good addition to the list of these plants. The graft from which the Arboretum specimen was raised was obtained in 1889 from the Parsons Nursery on Long Island. Beyond this nothing is known of the origin of this tree. There is also a pyramidal form of the Silver Maple (*Acer saccharinum* var. *pyramidale*). This originated in a European nursery and there are only small specimens in the Arboretum. The only Old World Maple which has produced one of these sports is the Norway Maple (*Acer platanoides*, var. *columnare*). This tree is established in the Arboretum collection and is a broader tree than the American fastigate Maples. The fastigate Tulip tree (*Liriodendron Tulipifera*, var. *pyramidale*) is one of the handsomest of these trees; it originated in the nursery of Simon Louis near Metz in Alsace and has been growing in the Arboretum since 1888. There is a good specimen with the other Tulip-trees on the right-hand side of the Meadow Road. The Linden genus appears to have produced but one of these trees, the var. *pyramidalis* of the European *Tilia platyphyllos*. This tree tapers from a broad base to a pointed apex and is pyramidal rather than fastigate in outline. The fastigate form of one of the Oaks of western Europe (*Quercus pedunculata*, var. *fastigiata*) sometimes grows in Europe to a large size; it is hardy in this country and grows rapidly, but, like the other European Oaks, it is short-lived here and rarely lives more than thirty or forty years. One of the most interesting of all the fastigate trees is a European Beech growing at Dawyck, Mr. F. R. S. Balfour's estate in Peebleshire, Scotland. It is a tall and evidently an old tree to which the name of *Fagus sylvatica*, var. *Dawychi* has been given. This tree has recently been propagated by nurserymen and there is a small plant in the Arboretum with the other Beeches near the South Street entrance. There are two fastigate forms of the European Hornbeam in the Arboretum collection (*Carpinus Betulus*, var. *pyramidalis* and var. *globosa*). The first is pyramidal rather than fastigate, and the second, in spite of its name, is a dwarf, very compact, fastigate plant. They are in the Hornbeam Collection on the right-hand side of the Meadow Road opposite the Oaks. There is only one fastigate Birch, the var. *fastigiata* of the European *Betula pendula* or *verrucosa*. This is distinctly fastigate in habit, with a narrow head of erect branches. A specimen of this tree may be seen on the Bussey Hill Road with the other Birches. One of the narrowest of all these trees is the fastigate form of the Scotch Elm (*Ulmus glabra*, var. *fastigiata*) which is sometimes called in England the Exe-

ter Elm, as it was raised in a nursery in Exeter about ninety years ago. This tree has little beauty. More beautiful and interesting is a geographical form of the European *Ulmus nitens* (var. *stricta*). This is the common Elm in Cornwall and some parts of Devonshire, and is usually called the Cornish Elm. It is a tree sometimes eighty feet tall with a trunk occasionally five feet in diameter, with short ascending upper branches and lower branches curving upward. A tree which is often considered now a form of the Cornish Elm (var. *Wheatleyi*) has a similar habit and is usually called the Guernsey Elm. It sometimes appears in nursery catalogues under the name of *Ulmus campestris monumentalis*. The European *Crataegus monogyna* has produced vars. *stricta* and *monumentalis*. The former is a tree with a broad head of erect branches, and can be seen in the old Crataegus Collection next to the parkway wall. The latter, which is a narrower and strictly pyramidal plant, is new in the Arboretum. A fastigate form of the European Horsechestnut (*Aesculus Hippocastanum*, var. *pyramidalis*) has appeared in a European nursery but is not yet in the Arboretum.

Fastigate Conifers. In the pinetum are young trees of the White Pine (*Pinus Strobus*, var. *fastigiata*) with erect branches which give the trees a peculiar and distinct appearance. They were raised from grafts taken from a tree which was growing a few years ago near Stamford, Connecticut. The Scotch Pine (*Pinus sylvestris*), which shows a strong tendency to seminal and geographical variation, has also produced a fastigate form (var. *pyramidalis*). The so-called Swedish Juniper is a narrow, dwarf pyramidal form of the common Juniper (*Juniperis communis*, var. *suecica*). This little Juniper is not very hardy in this part of the country but is often planted in the middle states. The handsomest pyramidal coniferous plant, however, in the Arboretum is a form of *Thuya occidentalis* (var. *pyramidalis*) raised sometime before 1885 by Robert Douglas in his nursery at Waukegan, Illinois. It is a tall narrow plant suited to replace although much smaller of course, the fastigate Cypress which plays such a part in the decoration of the gardens of southern Europe. This Arbor Vitae is sold in some American nurseries as *Thuya occidentalis pyramidalis Douglasii*. The common Spruce (*Picea Abies*) has produced many abnormal seminal forms and among them are at least two with erect branches (var. *columnaris* and var. *pyramidalis*). A few individuals of these varieties were found many years ago in European forests and the cultivated plants have probably been propagated from these wild plants. Less important are two dwarf pyramidal forms of the European Fir (*Abies Picea*, var. *columnaris*, and var. *pyramidalis*). The Lawson Cypress from the Pacific Coast (*Chamaecyparis Lawsoniana*) is another tree which shows great variation in its seedling offspring. Among them is a distinctly pyramidal form which appeared in an English nursery many years ago and is known as *Cupressus Lawsoniana erecta viridis*. Like all the forms of the Lawson Cypress it is not hardy in the neighborhood of Boston. The so-called Irish Yew, a pyramidal form of the European Yew (*Taxus baccata*, var. *fastigiata*), of which there is a yellow-leaved variety, is a popular garden

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