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 re-
sembles 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
fastigiate form of the Sugar Maple, *Acer saccharum*, var. *monumen-
tale*, which was found in 1885 in a cemetery in Newton, Massachu-
setts. 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 fastigiate 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. *pyra-
midale*). 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 plata-
noides*, var. *columnare*). This tree is established in the Arboretum
collection and is a broader tree than the American fastigiate Maples.
The fastigiate 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 Arbor-
etum since 1888. There is a good specimen with the other Tulip-trees
on the right-hand side of the Meadow Road. The Linden genus ap-
ppears 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 fastigiate in out-
line. The fastigiate 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
fastigiate 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. *Dawycki* 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 fastigiate forms of
the European Hornbeam in the Arboretum collection (*Carpinus Betu-
lus*, var. *pyramidalis* and var. *globosa*). The first is pyramidal rather
than fastigiate, and the second, in spite of its name, is a dwarf, very
compact, fastigiate plant. They are in the Hornbeam Collection on
the right-hand side of the Meadow Road opposite the Oaks. There is
only one fastigiate Birch, the var. *fastigiata* of the European *Betula
pendula* or *verrucosa*. This is distinctly fastigiate in habit, with a nar-
row 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 fastigiate 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 monumentalitis. The European Crataegus monogyna has produced vars. stricta and monumentalitis. 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 Thyua occidentalis (var. pyramidalis) raised sometime before 1835 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 Thyua 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 Cypressus 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
plant in all countries where it is hardy. Unfortunately this interesting tree is not able to support the New England climate. This is true of the erect garden form of the Japanese Cephalotaxus (pedunculata, var. fastigiata).

Of these twenty-eight plants with abnormally erect growing branches five in two genera are North American, one only is Asiatic, and twenty-two are European, the Cornish Elm, which is not an abnormal tree but a geographical variety, being omitted. The predominance of abnormal forms among European trees is due, no doubt, to the fact that European trees have been raised artificially from seeds for a longer time and in greater numbers than those from other countries, and that European cultivators of trees have been keener than others to propagate and detect plants of abnormal habit and foliage. It is less easy to explain the absence of fastigiate trees from such largely cultivated genera as Fraxinus, Catalpa, Prunus, Magnolia, Salix and Tsuga. Of our common Hemlock in this last genus there are a number of dwarf forms and forms with abnormal foliage, but among them none has yet appeared with erect growing branches.

**Tilia vulgaris.** As a rule European trees do not grow as well in this part of the country as the native species or those from eastern Asia of the same genus. Many specimens of one of the European Elms have lived in Massachusetts for a number of years, however, and have grown here into large and splendid trees, and the European Beech becomes a better tree than the American Beech when this is transplanted from the forest to the park. One of the European Lindens is another exception to the general rule that native trees are better trees to plant than exotic trees, for the best Lindens that have been planted near Boston are trees of *Tilia vulgaris* which is now in flower. This tree is sometimes also called *T. europaea*, *T. intermedia* and *T. hybrida*, and is considered by some of the best observers of European trees a natural hybrid between the two species of western Europe, *T. platyphylos* and *T. cordata*. Although widely distributed in Europe, *Tilia vulgaris* appears to be much less common than either of its supposed parents, and the variation in the size, shape and color of the leaves makes its hybrid origin possible. On some individuals the lower surface of the leaves is quite green and on others it is bluish or even whitish, but leaves on different parts of the same branch differ in this respect, and on shoots produced from the bases of old trees the large leaves are quite green. It is a fine, round-headed tree with rather small, somewhat pendulous branches, and appears to have been more often planted in the neighborhood of Boston than any other Linden. There are a number of large specimens on Centre Street near Orchard Street, Jamaica Plain, and in Olmsted Park, and large individuals can be found in all the suburbs of Boston. The young Lindens which have been recently planted on Huntington Avenue and on Louis Pasteur Avenue in Boston are of this variety.

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