A few interesting trees flower in the Arboretum after the middle of summer. The first of these is already in bloom. This is the Chinese *Koelreuteria paniculata*, a small tree with large, handsome, pinnate leaves and large erect clusters of bright yellow flowers which are followed by conspicuous bladder-like fruits. No other tree has flowers of a more beautiful yellow color, and no other summer-blooming tree here is so conspicuous when it flowers. *Koelreuteria* is much cultivated in the gardens of Peking, and in western China it is common in hot dry valleys. It is therefore well suited to withstand heat and drought as well as cold. It can be seen on the right-hand side of the Meadow Road between the Evonymus and Horsechestnut groups, its relationship being with the Horsechestnuts and with the Maples.

Another Chinese tree will soon be in flower. This is *Sophora japonica*, a member of the Pea Family, with green branchlets, very dark green pinnate leaves and narrow erect clusters of creamy white flowers. The very large and old individuals of this tree with dark, deeply-furrowed bark which are growing in Peking look at a little distance like Oak trees. First known by Europeans in Japan it was called, like some other Chinese plants, *japonica*, although it was brought from China to Japan with many other plants cultivated by the Japanese and is not a native of the Island Empire. There is a form of this tree with weeping branches which rarely flowers. These trees can be seen on the right-hand side of the Bussey Hill Road opposite the head of the Lilac Group. There is also a fine specimen of *Sophora japonica* in the Public Garden of Boston.

Next to the Sophoras there is a group of the eastern Siberian *Maackia amurensis*, which is now in flower. This is a small tree and the only representative of its genus related to the eastern American and Chinese Cladrastis or Yellowwood. *Maackia*, however, has reddish bark, much smaller leaves, short erect spikes of creamy white inconspicuous flowers and scaly buds. Of much interest botanically, *Maackia* is of little ornamental value and probably will never be very often seen in this country outside of botanical collections.

Much more conspicuous and an object of great interest always to visitors to the Arboretum is *Acanthopanax ricinifolium*. This member of the Aralia Family is not an uncommon inhabitant of the forests of the northern island of Japan and grows also in Korea; it is a large tree with dark deeply furrowed bark, stout spreading branches which, however, are nearly erect on young trees and more or less armed like the trunk with short stout spines, and large, palmately lobed dark green leaves drooping on long stalks. In size and shape the leaves resemble those of the Castor-oil plant, *Ricinus*, a fact to which this tree owes its specific name. The small white flowers are produced in broad, flat, compound clusters and are followed in the autumn by shining black, berry-like fruits. *Acanthopanax ricinifolium* was raised at the Arboretum from seeds brought from Japan in 1892 by Professor Sargent; it has grown here rapidly and is perfectly hardy. There are two plants in the Aralia Group by the pond at the junction of the Meadow and Bussey Hill Roads, and there is a plant beyond the Platanus Group at the Centre Street entrance, and another in the mixed plantation on Peter's Hill.

Two other trees of the Aralia Family are also still to flower. These are the Hercules' Club, *Aralia spinosa* of the southern states, and its
near relative from eastern Siberia, *Aralia mandshurica*, still sometimes found in nurseries under the name of *Dimorphanthus*. The Hercules' Club grows sometimes thirty feet high, with a slender stem armed like the branches with stout prickles. The leaves are twice pinnate, from three to four feet long, and two and a half feet wide, and the small white flowers are borne on long slender stems in many-flowered clusters arranged in broad twice compound panicles three or four feet in length, rising singly or in pairs above the spreading leaves. The flowers are followed by great clusters of small black fruits which ripen in the early autumn. No other tree of temperate North America has such a tropical aspect as this *Aralia*, which is not always entirely hardy in New England although it is now well established at the northern base of Hemlock Hill, just back of the Laurels, where it has spread by suckers from the roots. Its Manchurian relative, which greatly resembles the American tree, is hardier here and can be seen in the border between the drive and walk next to the Liquidambars and in the Aralia Group.

Another North American tree, the sorrel-tree or Sourwood, *Oxydendrum arboreum*, is now covered with flower-buds. This beautiful and interesting tree belongs to the Heath Family and is the only representative of its genus. On the rich slopes of the southern Appalachian Mountains it sometimes rises to a height of thirty feet or more, although in cultivation at the north it begins to flower when only a few feet high and will probably never become a large tree. The leaves are oblong, bright green and very lustrous, and have a pleasant acidulous flavor to which this tree owes its common names. The white flowers, which are shaped like those of the Andromedas, are erect on the branches of a terminal, spreading or slightly drooping, compound cluster seven or eight inches long; they retain their beauty for a long time and are followed by capsular fruits. The leaves of this tree turn in the autumn bright scarlet. The Sorrel-tree appears to be free from the attacks of all insects; it does not suffer from disease, and it is surprising that such a handsome, hardy and interesting tree should be so little known. There are a number of individuals among the Laurels at the northern base of Hemlock Hill.

With the early flowering Japanese forms of *Hydrangea paniculata* (var. *praecox*) mentioned in a recent Bulletin, *Aesculus parviflora* is now the most conspicuous shrub in flower in the Arboretum. This native of the southeastern United States is the last of the Horsechestnuts to flower. It is a shrub which in cultivation sometimes spreads to a diameter of twenty feet or more but rarely attains a greater height than six or eight feet. It is a good plant to use as a single specimen as it is perfectly symmetrical in habit, or, as has been done in the Arboretum, it can be planted in masses. The plants are now covered with long narrow spikes of small creamy white flowers which stand erect above the dark green foliage. A group of this Horsechestnut can be seen with the other Horsechestnuts on the right-hand side of the Meadow Road at the base of the woody hill which rises at the southwestern extremity of the north meadow.

The Pepperbush, *Clethra alnifolia*, will soon open its fragrant white flowers which are borne in erect, terminal, compound clusters. This is perhaps the most beautiful of the summer flowering shrubs of New England and is a common inhabitant of swamp borders and other wet places in the neighborhood of the coast from Maine to Florida. The Pepperbush can be seen along the Meadow Road where it has been largely planted, and in the Shrub Collection. A form with flowers faintly
tinged with rose was found near Fall River, Massachusetts, a few years ago and has been introduced into the Arboretum. Another species, a native of Florida, C. tomentosa, has proved hardy in the Arboretum, and is valuable as it flowers two or three weeks later than the northern Pepperbush from which it chiefly differs in the covering of white hairs on the lower surface of the leaves. The third American species, C. acuminata, an inhabitant of the forests of the southern Appalachian Mountains, has dull green leaves and drooping clusters of yellowish white flowers, and is a much less desirable garden plant. It can be seen with the others in the Shrub Collection and on the right-hand side of the Meadow Road near the Phellodendron Group. The Japanese species, C. canescens, lives in the Arboretum but has not proved very hardy here and has not flowered, although it has been more successful in other Massachusetts gardens where it produces freely its beautiful fragrant flowers.

Only a few forms of the large genus Yucca, which has its headquarters in the southwestern part of the United States, in Mexico and in Central America, are hardy in the Arboretum where they can be seen in the Shrub Collection. The common Yucca of American gardens is Y. flaccida, with thin reflexed leaves gradually narrowed from below the middle to the apex and separating on the margins into straight thin threads. In gardens, however, it generally appears under the name of Y. filamentosa, a species with thicker and more rigid leaves usually broadest above the middle, and separating on the margins into coarser curled threads. Y. flaccida is a native of the southern Appalachian foothill region and is probably the hardiest of all the Yuccas. It is now in full flower, as well as the form with leaves striped with yellow (var. lineata) which is usually found in gardens under the name of Y. filamentosa variegata. A fine and vigorous form of Y. flaccida from Stone Mountain, Georgia, (var. patens) is also in flower. There are also in the collection the true Y. filamentosa of the coast plains of the southeastern United States and its variety concava, found from the coast of Maryland southward, and Yucca glauca. This last is a plant with narrow leaves and is common and widely distributed over the high plains at the eastern base of the Rocky Mountains from Wyoming southward. This handsome plant is perfectly hardy here but has not flowered in the Arboretum. Indigofera Kirilowii mentioned in a recent Bulletin has continued to grow and to produce its racemes of bright pink flowers in spite of the drought of June and early July which has been one of the most severe the Arboretum has experienced. This Korean shrub remains a long time in bloom. Its habit and foliage are excellent, and it gives every promise of being a valuable addition to the list of summer flowering shrubs. Two other species of this genus are now flowering on Azalea Path, I. decora from China and Japan, with pure white flowers, and I. Gerardiana with purple flowers, a native of the Himalayas. The low stems of these plants are killed to the ground every winter but new ones appear in the spring and growing rapidly flower freely at this time. I. decora is the more beautiful of the two and well worth a place on the margin of any shrubbery or in the herbaceous border.

These Bulletins will now be discontinued until the autumn.

The Arboretum will be grateful for any publicity given these Bulletins.