Asiatic Crab apples. Some of the earliest of these trees are already in flower, twenty-five days earlier than last year, and when this Bulletin reaches its Massachusetts' readers it is probable that a large number of them will be at their best and as full of flowers as they have ever been here before, for this year all plants of the Rose Family are unusually full of flowers and flower-buds. To northern parks and gardens no genus of small trees and shrubs has given greater beauty than Malus, the name which is now correctly given to all Apple-trees, especially the wild types and their first hybrids generally known as Crab-apples in distinction from the Apple-trees of orchards which are hybrids or selected and improved forms of European and western Asiatic Crab-apples. All the species of Malus hybridize so freely among themselves that it is not possible to raise from seeds gathered on trees in a large collection of species like that of the Arboretum plants similar to those from which the seeds were taken. Among such seedlings there may be plants handsomer than their seed-bearing parent, although quite different from it, and among a hundred seedlings raised from the seeds of one tree it is not usual to find two exactly alike. The possible variation in seedling plants produced by a single Crabapple-tree is well shown in one of the parks of the city of Rochester, New York, in which there are growing some twenty-five trees raised several years ago from seeds gathered from one plant of Malus floribunda, a tree introduced many years ago into our gardens from Japan and by many students believed to be a hybrid of doubtful parentage. These Rochester seedlings now produce abundant crops of fruit. This varies on different trees from the size of a small pea to an inch or an inch and
a quarter in diameter. On some of the trees it is bright yellow, on others bright red and on others red and yellow. There is less difference in the flowers, but the leaves vary on the different plants in shape and in the absence or presence of a covering of hairs. Whenever the seeds of Crabapples are gathered from trees in collections great or small there will be new hybrids; some of these will be distinct and beautiful like the hybrids of the central Asiatic *Malus Niedzwetzkyana* which have appeared in European gardens and are now cultivated under the name of *Malus purpurea*, and the persons who raise such new hybrids will naturally want to have them distinguished by name. The number of varieties of such hybrids has no limit, and as the same hybrid may appear in different countries at about the same time and receive different names students of these trees have the promise of even greater trouble in the future than they have had in the past when they had the offspring of only a few species to deal with. As has been often stated in these Bulletins there is but one way to propagate Crabapples if types of the species, varieties and hybrids are wanted and that is by grafting. It is cheaper to raise seedlings, and seedlings are often sold in American nurseries as species. They are often ornamental but rarely are true to the name under which they are sold.

The first Crabapple to open its flowers this year is again the Manchurian, north China and Korean form of *Malus baccata* (var. *mandshurica*) which is the eastern form of the better known Siberian Crabapple (*Malus baccata*) which has been cultivated in Europe for more than a century and has been the parent of many hybrids. The Manchurian form as it grows in the Arboretum is a tree some fifteen feet tall and broad. The flowers, which are produced in profusion, are pure white, more than an inch across and more fragrant than those of any other Asiatic Crabapple. The fruit is round, yellow or red, and not larger than a large pea. A form of this tree, var. *Jackii*, brought from Korea by Professor Jack in 1905, is distinguished by its larger dark scarlet fruit. The Manchurian Crabapple, which is still rare in this country, should, for the fragrance of its flowers alone find a place in all collections. Almost as early is *Malus robusta*, which is believed to be a hybrid between *Malus baccata* and *M. prunifolia*, a north China plant. This tree was raised here in the early days of the Arboretum from the seeds of *Malus baccata* sent from the Botanic Garden at Petrograd. It is covered every spring with large, pure white, or rarely greenish, fragrant flowers which are rather more than an inch in diameter and larger than those of the other Asiatic Crabs. The fruit differs somewhat in size on different trees and is subglobose and dull red. In good soil and with sufficient space for development this Crab will grow into a large tree, with a broad, round-topped head of spreading, often slightly pendulous branches. This is the handsomest of the white-flowered Crabs and one of the most beautiful of early spring-flowering trees which can be safely planted in this part of the country. The largest specimens in the Arboretum are in the old Apple Collection on the left-hand side of the Forest Hills Road.

*Malus micromalus*, another early-flowering Crab, is one of the least known of these trees. It was first sent to Europe by Von Siebold in 1856.
under the name of "Kaido," a name which in Japan belongs to *M. Halliana*. In Japan *M. micromalus* is rare and known only in gardens, and by Japanese botanists it is believed to have been introduced into their country from China and to be a hybrid possibly of *M. baccata* and *M. spectabilis*. In habit this Crab is more pyramidal than that of the other species and hybrids, and this habit makes the plants conspicuous in the collection. They are covered this year with their small pale pink, delicate flowers which will be followed by light yellow fruit often rose color on one cheek. The largest Arboretum specimen is in the collection at the eastern base of Peter's Hill.

*Malus theifera*, which is one of Wilson's discoveries in western China, promises to be a good addition to the list of early flowering Crabs. Its long, upright, and spreading, rather zigzag branches make it easy to distinguish at any season of the year; they are continuously studded with short spur-like laterals which bear numerous clusters of flowers rose-red in the bud and pale or almost white when fully expanded. In central China the peasants collect the leaves and prepare from them the palatable beverage which they call "red tea." *Malus theifera* has now flowered for several years in the Arboretum, the largest plant being in the Peter's Hill collection where it is now a conspicuous object. In the color of its rose-red flowers drooping on slender stalks *Malus Halliana* with its variety *Parkmanii*, which has double flowers, is perhaps the most distinct of all Crabapples. It is a small tree with erect and spreading branches which form a narrow, vase-like head, and dark green leaves; the globose reddish fruit is not larger than a small pea. It is well known in Massachusetts gardens, having been sent by George R. Hall, in 1862, to Boston, where it was first planted in Mr. Francis Parkman's garden on the shores of Jamaica Pond. The Parkman Crab is a favorite in Japanese gardens where it is known as "Kaido" and was no doubt imported into Japan from China where the single-flowered form was found by Wilson. Whatever its origin the Parkman Crab is one of the most distinct and beautiful of the small trees which are now flowering here in the Arboretum, although normally the flowers do not open before the 10th of May.

*Malus floribunda*, by many persons considered the most beautiful of Crabapples, was introduced into Europe by Von Siebold in 1853 from Nagasaki in southern Japan. The place where this little tree grows wild still remains unknown, and by some persons it has been considered a hybrid of Chinese origin; more probably, however, it originated on one of the high mountains of Kyushu. Japanese botanists and nurserymen confuse it with the Parkman Crab, and Wilson did not find it in Japanese gardens. It is a broad, round-topped tree-like shrub sometimes twenty-five feet tall, with stout branches and slender, arching and pendant branchlets. The clusters of flowers are white when fully expanded and are rose-red in the bud, and as they open in succession the two colors make a handsome contrast. The fruit is about the size of a pea, yellowish or yellowish-brown. On some plants it falls in early autumn and on others it remains on the branches during the winter or until devoured by birds who find it one of their most palatable winter foods. *Malus floribunda* rarely fails to produce abundant crops of flow-
ers and in this climate has proved to be one of the most satisfactory
and reliable of all the arborescent shrubs or small trees which have
been planted in eastern Massachusetts. A hybrid between *M. floribunda*
and probably *M. robusta* appeared here among a lot of seedlings of *M. floribunda* in 1883 and has been named *M. arnoldiana*. It has the habit
and abundant flowers of *M. floribunda*, but the flowers and fruit are
nearly twice as large as those of that plant. It is a handsomer plant
than *M. floribunda*, distinguished by its long arching branches, and one
of the most beautiful Crabapples in the Arboretum. The first of the
ASIATIC Crabapples introduced into Europe, *Malus spectabilis*, has been
cultivated by the Chinese from time immemorial. Like several other
of these plants, it is not yet known in a wild state but is probably of
hybrid origin. It is a tree from twenty-five to thirty feet high, with
a wide vase-shaped crown made of numerous spreading and ascending
branches and short branchlets. The flowers are pale pink, more or less
semidouble and fragrant. The fruits are pale yellow subglobose and
about three-quarters of an inch in diameter. *Malus spectabilis* is a
perfectly hardy, free-flowering plant and well worth a place in gardens
where sufficient space can be allowed it for free development. What
is probably a hybrid of *Malus spectabilis*, *M. Scheideckeri*, and some
unknown species, possibly *M. micromalus*, is a small pyramidal tree
with small flowers produced in great abundance and well worth a place
in a collection of these trees.

The Crabs mentioned in this Bulletin are the most important of those
now in flower in the Arboretum. In a later issue some account will be
given of the later-flowering species.

On April 23rd the first Azalea flowers in the Arboretum opened on
the Korean *Rhododendron yedoense* var. *poukhanense*, better known as
*R. poukhanense*, which last year was in bloom on the 10th of May. It is
a very hardy shrub widely distributed in Korea from the neighborhood
of Seoul southward, and grows generally in open Pine-woods and on
grass-covered slopes where it forms dense mats rarely more than three
feet high, although in more shaded positions it is occasionally as much
as six feet tall. Here in the Arboretum in full exposure to the sun it
forms dense mat-like bushes from two to two and a half feet tall and
three feet or more in diameter. This Azalea is perfectly hardy in the
Arboretum where it first flowered in 1914. The flowers are clustered,
with a rose or rosy purple corolla, and are more fragrant than those
of any other Azalea in the Arboretum collection. The color of the
flowers does not harmonize with that of other Azaleas which bloom at
the same time, and the plants are therefore best kept away from other
Azaleas. *Azalea yodogava* (*Rhododendron yedoense*) which in recent years
has been sent in large numbers from Japanese nurseries to the United
States and Europe, is a double-flowered form of the Korean Azalea.