The Oriental Crab-apples. It is difficult to write comprehensively about the oriental crab-apples; there are so many of them and they are such a varied lot. In Asia the crab-apples behave in somewhat the same bewildering way as do the hawthorns in this country; taken as a whole they form a complex assemblage, difficult to sort into such conventional pigeonholes as species and varieties. They probably hybridize in nature, they most certainly do in cultivation. Some are low shrubs, others are forest trees. Some bear fruits closely resembling the cultivated apple in size and shape; others have fruits so tiny that one must look closely to see any resemblance to an apple. While the flowers in truth are mainly white or pink, they too may vary, for there are a number of varieties of such a brilliant rosy purple that the color must be seen to be believed.

One of the most distinct as well as one of the finest from an ornamental standpoint is Malus toringoides, now displaying its brilliant fruits near the Forest Hills gate and on the Overlook. They are rather more pear-shaped than apple-shaped and are borne in gracefully drooping clusters along the branches. Late in August they begin to turn color, flushing brilliantly where the sunlight strikes them, deepening their shade week after week until they are finally caught by the hard frosts of mid-autumn. From green they pass quickly to orange overlaid with a flush of scarlet, which deepens to crimson and may finally cover the whole fruit. These clear bright colors are brought to an even greater perfection by the waxy surface of the little apples which causes them to shine and sparkle among the leaves. The leaves are in themselves somewhat ornamental, being so deeply cut that they resemble those of the English hawthorn and for this reason Malus toringoides is sometimes known as the "hawthorn-leaved crab." Its flowers are pure white, borne after most of the oriental crab-apples have finished
blooming. It grows rapidly, producing a pyramidal small tree, not very dense so that the attractive leaves and fruits are well-spaced and exhibited to good advantage.

Another distinct crab-apple is *Malus brevipes*, valuable in certain situations for its low, dense habit of growth. Old specimens retain their mound-like shape, flowering and fruiting profusely though only a few feet high. The flowers are pink in the bud, fading to almost pure white when in full flower. The fruits are unlike the other oriental crab-apples in that they have short, stiff stalks. Fruit and stalk have the same proportion as in the cultivated apples and since the color is a bright red, they have the appearance of miniature market apples, no larger than the end of one's thumb.

In one technical detail they can be readily distinguished from such apples and since this detail is among the most important characters in the classification of crab-apples it may be well to describe it in full. Country people, like botanists distinguish between the two ends of an apple and we may well use their expressive terms, "stem end" and "blow end." If the blow end of the cultivated apple is examined carefully it will be seen that the five greenish leafy points which originally protected the flower in the bud have still persisted, though the petals have long since opened out and fallen off. On *Malus breweris* as on many of the flowering crab-apples, the blow end is as smooth as the stem end for these little leafy points fall like the petals, leaving only a slight scar. The technical term for such a condition is "deciduous sepals," while cultivated apples and a few of the crab-apples which resemble them are said to have "persistent sepals." The other technical detail of prime importance in classifying the crab-apples is the degree to which the leaves are cut. The cultivated apple has "entire" leaves, that is, they have a simple outline, something like that of an egg or a football, without any gross indentation. Most of the flowering crabs have their leaves more or less lobed or cut, particularly on the vigorous new shoots at the ends of the main branches. Using these two sets of characters we can make four pigeonholes in which to classify the apples and crab-apples:

1. leaves undivided, calyx persistent
   *Malus prunifolia, Malus spectabilis, Malus micromalus*, cultivated apples

2. leaves undivided, calyx deciduous
   *Malus baccata, Malus hupehensis, Malus Halliana*

3. leaves undivided, calyx persistent
   *Malus ioensis, Malus coronaria*
4. leaves divided, calyx deciduous

_ Malus floribunda, Malus baccipes, Malus zumi, Malus Sieboldii, Malus Sargentii_

Not all the oriental crabs are decorative in fruit as well as in flower. _Malus hupehensis (M. theifera)_ which is superlatively beautiful at flowering time, bears little apples which are at best a dull reddish green. It is well worth growing, however, for its flowers alone and its shape and size makes it a good tree for avenues or in formal gardens. Its main branches grow outward and upward at a slight but relatively constant angle (to be exact, something like the main ribs of an old-fashioned clothes-reel). Thickly set with small fruiting branches or spurs which hug close to the main branch, they seldom fork, continuing upward and outward at the same slope. At flowering time when the spurs are thickly covered with flowers, the main branches have the appearance of being graceful wands which have been artificially wound with bloom. For this reason this species is sometimes known as the "garland crab." 

One of the commonest of the oriental crab-apples, _M. baccata_, includes a variety which is not as well known as it deserves to be. Like many another outstanding variety it was sent out from China by William Purdom, one of the Arnold Arboretum's most discriminating collectors. Purdom apparently had a good eye for plants or varieties of particular garden merit. In several instances (the lovely _Viburnum fragrans_ is one example) a species will be represented in the Arboretum by specimens sent in by several collectors, Purdom among them, and the plants raised from his seed will be outstanding as garden plants. So it is with _Malus baccata var. gracilis_ which is only slightly different from the many collections of _Malus baccata_ which have been received at the Arnold Arboretum from the orient. Yet that slight difference is important from the standpoint of horticulture, and it is to be hoped that _M. baccata var. gracilis_ will shortly become better known. Like the species, it forms a fair-sized round-topped tree with clouds of white flowers in the spring and tiny red fruits in the autumn. It differs in its smaller flowers, narrower leaves and more graceful habit. Though the flowers are smaller they are, if anything, more abundant and at flowering time when they are grown in great profusion on graceful twigs their delicacy makes _M. baccata_ look a little coarse by comparison. In the late autumn when the leaves have fallen and the tiny fruits persist plentifully the tree is a lovely sight. The whole top of the tree is covered with the graceful drooping lines of the fruiting twigs, like raindrops blown slantwise in a shower.
These are only a few samples of the interesting and varied members of the crab-apple collection. Many more are equally deserving. There are the various purple crabs with flowers of an incredibly bright rosy pink and with leaves and fruits tinged with red or purple. There are the Soulard crabs and their relatives, natural hybrids between cultivated apples and the native American "prairie crabs"; these lusty hybrids are bowers of pink in the spring and hold their abundantly borne large green apples late into the winter. There is *Malus Sargentii* from Japan, a low growing spreading shrub with all the delicacy of a Japanese screen, yet reliably winter hardy. All in all, the crab-apples have gradually grown to be the finest single display at the Arnold Arboretum, fragrant and beautiful in the springtime, brilliant in the fall, and to the birds at least, attractive far into the winter. When their special merits are recognized and their care is understood they will be very generally used in New England, some for foundation planting, some for avenues and drives, others for naturalistic plantings and to furnish winter food on game preserves.

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