

ARNOLD ARBORETUM
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FLOWERING CRABAPPLES FOR SPRING AND FALL

AT THIS TIME of year in New England and New York, the flowering crabapples are in full bloom. Collected from widely segregated places in the northern hemisphere, nurserymen in this country are able to offer over fifty of them to the public. Generally, they can be grown wherever the common apple does well, and, though subject to similar apple troubles such as borer and scale, they are an asset to any garden. The sizes and shapes of the twenty-five different crabapples listed in this bulletin differ greatly.

Malus baccata mandshurica is not only the first to bloom, starting this year while the Japanese cherries were still in flower, but is also the tallest, growing fifty feet high or more. On the other hand, *Malus sargentii* is the smallest, often growing twice as broad as it does high and seldom becoming over 8 feet tall. This might be the best crab-apple for the small home garden where space is the limiting factor. Unfortunately, nurserymen often grow it from seed which has not been collected from pure stands, resulting in trees that do not have the typical low-growing habit but are much more upright. Since there are few, if any, pure stands in this country, grafting might better be resorted to in order to insure the typical form. The rest of the flowering crabapples range in height from 15 to 30 feet, the majority of them being 15 to 25 feet tall. Some, like *M. halliana parkmani*, rarely exceed 15 feet, while others like *M. ioensis plena* and *M. floribunda* may attain 30 feet. Some of the varieties, like *M. prunifolia rinki*, are upright and spreading in habit of growth; others, like *M. floribunda* and *M. arnoldiana*, are generally mound-like in appearance.

The most picturesque in habit is the tea crab, now called *M. hupehensis*, but listed in nursery catalogues as *M. theifera*. The main branches,

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originating from the trunk, are long with few side branches, appearing from a distance somewhat like a huge fan. It is always outstanding, particularly when planted in front of grouped pines or hemlocks.

Like the common apples, the flowering crab has a strong tendency to be alternate bearing, that is, fruit production is poor one year but good the next. Though this may not be particularly noticeable in the flowering, it is very noticeable and often disappointing in the fruiting habits. For instance, the best fruiting tree in the group at the Arboretum (*M.toringoides*) was marvelous in fruit during the fall of 1936, but in 1937, even the largest plant was uninteresting because of few fruits.

The Oriental crabapples (see table) are the first to bloom, followed shortly afterwards by the native species. The flower display lasts about a week, but, of course, depends entirely upon the weather, and this year is considerably retarded because of the unseasonable cold weather. When this issue of the Bulletin reaches its readers the crabapples will be in full bloom at the Arboretum. Some years when the weather is particularly cool the beauty of these plants is prolonged.

For instance, the Tea Crab is charming with its long slender branches clothed with delicately-colored flower buds. It is almost the ideal among crabapples, since the deep pink of the buds, touched here and there with a tinge of white, blends beautifully with the bright green of the unfurling leaves. When these buds begin to open, it is noticed that the petals are white inside and this color becomes predominant, the pink on the under-side slightly fading to white, so that instead of having a pink-flowered crabapple as might be reasonably supposed from a view of the pink buds, actually the flowers are white in color. Although most of the crabapples are either red to pink or white in flower, the Purple Flowered Crab (*M.purpurea*) is unusual with its striking reddish-purple flowers that are particularly conspicuous. The fruits, veins of the leaves and even the wood of the twigs of this peculiar plant are all a slightly reddish-purple shade.

One of the best of color combinations can be obtained by planting a single Carmine Crab, (*M.atrosanguinea*) the flowers of which are a very beautiful deep carmine, in front of two Japanese Flowering Crabs (*M.floribunda*). These latter are light pink as the flowers open but fade to white almost immediately. Since the Carmine Crab and the Japanese Flowering Crab are about the same height, seldom over twenty-five feet tall, dense, bushy and mound-like in habit of growth, and bloom at the same time, such a combination is never forgotten,

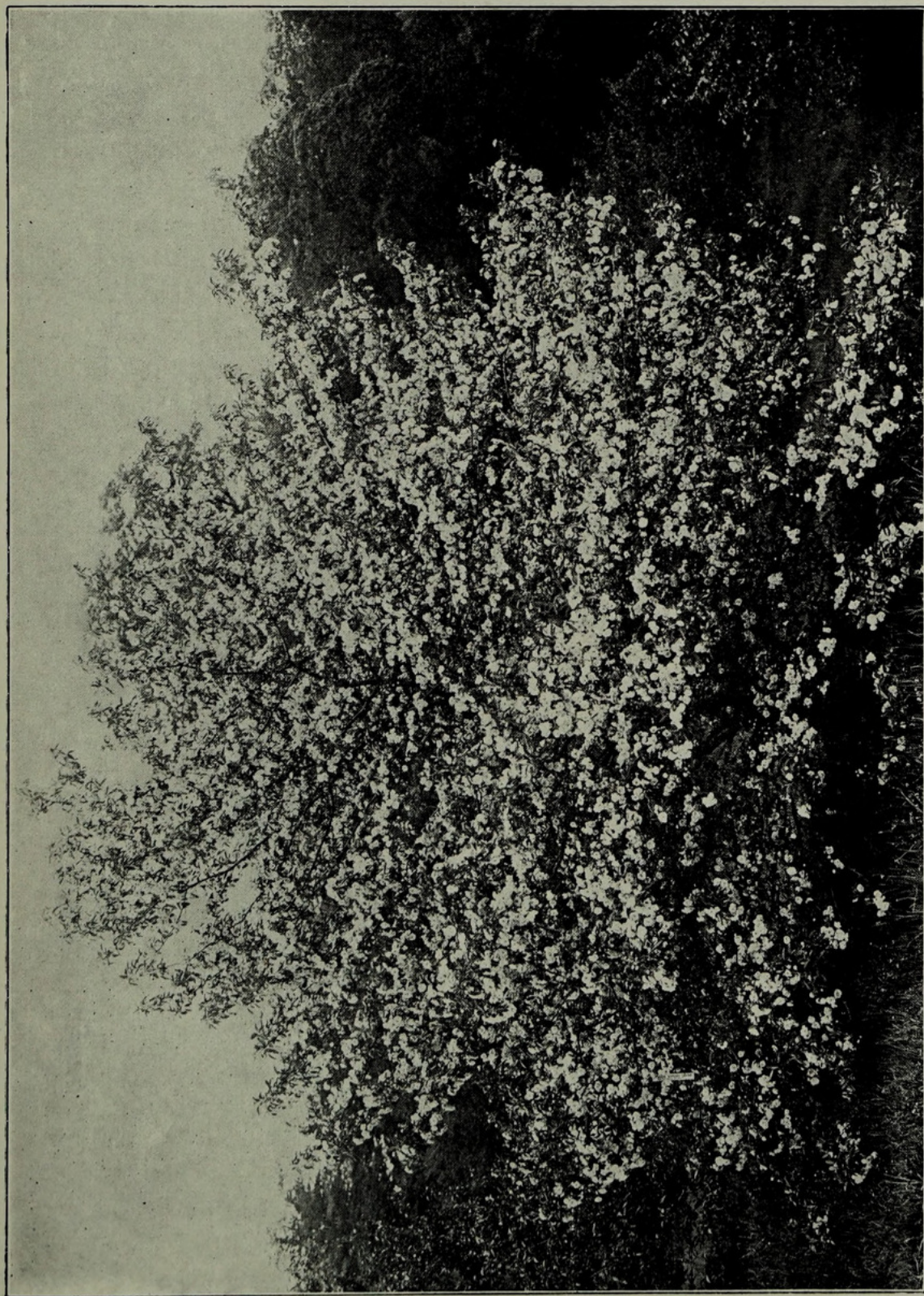


PLATE V

Bechtel's Crab, *Malus ioensis plena*

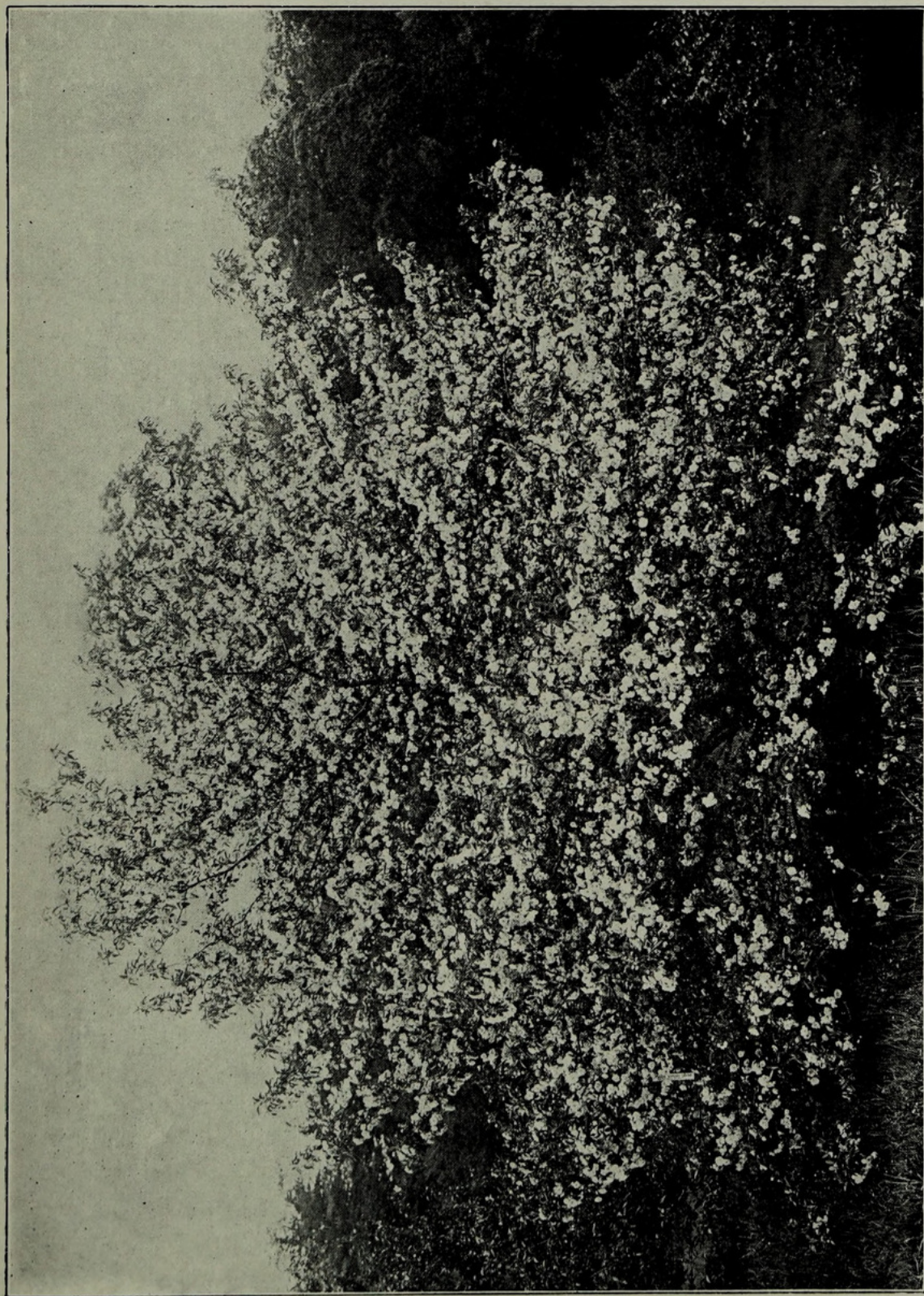


PLATE V

Bechtel's Crab, *Malus ioensis plena*

particularly when planted so that they are viewed with an evergreen background of pine or hemlock foliage.

In the late summertime, the crabapple fruits begin to color, naturally becoming conspicuous against the green background of leaves. The fruits of a few species are an inconspicuous green, the fruits of the Purple Crab, purple. Many fruits are red like those of the Zumi Crab, some are bright yellow, but the ones we value the most are red and yellow, red on the side towards the sun, and yellow on the side away from the sun. Such is the fruit of the Cherry Crab, and the Cutleaf Crab, *M. toringoides*, the best of all the crabapples for ornamental fruit. It was introduced into this country for the first time in 1904 and since that time has proved itself the best in fruit of the hundred different kinds growing at the Arnold Arboretum in Boston. The individual fruits are almost half an inch long, slightly pear-shaped, and colored a glorious mixture of red and yellow, red on the side turned towards the sun and yellow on the side shaded from the sun. For a good yellow-fruited form, the Arnold Crab, originating in the Arnold Arboretum before 1883 as a chance hybrid, is probably the best since its fruits are a brilliant golden yellow. It is difficult to say what varieties are most enticing to birds, for in years when birds are numerous almost all of the varieties prove attractive, although there is a tree here and there which for some reason may be left untouched.

In New England and parts of New York, past winters have demonstrated that the double-flowered Japanese cherries are not dependably hardy. Gardeners in general should realize that the crabapples are considerably hardier and that there are also double-flowered forms (see table). Though these may not be considered as worthy substitutes for cherries, they can at least be depended upon for bloom. The least hardy of all the crabapples is the Parkman Crab, *M. halliana parkmani*, which was injured considerably during the winter of 1933-1934, both in New York and at the Arboretum.

The method of propagating these plants varies considerably. Many of the species can be easily grown from seeds, but in botanic garden collections, where a number of species are in close proximity, there is ample opportunity for cross pollination; and it has been definitely proved that *M. sargentii* when grown from seed thus collected does not give plants with the desired low-growing habit but rather plants with a more upright form. It is much safer to bud or graft all forms, obtaining buds or scions from stock plants with known characteristics. There is a confusion in the nomenclature of the crabapples in many

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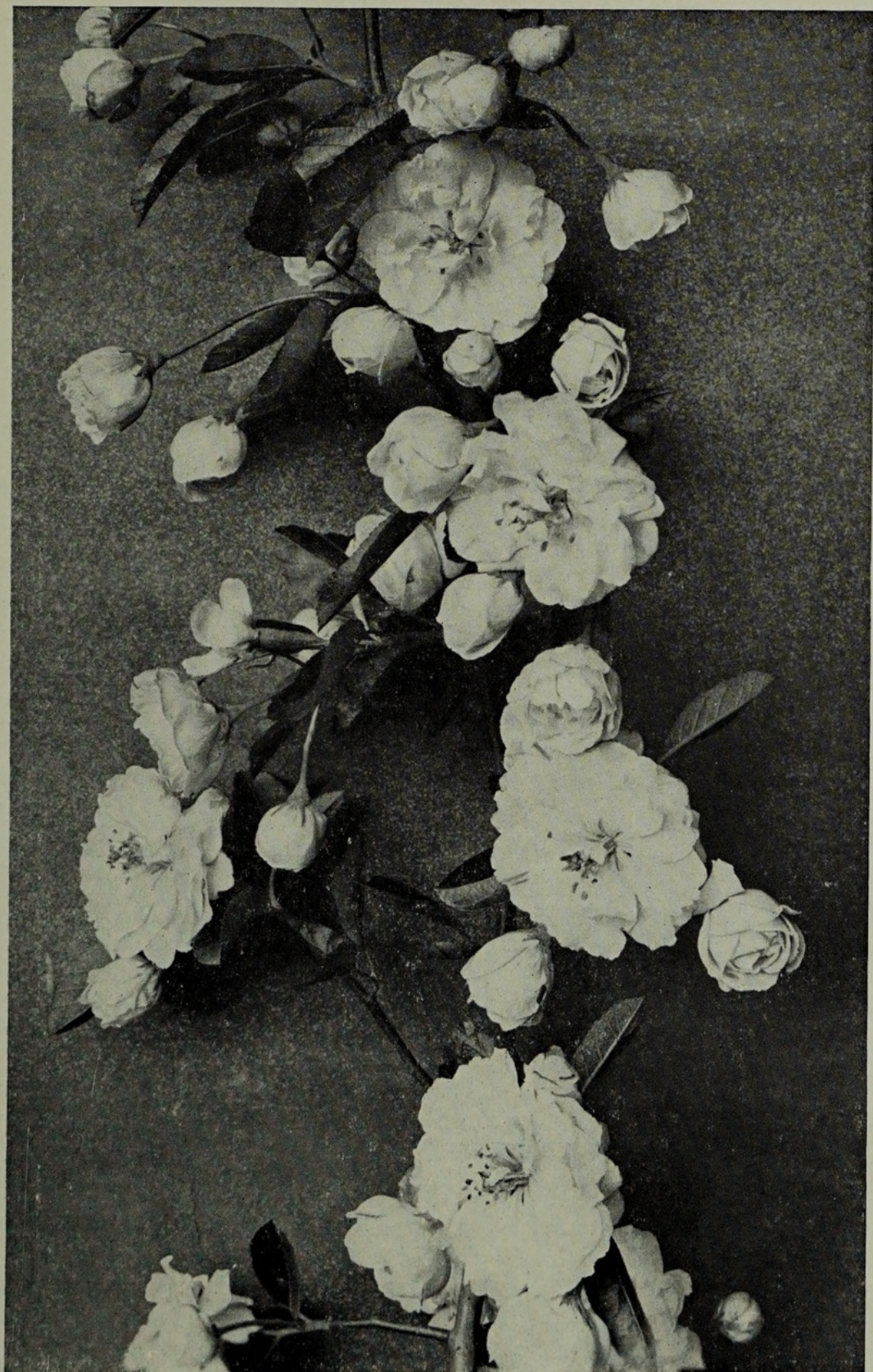


PLATE IV

Malus ioensis plena

Photographed in the Arnold Arboretum, May, 26, 1931,
by Professor Oakes Ames.

nurseries today, simply because large scale production from seed has resulted in many variations from true types.

Asexual reproduction naturally brings up the problem of understocks, which is by no means definitely settled. The American species are best grafted on seedlings of *M.ioensis* or *M.coronaria*. Both French crab seedlings and those of the various Asiatic species have proved successful for the Asiatic forms, especially *M.robusta*.

Crabapples are hosts of Juniper rusts, and the Arnold Arboretum has found the Asiatic species to be the least susceptible. There are places around Boston where Bechtel's crab becomes so disfigured with this disease that it is not grown. Bordeaux has been used in efforts at control but with little success. After several years of careful investigation, the Arnold Arboretum recommends the following for the control of this troublesome disease on ornamental flowering crabapples: Use 5 to 6 pounds of "Linco," a colloidal sulphur spray produced by Linder & Co. Inc., 296 North Beacon St., Boston, Mass., with 100 gallons of water with 3 pounds of "S. S. S.", a commercial "spreader" available at any store selling spray materials. Spray at first when the young leaves become visible and follow with four or five sprays at six to ten day intervals. Spraying just before a rain gives optimum results. To control chewing insects, add 4 pounds of lead arsenate to one of the later applications.

It should be mentioned that crabapples must be sprayed for scale. At the Arboretum Sunoco Oil is applied as a dormant spray, one part of oil and 15 parts of water, the application being made sometime between the middle of February and the first of April.

During the next few years the Arboretum will replant the slope at the base of Peter's Hill where the poplar collection was located before the hurricane. This has already been mentioned in a previous issue of the Bulletin (Vol. VII, No. 1; April 14, 1939). Over a thousand seedlings are now being planted in our nurseries and will be ready to plant in the permanent collections within a few years. This is the result of a definite plant breeding program and it is hoped that at least a few new and interesting varieties will be found in this large number of seedlings.

Crabapples are easily grown in a large number of soils and situations. They are of ornamental interest several seasons of the year and are excellent for attracting birds. We should recognize these sterling qualities and plant more of them!

THE BEST FLOWERING CRABAPPLES (Malus)

Characters of ——— FLOWER ——— and ——— FRUIT ———						
Single or Double	Color	Landscape		Color	Landscape Value	Year discovered or introduced — Remarks
		Value	Size in Centimeters			
°M. angustifolia	S . light pink	good	1.5-2.5	yellow green	poor	Native; thorny
M. arnoldiana	S . pink	excellent . 1	1	yellow	good	1883; Hybrid (floribunda x baccata)
M. atrosanguinea	S . deep carmine	excellent . 1	1	dark red	good	1905; (halliana x sieboldi)
°°M. baccata mandshurica	S . white	excellent . 1 2	1 2	yellow or red	good	1825
°M. coronaria	S . pink	excellent . 3	3	green	poor	Native; thorny
M. coronaria charlottae	SD pink	excellent . 3	3	green	poor	1900
°°M. floribunda	S . pink, fading white	excellent . 0.6-0.8	0.6-0.8	red and yellow	good	1862
°M. glaucescens	S . pink	fair	3-4	pale yellow	poor	Native; thorny
°°M. halliana parkmani	D . bright rose	excellent . 0.6-0.8	0.6-0.8	red purple	poor	1862; least hardy of all
M. "Hopa Crab"	S . rose red	good	1.5-2	red	good	1920; (baccata x pumila niedzwetzkyana)
°°M. hupehensis (M. theifera)	S . pink, fading white	excellent . 1	1	greenish yellow, red cheek	poor	1900
°°M. hupehensis rosea	S . pink	excellent . 1	1	greenish yellow, red cheek	poor	1900
°M. ioensis plena	D . pink	excellent	excellent	red or yellow	good	1888; often thorny
M. micromalus	S . pink	excellent . 1-1.5	1-1.5	red	good	1856; Hybrid (baccata x spectabilis)
°°M. pumila niedzwetzkyana	S . red	fair	2	red	good	1891
°°M. prunifolia rinki	S . pink	excellent . 2	2	yellow to red	good	1850; upright growth
M. purpurea	S . red purple	excellent . 1	1	red	poor	1915; Hyb. (atrosanguinea x niedzwetz.)
M. purpurea eleyi	S . vinous red	excellent . 1	1	red	poor	1920
°°M. sargentii	S . white	excellent . 1	1	dark red	good	1892
M. scheideckeri	SD pale pink	excellent . 1-1.5	1-1.5	yellow	poor	1882; Hyb. (spectabilis x micromalus)
°°M. sieboldi	S . pale pink, fading white	good	0.6-0.8	red to yellowish	poor	1853
°°M. spectabilis	SD pink	excellent . 2	2	pale yellow	poor	1780
M. spectabilis albi-plena	D . white	excellent	excellent	yellow with red cheek	excellent . 1904	
M. spectabilis riversi	D . pink	excellent	excellent	yellow with red cheek	excellent . 1904	
°°M. toringoides	S . white	poor	1-1.2	yellow with red cheek	excellent . 1904	

°Species native to the United States.
 °°"Oriental Flowering Crabapples" native to China and Japan.
 SD = semi double



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