

Without going into details and taking up the valuable time of the Breeders' Association, I would say that having the noble example of those who have preceded us in breeding roses, and the benefit of their work to profit by, our advantages are tenfold greater than those who labored in advance. We can avoid the snags of the past to guide us in our present and future work, and it is gratifying to know that rose breeders are advancing all along the line.

There is an unlimited field for the rose breeder to labor in, and the American breeder will have the advantage in the long run, for the demand for good, hardy, free-blooming roses is on the increase, and the majority of American people want their roses on their roots. All our public park superintendents should encourage the planting of American-grown roses on own roots. This would encourage the breeder as well as the propagator of American-grown roses.

Looking into the dim vista of the future I see before me a glorified America; thousands of miles of rose hedges, thousands of square miles of the Southland planted with fields of roses, whose bloom will be utilized for the manufacture of rose perfume.

Let the young rose breeder rejoice in his youth, for he shall behold the wonderland, the fruit of his labor, which his father has seen in the visions of the future.

ANTOINE WINTZER.

BREEDING WILD ROSES.

By W. VAN FLEET, *Little Silver, N. J.*

When it is considered that more than eleven thousand rose varieties were listed by Simon in 1906, that countless varieties have fallen out of record, that about a hundred new ones are commercially introduced each year, and that of this vast host scarcely fifty, all told, are suited for culture in ordinary American gardens, it will be realized that radical changes in breeding ideals and methods are needed if the really hardy garden types of roses are to be advanced in public favor. By hardiness is meant not only frost resistance, but resistance as well to fungus disorders, such as leaf mildew and black spot. The latter is the bane of the modern rose garden and effectually bars the outdoor cultivation of scores of the most desirable varieties of the Hybrid Perpetual and Hybrid Tea classes. Apparently the only means of overcoming this serious defect and of breeding in new and distinct characters is by free use of vigorous species and well fixed natural varieties. Something has been accomplished within the last fifteen years by the use of such robust Asiatic species as *Rosa rugosa*, *R. Wichuraiana*, and *R. multiflora*, but the surface of hardy-rose-breeding possibilities can scarcely be said to have been scratched.

The work of breeding wild roses by selection and hybridization with kindred species and garden varieties is arduous and slow, and it affords only an infinitesimal chance for pecuniary return. The standard of perfection in rose blooms is now high and only those approaching in finish the difficult varieties are likely to be tolerated even if borne on the most rugged plants. The writer has been working with native and old-world species for many years, with moderate success, but at nothing like the rate of progress that was hoped for at the outset.

WORK WITH NATIVE ROSES.

Native roses are particularly trying, many appearing sterile with any but their own pollen, while others, though susceptible to hybridization, show little change in the cross-bred progeny. *Rosa lucida* rarely perfects seeds when treated with foreign pollen. Out of perhaps 1000 pollinations with many species and varieties, a dozen hybrids of this common eastern species with *R. rugosa* and *R. spinosissima* were raised. In the *Rugosa* cross the plant is more vigorous and thorny, with larger single flowers and broad shining but not rugose foliage. The Scotch rose hybrid is of weak growth, with pale imperfect blooms, not promising. Three successive generations of *Lucida-Rugosa* seedlings, most of them pollinated with other rose species and varieties, have been grown, but no further changes are apparent. *R. lucida* with *R. Wichuraiana*, however, has yielded one of the most robust hybrids we have ever seen, of semi-sarmentose or climbing habit with profuse corymbs of large, single blush-white blooms. A plant in six years' growth, without support, forms a mound of foliage 8 feet high and more in diameter.

No success has rewarded attempts to breed *Rosa Carolina*, *R. Fendleri*, *R. Woodsii*, *R. Arkansana* and *R. Sayi*, which latter appears to be regarded as a variety of *R. acicularis*. All are completely sterile to foreign pollen under our cultural conditions. The self-fertilized seedlings of *R. Sayi* vary considerably and superior varieties might in time be developed by selection.

Rosa nitida has proved the most tractable of this type of rose. Very handsome hybrids with single to quite double blooms, of good size, ranging in color from light pink to deep crimson, have been secured by first crossing with double flowering varieties of *R. rugosa* and breeding the hybrids to the most robust Hybrid Perpetuals. The habit of the latter crosses is upright, with abundant shining rugose foliage and prickly stems. They bloom abundantly in spring and occasionally during summer. The fruits are intermediate in size between those of the parent species, but endure until late autumn.

Rosa setigera has been disappointing. There is little difficulty in securing dense, double-flowering hybrids of good color, but the plants fall off in vigor and do not maintain effective foliage. A pretty cross or two was made with Tea roses, but the plants were tender and very susceptible to mildew. The species is hardy, resistant and deserves further attention, as it is credited with producing *Prairie Queen* and other useful hardy climbers, as a result of crossing with *Noisette* roses.

WORK WITH FOREIGN SPECIES.

Rosa ferruginea produced, when crossed with a Hybrid China variety, a beautiful bright pink bloom of moderate size so densely double that it is a veritable pompon, borne on a stout, thornless plant with reddish foliage. Unfortunately this very interesting hybrid is difficult to propagate and may soon be lost.

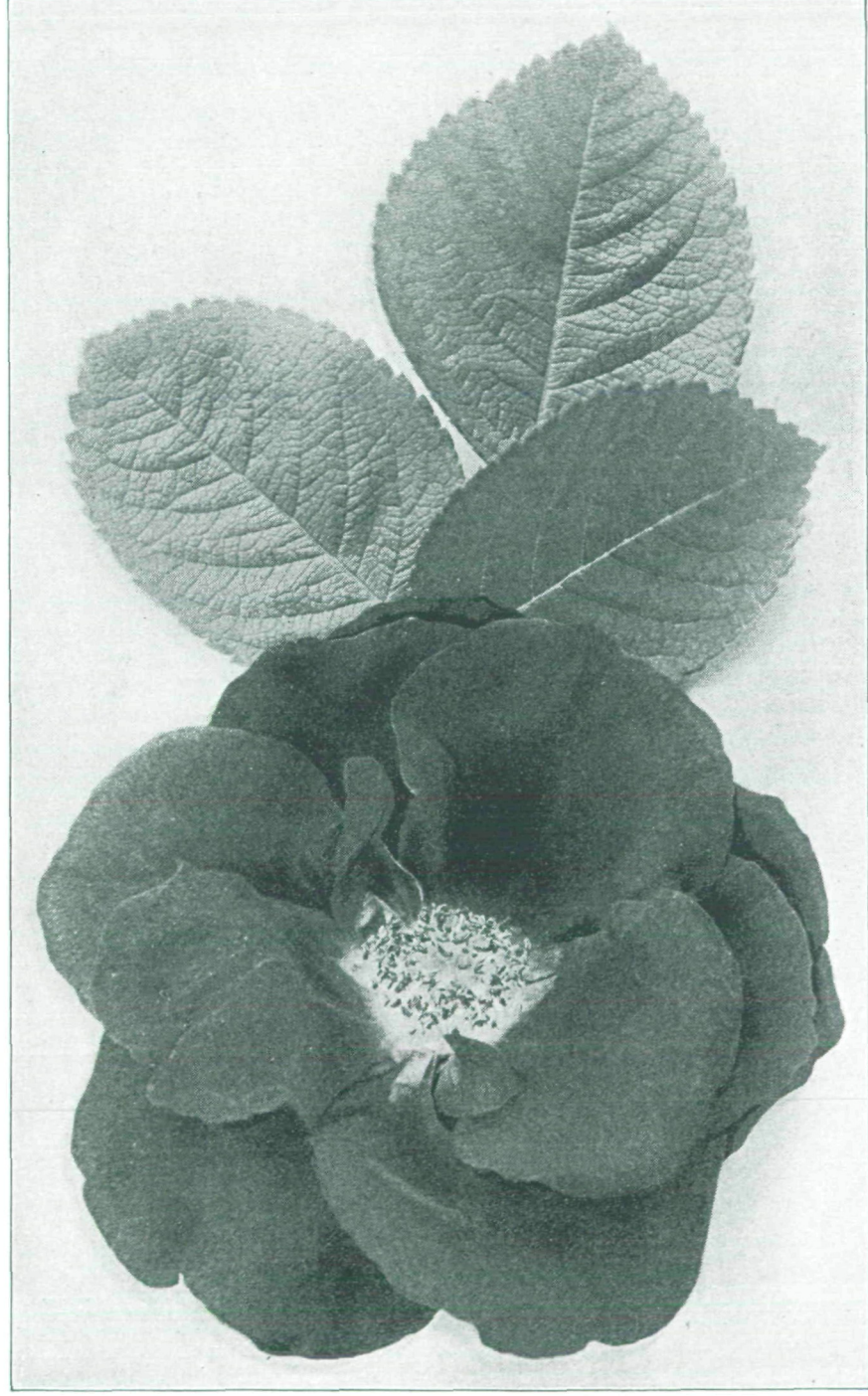
R. Moschata crossed with garden varieties of the Bourbon rose has given some attractive and free-blooming dwarf plants with large single and double flowers, deep colors of red predominating. There is more tendency to stripings and variegations with lighter colors than in the seedlings of any other species.

R. rubiginosa blends freely with many other hardy varieties, but crosses with difficulty, if at all, with roses containing blood of the Tea-scented kinds. Several hundred seedlings have been raised, most of them equal, but few superior, to those produced by Lord Penzance of England. A selected *Rubiginosa* X Fisher Holmes (Hybrid Perpetual) grows 10 feet high and produces very brilliant semi-double crimson flowers followed by large clusters of conspicuous orange red fruits.

R. Lævigata can be induced to form viable seeds with pollen of a considerable number of species and varieties, but our seedlings, even under careful green-house treatment, do not usually reach the blooming age, though many grow with considerable vigor for a year or two. *R. Wichuraiana* pollinated with *Lævigata* has given a hardy and beautiful climbing rose with large shining foliage, and enormous semi-double white blooms, yellow in bud. It is apparently a variety of much value. Seedlings of *Lævigata* crossed with the best white Teas and Hybrid Perpetuals are again under way, but are likely to perish as before. The only known commercial hybrid of the Cherokee rose is Anemone, with large single pink flowers. It is supposed to be a blend of *Lævigata* with a Tea rose.

R. Multiflora has great promise as a breeder for garden roses. The type readily produces densely double blooms of good size as a result of crossing with superior garden varieties. Crimson Rambler and others of the polyantha section are being widely used as seed or pollen parents and with excellent results. *Multiflora* X Persian yellow has produced with us a climbing variety having buds of flaming nasturtium scarlet, opening into yellow double blooms, which successively change to white and finally to pale rose.

R. Wichuraiana has leaped at one bound to a foremost position among rose species desirable for breeding. Thousands of hybrids have been raised in all rose-growing countries. Something like fifty-four named varieties of *Wichuraiana* parentage had been put in commerce by the end of 1905, and others appear each season. *Wichuraiana* hybridizes so readily that it is scarcely possible to grow the species true from seeds if other roses in the vicinity bloom at the same time. Its late season of flowering and facility of bud propagation are all that will save the type from disappearing under cultivation. It appears to readily blend with almost all species and varieties, the hybrid blooms largely taking on the characteristics of those of the pollen parent, while the plant retains much of *Wichuraiana* habit. Some of the most beautiful new garden roses owe their attractions to *Wichuraiana* influence. So far, however, the greatest success has been with direct or bi-specific hybrids. Attempts



to grow secondary and dilute crosses, though very general, have not met with conspicuous success, the offspring reverting or falling off in quality to a remarkable degree. There is widespread desire to produce continuous-blooming roses of *Wichuraiana* character. This has seldom been accomplished by direct crossing, but many dwarf continuous-blooming plants result from seeds of characteristic *Wichuraiana* hybrids, either self or cross-fertilized. They are seldom of any value from a rosarian's standpoint.

Rosa Rugosa is plainly the most hopeful species for breeding high class garden varieties. The hardiness, vigor and handsome foliage of the species and its immediate varieties, together with the great size and fragrance of the flowers, and long blooming season, at once place it beyond comparison. The work of amelioration has been found to be slow and difficult, though steady progress is made. More than one hundred hybrids and varieties have been introduced to general cultivation and scores of good ones are still in the hands of originators. Contrary to experience with *Wichuraiana* the best results are gained in dilute *Rugosa* crosses. It is necessary to remove two or more generations from the wild types to gain texture of petal and purity of coloring. This has been done in such superior varieties as Conrad Ferdinand Meyer, the result of a double cross represented by Gloire de Dijon X Duc de Rohan (H. P.) X *rugosa* Germanica, the last a hybrid between *Rugosa* and a Provence rose. The blooms are perfect from the fancier's viewpoint and are most freely produced throughout summer, but the *rugosa* foliage has vanished. The writer has produced, by pollinating a selected double-flowering hybrid *Rugosa* with Victor Hugo a plant of extreme *rugosa* character, but with large densely double blooms, scarlet-crimson in color, and of such fire and brilliancy that they even surpass those of its glowing pollen parent. Other crosses of White *Rugosa* on Clothilde Soupert, a Tea-polyantha variety, resulted in the splendid continuous-blooming varieties, New Century, white, blush center and Sir Thomas Lipton, pure white, that are well worth growing in the most exclusive gardens. The possibilities of *Rosa rugosa* are slowly yielded, but will be of overwhelming value to future breeders.

Something should be said of *R. spinosissima* and *R. lutea* in their best garden forms. The Scotch rose and Harrison's yellow both hybridize well with *Rugosa* and have produced very attractive varieties. The writer has not succeeded so well when using Austrian copper and Persian yellow. Hopeful species for breeding that should be introduced in this country are *R. gigantea*, a large flowered climbing species, native of Burmah, that has produced a superior variety in Portugal by crossing with Gloire de Dijon, *R. Hugonis*, yellow-flowered and *R. Soulieana*, with white flowers in corymbs, both native to Western China.