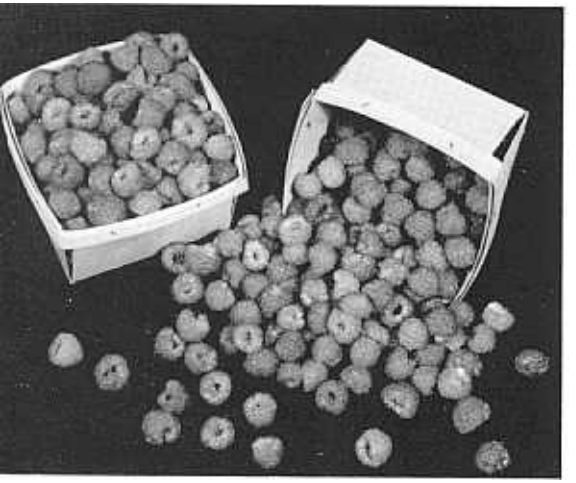

Breeding Autumn-Fruiting Raspberries

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Autumn-fruiting, or so-called everbearing, raspberries have long been known in this country and abroad. Many have been introduced from time to time and they occur in the wild. Most of the more important varieties, except Ranere, were polyploids. All were very similar and had certain characteristics in common which were undesirable from the pomological point of view. The plants were vigorous, suckered profusely, lacked winter hardiness, and were unproductive. The leaves were dark green, thick and coarse. The berries were small, crumbly and often with very few drupelets on the autumn berries. They were very soft, dull, dark red, tart and poor in quality. Erskine Park and LaFrance were sold by nurseries for a few years during the twenties. Hailsham, a tetraploid variety, was possibly slightly better than the others at Geneva.

Pollen studies of several of the polyploid varieties revealed a very high percentage of poor pollen, the anthers being shrivelled, shrunken, and often failing to dehisce. A few viable grains were found. Erskine Park, a triploid variety was used in a few crosses, but a high proportion of the resulting seedlings were female sterile and none of the others was of any merit. Breeding work with the polyploid varieties was not pursued further as the only characteristic of any value that they offered was the autumn-fruiting habit. This characteristic is now available in other varieties and selections of much greater potential breeding value.

Indian Summer Introduced

Lloyd George, an English variety, then came into the picture and was used extensively as a parent at Geneva, chiefly because of its large size. Lloyd George also produces some autumn-fruit in England and Oregon, but nothing more than a few late flowers at Geneva. Among the resulting seedlings were several that produced an autumn crop. One

of these, a cross with N. Y. 1950 (Empire x Herbert) was eventually named Indian Summer, and it has been of some value for its fall crop where the growing season is longer than at Geneva. When well grown the berries are large and of fine quality. Too often, the berries are small and crumbly, and much of the fall crop fails to mature because of early frosts.

With the advent of Indian Summer the breeding of autumn-fruiting varieties and selections became a definite objective of the raspberry breeding program. Indian Summer was crossed with other varieties that contributed characteristics in which Indian Summer was deficient. Only a few produced an autumn crop early enough to be of value and none were outstanding in other respects. The next step was to sib-cross, back-cross and self these fall-bearing selections with the hope that in the F_2 segregations and recombinations there would be seedlings with the desirable characteristics of the grandparents. Here the first real disappointment was experienced. The mating of closely related seedlings resulted in a great decrease in vigor of the resulting progeny and none were of any value otherwise.

September Better Than Indian Summer

At this time some new breeding material appeared. When the first crosses with Indian Summer were made, a population of 11 seedlings from Marcy x Ranere was also raised. One of these was selected for its fall crop, but it did not attract much attention until fruiting on second test. The fall crop was from 2 to 4 weeks earlier than the fall crop of Indian Summer and as it was otherwise desirable, it was named September. So far it has performed well, especially in the fall, from Geneva to Virginia and in Illinois. It is possibly better south of Geneva than at Geneva, perhaps because of its Ranere parentage. The fall crop is of fine quality, but the summer crop is only fair and the berries stick to the plant tighter than is desirable. So far it appears to be considerably superior to Indian Summer.

New Varieties in Prospect

In addition to September, several selections have been made from over 200 seedlings raised from seeds collected from wild autumn-fruiting plants in Oswego County, New York. The fall crop of these began ripening in mid-August and was finished before hard frosts occurred. One branched somewhat at the tip, thus increasing the bearing surface. Also available was a selection of uncertain parentage, but probably a seedling of Ranere that ripens at least a week earlier than September. The fruits are produced on about 20 inches of the tip of the cane, giving it at least twice the bearing surface of other fall-bearing types.

Another lot of seedlings was produced, using varieties and selections not closely related, in order to take advantage of the phenomenon of hybrid vigor. The principal difficulty at this stage seems to be the low percentage of seedlings that start the fall crop early enough to be of value. Large populations and the use of a new batch of selections, as yet of unknown breeding value, may improve the situation in the future.

At this time, forty selections made in 1948 have been propagated for second test and further breeding. Several hundred seedlings of fall-bearing parents will bear their first fall crop in 1949. Another lot of seedlings of similar breeding will be grown during the spring of 1949. The material now on hand, or on the way, should provide better fall-bearing varieties than any now known. The ultimate object of this program is a series of two-crop raspberries whose fruit are suitable for market or home use and whose plants are resistant to mosaic disease.

The Van Cherry

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In 1936 a cherry breeding project was started at the Summerland Experimental Station with the object of originating new varieties of black cherries which would have the firmness and high dessert quality of Bing and Lambert, combined with resistance to cracking of the fruit in rainy weather. It was also desired to obtain varieties which would be inter-fertile with Bing and Lambert.

Van Cherry, One in a Thousand

The Van cherry is at present the most promising of over a thousand seedlings which have been brought to fruiting age. It is an open-pollinated seedling of Empress Eugenie, an old French variety classified as a Duke or semi-sour cherry. The tree of Empress Eugenie from which the seeds were collected was located in an orchard where Bing, Lambert, Royal Ann and several other varieties of sweet cherry were planted. The original Van tree was planted in 1939, was selected as promising in 1942, and in 1943 was named in honour of J. R. Van Haarlem, Pomologist at the Horticultural Experiment Station, Vineland, Ontario. The variety was introduced in 1944.

The original tree is of good size for its age, vigorous, of upright growth, and has been a heavy annual bearer. The fruit sets thickly and is well distributed on the limbs, with heavy clusters on the younger wood. The fruit stem is shorter than that of Bing or Lambert.

Fruit Large, Attractive, and High Quality

Van is a black cherry of Bing type. The fruit is about as large as Bing, slightly firmer, quite as good in quality