A Hundred Years of Loganberries

D. L. JENNINGS[1]

Addressing a state fair in 1923, Judge J. H. Logan[2] of Santa Cruz, California said: "Forty-two years ago, in the fall of 1880, I commenced some experiments in my home garden..." The fall of 1980 is thus a good time to consider the tremendous impact that the famous fruit produced by these experiments has made on world horticulture, and to assess the efforts of successive breeders to produce a fruit to rival it.

The judge was an enthusiast for the flavor of the wild blackberries of California and set out to produce a new cultivar with a flavor superior to that of cultivated blackberries by crossing a domesticated blackberry known as Texas Early with a remarkable selection from the wild found by a Mr. Aughinbaugh. The fruits of Mr. Aughinbaugh's blackberry were much bigger than those commonly found in the wild and were notable for their long conical shape; moreover, their flowers were unisexual, ideal for an experiment involving cross fertilization. Judge Logan planted adjacent rows of each blackberry, and, quite by chance, he planted a third row with the raspberry Red Antwerp, one of the leading cultivars of his day. All the fruits ripened in May, 1880 and he immediately sowed seed from the Aughinbaugh blackberry. By the autumn, some 300 seedlings were available for planting out and he was able to observe their fruit for the first time in 1882.

One of the seedling blackberries, clearly the result of crossing with the Texas blackberry, more than fulfilled his expectations and he called it the Mammoth blackberry, though it became known as Black Logan. But there was another result and the judge's summing up describes it best: "in the very first row I found a simple lonely plant, in appearance like no other berry plant I had ever seen. It was neither a raspberry nor a blackberry but distinctly a new form of the *Rubus* family. The old Red Antwerp raspberry which I had casually planted had naturally crossed with the blackberry and nature had produced a new and perfect fruit, which later was named the Loganberry — the happy and unlooked for result of my experiments." All plant breeders must surely envy the amazing beginner's luck that gave an amateur such outstanding success from a population of one!

Much credit is due to the judge for persisting with his explanation of the new fruit's origin. He met with considerable skepticism from many of the leading botanists of his day who disputed its hybrid origin, largely because progenies raised from it showed little or no segregation of characters from the putative parents. They therefore suggested that it was a newly discovered wild species. It was not until the 1940s that cytologists at the John Innes Horticultural Institute in England reported that it was an allohexaploid constituted from two differentiated genomes of the blackberry and one from the raspberry: evidence which not only supported the hybrid origin of the Loganberry, but also explained the lack of diversity in its progenies.

Although the Loganberry was widely acclaimed from its early days, there is no doubt that two events have contributed to its continued success today. The first is the discovery in California by B. E. and G. R. Bauer of the thornfree mutation. Although it was

[1]Scottish Horticultural Research Institute, Dundee, Great Britain.

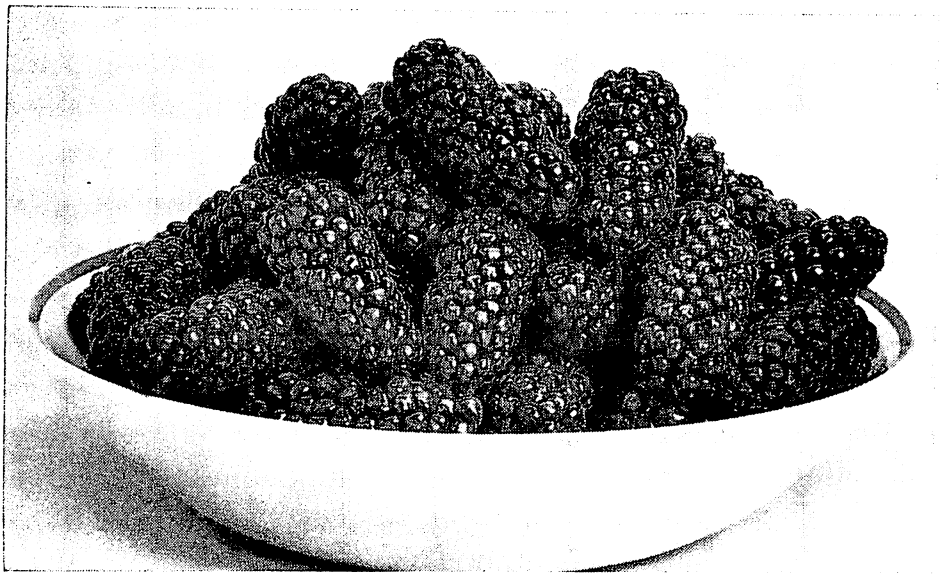
[2]Seventeenth biennial report of the Board of Horticulture, State of Oregon, 923, p. 237.

Mr. Aughinbaugh's Blackberry (Reproduced from the California Horticulturist and Floral Magazine, Vol. 5, 1875).

discovered in 1929, it was slow to become popular because of the commonly held belief that it was inferior to the thorny form. In fact the best clone is very similar but not identical to the original; it is slightly earlier, has a slightly larger average fruit size and produces more canes. The other event was the successful rescue operation in the early 1930s by Beryl Breakbane at the East Malling Research Station, England. This freed the Loganberry from its considerable admixture of inferior seedlings and virus-infected plants and led to the distribution of the highly successful LY59 clone, to be followed later by L654, a clone selected from the thornfree form.

Burbank's Logan, better known as the Phenomenal berry, was introduced in 1905. Luther Burbank's berry came from the second generation of a cross between Mr. Aughinbaugh's blackberry and the Cuthbert raspberry; it is larger, slightly lighter in color and considered by its advocates to be sweeter, richer and more distinctive in flavor. Nevertheless, it has not competed successfully with the Loganberry, partly because it is prone to certain diseases.

B. M. Young of Louisiana used the hexaploid Phenomenal berry for crossing with the octoploid Austin Mayes dewberry and selected his Youngberry, a septaploid, from the cross. It was introduced in 1926 and rapidly became popular for its sweet flavor and deep wine color, but its canes



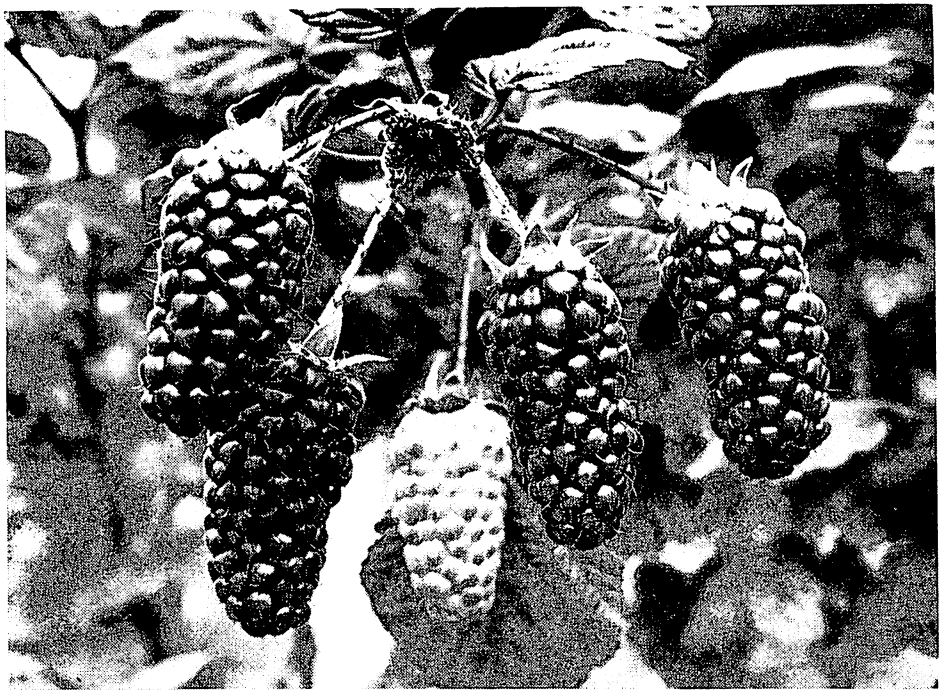
Dish of Tayberry fruit.

were too prone to winter injury to be successful north of California. At least six thornless mutations have been found but none of them has attained any major importance.

Rudolph Boysen's Boysenberry is very similar to the Youngberry and has the same chromosome number. It is another California hybrid, selected in 1920 and introduced about 1935, but its precise origin is not known. Its type is as might be expected from a cross between a Loganberry and an octoploid dewberry such as Austin Mayes. It may be related to John Lubben's Lubbenberry because Boysen rented Lubben's farm at Napa, California. Its fruits are larger, deeper purple and slightly more acid tasting than the Youngberry, but unlike the Youngberry it has been a major success; indeed it is the only hybrid berry to exceed the Loganberry in importance. It gives very high yields in Oregon and New Zealand, but while it is more hardy than the Youngberry it is still not hardy enough for Europe and most parts of America.

Hybrid fruits produced in areas outside of California have not so far been very successful. In 1912, H. Ness of Texas crossed a selection of the southern dewberry with a raspberry cultivar called Brilliant and in 1921 released a selection known as Nessberry, hoping that it would provide for southern America what Judge Logan's berry had provided for the Pacific coast. The hybrid is tetroploid and is more notable for the success of its progenies than for success in its own right. Providing names for its offspring proved no difficulty and cultivars like EarlyNess, BigNess and RegalNess appeared in the 1920s; more importantly, the cultivar Brazos appeared later, followed more recently by a series of new cultivars derived from it.

In Britain, raspberry-blackberry hybrids like Laxtonberry, Kings Acre Berry, Mertonberry and Veitchberry all had short and undistinguished careers, but the Veitchberry has a special importance as the parent of the country's leading blackberry. It was



Fruiting Lateral of Tayberry.

raised by the nursery firm of Veitch from a cross between an English hedgerow blackberry and the tetraploid raspberry November Abundance. The Laxtons of Bedford used it as a parent and in the mid 30s selected the hexaploid blackberry, Bedford Giant, from one of its progenies. The selection probably came from a self of the Veitchberry, the result of fusion between a diploid and a tetraploid gamate produced by the tetraploid parent. Undoubtedly the raspberry germplasm of the Veitchberry contributes to the early ripening of Bedford Giant blackberry.

The Tayberry is the latest raspberry-blackberry hybrid. It was bred at the Scottish Horticultural Research Institute in Scotland from a cross between the octoploid Pacific coast blackberry Aurora and an unnamed tetraploid raspberry selected at the Institute. Like the Logan berry it had the best parents available at the time of crossing. But Aurora, bred by George Waldo of Oregon, has benefited from the breeder's skill and is a superior parent to Mr. Aughinbaugh's selection from the wild. Its fruit are bigger and are excellent for flavor and color. These improvements are inherited by the Tayberry. Tayberries are long conical in shape, some 50% bigger than Loganberries, and they have a brighter and lesser downy appearance. They are deep purple when fully ripe and have an excellent flavor. Their yields in Britain and British Columbia have been very promising. They are eminently suited for sale as fresh or frozen fruit and processing tests show that they make excellent jam or wine. The Tayberry has been awarded a U.S. plant patent, and propagation in North America is being undertaken by the Sakuma Brothers of Burlington, Washington.