The Ambato Strawberry of Ecuador

GEORGE M. DARROW
Beltsville, Maryland

In March 1952, in connection with a survey of temperate fruits in Central America, Colombia and Ecuador, I had the opportunity to visit one of the large strawberry fields near Guachi, a suburb of Ambato, Ecuador. This 100 to 200 acre field consists entirely of the Ambato variety, a selection of pure *Fragaria chiloensis*. The field is probably centuries old, the plants having been taken from Chile to Peru and Ecuador in the 16th century. The Ambato is one of the original selections that Indians in Chile are said to have made some 400 years ago. It is the only variety, so far as I could learn, grown in the Ambato area, at about 9500 feet above sea level. The fields are never replanted, only occasional runner plants being set to replace plants that die. Hand weeding is practiced about three times a year. Under the cool, semi-arid conditions of Ecuador, the Ambato bears fruit the year around without irrigation, and is picked about once each week.

All plants examined were infested with aphids, but not with species considered to be the chief transmitters of strawberry viruses. All Ambato plants sent to Beltsville, Maryland in January, 1953, indexed virus-free when grafted to *F. vesca* test plants.

Ambato is the only perfect-flowered selection of *F. chiloensis* known. Not only do most of the flowers set fruit, but the anthers have an unusual amount of pollen, more than those of any other variety I have observed anywhere. No perfect-flowered plants of *F. chiloensis* have ever been found on the coast of Oregon and Washington or anywhere else other than Chile except on the Island of Juan Fernandez, off the coast of Chile, where the Ambato may have been introduced from the mainland.

The Ambato is very firm-fruited at Guachi, but was not different from other varieties in this respect when tested in Maryland in the 1920's. Its firmness in Ecuador seems related to the cool, arid climate where it is grown. The surface color of the fruit is pale red turning dull red, and its flesh is white. The berries are delicately flavored, not rich. They are medium to large, remarkably uniform in shape, long, blunt, conic, with dark

Photo by Popenoe

Fig. 1. The fruit and perfect flower of the Ambato strawberry (Fragaria chiloensis) grown in Ecuador.

seeds. The flowers of Ambato are very fragrant in the cool climate of Guachi, Ecuador.

This variety may possibly be red stele-resistant. Among the crosses of Ambato with named varieties made in the 1920's was one seedling that seems to have given resistance against red stele to its progeny.

The Ambato is probably adapted to relatively short daylight periods of 12½ to 13 hours. Most strawberry varieties have fasciated crowns and fruit when grown during days of less than 13 hours, but no fasciation was noted in the Ambato under such conditions.

It lacks vigor in the field at Beltsville, Maryland, but some of its hybrids with other varieties may be very vigorous. It may not be hardy, and this might be a handicap in using it in breeding for northern regions.

In conclusion, it can be said that the Ambato strawberry of Ecuador may have desirable genes for firmness under arid conditions, unusual uniformity of fruit, resistance to red stele, adaptability to short photoperiods and resistance to fasciation. It may also have undesirable genes for dark to black seed, white flesh, dull red skin and susceptibility to leaf scorch.

Testing the genetic qualities of the Ambato, especially its resistance to red stele, and crossing it with Missionary to get improved varieties for Latin America and for our southern states are suggested.

LITERATURE

1. Darrow, G. M., Ceiba 3: 179-185, 1953.

2. Popenoe, W., Jour. Hered. 12:457-466, 1921.

3. Waldo, G. F., Plant Dis. Reptr. 37:236-242, 1953.

Photo by Popenoe

Fig. 2. A strawberry picking crew at Guachi, Ecuador.