

# The Passion Fruits in Puerto Rico

WILLIAM C. KENNARD\*

Mayaguez, Puerto Rico

**F**RUITS of several species of the genus *Passiflora* are valued highly in the tropics and sub-tropics for dessert use and for making sherbets, jams, and a refreshing drink. The passion fruits are related to the papaya (*Carica papaya* L.) and the muskmelon (*Cucumis melo* L.), although each of these fruits is now classified in a separate botanical family. Most of the *Passifloraceae* are perennial, evergreen, woody vines indigenous to the tropical Americas. The genus, however, comprises about 400 species, some of which are erect and tree-like in form. Several ornamental species are native to the United States and one, *Passiflora lutea* L., grows as far north as Pennsylvania. Several species and hybrids are grown as conservatory plants in the parts of the United States where freezing temperatures occur, and are prized greatly because of their colorful and unusual-shaped flowers. The botanical and common name of this group of plants was recorded in the 17th century by Spanish priests in Brazil who associated the organs and colors of the flower with the instruments and circumstances of the crucifixion of Christ.\*\*

Fruits of the genus which are edible include: *Passiflora edulis* Sims, passion fruit or purple passion fruit; *P. edulis* f. *flavicarpa* Degener, yellow passion fruit; *P. ligularis* Juss., sweet granadilla; *P. laurifolia* L., Jamaica honeysuckle or water lemon; *P. molisima* Bailey, banana passion fruit; and *P. quadrangularis* L., giant granadilla.

Many of these species are now grown in most parts of the world between 30° north and south latitude, where freezing temperatures do not occur. Commercial production, however, is centered in Australia and New Zealand where several species, especially the purple passion fruit, are widely grown. There the vines are grown on two- or three-wire trellises and handled very similarly to grapes in the north-eastern United States. The vines are trained to the wires and receive regular annual pruning. The fruits are sized, graded, and packed for the market in wooden boxes much the same as apples are in temperate parts of the world. Culture of purple and yellow passion fruits on a commercial basis



Fig. 1. A passion fruit vine, as it grows in Puerto Rico showing both flower and fruit.

\*Research Horticulturist, Federal Experiment Station, Agricultural Research Service, U. S. Department of Agriculture.

\*\*Bailey, L. H. The Standard Cyclopedia of Horticulture, Vol. III. Macmillan Co., N. Y. 1935.

for processing is now well established in Hawaii.

In Puerto Rico, large-scale plantings have not been established, but fruits of several edible species can be found in local markets during the harvest season. Two species, the yellow passion fruit and the giant granadilla, are most widely grown. The plants are propagated by seeds or from cuttings of the mature wood and, due to their vigorous climbing habit, are trained on fences (Fig. 1), arbors, and house walls.

The plants grow well in a wide range of soils, but give best growth on fertile, well-drained types. The vines produce flowers the second year after planting and set fruit continuously from June to November. Flowering ceases with the beginning of the dry season. The vines, which produce for many years, require little attention other than occasional pruning and fertilizing, and are not affected by any serious diseases or insect pests. The purple passion fruit, which according to some has a flavor superior to that of the yellow type, has not grown well due to a wilt disease, probably caused by a species of *Fusarium*, which causes death of the plants.

The alternate, curly leaves of the yellow passion fruit, called "parcha" in Spanish, are deeply three-lobed, and the vines climb readily by means of long tendrils in each leaf axil. Flowers are two to three inches in diameter and are borne singly at each node on the new growth. The fruit are round to elliptical in shape and attain a diameter of about two inches, turning from green to yellow at maturation. The interior of the brittle-shelled fruit is filled with many small seeds surrounded by a yellowish, gelatinous, aromatic pulp and acid juice which is used for flavoring sherbets and for making jams and jellies. The pulp also

is eaten directly from the fruit with a spoon after adding a little sugar. The most popular use is in a refreshing drink prepared by blending the fruit pulp with ice, water, sugar, and a pinch of bicarbonate of soda.

The giant granadilla forms a larger leaf and is a more vigorous grower than the yellow passion fruit. This species derives its botanical name from the fact that the stems are quadrangular in cross-section. The flowers are five inches in diameter but hang down so that the red petals and purple and white rays are not as showy as those of some other *Passiflora* species. Fruit of the giant granadilla reach a length of eight to nine inches and turn yellow when mature. The pulp around the seeds is used to flavor ice-cream and to make a cooling drink. In addition, the flesh of this fruit is edible. The green fruit is boiled and eaten as a vegetable and the fully ripe flesh is eaten alone or in combination with such fruits as papaya and pineapple.

### Malling-Merton Apple Rootstocks

T. N. Hoblyn\* informs us that there are now no restrictions on the distribution of the five Woolly aphid resistant Malling-Merton rootstock varieties MM104, MM106, MM109, MM111.

These rootstocks have been found to be suitable for large scale trials in England, and may be obtained from a number of English nurserymen. They have been found to be free from the "Mosaid" and "Rubbery Wood" viruses.

Dr. Hoblyn suggests, however, since it is by no means certain that these rootstocks will do well outside the United Kingdom, that they be subjected to very careful trials before we use them on any extensive scale.

\*Assistant Director, East Malling Research Station, East Malling, Kent, England.