

The intriguing family of passion flowers

# Flowers of Beauty and Passion



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**Species belonging to the genus *Passiflora* have beautiful exotic flowers and edible fruit, appreciated for their intriguing taste. Although they grow and bloom best in tropical climates, they can also adapt to Polish weather conditions. Steeped in symbolism, the flowers' name evokes a certain sadness but their beauty is a true feast for the eyes**

Indigenous chiefly to South America, the genus was first discovered by the Spaniards. Individual parts of the flower reminded them of the crucifixion of Christ and the instruments used to torture him. In their interpretation, the *corolla scale* represented the crown of thorns, the stamens, thought to look like hammers, symbolized the five wounds of Christ, while the styles of the carpel resembled the nails used to crucify him. So the Spaniards decided to name their discovery after the Latin words *passio* (suffering) and *flos* (flower). Hence the name *Passiflora*, the flower of Christ's passion.

### Beauty from the New World

Passion flowers are evergreen, fast-growing and tendril-climbing vine plants. They are mostly perennials, with only few species classified as annuals. They naturally occur in tropical rainforests, on rocks, and in meadows. Arranged alternately along the stem, the leaves are either simple or lobed into three or five lobes. The plants owe their ornamental value to their unique exotic flowers, which grow from the axils of the upper leaves. Depending on the species, the flowers may be very small or large and fragrant and come in a variety of colors: white, red, creamy, purple, blue, and yellow. Some species, however, have ornamental leaves and inconspicuous flowers.

Many species of the *Passiflora* genus have edible fruit and the most popular variety, known as the passion fruit

(*Passiflora edulis*), comes from Brazil. With its thick purple or yellow skin, the fruit is the size of a plum and has edible jelly-like pulp with many small seeds. Aromatic and slightly acidic in taste, the pulp can be eaten raw. Sometimes known as *maracuyá*, it can be used to make juice. Thanks to its thick leathery skin, the fruit is resistant to transport damage and stores well. When the fruit is stored for a longer period of time, the skin loses its turgor, but the pulp retains its taste.

The largest fruit is produced by the species called the giant granadilla (*Passiflora quadrangularis*). Creamy green in color, the fruit is elongated (up to 30 cm in length) and may weigh up to 2 kg, but it is not as tasty as the fruit produced by *Passiflora edulis*. The giant granadilla also stands out as the species with the largest and most beautiful flowers. Fragrant flowers with purple petals and dark blue and purple *corollula* serve to attract pollinators. The plant has large leaves with whole margins and uses strong curling tendrils for support and attachment.

In their natural conditions, most species grow in tropical climates and require high temperatures throughout the whole of the growing season (23-30°C), but some species may grow in cooler temperatures and tolerate temperatures as low as 5°C when they rest in the winter.

In Polish conditions, the *Passiflora* is a house plant that can be grown indoors, in such places as houses and orangeries. In the summer, it can be moved to balconies or terraces. It likes sunlight, which is also required for a good blooming. Also, it needs fertile and well-drained soil, which should remain moist in the growing season (March to October). A fertilizer suitable for flowering plants needs to be applied regularly every two weeks. In the winter, the passion flower goes into dormancy, so it does not need fertilizing, but it should be moved to a cooler and bright place and watered moderately. In the spring, it must be moved to a warmer place and watered well and the shoots must be pruned to half their length. Fertilization should begin when the plant develops young leaves. The *Passiflora* has long shoots, which require strong support.

### From a distant world to a Warsaw suburb

The collection of greenhouse plants in the PAS Botanical Garden in Powsin features more than ten species of *Passiflora*. The plants are grown from seeds or cuttings. Different species need different climate condi-

*Passiflora* 'Amethyst'*Passiflora* ×*violacea* 'Eynsford Gem'*Passiflora* 'Baron Beauty'

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tions, so they had to be planted in different parts of the greenhouse. Most of them were planted in the tropical section, characterized by high temperatures and high humidity for most of the year. The passion flowers were planted directly into the ground (they grow in special pergolas on the side walls of the greenhouse).

The *Passiflora quadrangularis* seeds that I had received from the *Index Seminum* seedbank of the Botanical Garden in Potsdam first bloomed in 2004. After examining the flowers and categorizing the plant, I concluded that it was actually the giant granadilla (*Passiflora quadrangularis*), as described in the literature. Meanwhile, the species in our collection formerly regarded as *Passiflora*

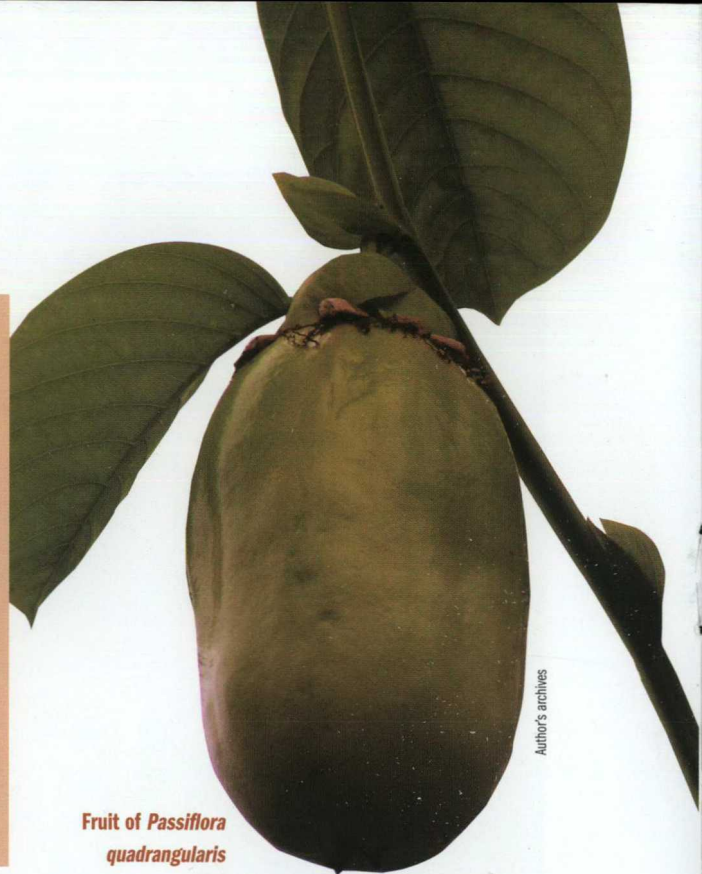
*quadrangularis* proved to be a hybrid resulting from a cross of *P. alata* and *P. quadrangularis*, ultimately categorized as *Passiflora* ×*decaisneana*. According to the literature (Vanderplank 1996), this hybrid actually appears as *P. quadrangularis* in many private collections and gardens. Although the two species are similar, *P.* ×*decaisneana* is a lot easier to cultivate, more likely to bloom, as well as more resistant to fungal diseases and therefore more popular than the giant granadilla.

The two species differ mostly in terms of the fruit they produce. *P.* ×*decaisneana* has long egg-shaped fruit that turns orange as it ripens, while the ripe fruit of *P. quadrangularis* is yellow-green in color, cylindrical in shape,

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Around 95% of *Passifloraceae* species are native to South America, with the remaining coming from Asia, Australia, North America, and Africa. Passion flowers were first brought to Europe in the 18th century and became very popular thanks to their unusual flowers and edible fruit. In hot climates they grow in the ground, while in cooler climates they are treated as houseplants.

Passion flowers were first mentioned by Carl Linnaeus (who described 22 species in *Flora suecica* in 1745 and as many as 24 in *Species Plantarum* in 1753). The author of the first and largest monograph devoted to the species was M.T. Masters, who described 202 species of passion flowers in 1872; his monograph was included in Martius's *Flora Brasiliensis*. Today, we know that the genus *Passiflora* includes between 455 and 465 recognized species (Vanderplank 1996).



Fruit of *Passiflora quadrangularis*

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and much larger in size. The ripe fruit, which is sweet and sour in taste, is often used to make various types of jelly. The skin, which is very thick, can be cooked and served as a vegetable.

It is difficult to differentiate between specific species, unless they are blooming or fructifying. Even so, one can spot small differences by carefully examining the shoots. Around 90% of the leaves of *P. quadrangularis* have six nectarous excrescences on the petioles, compared with only four found in *P. ×decaisneana*. In natural conditions, the *P. quadrangularis* is a rapid-growing vine that can reach a height of 15 meters, or even 45 meters on Java.

Among other species grown in the PAS Botanical Garden, it is worth mentioning *Passiflora vitifolia*: with its magnificent crimson flowers, it is regarded as the most beautiful of all red passion flowers. It has edible yellow-green fruit and large dark green three-lobed leaves that are glossy on the outside. The *Passiflora* "Amethyst" has beautiful large flowers that are lavender in color. The

flower buds are elongated and purplish in color and the three-lobed leaves are dark green. The *Passiflora* ×*violacea* "Eynsford Gem" can also boast large and ornamental flowers. This fast-growing hybrid has dark green three-lobed leaves and the flowers are purple, pink, and white. In turn, the "Baron Beauty," another rapid-growing *Passiflora*, has large navy blue flowers.

In closing, it is worth adding that passion flowers have long been known for their medicinal properties. Indians from North and Central America used them to treat sleeplessness, epilepsy, depression, and stress. They can relieve pain and the flowers have sedative properties. In addition to being used to make various types of juice, ice cream, and jelly, the fruit is also widely used in the cosmetic industry. ■

#### Further reading:

Brickell Ch. (1996), *Royal Horticultural Society A-Z Encyclopedia of Garden Plants*, Dorling Kindersly, pp. 756-757.

Vanderplank J. (1996), *Passion flowers*, 2nd ed., Cassell, London



*Passiflora vitifolia*



*Passiflora citrina*

Author's archives (2)