

Goatsfoot, Maypop, the Native and Naturalized

Just the name passionflower invokes images of romance, exotic places, and even tropical flavors—and there's a reason for that. Passionflowers are considered to be one of the most romantic flowers, they live in exotic places, many species emit a heavenly aroma that rivals any perfume, and the fruit of some species are used to create tempting tropical drinks and desserts. There is even a story with religious significance associated with passionflowers.

As legend has it, a 17th century Roman monk scholar named Jacomo Bosio was working on a treatise concerning the crucifixion of Christ when he met an Augustan friar, Emmanuel de Villegas. Villegas, who was of Mexican descent, showed Bosio illustrations of a passionflower. Skeptical at first, Bosio decided to include this marvelous flower in his treatise only after hearing reports from other Mexican Jesuits that passionflowers did, indeed, exist. Bosio concluded that the flower was revealing the passion of Christ and wrote:

"The column rising in the centre of the flower surrounded by the crown of thorns, the three nails at the top of the column. In between, near the base of the column is a yellow colour about the size of a reale, in which there are five spots or stains [stamens] of the hue of blood evidently setting forth five wounds received by our LORD on the cross. The abundant and beautiful leaves are shaped like the head of a lance or pike like the spear that pierced the side of our Saviour, while the underside of the leaf is marked with round spots signifying thirty pieces of silver [which Judas was paid to betray Christ; Matthew 26:15]."

Bosio also noted that the flower bore 72 filaments on the corona which, traditionally, is the same number of thorns in the crown placed upon the head of Christ. He also concluded that the ten sepals and petals represented the ten apostles (less Peter and Judas), and the tendrils signified the whips of Christ's persecutors. Bear in mind that Jacomo Bosio lived during a time when every plant and animal was believed to have medical or spiritual significance.

Passionflowers belong to the PASSIFLORACEAE, the Passionflower Family, which is made up of four genera — *Adenia*, *Malesherbia*, *Passiflora*, and *Tetraphaeta*. The genus *Passiflora* is comprised of over 400 tropical and temperate species from North America southward through the West Indies and Mexico into South America (95% of the world's passionflowers are indigenous to South America). There are also twenty Indomalayan and Pacific species. The vining species climb by tendrils and are an important larval food plant for heliconiine (passionflower) butterflies which, in Florida, include the zebra, julia, gulf fritillary and variegated fritillary. Some species are agriculturally important for their edible fruit, most notably *Passiflora edulis* (passion fruit), and *P. quadrangularis* (giant granadilla).

Florida is home to six native and three naturalized exotic *Passiflora* species. One common native species is the corkystem passionflower, *Passiflora suberosa*, which develops corky outgrowths on the mature stems. It occurs in pinelands and hardwood forests throughout Central and South Florida and also grows wild in the West Indies, the tropical Americas, Hawaii, Indonesia, Polynesia, and the Galapagos Islands. It is also naturalized in parts of the Old World tropics. To many, this species is difficult to identify because the plant produces leaves of widely varying shapes and sizes, ranging from lance-shaped, narrowly linear, tri-lobed, bilobed, and all variations in between. The long list of botanical synonyms attests to the futile attempts taxonomists have made trying to name the many leaf forms produced by this plant.

Changing leaf shape is believed by lepidopterists to be a botanical ploy to keep from being identified by egg-bearing female heliconiine butterflies. If you think this is impossibly bizarre, consider the following: most *Passiflora* species produce extrafloral nectaries (nectar glands) on



TOP: *Passiflora biflora*, an aggressive exotic, quickly takes over in the garden (best admired here or in books).
MIDDLE: *P. pallens*, an endangered tropical beauty.
BOTTOM: *P. multiflora*, the rarest of our native passionflowers, found in Elliott Key.

& Love-in-a-Mist, Passionflowers of Florida

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TOP: *Passiflora lutea*, a temperate species for North Florida. MIDDLE: *P. sexflora*, goatsfoot, an unusual and endangered tropical. BOTTOM: *P. suberosa*, corkystem, a common favorite for butterfly gardening.

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duces large, fragrant, very showy lilac or mauve flowers with pinkish-violet filaments. It survives New England winters and is considered to be the hardiest of the passionflowers. Plants cultivated in Europe have even survived winter temperatures down to -2°F (-16°C). One horticultural drawback is its tendency to produce abundant root suckers, sometimes far away from the parent plant. If left unchecked, it can aggressively cover a fence, shrubs, or even trees. Regardless, it is cultivated for its eye-catching flowers, for its butterfly-attracting attributes, and for its lime-green or yellow edible fruit. It is also one of the parents in two showy manmade hybrids: *Passiflora* x *colvillii* (*P. incarnata* x *P. caerulea*) and *Passiflora* 'Incense' (*P. incarnata* x *P. cincinnata*).

The yellow passionflower, *Passiflora lutea*, is also cold-hardy and grows wild from Pennsylvania to Kansas south into Texas and north-central Florida. It is an herbaceous species that dies back in winter, and has little ornamental value. Very small greenish-yellow flowers are produced during the summer, followed by dark purple, pea-sized fruit.

The extreme southern tip of Florida is blessed with three additional native species, all of which are listed as endangered by the State of Florida. *Passiflora pallens*, with evenly three-lobed leaves and medium-sized white flowers, occurs in the hardwood forests and swamps of Collier, Miami-Dade, and Monroe counties. Its natural range also extends into the West Indies.

Another species, goatsfoot, *Passiflora sexflora*, has two- or three-lobed leaves, much wider than they are long, and small, but pretty, greenish-white flowers with pinkish-violet filaments. In Florida it is found only in tropical hardwood hammocks of Miami-Dade County and is also found in the West Indies, Mexico, and the tropical Americas.

Our rarest native species is *Passiflora multiflora*. Its oblong leaves are softly pubescent and the small ($3/8$ "), yellowish-white flowers

the petioles, leaves, and/or floral bracts. These serve two functions to help protect the plant; they attract nectar-seeking ants that will, in turn, attack caterpillars, and the glands often mimic—in size, shape, and color—the eggs of butterflies. If a female butterfly sees these glands, she will likely pass by without laying eggs, in the mistaken belief that a butterfly has already laid eggs on the plant.

The corkystem passionflower produces small (typically $3/8$ - $1/2$ inch), pale green flowers throughout the year, and these are followed by small, round, purple fruit that are eaten by birds. Unlike most passionflower species, this is a rather petite vine, seldom climbing very high into shrubs and sometimes simply rambling across the ground. In pineland habitat, it even tolerates fire. Because it is so widely used by butterflies as larval food, it is commonly cultivated by butterfly gardeners wherever heliconiine butterflies occur.

A second native species ranges southward from Connecticut into the south-central counties of Florida. This is the apricot vine or maypop, *Passiflora incarnata*, which pro-

are borne in clusters from the leaf axils, sometimes in such profusion that they cover the entire stem. In Florida, this plant is found only on Elliott Key (Miami-Dade County) into the Upper Florida Keys of Monroe County. Its global range also includes the West Indies and Costa Rica.

Of the many introduced exotic species, three have managed to escape cultivation in central and southern Florida. All are capable of enshrouding native trees and shrubs and should be controlled whenever encountered in natural areas. One is the edible passion fruit, *Passiflora edulis*. This South American species produces tri-lobed leaves and large, attractive flowers with purple and white filaments. The 2- to 3-inch round fruit are typically purple, and have a tough, leathery outer shell. The pulp is refreshingly sweet and aromatic, and is used in drinks and sherberts or eaten fresh as a dessert. Raccoons and opossums are principally responsible in Florida for moving the seeds from cultivated plants into natural areas.

Another species, described in the literature as "vigorous and spreading," is *Passiflora biflora*, native from Mexico south to Venezuela and also the Bahamas (mistakenly referred to as native to Florida in Wunderlin, 1997). The variable leaves are generally two-lobed and the one-inch white flowers with yellow filaments are borne in pairs from the leaf axils. *P. biflora* is naturalized in the vicinity of Palm Lodge, a circa 1912 historical site in Homestead, Florida and is extremely aggressive, covering fencerows and scrambling high into the canopy of large trees. At the University of Florida's IFAS station near Homestead it is established in a remnant pine rockland where it even manages to compete with kudzu, *Pueraria montana*. It serves as larval food for gulf fritillary butterflies but its invasive, weedy tendencies make it a poor candidate for purposeful cultivation in Florida. Purple, oblong fruit are freely produced and the seeds are distributed by birds.

The third species that has escaped cultivation in Central and South Florida is *Passiflora foetida* which, as its name implies, has ill-smelling flowers (fetid means "having an offensive smell"). There are over fifty named varieties of *P. foetida*, and these pro-



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TOP: *Passiflora edulis*, exotic and best known as the edible passionfruit. MIDDLE: *P. incarnata*, a native, called maypop perhaps because it pops up everywhere in May. BOTTOM: *P. foetida*, "love-in-a-mist," a stinky exotic with 41 common names.

duce extremely variable leaves ranging from lance-shaped to two-, three-, or five-lobed. One interesting account by John Vanderplank (1996) involves a note pinned to a herbarium specimen at the Royal Botanical Gardens in Trinidad. The note was written by Dr. M. T. Masters, an authority on passionflowers, to John Hart, the superintendent of the Royal Botanical Gardens:

"As to your passion flower, it is certainly a form of *P. foetida*, a tropical weed which seems to be never twice alike! I dare say it would be possible to make 20 species out of it in one week, but next you could not define them and would have to make 20 more!"

The 1 1/2- to 2-inch flowers are white, pink, purple, or blue, with either yellow, red, or scarlet fruit depending on the variety. One constant distinguishing character is the occurrence of green, feathery bracts that surround the bud and fold outward beneath the flower, giving rise to one of its forty-one common names, "love-in-a-mist." The Florida form (possibly introduced from the Bahamas) produces pinkish-purple flowers, three-lobed leaves, and bright red fruit.

Passionflowers are among the world's most enchanting flowers and Florida's native species make interesting garden subjects if given ample room to grow. In

fact, the corksystem passionflower requires little space and could be trained on a small trellis or grown in a hanging basket. If you cultivate passionflowers, expect your planting to be visited by butterflies—and please view their caterpillars not as pests but as a delightful bonus. ✨

LITERATURE CITED

- Vanderplank, John, 1996. *Passion Flowers and Passion Fruit*, Second Edition, MIT Press, Cambridge MA.
 Wunderlin, Richard P., 1997. *Guide to the Vascular Plants of Florida*, University Press of Florida, Gainesville, FL.

ABOUT THE AUTHOR: Roger is a well-known naturalist and the Resource Management Supervisor for the Miami-Dade County Parks and Recreation Department. He is a frequent contributor to The Palmetto and has been a keynote speaker at past FNPS conferences. If you've never had the pleasure of meeting him, then you have one more reason to go to the 2000 Conference in Miami (May 4-7), where no doubt Roger will be found poolside, with one of those tempting drinks in his hand, swapping plant tales.

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