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Florida's So-Called 'Butterfly Orchid'

By Chuck McCartney



Although there are a number of orchid species around the world called Butterfly Orchid, to most orchidists, *Psychopsis papilio* and its three closest relatives are considered the classic Butterfly Orchid. By comparison, Florida's *Encyclia tampensis* looks nothing like a butterfly, nor is it known to be pollinated by them. This specimen of *Psychopsis papilio* was grown by Ernie Barham and photographed by Chuck McCartney. *Encyclia tampensis* was photographed by Christopher Ohanian on June 5, 2013, in northern Broward County.

The most widespread epiphytic (tree-growing) orchid in the southern half of the Florida Peninsula is the pretty species known scientifically as *Encyclia tampensis*. Because so many laymen are reluctant to learn botanical names (they say the latinized binomials “scare” them or “confuse” them or are “hard to pronounce”), it has become the practice to provide every plant, no matter how obscure, with a so-called “common name” – even if such a vernacular name has never been in common usage.

Such is the case with *Encyclia tampensis*, which is almost endemic to Florida (with a small population in the Bahamas but no verified specimens from Cuba, despite the presence of some similar species there). Therefore, someone (I can't determine who) made up the common name “Florida Butterfly Orchid”

for *Encyclia tampensis*. It's all very pretty and very poetic. The problem is, it makes no sense whatsoever.

The reason this new common name is a problem is the fact that the sweet-scented flowers of this orchid, which blooms mostly in the late spring and early summer, look nothing like a butterfly, nor are they known to be pollinated by butterflies. The shape of the flowers and their honey-like fragrance produced in the afternoon seem to indicate pollination by some species of bee. The round, flattened midlobe of the white lip forms a “landing pad” for a visiting pollinator, and the magenta spot or stripes in the middle of it (the rare “albino” form lacks this colorful ornamentation) serve as “nectar guides,” pointing the way to where the pollinator may (or may not – orchids can be great



Left: A typically colored flower of *Encyclia tampensis* has a bright magenta spot in the middle of the white lip which forms a landing pad for the presumed bee pollinator of this widespread native orchid. This specimen was photographed by Chuck McCartney on June 20, 1994, at the western end of Long Pine Key in the Miami-Dade County portion of Everglades National Park.



Above: Some botanists have suggested a hybrid origin for *Encyclia tampensis* in the distant past, possibly accounting for numerous color variations in the flowers. Jake A. Heaton photographed a rare "alba" form of the species on June 8, 2016, in a Sarasota County nature preserve. In a dwarf cypress forest in the Miami-Dade County section of Everglades National Park, Chuck McCartney came upon an unusual yellow-flowered form on June 20, 1994.



Above: In south-central Florida's Sarasota County, *Encyclia tampensis* can form large colonies on Live Oak trees (*Quercus virginiana*). Photograph taken on June 6, 2016, by Jake A. Heaton.



Above: In full sun, plants of *Encyclia tampensis* sometimes take on a dwarfed appearance and may display purplish coloration to cope with the high ultraviolet light, like this specimen photographed by Chuck McCartney on November 1, 1980, in a dwarf cypress forest in the Big Cypress of northeastern Collier County.



Above: Not all plants of *Encyclia tampensis* growing in full sun become miniaturized. Environmental consultant Jack Lange observes a sizable specimen flowering profusely on a dead Buttonwood tree (*Conocarpus erectus*) in a coastal prairie near Flamingo in the Monroe County portion of Everglades National Park. Photographed on May 24, 2000, by Chuck McCartney.



Above: Intrepid amateur field botanist Jake A. Heaton created this photo combo showing variations of *Encyclia tampensis* flowers he photographed in Sarasota County, Florida.

pollinator deceivers) find some anticipated reward in the form of nectar. Also, a bee is strong enough to muscle its way into the center of the flower in its search for nectar by depressing the lip (or labellum) of the flower, which is hinged to the base of the orchid's reproductive column.

Brief anatomy lesson: The column (fancy word: gynostemium) is a unique character of most of the orchid family, uniting two of the flowers' posited primitive three anthers (male parts) into a single structure that also contains the united stigmas (female parts). In most orchids (remember, there are more than 25,000 naturally occurring species worldwide, so there is a lot of variability in the following pattern), the pollen, rather than being in individual grains, is presented in discrete packets called pollinia. These are beneath a cover called the anther cap. The sticky stigmatic surface is behind the pollinia, separated from it most of the time by a flap of tissue called a rostellum to prevent self-fertilization. A visiting pollinator, while probing for a reward, dislodges the anther cap, gets the pollinia glued to some portion of its anatomy, then flies away to visit another orchid flower, in the process depositing the pollen packets onto the stigma of that flower, thus achieving cross-pollination for the orchid. The pollinator may or may not have received a reward for its efforts.

For an orchid so relatively ubiquitous in southern Florida, it's surprising that so little is known about the precise pollination biology of *Encyclia tampensis*. Sadly, this is true of perhaps the majority of the world's orchid species because this sort of scientific inquiry is painstaking, time-consuming work.

The other problem with the newly minted "Florida Butterfly Orchid" is that this species already had a longstanding common name, at least among old-time orchid collectors and orchid growers in extreme southern Florida. Although certainly less pretty or poetic than "Florida Butterfly Orchid," *Encyclia tampensis* (then called *Epidendrum tampense*) was long known as the Onion Orchid. Just one look at the plant and this common name makes sense. It produces a rounded to pear-shaped bulb (technically a swollen water- and nutrient-storage stem called a pseudobulb) that is topped by one, two or occasionally three long, tough green leaves. It doesn't take a leap of imagination to see the resemblance of the plant to an onion. Thank goodness the orchid – plant or flower – doesn't smell like an onion!

Another big problem with the common name of "Butterfly Orchid" for *Encyclia tampensis* is that around the world, there are several other orchids given that vernacular designation. Most especially, that name belongs to a small group of orchids from northern South America (and adjacent Trinidad, which is, floristically and geologically, just a piece of the South American continent that got separated in relatively recent times). These distinctive orchids at one time were placed in a large, diverse assemblage of orchids lumped into the genus *Oncidium* and now, understandably, segregated into the genus *Psychopsis*, which contains just four species (although some authorities include a fifth). The prime example of the genus is the



Above: A robust specimen of *Encyclia tampensis* growing in the shade of a hardwood hammock in eastern Everglades National Park shows the onion-like appearance of the plant, with its conical pseudobulb topped by tough green leaves. The appearance of the plant accounts for the understandable common name Onion Orchid among old-time South Florida orchid growers. Photographed on February 23, 1995, by Chuck McCartney.

species *Psychopsis papilio*. Now this is, in my mind, the ultimate Butterfly Orchid.

The genus *Psychopsis* was established by eccentric botanist C.S. Rafinesque in 1838 and derives its name from two Greek words that translate as "resembling a butterfly." And the species epithet *papilio* means "butterfly" in Latin. (Some of our larger swallowtail butterflies, for example, the beautiful Eastern Tiger Swallowtail and the Eastern Black Swallowtail, are placed in the genus *Papilio*.) This orchid and its related species certainly deserve the common name Butterfly Orchid, mainly because they look like large, exotic yellow-and-brown butterflies sitting atop tall, thin flower stems (inflorescences). These are truly handsome species that richly deserve their common name.

Then called *Oncidium papilio*, this "true" Butterfly Orchid caused a sensation when introduced into England in 1824. Some authors credit this exotic beauty with igniting the "orchidomania" among the British gentry that dominated horticulture in that country through the subsequent Victorian Era of the 19th Century.

Regarding our *Encyclia tampensis*/Onion Orchid, it was first described in botanical literature in 1847 based on a plant that made its way from Florida's Tampa Bay region to English botanist John Lindley, the preeminent orchid expert in the first half of the 19th Century. Lindley placed it in the large catchall genus *Epidendrum* as *Epidendrum tampense*, and sometimes even today, you'll hear it called "tampense." John Kunkel Small of the New York Botanical Garden, ever the "splitter" when it came to plant taxonomy, transferred it to the then relatively obscure genus *Encyclia* in 1913. That genus was resurrected and validated by Florida-based taxonomist Dr. Robert L. Dressler, one of the preeminent orchid botanists of the second half of the 20th

Century. Dressler distinguished *Encyclia tampensis* and its generally pseudobulbous relatives from the mainly lepidopteran-pollinated “keyhole” flowers that resembled the type species of the genus *Epidendrum*. *Encyclia* was created in 1828 by English orchid expert William Jackson Hooker based on a now-obscure Brazilian species where the side lobes of the lip encircled the flower’s reproductive column, the character to which the Greek-derived genus name refers.

As a side note, the genus *Epidendrum* was named in 1763 by Swedish scholar Carl Linnaeus, the father of our modern binomial (two-name) system for designating living organisms (plant, animal or otherwise – although there wasn’t as much “otherwise” back then). In Linnaeus’s time, as European explorers were fanning out across the globe and sending back exotic orchid plant specimens to Linnaeus labeled as being found on a tree, he created this catchall form genus *Epidendrum* for those orchids, a name derived from the Greek words meaning “upon a tree.” Linnaeus’s concept of *Epidendrum* proved to be a hodgepodge of often-unrelated orchids, including species from such disparate genera that we now know as *Cymbidium*, *Grammatophyllum* and even *Phalaenopsis*, for example. Over the intervening 250-plus years, the genus *Epidendrum* has been refined to include just New World (Neotropical) orchids in the subfamily Laeliinae. Even with the segregation of *Encyclia* and some other genera, *Epidendrum* as it is now understood still includes upward of 1,500 species.

When the groundbreaking book *The Native Orchids of Florida* by Carlyle A. Luer, M.D., came out in 1972, it included four species in the genus *Encyclia*. However, since then, through the work of Florida orchid taxonomist Dr. Wesley E. Higgins, three of those species have now been moved to the genus *Prosthechea*, first created in 1838 by George B. Knowles and Frederic Westcott for an obscure little species of southern Mexico and northern Central

America called *Prosthechea glauca*. These three former Florida *encyclias* are now known as *Prosthechea cochleata* var. *triandra* (the Clamshell Orchid), *Prosthechea boothiana* var. *erythronioides* (the Dollar Orchid), and little *Prosthechea pygmaea* (known in Florida only from the Fakahatchee Strand). Among the major physical characteristics separating *Prosthechea* from *Encyclia* are a reproductive column with three prominent projections at its apex and, perhaps more telling, a three-sided seed capsule that is triangular in cross-section.

The only other true *Encyclia* reported for Florida was the Bahamian species *Encyclia rufa*, with a label reading that it was collected by John Kunkel Small, Charles A. Mosier and P.A. Matthews on May 24, 1926, at Eau Gallie, now part of Melbourne in Brevard County, never to be seen again in our state. This specimen was either a waif (a one-time chance introduction), a tiny population that was lost to habitat destruction, or a labeling error by Small as to the true provenance of the plant.

As it stands now, *Encyclia tampensis* – the Onion Orchid – is the only member of this New World genus of 170 taxa (including species and natural hybrids) that is found in Florida.

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About the Author

Chuck McCartney is a fourth-generation South Floridian. He joined Miami-Dade County’s legendary Native Plant Workshop in the mid-1970s and has been a member of the Florida Native Plant Society since 1986, winning the society’s Green Palmetto award in 2002 for his educational efforts. His special interest is the wild orchids of southern Florida and the Southern Appalachians, and he often speaks on these and other native wildflower topics to native plant groups, orchid societies, garden clubs and natural history organizations.



Above: In suburban northern Broward County, *Encyclia tampensis* is still surprisingly abundant. A large specimen grows on the vertical trunk of a Cabbage Palm (*Sabal palmetto*) in a parking lot off a much-traveled roadway. Not far away in a remnant cypress forest next to a gas station near a busy intersection, a specimen beautifully displays its flowers. Photos taken on June 5, 2013, by Christopher Ohanian.