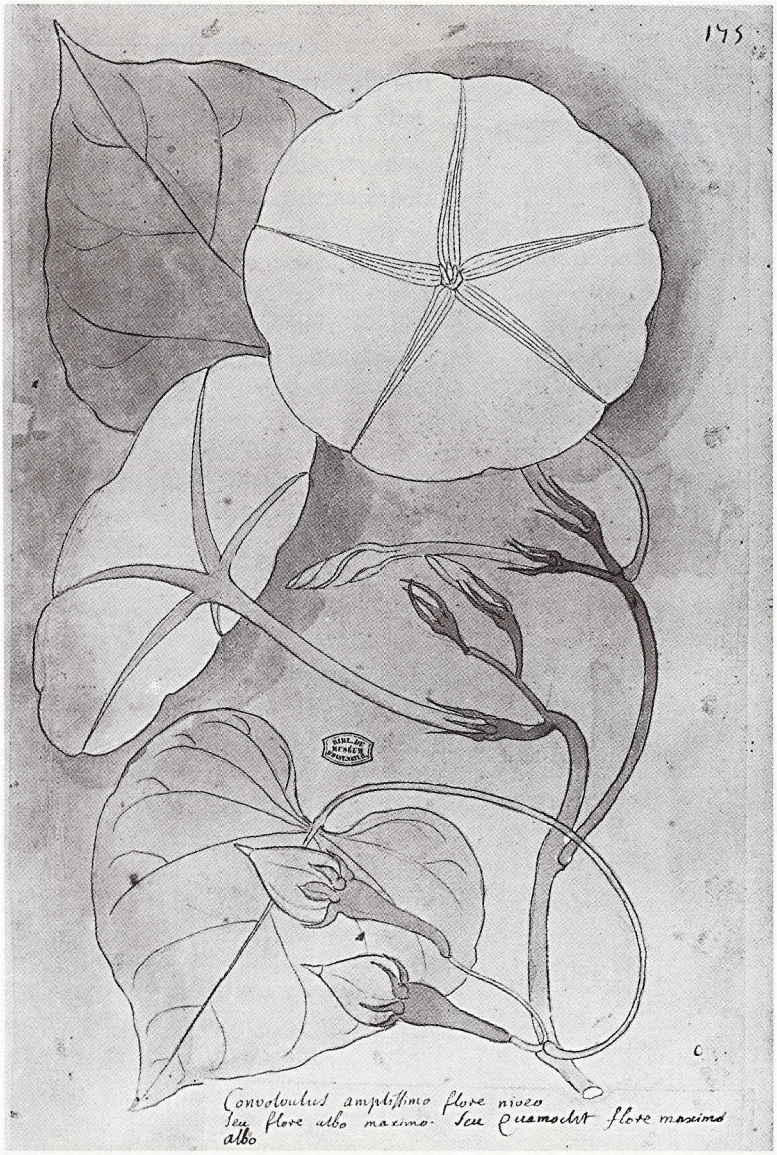
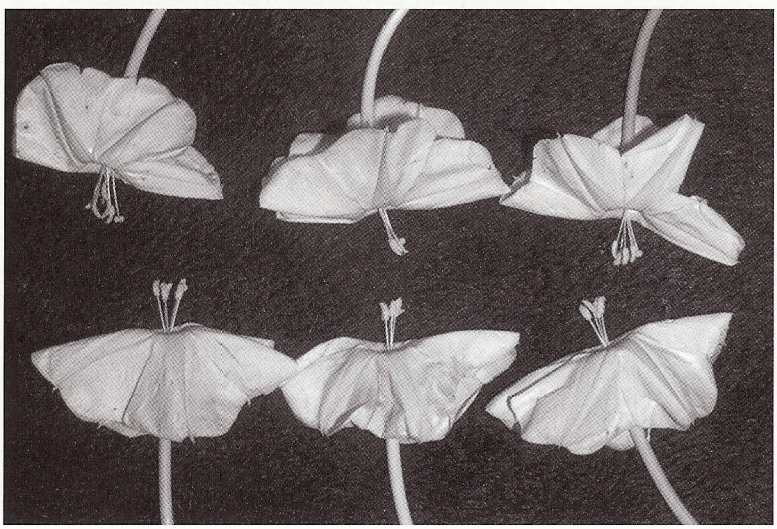
# Moonvine

## Discovering Florida's Ethnobotany with Dr. Dan Austin



Shortly after 1913, the Lake Okeechobee American Legion developed a cheer for a West Palm Beach parade:

**Custard Apple, Moonvine, Catfish and Moonshine!**

**Ever-glades Post 20! Whoopee! Muck Rats!**

That pretty well summed up the abundance of moonvine (*Ipomoea alba*) in South Florida at the time (along with a few other prominent items). Moonvine formerly blanketed the canopy of a pond apple forest that stretched for 32,000 acres along the southern edge of Lake Okeechobee. This forest, and the moonvines covering it, was totally destroyed and replaced by agriculture. A belt of trees and vines 50 miles long and two or more miles wide was eliminated in less than a decade. Although moonvines are not as common in Florida as they once were, they are still abundant in some places.

Moonvines, also called moonflowers or tropical white morning glory in English, and *flor de luna* (moon flower, Veracruz, Tabasco) in Spanish, have fascinated people since the first Europeans arrived in the New World. The large white flowers open in the evening, they are strongly scented, and they attract large nocturnal sphinx moths (SPHINGIDAE). That combination of traits, plus some others, enticed the Spanish to carry the seeds back to Europe and then to the rest of the world within the first few years after 1492. The plants became pantropical so quickly that until recently there remained a cloud of confusion about their origin. Most people, from at least the 1750s to the present, thought that the first mention of the moonvine was by H. A. Rheede in his list of plants cultivated in Malabar, India, in the 1680s. However, it appears that the first record was made by an early Spanish historian. Shortly after his arrival in Panama in 1514, Gonzalo Fernández de Oviedo wrote about the *flor de la Y* that he found in Cuba. All students of that island have equated that account with *Ipomoea alba*, and Oviedo's brief description fits.

The origin of the Taino word "*Y*" for these plants has been a mystery ever since. However, it may be a comparatively simple matter of related words (cognates) and partial misunderstanding on the part of the Spanish.

We know from Columbus's account that the Taino people of Hispañola called *Ipomoea batatas* (sweet potato) *ajé* [also spelled *hage*, *age*, *aje*, *axe*, *ase*]. The Taino spoke a language

**Illustration above:** Drawing with watercolor by Charles Plumier, Franciscan priest who visited Haiti, Martinique and the Lesser Antilles in the 1690s. The original is bound in Volume 2 of Plumier's unpublished items from his visit to the Americas, and held by the Museum National d'Histoire Naturelle in Paris.
**Left:** Graceful, elegant moonvine flowers lined up for our admiration.

Photos by the author.

related to the Arawakan people of northern South America. The Arawaks call the sweet potato *haliti*, and their relatives the Guajiro say *haisi*. Taino, Arawak and Guajiro words are cognate with *á:hi* (Mikasuki), *ahe* (Choctaw), *aha* (Muskogee), and even *nuna* (Cherokee). With simple misunderstanding or poor transcription, the Taino word would be changed to "*é*" or "*y*" by Spanish-speaking listeners in the 16th century. So, the name Oviedo left behind for the moonflower, *flor de la Y*, may be translated "flower of the *ajé*" or "morning glory." Or, more exactly, the "root with flowers."

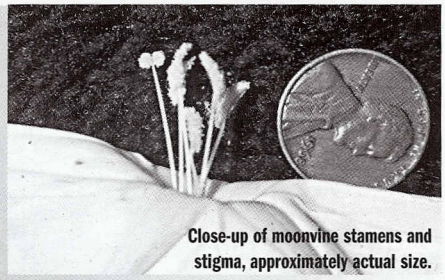
Surely, the Cuban name *jabilla* is related to "*Y*." *Jabilla* is probably also based on the same root as Taino *hage* and Arawak *haliti*. This Cuban name is applied to *Ipomoea violacea*, a species that resembles *I. alba*. In both Spanish (*aguinaldo blanco de costa*) and English (coast moonvine) the *jabilla* is considered the "coastal" moonvine because it is found on beaches and in mangroves.

Other common names are easier to understand. In Hispañola, moonvine is rendered *estrella vespertina* (evening star), and in Yucatán *oración* (prayer). Colombians say it is *galán de noche* (gallant at night). French Antilles people say *belle de nuit* (beauty of the night). This fascination with the evening flowers spilled over into Europe and caused Swiss botanist J. D. Choisy to separate the species out into the genus *Calonyction* (Greek, "beautiful at night") in 1833. Yet, the similarity in shape and time of flowering between moonvine and some other species in the family do not necessarily indicate relationships. More often, the flower shape reflects convergence onto a pollination type from different lineages.

Hondurans prefer to call the moonvine *pañal de niño* (child's diaper), while people in El Salvador call it *garza* (egret). That Salvadorean name is probably a corruption of indigenous names for the plants, including *gamuza* (Chiapas), *huamol* (Chiapas), and *guamol* (Chiapas). Those words might be linguistically related to *amule* (variant of Nahuatl *amole*, "soap," Oaxaca), or they may have some other relationship. A name for which there was no translation is *mash* (Chiapas).

Moonvines are also called *bejuco de tabaco* (tobacco vine) in El Salvador, because stems were used to tie up tobacco leaves to dry. In Mayan-speaking areas from Chiapas to Yucatán, the climber is *nacta* (Lacandon), *naxh*, *huchuk* ("hiccup"), *huchuk ts'aan* (hiccup vine), *xpeten* (an island in water or vegetation usually with a permanent pond within), *piroreta* (spiral), and *sutup* [*suput*, *xutu*, *xutub*, *zutub*] (something that turns or forms a spiral). Even though three of the translations suggest only descriptive terms regarding the twining or climbing life-form, their existence shows that people took note of the plants. Often when indigenous Americans have a name for a plant, they have a use for it, whether or not they share that information. Other Maya call the plants *haapolin* (*ha* = water, *polin* = origin, or found near water, Yucatán). They know that, where they see a vine, there will be a place to get water.

## Moonvines



Close-up of moonvine stamens and stigma, approximately actual size.

***Ipomoea alba* & *Ipomoea turbinata*.** *Ipomoea alba* has a history so confused with *I. turbinata*, the purple moonvine, that the two are not always separable. This purple-flowered species was also taken from the Americas to India at perhaps the same time as the white moonvine. Both became popular in Indian medicines, partly because of confusion with other medicinal plants called *kaladana* (black seed). This contorted history is only partly unraveled, but there seems no doubt that the two nocturnal-flowering *Ipomoea* are native in the Americas. Their other relatives are here, and there are no close allies in the Old World.

***Ipomoea violacea*.** We have another species of moonvine in Florida that is restricted to the coasts in saline and brackish sites, especially mangroves and beaches. Some people call it the "beach moonvine." It is correctly *Ipomoea violacea* in spite of the flowers being white. This anomalous name came into existence because Linnaeus borrowed the species from a predecessor who had mistakenly written that the flowers were purplish or bluish (*violacea*). Linnaeus, not knowing the difference, continued his error. Because of a set of laws governing naming of plants (International Rules of Nomenclature), *Ipomoea violacea* must be used for a white-flowered plant.

***Ipomoea violacea*** lacks the odor that lures the moths to *I. alba*, and apparently fools the insects by mimicking the fragrant species. Both are round spheres to the moths and they may grow near enough that moths drinking nectar at *I. alba* see and visit *I. violacea*. There is also little reward in the form of nectar for the moths at the beach moonvine. Apparently, enough flowers are visited that the species reproduces because they are spread from at least Palm Beach County south through the Florida Keys.

Venezuelans and Mexicans call these vines *nigua* (chigger). *Nigua* is a Taino word that, along with some others, was spread widely outside Hispañola by the Spanish. Was moonvine really used against chiggers, as was chiggery grape (*Tournefortia hirsutissima*)? There are numerous uses for the plants, but nothing has been found that substantiates that use. Moreover, moonvine and several unrelated plants are called *nigua*. Perhaps *nigua* is a general name that refers to some physical trait resembling chiggers.

In Puerto Rico and Oaxaca, Mexico, the twiners are *bejuco de vaca* (cow vine), and *bejuco de puerco* (pig vine), because they are fed to those animals as fodder. There are reports of the immature seeds being eaten in India, and the plant has had the reputation there as a snakebite remedy since at least the 1600s.

There are several other recorded applications, including use as a febrifuge (fever reducing medicine), to stop falling hair, to stop dandruff, as a laxative, and to expel gas. Some Mayans suggest that it "diverts

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# Moonvine

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hunger when tied around body," an unlikely claim. Oviedo was the first to note the plant's laxative aspects, and that is likely why moonvine and many other American plants were taken with the Spanish around the world. People in Oviedo's time were convinced that all human maladies came from being "poisoned" by material in their colons. Laxatives were the medical panaceas.

There are enough chemicals in the vine to have real impact on several of the problems it is used to treat. Moonvines contain calystegines, resins, indolizinic alkaloids, ipomine, and ipalbidine (hexahydroindolizine alkaloid). The calystegines are poisons (in small doses, medicine), the resins are laxative, and alkaloids have a number of actions on human physiology.

Milky juice from moonvine stems has a long pre-European history in Mesoamerica of being used to coagulate latex from the *arbol de caucho* (rubber tree, *castilla*, MORACEAE). The vine is the *bejuco de cuajar hule* (vine for coagulating *castilla*, Oaxaca), or simply *cuaja leche* (coagulate milk, Oaxaca). *Castilla* was an important rubber source for the Mayans who used it to make balls for their game *pelota*, among other things. The Aztecs also adopted rubber use, and considered the sap as the tree's "blood." Balls from this *caucho* or Panama rubber were so valuable to the Aztecs that they paid their taxes with them.

Although humans have carried moonvine widely, it also travels well without them. The seeds are dispersed by water, and that is one of the reasons it was so common on Lake Okeechobee at the beginning of the 1900s. The seeds float so well that they arrive regularly on the coasts of Britain, Ireland, and presumably Norway. Since the closest point of origin for those drift-seeds is the Cape Canaveral area of eastern Florida, they have a long seawater journey — at least 4200 miles. Drift-seed enthusiasts in those areas report that they arrive literally by the thousands. One person reports that they come in "numbers beyond imagining." Incredibly, some small percentage is still alive when the seeds arrive on the southwestern coasts of England. A colleague there has been able to germinate them for illustrations in a book he has prepared on the species they find on British coasts.

One of the first things that I did when I first arrived in Florida was survey the southeastern coastal area for morning glories. The most abundant species in wetlands was the moonvine. I found a spot on the edge of the Everglades where a vine sprawled over the shrubs and trees near a swamp. One evening I set up a camera with a flash on a tripod and focused on an unopened bud. Promptly at 7:00 p.m., the flower began to open and shed its musky fragrance into the mosquito-filled dusk. Within minutes after it opened a large tomato hornworm sphinx (*Manduca sexta*) arrived and probed the flower with its straw-like proboscis. I stepped over and snapped the picture. It seemed like the easiest thing in the world, and I anticipated many more photographs like it. Thirty years later, I had added only one. Moths and moonflowers are unpredictable subjects.

## MOON GARDEN

**Moonvine is a great choice for a night-blooming, fragrance filled garden providing free entertainment in the form of nectaring moths, insect-tracking bats, trilling screech owls, and other nocturnal creatures. Plant your moon garden near a window so that evening breezes carry the fragrance indoors. Include an observation bench where you can relax in the magical surroundings. For more great moon garden ideas, including plant selections, visit www.hcfnps.org and download moongarden.pdf, "A Florida Moon Garden," by Sharon LaPlante, Hernando Chapter, from which this little idea box was adapted.**

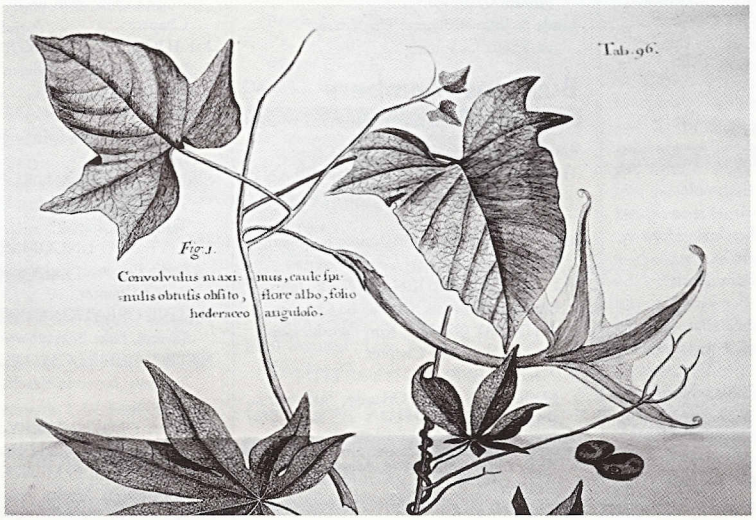


**Illustration:** Sloane, H. 1696. *Catalogus Plantarum quae in Insula Jamaica sponte proveniunt.*

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**ABOUT THE AUTHOR:** A member of FNPS since 1981, Dan works in the Conservation & Science Dept. of the Arizona-Sonora Desert Museum in Tucson, where he studies morning glories and other plants. He also serves as the Book Review Editor for *Economic Botany*. Fortunately for us, Dan also makes time to continue writing for *The Palmetto*. A 20-year index of *The Palmetto*, published in the last issue, showed him to be one of our most frequent contributors. Thanks, Dan, for all you do.