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The Wildflower Garden: *Piriqueta cistoides* ssp. *caroliniana*

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Piriqueta cistoides ssp. *caroliniana* (synonym: *Piriqueta caroliniana*) (Turneraceae) is an extremely ornamental and common wildflower native to . Its horticultural attributes and cultivation are discussed.

KEYWORDS: *Piriqueta*, Turneraceae, butterfly garden plant, Florida, gulf fritillary, native plant, perennial, wildflower.

Piriqueta cistoides ssp. *caroliniana* is a frequently encountered, perennial wildflower that grows in sunny situations in flatwoods, rocky pinelands, sandhills, and scrub. It probably occurs in every county in Florida but so far it has not been recorded, in the form of a vouchered herbarium specimen, from ten counties (Wunderlin & Hansen 2004). Different populations are exceedingly variable and differ with respect to growth habit (prostrate to erect); height (from a few inches to about two feet); vestiture (densely hairy with stellate or simple hairs to completely hairless); leaf shape (long and narrowly linear to short and elliptic-ovate); leaf margin (essentially entire to manifestly toothed); and flower color (pale to deep golden yellow). However, all forms are easily recognized by the following combination of traits: simple, alternate leaves; conspicuous and showy bright yellow flowers with five petals, five stamens, and three stigmas, each of which has a much divided, bushy tip; and seeds borne in capsules that split along three lines, that is, the capsules are three-valved. When first encountered, some forms of this plant might be mistaken for a large-flowered, yellow flax in the genus *Linum;* however, flax flowers have stigmas that lack bushy tips and the capsules split along more than three lines.

Botanically, the plant was long known as *Piriqueta caroliniana* (Walter) Urban; however, Arbo (1990; 1995) treats it as a subspecies of *Piriqueta cistoides* (Linnaeus) Grisebach. Arbo's treatment, while accepted by many botanists, is rejected by others. For example, Weakley (2007:669) maintains *Piriqueta caroliniana* separate from *Piriqueta cistoides* because the two remain morphologically distinct over a wide, overlapping range in the

Figure 1. Spontaneous, self-sown eedlings of *Piriqueta cistoides* ssp. *caroliniana* coming up in the author's yard.

Neotropics. The situation regarding common names is equally unsettled with some favoring "pitted stripeseed," a recently concocted name, and others preferring to use the genus name as a common name. I favor the latter since "piriqueta" (pronounced PI-RI-KET-A) is more mellifluous than "pitted stripeseed" and there are historical precedents going as far back as the 1930s for using "piriqueta" as a common name (Baker 1938:143).

Questions as to its scientific or common name aside, it is extremely easy to grow in almost any garden situation, in both moist to dry soils, so long as it is provided with plenty of sunshine and kept free from the competition of larger, taller plants whose shade will greatly weaken or even kill it. Although plants will flower throughout an extremely long period from late winter to late autumn, they are never in continuous flower. Rather, the flowers are produced in flushes lasting about two or three days with a variable, intervening period during which only a few flowers are produced. All plants in a given site will synchronize their flowering cycle so that they all produce a flush of flowers simultaneously. When many plants are growing together and there is ample summer rain, there can be numerous cycles of

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Figure 2. Free-flowering plant of *Piriqueta cistoides* ssp. *caroliniana* coming up in the author's driveway as a result of self-sown spontaneous seedlings.

simultaneous flushes of flowers resulting in a dazzling spectacle.

Individual, solitary plants usually fail to produce seeds, indicating that the plants are self-sterile. Therefore, I like to plant them in groups of a minimum of three genetically distinct plants so that seeds will form and the plants can self-sow and multiply—this is definitely a plant that the gardener wants more of! Seeds germinate freely but they are usually extremely difficult to gather since the walls of the ripe capsules fold back with a great and sudden force, ballistically hurling the seeds considerable distances and giving the gardener very little opportunity to harvest the seeds. Luckily, this is among the easiest of plants to grow from cuttings and I have never had a single cutting fail to root within 10 to 14 days or so.

Regarding wildlife value, at least three different groups of insects use various parts of the plant as food. The seeds are provided with a tiny, nutritive appendage that is technically known as an "elaiosome" and its presence is an indication that ants, which are attracted to the elaiosome as a food source, may help to further disperse the seeds after they have been ballistically hurled from the capsules. The flowers also provide food to small and mid-sized native bees, which eagerly visit the flowers and serve as the principal pollinating agents. Lastly, it is a favored larval food plant for the gulf fritillary, *Agraulis vanillae* Linnaeus. Many butterfly gardeners, who are familiar with the use of passion vines (*Passiflora* species) as caterpillar host plants by gulf fritillaries, may be surprised to learn that gulf fritillaries will readily use this plant as a caterpillar host plant, especially since the two genera seem to be so dissimilar. Appearances, however, are misleading and the two families to which *Passiflora* and *Piriqueta* belong, the Passifloraceae and Turneraceae, share many morphological, biochemical, and genetic similarities. Indeed, the Passifloraceae and Turneraceae are so closely related that the Angiosperm Phylogeny Group regards the merging of the two families as appropriate (2003:407).

Readers may well wonder how gulf fritillaries can tell that the genera *Passiflora* and *Piriqueta* are related and that both are suitable host plants on which to lay eggs. After all, these two genera look completely different to human eyes and it is only by a very careful examination of floral details, fruit morphology, and genetic and chemical analyses that we can tell that they are allied. The answer to this puzzle is that female gulf fritillaries do not use their eyes to identify suitable host plants but, rather, they use chemical cues and both genera produce cyclopentenoid cyanogenic glycosides (*ibid*) that identify them as suitable caterpillar host plants to female gulf fritillaries.

Figure 3. Wild plants of *Piriqueta cistoides* ssp. *caroliniana* growing in a rock pine land site in Miami-Dade County. This form has prominently toothed leaf margins and a greenish-gray leaf color resulting from a dense coat of tiny hairs.

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CORRECTION TO ORIGINAL ARTICLE

The last sentence made reference to similarities between the genera *Passiflora* and *Piriqueta;* however, the similarities pertain to their respective families. Thus, the last sentence should read:

> …they use chemical cues and both the Passifloraceae and Turneraceae produce cyclopentenoid cyanogenic glycosides (*ibid*) and this is presumably what female gulf fritillaries use to identify *Passiflora* and *Piriqueta* as suitable caterpillar host plants.

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