

KEYS TO THE FLORA OF FLORIDA -- 14, *VIOLA* (VIOLACEAE)

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ABSTRACT

Viola (Violaceae) is represented in Florida by 13 species, two of which are introduced. *Viola palmata* is treated as formed of two varieties, with var. **esculenta** recognized as a new name, and with validity of the epithet explored. Specific distinction, both in morphology and range, is drawn for *Viola sororia*, *Viola affinis*, and *Viola floridana*. Applicability of *Viola kitaibeliana* to the Florida flora is examined. Seven species reported for Florida are here excluded. An amplified key is given to the Florida taxa.

KEY WORDS: *Viola*, Violaceae, Florida flora.

The genus *Viola* (Violaceae) has long charmed otherwise level-headed botanists into lifetimes of rapt devotion. Most notably, Ezra Brainerd (*Violets of North America*. 1921) spent decades in study of the genus (his passion extending even to the naming of his daughter, Viola Brainerd Baird, a violet author in her own right). Decades later, the equally zealous Norman H. Russell took up the torch, with his study of the white-flowered species (*Amer. Midl. Nat.* 54:481-494. 1955) and an overview of the genus in North America (*Sida* 2:1-113. 1965). Russell's commitment resurfaced with co-authorship of a survey of the southeastern species (L. E. McKinney & N. H. Russell, *Castanea* 67:369-379. 2002).

These major efforts have been supplemented by a plethora of briefer, often regional studies (as noted by McKinney & Russell). The "stemless blues" have been addressed by H. E. Ballard, though his major works remain unpublished. Arthur Cronquist completed, but

never published, a full treatment of the southeastern species; his 1980 manuscript, generously circulated, has been of aid to many others. Landon E. McKinney (Sida, Bot. Misc. 7:1-60. 1992) revised the "stemless blues" for North America. N. L. Gil-Ad, in his thesis (Michigan. 1995) and later partial publication (Brittonia 50:91-121. 1998), re-examined and further elucidated the same complex.

Other studies were more limited in range but more understanding of local variations. Two brief but informative articles by W. A. Murrill (Ecology 21:512-513. 1940a; J. Elisha Mitchell Sci. Soc. 56:367-370. 1940b), largely overlooked by violet scholars, examined the 10 species then recognized for northeast Florida (Alachua County) for distinguishing morphology, habitat, and soil pH. Two "guides" to the flora of the Florida panhandle (A. F. Clewell, Guide to the Vasc. Plants of the Florida Panhandle. 1985) and the entire state (R. P. Wunderlin, Guide to the Vasc. Plants of Florida. 1998), though useful, are too concise to permit clear understanding of taxonomic judgments.

Viola palmata is here recognized as two rather sharply distinguished populations, which are given varietal status. *Viola palmata* (s.s.), described by Linnaeus (1753) from a Virginia type, was understood by Brainerd (1921), Small (1933), Russell (1965), and other authors to be a northern species, unknown in Florida. [Small's (1933) extension of the range to Florida was in error.] But according to McKinney (1992), the name is correctly typified by what has been called *V. triloba* Schweinitz (1822), a familiar southeastern species, thus (once again) bringing the name *V. palmata* into Florida usage. [McKinney then treated the northern species as *V. subsinuata* Greene.]

Expanding on the judgment of earlier authors, Murrill (1940a, 1940b) separated *Viola palmata* (his *V. triloba*) from *V. esculenta* by both habitat and soil pH. This distinction seems justified. In the field one can predict that the lightly pubescent thin-leaved *Viola palmata* (= *V. triloba*) will be found in mesic woodlands, and the wholly glabrous, almost fleshy-leaved *V. esculenta* to be limited to hydric stream bottoms. Once pressed, the evident distinctions largely disappear. Varietal status provides a taxonomic legitimacy to these differences.

Although the name *Viola esculenta* has long been used with reference to the succulent-leaved southeastern violet, the legitimacy of the combination has escaped scrutiny. The name has been assumed to have been formed by Stephen Elliott of Charleston, South Carolina, in his *A Sketch of the Botany of South-Carolina and Georgia* (1817). And indeed Elliott did provide a brief but unmistakable description: "...with the early leaves cordate, late ones hastate, with the lateral lobes sometimes divided, all rugose, crenate and glabrous; the middle lobe very large."

But Elliott did not employ the name *Viola esculenta* for his new violet. He placed it with others as varieties under the name *Viola palmata* Linnaeus. Under *V. palmata* var. *heterophylla* he then noted: "from the circumstance of its being eaten by negroes, I had called it *V. esculenta*, it is however the *V. heterophylla* of Muhlenberg..." Since a name is not validly published when it is not accepted by its author in the original publication (I.C.B.N., Art. 34.1), it is here rescued from oblivion by incorporation into a new name based on the same type and diagnosis.

Viola palmata* L. var. *esculenta* Elliott ex D. B. Ward, **nom. nov.*

Based upon *Viola esculenta* Ell., nom. illeg., Sketch 1:300.

1817. TYPE: Georgia, Ogeechee [River]. S. Elliott s.n.

(CHARL, not seen).

As a footnote to the above argument, the present action is not the first effort to restore legitimacy to Elliott's name. E. L. Greene (*Pittonia* 3:314. 1898), though he noted it to have been published only as a synonym, used "*V. esculenta*, Ell." A decade later the careful Ezra Brainerd (*Bull. Torrey Bot. Club* 37:588-589. 1910) also commented on the deficiency, and credited "effective publication" to Greene (1898). Later authors, by and large, have been oblivious to the original invalidity of Elliott's name.

The rules of the I.C.B.N. as to "effective" and "valid" publication are intentionally left vague, to accommodate inexact early writings.

Here, "valid publication" may be argued (Art. 32.3) to be met by Greene's use of the name, credited to Elliott. And, since not accepted by the original author, the published combination must be credited to the restoring author, with optional inclusion of the originator of the name. Thus *Viola esculenta* Elliott ex Greene (1898) is correct at specific rank.

The change in publication date of *V. esculenta*, from 1817 to 1898, is of possible significance in that other specific names applying to this taxon may have been published in the interim. The present action, of using the circumscription and type of the 1817 publication, creates a new name (at varietal level) and avoids questions of priority of the specific name.

The presence -- and distribution -- of *Viola sororia* Willdenow (1809) as reported here is in marked contrast to that given by McKinney (1992:34-39). McKinney provided a description, noting the pubescence to be "primarily strigose," that agrees with Willdenow's original diagnosis and is quite in line with populations in northern states known by that name. McKinney's Florida distribution extends throughout most of the state, with specimens cited as far south as Hillsborough and Polk counties in the central peninsula. Yet few specimens are known outside the panhandle that could reasonably be so identified. Those annotated with this name usually do show a few sparse hairs but are otherwise identical with *V. floridana*.

Viola floridana itself is here interpreted as an endemic, nearly restricted to the Florida peninsula. Though occasional collections from the eastern panhandle may be of this species, most panhandle plants so-called are *V. affinis*. *Viola affinis* in turn, though occasionally reaching the northern peninsula, is otherwise restricted to the panhandle. This understanding is in contrast to that of those (Russell, 1965; etc.) who viewed *V. floridana* as a widespread regional species, and of others (Wunderlin, 1998) who made no distinction whatsoever among *V. sororia*, *V. affinis*, and *V. floridana*. These three taxa admittedly intergrade, but they differ enough even in areas of geographic overlap to justify the rank of species. It is surely significant that Gil-Ad

(1998:117), using seed-coat morphology, was able to separate them without apparent difficulty, *V. floridana* so sharply differing from the other two that he considered it conspecific with the western *V. missouriensis* Greene. Even so, recent efforts by panhandle botanists have continued to encounter intermediates and uncertainties sufficient to hold the present interpretation of the Florida "stemless blues" to be preliminary and incomplete (James R. Burkhalter, Kathy C. Burks, Ann Johnson, pers. comm., April 2006).

The scientific name assigned to the Field Pansy, the annual violet found occasionally in north Florida, depends upon whether or not it is thought to be native to North America. This issue was considered significant by M. L. Fernald (*Rhodora* 40:443-446. 1938) who discussed it in detail, maintaining that the plant was little known to early American botanists and that its behavior was that of other "early-established weeds" of foreign origin; he concluded it was clearly introduced into North America. It was close to the Mediterranean *Viola kitaibeliana* Roemer & Schultes, though he was unable to match it exactly with specimens from Europe. He acknowledged the small differences by giving the American plants varietal status, as var. *rafinesquii* (Greene) Fern.

But others have been reluctant to abandon a presumption of native origin. Though he made no effort to refute Fernald's argument, H. A. Gleason (*Illust. Fl.* 2:566. 1952) returned the plant to specific status, using *V. rafinesquii*, a name unique to North America. L. H. Shinnars (*Rhodora* 63:327-335. 1961), responding to Fernald's discussion, pointed out in detail that the plant had indeed been known to early American authors, but was reported by those in the east to be of equivocal, perhaps introduced status, while those further west clearly treated it as native. Shinnars' conclusion was that it is a native American plant, with its major area in Texas, Arkansas, and Oklahoma, that has spread eastward as a weed.

Shinnars, as with Fernald, was unable to match the American plant with those of Europe; he saw this as further evidence of its native status. As such, he preferred specific rank, but found that the earliest specific

combination, *Viola bicolor* Pursh (1814), was antedated by *V. bicolor* Hoffmann (1804). He saw *V. rafinesquii* Greene (1899) as the correct name at specific rank.

Certainly, by examination of available specimens, the American plant, though not indistinguishable, is only subtly different from the Old World plant. And Shinnars' documentation of western records of nativity and movement eastward as a weed is difficult to explain away. Fernald's judgment seems sound as to rank of the American plant, and Shinnars' as to its introduced status in the eastern United States.

Long, happy hours in the woods of West Florida with Angus K. Gholson and the late Robert K. Godfrey have contributed both inspiration and informational content to this effort.

VIOLA L. Violets¹

1. Plants without elongated above-ground stems, the leaves and flowers arising from a rootstock or rhizome.
2. Corolla violet or purple (white in albino forms); rootstocks stout, fleshy; plants without stolons.
3. Leaves with 5-7 narrowly oblanceolate, shallowly-toothed lobes; hairs of beard on lateral petals short-pointed; cleistogamous capsules pale green to whitish, on erect peduncles; stems erect or nearly so (beneath soil and leaf litter); flowers large, purple. Perennial herb. Moist to dry pinelands. Panhandle and north Florida, south to

¹ The "amplified key" format employed here is designed to present in compact form the basic morphological framework of a conventional dichotomous key, as well as data on habitat, range, and frequency. This paper is a continuation of a series begun in the 1970s (vide *Phytologia* 35:404-413. 1977). Keys are being prepared for all genera of the Florida vascular flora, but the present "amplified" series is restricted to genera where a new combination is required or a special situation merits extended discussion.

mid-peninsula (Highlands, Lee counties): frequent.
Spring. [*V. palmata*, misapplied]

***Viola septemloba* LeConte**

3. Leaves unlobed or coarsely divided, with no more than 5 broad lobes; hairs of beard rounded or slightly clavate; stems inclined or near-horizontal (beneath litter).

4. Leaf blades with 3-5 broad lobes (except the earliest, which may be unlobed); cleistogamous capsules brown, on short prostrate peduncles. Perennial herb. Spring.

***Viola palmata* L.**

- a. Leaves angular, the apex and lobes acute, sparingly pubescent on veins, margins, and some petioles, thin. Dry hammocks. Central panhandle (Liberty County), eastward to north peninsula (Marion County). Frequent. [*V. chalcosperma*, misapplied; *V. triloba* Schwein.] var. ***palmata***

- a. Leaves rounded, the apex and lobes blunt, wholly glabrous, sometimes stiff and succulent. Moist hammocks, often by streams. Western and central panhandle (Escambia, Calhoun counties), east and south to central peninsula (Highlands County). Frequent. [*V. esculenta* Ell., illeg.]

var. ***esculenta*** Ell. ex D. B. Ward

4. Leaf blades not lobed or divided.

5. Plants nearly or quite glabrous (or with a few scattered hairs on petiole if near and possibly introgressant with *V. sororia*).

6. Spurred petal (and lower lateral petals) bearded at throat; petals dark purple; scapes to 20 cm. long; plants in summer foliage relatively robust (>10 cm. tall). Perennial herb. Riverbottom forests. Western and central panhandle (Escambia to Jackson, Gadsden counties), to upper peninsula (Marion County) where perhaps adventive; infrequent. Spring. [*V. sororia* Willd. var. *affinis* (LeConte) McKinney]

***Viola affinis* LeConte**

6. Spurred petal beardless (lower lateral petals bearded at throat); petals lavender; scapes to 6 cm. long; plants in summer foliage of moderate size (<12 cm. tall). Perennial herb. Moist sandy soils of open hammocks, stream bottoms, lawns. North Florida, south to mid-peninsula (Highlands County, disjunct to Collier County); common (rare in panhandle). Spring. Endemic. [*V. chalcosperma* Brainerd; *V. missouriensis*, misapplied]

***Viola floridana* Brainerd**

5. Plants variously pubescent.

7. Petioles heavily pubescent (hairs 0.5-1.0 mm. long), extending onto veins below, glabrous or nearly so above; spurred petal beardless; plants robust, older leaves rising to 10 cm. and above. Perennial herb. Dry open woodlands, bluffs. Central panhandle (Jackson to Leon counties), sparingly disjunct eastward (Alachua: Millhopper); rare. Spring.

***Viola sororia* Willd.**

7. Petioles glabrous or minutely villous; plants small, the summer foliage <6 cm. in height.
8. Spurred petal beardless; flowers relatively large (petals 2.0-2.5 cm. long), borne well above leaves; leaves usually appressed to ground, purplish and glabrous below, densely puberulent above (with silvery sheen when fresh). Perennial herb. Dry woodlands. Panhandle (Escambia, Calhoun, Jackson, Calhoun, Liberty, Santa Rosa counties); rare. Spring.

***Viola hirsutula* Brainerd**

8. Spurred petal bearded; flowers relatively small (petals 1.2-2.0 cm. long), borne with or below leaves; leaves spreading, finely pubescent below and on margins and veins above, green below and above. Perennial herb. Dry oak woodlands. Central panhandle (Calhoun County) east to north peninsula (Alachua, Levy counties); infrequent. Spring.

***Viola villosa* Walt.**

2. Corolla white, the petals often with dark lines; rootstocks slender, fibrous; plants often with stolons.

9. Leaf blades broadly elliptic to cordate-ovate, 1.5-2 times as long as broad. Perennial herb. Moist sandy soils, usually under pines. North Florida, south to lower peninsula (Lee, Palm Beach counties); frequent. Spring. [*V. rugosa* Small] ***Viola primulifolia* L.**

9. Leaf blades oblanceolate to linear, 6-12 times as long as broad. Perennial herb. Wet sands of pine woodlands, pond margins. Nearly throughout, common (rare in s. peninsula, absent in Keys). [*V. vittata* Greene] ***Viola lanceolata* L.**
var. ***vittata*** (Greene) Weath. & Grisc.

1. Plants with elongated leafy stems, either erect or trailing.

10. Plants perennial; stipules entire; style scarcely enlarged at the tip.

11. Petals yellow, purple tinged on back; leaves ovate, the apex long-tapering, the base rounded to truncate, often variegated with silvery-gray patches; stems ascending-erect. Perennial herb. Rich moist wooded slopes. Central panhandle (Gadsden, Liberty counties); rare. Spring. ENDANGERED (State listing); two known colonies. [*V. hastata*, misapplied]

***Viola tripartita* Ell.**

var. ***glaberrima*** (Ging.) Harper

11. Petals pale violet-blue; leaves small, orbicular, usually purple beneath with purple veins above; stems commonly trailing. Perennial herb. Moist hammocks. Central panhandle (Jackson County), eastward to north peninsula (Alachua County, disjunct to Citrus County); common. Spring. ***Viola walteri* House**

10. Plants annual; stipules pectinately divided; style much enlarged upwards.

12. Petals light to deep violet, the center yellow or white with violet stripes; pectinate stipules with middle lobe linear to linear-spatulate, entire; leaves crenate, orbicular at base of plant, broadly ovate above. Annual herb. Sandy riverbanks, lake margins, roadsides. West and central panhandle (Escambia, Okaloosa counties, east to Jackson,

Leon counties); infrequent, but often locally abundant.
 Spring. [*V. bicolor* Pursh; *V. rafinesquii* Greene]
 FIELD PANSY. * *Viola kitaibeliana* Roem. & Schult.
 var. *rafinesquii* (Greene) Fern.

12. Petals cream or orange-yellow, the upper two usually purple-tipped; pectinate sepals with middle lobe spatulate or oblong-spatulate, distinctly crenate to serrate; leaves crenate to serrate, elliptic at base of plant, narrowly ovate above. Annual herb. Disturbed soils. Panhandle (Calhoun, Franklin, Santa Rosa counties); rare. Spring.
 WILD PANSY. * *Viola tricolor* L.

Excluded names:

Viola conspersa Reichenb.

Dog Violet.

Northern. Found only once, in Leon Co. (Godfrey 59336 - FSU); retained by Clewell (1985) and Wunderlin (1998), based on this spm. No longer present when site was revisited in 1985 (R. K. Godfrey, with D. B. W.).

Viola cucullata Ait.

Marsh Violet.

Reported for Jefferson and Liberty counties, on basis of annotations by H. E. Ballard (Anderson, 1984; Clewell, 1985:523). Misidentified; cited spms. appear to be *V. affinis*. Russell (1965) and McKinney (1992) found no *V. cucullata* south of northern Georgia.

Viola fimbriatula J. E. Sm.

Reported for Florida by Small (1933). No spms. are known south of North Carolina and northern Alabama (Russell, 1965; McKinney, 1992).

Viola hastata Michx.

Reported for Florida by Small (1933), without documentation. Recorded for Gadsden Co. (Ward, 1979; Clewell, 1985; Wunderlin, 1998), on basis of spms. from a single small population discovered by R. K. Godfrey. Misidentified; the plants are *V. tripartita* (q.v.). Russell (1965) found no true *V. hastata* south of northern Georgia. Curiously, Small (Bull. Torrey Bot. Club 24:487-496, 1897) had discussed at length erroneous reports of the "Alleghenian" *V.*

hastata in Florida, on the basis of misidentified *V. tripartita*; did he forget his own earlier writing?

***Viola langloisii* Greene**

Reported for Florida by Russell (1965), with spms. (FLAS) so annotated. But plants matching his description cannot be found in the field. Florida plants so named may perhaps best be referred to young *V. floridana*.

***Viola papilionacea* Pursh**

Reported for Florida by Small (1933) and others. But a "mythical" species, a catch-all for almost any glabrous or near-glabrous stemless blue violet with uncut leaves (Russell, 1965). Apparently most plants so-called are hybrids involving *V. affinis*, *V. cucullata*, and *V. sororia* (Gil-ad, 1998). The name seems not applicable to Florida plants.

***Viola pedata* L.**

Bird's-foot Violet.

Northern. Reported for Florida by Small (1933). No spms. from the state were seen by Russell (1965) or McKinney (1992).



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