
New Combinations in the Florida Flora

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ABSTRACT. New combinations are made for the following species and varieties within the flora of Florida: *Agaloma oerstediana*, *Agaloma pubentissima*, *Aristida stricta* var. *beyrichiana*, *Asimina spatulata*, *Deeringothamnus rugelii* var. *pulchellus*, *Erianthus brevibarbis* var. *contortus*, *Ludwigia curtissii* var. *simpsonii*, *Nyssa biflora* var. *ursina*, *Pentalinon luteum* var. *sericeum*, *Peperomia humilis* var. *culmicola*, *Ptelea trifoliata* var. *baldwinii*, *Stipulicida setacea* var. *filiformis*, *Zamia floridana* var. *umbrosa*.

Key words: *Agaloma*, Annonaceae, Apocynaceae, *Aristida*, *Asimina*, Caryophyllaceae, *Deeringothamnus*, *Erianthus*, Euphorbiaceae, Florida, *Ludwigia*, North America, *Nyssa*, Nyssaceae, Onagraceae, *Pentalinon*, *Peperomia*, Piperaceae, Poaceae, *Ptelea*, Rutaceae, *Stipulicida*, *Zamia*, Zamiaceae.

Florida possesses one of the richest floras in number of species of any state in the U.S., exceeded only by California and Texas. This abundance extends to its infraspecific taxa—the varieties and subspecies—and is surely due to the relative isolation of the peninsular body of the state from the continental landmass, and the endemism that has followed interglacial flooding and the resultant populational disjunctions.

This profuse and intricate flora has yet to receive the detailed study and understanding regularly accorded the floras of many states in the western and northeastern United States, though recent guides (Clewell, 1985; Wunderlin, 1998) are significant efforts in that direction. Monographs, especially, are prone to gloss over taxa in Florida that appear of secondary importance, and when placing Florida species in new generic classifications, often fail to transfer varieties and subspecies that are readily recognizable to Florida field botanists.

The following new combinations provide names for a few of the orphan taxa that have been recognized historically in Florida but for one reason or another presently have no legitimate name in the appropriate genus or species. In each of these transfers, earlier authors have treated the taxon as worthy of recognition; no new taxa are proposed. These taxa are also accepted here, as clearly dis-

tinguishable components of the Florida flora. Where generic realignments have been proposed and are here accepted, acknowledgment is thereby given to the merit of those changes.

Though the *International Code of Botanical Nomenclature* (Greuter et al., 2000) permits both subspecies and variety to be employed as infraspecific ranks, the writer's past experience has shown few if any situations where both of these two hierarchical ranks are needed. The far greater historic seniority of variety over subspecies, the clear intermediacy of variety between species and form, and the flavor of calculated erudition attached to subspecies, seem sufficient to justify variety for the infraspecific combinations created here.

ANNONACEAE

Asimina spatulata (R. Kral) D. B. Ward, comb. et stat. nov. Basionym: *Asimina longifolia* R. Kral var. *spatulata* R. Kral, *Brittonia* 12: 266. 1960. TYPE: U.S.A. Florida: Leon Co., abundant in recently burned sandy pine flatwoods, 1 mi. NW Lake Jackson, 7 May 1957, *Kral 4714* (holotype, NY; isotypes, BH, BM, DUKE, F, FLAS, FSU, GA, GH, IA, MIAMI, MO, NA, NCSC, NCU, PH, UC, US).

Kral (1960) interpreted the familiar Florida Dog Banana to consist of two taxa, which he separated as *Asimina longifolia* var. *longifolia*, and *A. longifolia* var. *spatulata*. He found ranges of the two entities to be largely allopatric, supported by a number of leaf, flower, pubescence, and habit differences. Wilbur (1970) was not convinced that these taxa merited recognition even at varietal level. The distinctions as described by Kral, however, do appear consistent in Florida populations, above that normally accorded varietal status. Recognition of *A. spatulata* at the specific level seems justified.

Deeringothamnus rugelii (B. L. Robinson) J. K. Small var. ***pulchellus*** (J. K. Small) D. B. Ward, comb. et stat. nov. Basionym: *Deeringothamnus pulchellus* J. K. Small, *Bull. Torrey Bot. Club* 51: 390. 1924. TYPE: U.S.A. Florida: Desoto Co., pinelands, uninhabited wilderness E of Punta Gorda, 28 Apr. 1923, *Small 10925* (holotype, NY; isotypes, GH, MCU, MICH, MO).

Deeringothamnus has been known as a ditypic genus endemic to Florida, with a yellow-flowered species (*D. rugelii*) restricted to Seminole and Volusia Counties, east-central Peninsula, and a white-flowered species (*D. pulchellus*) in Lee and Charlotte Counties, southwest Peninsula (Kral, 1960). A collection by O'Neill from Bithlo, Orange County, central Peninsula (noted by Kral, but misattributed to Moldenke), and several recently discovered populations near Orlando, Orange County, seem intermediate. An Orlando population found in 1985 has been assigned to the white-flowered taxon (Eliane M. Norman, pers. comm., June 1987). Though flower color is not the only distinguishing character (petal shape and degree of curvature differ also), the presence of intermediates suggests a fragmented ancient population differing in random ways and better treated as a single species.

APOCYNACEAE

Pentalinon luteum (L.) B. Hansen & R. Wunderlin var. ***sericeum*** (R. W. Long) D. B. Ward, comb. nov. Basionym: *Urechites lutea* (L.) N. L. Britton var. *sericea* R. W. Long, *Rhodora* 72: 31. 1970. TYPE: Haiti. Tortue Island, vicinity of La Valle, thicket E of harbor, twining on shrubs to height of 15 ft., flowers yellow, 28 Dec. 1928, *Leonard 11642* (holotype, GH).

Once known as *Urechites* Mueller Argoviensis, this small genus (apparently 2 species) is correctly termed *Pentalinon* Voigt (Hansen & Wunderlin, 1986; accepted by Howard, 1989). Although in the Antilles *Pentalinon luteum* has been described as glabrous to variously pubescent (Howard, 1989), the founder effect selections represented in Florida, as reported by Small (1933), appear sufficiently distinct to merit retention of two entities at varietal rank.

CARYOPHYLLACEAE

Stipulicida setacea A. Michaux var. ***filiformis*** (G. V. Nash) D. B. Ward, comb. et stat. nov. Basionym: *Stipulicida filiformis* G. V. Nash, *Bull. Torrey Bot. Club* 22: 148. 1895. TYPE: U.S.A. Florida: Lake Co., dry sandy soil, vicinity of Eustis, 12–31 Mar. 1894, *Nash 14* (holotype, NY).

As do so many other widespread southeastern species, *Stipulicida setacea* shows increasing variability in the part of its range that extends into peninsular Florida. This variability was acknowledged long ago by Nash (1895) in recognizing *S. filiformis* from Lake County, central Peninsula.

James (1957), though unwilling to distinguish *S. filiformis* from typical *S. setacea*, noted and named (as *S. setacea* var. *lacerata* C. W. James) a variant with strikingly lacerate sepals from Pinellas County, on the Gulf Coast. These variations have been carefully observed and recorded by Judd (1983: 36); he found recognition of the lacerate-sepaled variant justified at varietal level, though he conservatively concluded the slender-stemmed *S. filiformis* “merely represents a morphological/ecological extreme” of typical *S. setacea*. However, since Judd’s map and other data place Nash’s *S. filiformis* almost exclusively within the elongate Central Florida Ridge, home of a host of other Florida endemics (Christman & Judd, 1990), loss of all taxonomic recognition for this plant would be unfortunate. Varietal status preserves the taxon, yet reflects its modest and intergrading morphological differences.

EUPHORBIACEAE

Agaloma oerstediana (J. F. Klotzsch & C. A. Garcke) D. B. Ward, comb. nov. Basionym: *Poinsettia oerstediana* J. F. Klotzsch & C. A. Garcke, *Monatsber. Konigl. Preuss. Akad. Wiss. Berlin* 1860: 103. 1860 (holotype, B perhaps no longer extant).

Agaloma oerstediana was first reported for Florida (as *Euphorbia graminea* Jacquin) by Herndon (1994), based on several collections in Dade County, the southernmost tip of the Peninsula, where it has become a frequent greenhouse weed. It has since moved via horticultural transplants into landscape settings northward at least to Palm Beach County. Its white-appendaged glands clearly mark it as a member of *Euphorbia* subg. *Agaloma* as conventionally delimited (Webster, 1967). (Corrected identification of the Florida introduction has been supplied by Daniel F. Austin and Derek Burch, with Richard Abbott adding data as to recent distribution.)

The genus *Euphorbia*, broadly circumscribed (Boissier, 1862, 1866; Pax & Hoffmann, 1931), consists of over 1500 species, a vast assembly held together by the presence of a bisexual pseudanthium or cyathium. Recent workers (Webster, 1994) have somewhat reduced this unwieldy grouping by recognition of small segregate genera (notably *Pedilanthus* and *Chamaesyce*), but authors who have made major generic dissections on the basis of gross morphology or other non-cyathial characters have in general been disregarded or their taxa retained only at infrageneric rank (cf. Wheeler, 1943; Webster, 1967, 1994; Govaerts et al., 2000).

It is difficult to understand why these infrage-

neric taxa, some of them sharply differentiated, are so seldom given generic ranking; perhaps the unique structure of the cyathium overrides acknowledgment of other, conflicting criteria. In any event, in the belief that certain of these segregate groupings more closely represent what may be elsewhere interpreted to be of generic rank than does the undivided cyathial complex, it is believed appropriate, at least for the purpose of regional floristic analysis, to recognize *Agaloma* Rafinesque at generic level. (Equivalent status is to be given to *Chamaesyce* S. F. Gray, *Poinsettia* Graham, and *Tithymalus* Gaertner (Ward, ms.). *Euphorbia* s. str. has no native or naturalized species in North America.)

Agaloma pubentissima (A. Michaux) D. B. Ward, comb. nov. Basionym: *Euphorbia pubentissima* A. Michaux, Fl. Bor. Amer. 2: 212. 1803. TYPE: U.S.A. Carolina: *Michx.* s.n. (holotype, P).

The impressive, yet unpublished, thesis by Huft (1979) documented this species as occurring widely in the southeastern United States and sparingly in north Florida. It was addressed by Small (1933) as *Tithymalopsis apocynifolia* (Small) Small, *T. paniculata* (Elliott) Small, and *T. zinniflora* Small.

GRAMINEAE (= POACEAE)

Aristida stricta A. Michaux var. ***beyrichiana*** (C. B. von Trinius & F. J. Ruprecht) D. B. Ward, comb. et stat. nov. Basionym: *Aristida beyrichiana* C. B. von Trinius & F. J. Ruprecht, Mem. Acad. St. Petersburg. VI. Sci. Nat. 7(2): 104. 1849. TYPE: U.S.A. Georgia?, in pinetis, *Beyrich* s.n. (holotype, LE; isotype, US).

Peet (1993) has reported that the familiar Wiregrass consists of two populations separable on pubescence of the leaf sheaths, the typical, near-glabrous one native to eastern North Carolina and adjacent South Carolina, and the second to southern South Carolina, Georgia, and Florida. Peet matched the more pubescent southern population with the name *A. beyrichiana* and accorded it specific rank. Standing alone, the stated morphological differences would attract little attention. His supporting argument, that there may have been two main centers of glacial-time persistence of the pineland flora, is of unsupported validity. The modest differences observed in the two Wiregrass populations are of a different order of magnitude from those of the distinct species cited by Peet as endemic to the two areas. Taxonomic recognition does appear justified, but at infraspecific rank.

Erianthus brevibarbis A. Michaux var. ***contortus*** (W. Baldwin ex S. Elliott) D. B. Ward, comb. et stat. nov. Basionym: *Erianthus contortus* W. Baldwin ex S. Elliott, Sketch 1: 40. 1816. TYPE: U.S.A. Georgia: Savannah, *Baldwin* s.n. (holotype, CHARL now lost).

Webster and Shaw (1995) have argued persuasively that Fernald (1943) was incorrect in his interpretation that Michaux's type of *Erianthus brevibarbis* from Illinois is specifically distinct from southeastern plants; they believed varietal status is sufficient. But if Webster and Shaw's further conclusion that *Erianthus* should be merged with *Saccharum* is rejected, this new combination is needed.

NYSSACEAE

Nyssa biflora T. Walter var. ***ursina*** (J. K. Small) D. B. Ward, comb. et stat. nov. Basionym: *Nyssa ursina* J. K. Small, Torreya 27: 92. 1927. TYPE: U.S.A. Florida: Gulf Co., Apalachicola River delta, near Port St. Joe, pineland swamps, 27 Nov. 1923 (fr), *Small 10995*, 24 Apr. 1924 (fl), *Small 11233* (syntypes, both NY).

Godfrey (Kurz & Godfrey, 1962; Godfrey, 1988; pers. comm., Dec. 1989) stated his belief that *N. ursina* is a fire-induced form of *N. biflora* (which he treated, 1988, as a variety of *N. sylvatica*). However, Burckhalter (1992) has viewed *N. ursina* as sufficiently distinct in habit, leaf size, and fruit shape to justify recognition at specific rank. While the morphological differences, particularly the stunted form of the plants, are apparent in the field, one is unable to dismiss the possibility that all one is seeing is an environmental response. However, the similarity of range of the Dwarf Tupelo to a wide array of wetland Panhandle endemics suggests a genetic component and tilts the balance toward a median level of taxonomic recognition.

ONAGRACEAE

Ludwigia curtissii A. W. Chapman var. ***simpsonii*** (A. W. Chapman) D. B. Ward, comb. et stat. nov. Basionym: *Ludwigia simpsonii* A. W. Chapman, Fl. South. U. S., 2nd ed, suppl. 2: 685. 1892. TYPE: U.S.A. Florida: Manatee, low ground, *Simpson* s.n. (holotype, US; isotypes, GH, MO, US).

Peng (1989) looked carefully at the *Ludwigia curtissii*-*L. simpsonii* complex and its near relatives and concluded the present taxa represent two spe-

cies. To Godfrey and Wooten (1981) the differences had not merited even varietal recognition. Peng agreed the entities are sympatric throughout central and south peninsular Florida (with *L. simpsonii* extending into north Florida), and often intergrade in diagnostic capsule and leaf characters. Peng noted the two taxa to appear to be ecologically distinct, with *L. curtissii* on black muck or in deep standing water, and *L. simpsonii* on roadsides or moist sandy soil. He found *L. curtissii* to be octoploid, *L. simpsonii* to be hexaploid, and the chromosome number to correlate with capsule size (*L. curtissii* the larger). These populational characteristics are undoubtedly as described by Peng. But, setting aside the chromosomal information, the pervasive morphological intergradation confounds the field botanist and guarantees erratic herbarium identifications. Varietal status reflects the small magnitude of apparent differences, yet preserves the taxon.

PIPERACEAE

Peperomia humilis A. G. Dietrich var. ***cumulicola*** (J. K. Small) D. B. Ward, comb et stat. nov. Basionym: *Peperomia cumulicola* J. K. Small, J. New York Bot. Gard. 22: 197. 1921. TYPE: U.S.A. Florida: Volusia Co., shell-midden, 10 mi. S of Daytona, 30 Nov. 1919, *Small 9196* (holotype, NY).

Florida field botanists stubbornly maintain that Boufford (1982) combined two distinct entities by his treatment of *Peperomia humilis*. The one—always terrestrial, seemingly always on aboriginal shell middens, with leaves round-tipped and spatulate or the lower ones acute, the stems green and sparingly pubescent—is found on scattered sites in northern peninsular Florida, from Fort George Island, Duval County (where locally so common that it forms the dominant ground cover) and Pineola, Citrus County, south at least to Jonathan Dickinson State Park, Martin County. The other—apparently always epiphytic, often on dead limbs, with leaves elliptic and acute, the stems usually pink and densely pubescent—is largely restricted to the Florida Keys and Cape Sable, Monroe County, and the Fakahatchee Strand of Collier County. The differences extend to cultural experiences, with the northern entity successfully grown in Broward County, where the more southern form does not survive. (These observations, together with those of the present author, are the synthesis of long Florida field experience by Daniel F. Austin, John Beckner, Donald Blake, and Roger Hammer.)

The second, more tropical taxon observed in Florida seems clearly the widespread West Indian

species known as *Peperomia humilis*, as reported by Boufford. The first, more northern population has long been recognized as distinct under the names *Piper leptostachyon* Nuttall (1822: 287), *Peperomia leptostachya* (Nuttall) Chapman (1883), *Peperomia cumulicola* Small (1921: 197), and *Micropiper leptostachyon* (Nuttall) Small (1933: 400). (For full synonymy, see Boufford, 1982.) Nuttall's *Piper leptostachyon* far predated Small's *Peperomia cumulicola*, but the transfer of *Piper leptostachyon* to *Peperomia* by Chapman (1883) was rendered invalid, as a later homonym, by the earlier formation of *Peperomia leptostachya* Hooker & Arnott (1841) of the Hawaiian Islands. Though at an infraspecific level either epithet is available, the uncertainty that attends the relationship between these two entities clearly leaves open the possibility they will again be treated at specific rank, and use of the same epithet at all ranks is desirable.

RUTACEAE

Ptelea trifoliata L. var. ***baldwinii*** (Torrey & A. Gray) D. B. Ward, comb. et stat. nov. Basionym: *Ptelea baldwinii* Torrey & A. Gray, Fl. N. Amer. 1: 215. 1838. TYPE: U.S.A. Florida: Duval Co., Fort George Island, *Baldwin s.n.* (holotype, PH).

Florida plants of *Ptelea trifoliata* have been assigned to variety *trifoliata*, variety *mollis* Torrey & A. Gray, and a narrow-leaflet variant that Bailey (1962) left unnamed but with collections from the type locality of *P. baldwinii* (Fort George Island, Duval County, Florida). Bailey, in a continuation of her study (Bailey et al., 1970), found plants with "narrow terminal leaflets" in 11% of populations within the Florida peninsula, but none elsewhere in the Southeast. Small (1933), though treating it at specific rank, well described and provided a key to set apart the narrow-leaflet population. Other authors (Godfrey, 1988; Wunderlin, 1998) have been unwilling to recognize any named infraspecific entities. But the morphological differences as confirmed by Bailey, though modest, have reasonably discrete ranges, and merit at least minimal taxonomic recognition.

ZAMIACEAE

Zamia floridana A. P. DC. var. ***umbrosa*** (J. K. Small) D. B. Ward, comb. et stat. nov. Basionym: *Zamia umbrosa* J. K. Small, J. New York Bot. Gard. 22: 136. 1921. TYPE: U.S.A. Florida: Volusia Co., hammock between Volusia and Ocean City, 4 May 1921, *Small 8679* (lectotype, designated by Eckenwalder (1980), NY; isoelectotypes, DUKE, FLAS, GH).

Within Florida two morphologically recognizable races of *Zamia* may be distinguished, the individuals of which retain their differences under uniform culture: the widespread *Z. floridana* and the more restricted east coast *Z. umbrosa*. [From 1962 through 1972, 29 plants from five populations (four of *Z. floridana*, one of *Z. umbrosa*) were maintained under glass in Gainesville, and periodically measured. Both in leaflet orientation and length/width ratios, plants of *Z. umbrosa* (from Flagler County) remained distinct, while those from other localities were indistinguishable both within and among populations.] Even so, both Florida representatives are undoubtedly "founder effect" chance selections from a morphologically varied Caribbean complex. Eckenwalder (1980: 323) made no provision for taxonomic recognition of the differences within the complex, stating: "No coherent system of varieties could be devised that was not . . . arbitrary and . . . typological. . . . Local botanists are thus left with the somewhat unsatisfactory circumstance of not being able to give taxonomic recognition to distinctive variants that occur in their region. . . ." Since not all local botanists are content to be so constrained, varietal status is here proposed for *Zamia umbrosa*. Beyond these two varieties, the extreme narrow-leaflet form of the Dade County rocklands, as well as plants from Putnam and Clay Counties locally known as the Palatka Giant (with leaves to 1.5 m), are yet to be integrated into a conventional nomenclatural structure.

Eckenwalder (1980), relying heavily on leaflet width and vein number, extended *Zamia pumila* L., a name initially applied to plants from Hispaniola, to all members of the genus in the West Indies and Florida. Stevenson (1987), by incorporating leaflet shape and denticulation and cone shape and color, was able to distinguish six species within this area, one of which (his *Z. integrifolia*) ranges to Florida; he later (1991) examined the genus as found in the United States in satisfying detail. Landry (1993) has followed Stevenson in recognizing the Florida plant as specifically distinct from the all-inclusive *Z. pumila* of Eckenwalder. However, Eckenwalder (pers. comm., Sep. 1977), though he did not himself use the name, appears to have been the first to note the familiar *Zamia integrifolia* Aiton was nomenclaturally superfluous when published, and is thus illegitimate; the Florida segregate, if recognized at specific rank, is *Z. floridana* A. DC.

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