Semple, J.C. 2013. Application of the names *Solidago stricta* and *S. virgata* (Asteraceae: Astereae). Phytoneuron 2013-42: 1-3. Published 1 July 2013. ISSN 2153 733X

APPLICATION OF THE NAMES *SOLIDAGO STRICTA* AND *S. VIRGATA* (ASTERACEAE: ASTEREAE)

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ABSTRACT

The name *Solidago stricta* Ait. has been applied in various ways for more than two hundred years. Most recently Semple (2012) applied the name in a narrow sense to the common species of the southeastern USA that has non-serrate basal leaves and a very short-branched, elongated, wand-shaped inflorescence. The holotype of *S. stricta* , however, does not fit this description, but instead matches plants previously treated as *S. perlonga* Fern.; *S. stricta* thus replaces *S. perlonga* as the correct name for this species. The correct name for the species long-identified as *S. stricta* is *Solidago virgata* Michx.

KEY WORDS: *Solidago stricta, Solidago virgata, Solidago perlonga, Solidago* subsect. *Maritimae*

Solidago stricta Ait. of *Solidago* subsect. *Maritimae* (Torr. & Gray) G.L. Nesom was described in 1789 and the name has been applied in various ways for more than two hundred years. In Torrey & Gray (1842), the name was misapplied to the northern species *S. uliginosa* Nutt., a name they listed in synonymy. In his paper on type collections of North American asters and goldenrods in European herbaria, Gray (1882, p. 182) discussed the origins of the misapplication of the name *S. stricta* resulting from specimen labeling errors of a Canadian arctic collection by Solander before Aiton published the name. Gray also gave the opinion that the "easily cultivated Kew Garden specimens in the herbarium are not good ones, the inflorescence becoming compound." Gray also noted that *S. stricta* was the older correct name for *S. virgata* Michx. Torrey & Gray (1842) had used the name *S. virgata* for plants with narrow, wand-shaped inflorescences growing from New Jersey to Alabama.

Cronquist (1980) separated *Solidago stricta* from *S. gracillima* Torr. & A. Gray on the basis of the former having a simple caudex and long, stoloniform rhizomes and the latter having a stout, relatively short rhizome. He included *S. austrina* Small, *S. perlonga* Fern., and possibly *S. flavovirens* Chapm. in the latter species. Cronquist stated that the range of *S. stricta* was from New Jersey to Florida and west to Texas plus in the West Indies and southern Mexico.

In the Flora of North America treatment of *Solidago*, Semple and Cook (2006) generally followed Cronquist on the broad range limits but included *S. gracillima* as a subspecies within *S. stricta*, with *S. austrina* and *S. perlonga* as synonyms of *S. stricta* subsp. *gracillima* (Torr. & A. Gray) Semple. Most recently, Semple (2012) clarified the application of the name *S. gracillima*, noting its very distinctive inflorescence branching pattern that is usually very different from the separate species *S. austrina* and *S. perlonga*, each with a distribution generally separate from *S. stricta*. Semple (2012) also included illustrations of the distinctive branching patterns of large inflorescences of these species and related species in subsect. *Maritimae*. The putative *S. stricta* of New Jersey south to Virginia was treated as *S. perlonga*. Semple (2013, Astereae Lab web site) posted additional illustrations of these species plus range maps; *S. stricta* included only plants with short-branched, virgate inflorescences regardless of the size, and it occurs on the outer coastal plain from mid North Carolina to extreme eastern Texas. *Solidago chrysopsis* Small was also treated as a subtropical South

Florida endemic. Semple (2013) placed most of the Texas coastal plain plants and the disjunction populations in Gulf Coast Mexico and the Bahamas in *S. mexicana* L.

Unfortunately and unbeknownst to this author, the nomenclatural confusion was not fully resolved. A great deal of post-FNA work has clarified the geographic and morphological limits of the species, but only very recently did I come into possession of an illustration of the holotype of *Solidago stricta*, thanks to the ever expanding number of digital images being posted on the internet. It should be noted that the database is expanding rapidly on multiple websites, both commercial and academic. Images that could not be found a few months or a year ago have now appeared as increasing numbers of herbaria either post images on their own sites or alternative sites such as jStor.org. Also, the quality of illustrations has greatly improved and details of stem pubescence can be observed on the sites posting very high resolution images. The internet is also an excellent source of high quality illustrations of species from places most of us will never get to see in person, but caution is needed with the labeling of these images.

One such image is the holotype of *Solidago stricta*, which shows several large shoots that I immediately recognized as matching plants of *S. perlonga* that I have collected (compare JSTOR Plant Science 2013 — see type of *S. stricta* at BM — with my website, Semple 2013 — see *S. perlonga*; after 1 July 2013 see *S. stricta*). The ascending, elongated lower inflorescence branches that Gray (1882) referred to as "not good" because they made the inflorescence "compound" are in fact excellent because they, as well as the serrate lower leaves, clearly indicate that the plant Miller had cultivated at Kew in 1778 was grown from material most likely obtained in Virginia or New Jersey. The former is more probable. This specimen is not the *S. stricta* of Semple (2012); it is *S. perlonga*, which must now be relegated to synonymy under *S. stricta* in the new strict sense. *Solidago stricta* is not the northern species of Torrey and Gray (1842), but neither is it the southern species most botanists since Gray (1882) had assumed it to be. Fernald (1936) had the concept right but the nomenclature wrong. The next available name for *S. stricta* sensu authors is *S. virgata* Michx., the type of which is from the Carolinas and has non-serrate lower leaves and a narrow (unfortunately immature) inflorescence.

Solidago stricta Ait., Hort. Kew. 3: 216. 1789; non Moench (1802), nec Less. (1831), nec Hook. (1834). *Aster strictus* (Ait.) Kuntze. Rev. Gen. 1: 318. 1891; non Poir. (1810), nec Pursh (1814), nec Wend. (1839). **TYPE** (protologue citation): "Nat. North America. Cult. 1758, by Mr. Phillip Miller" (holotype: BM digital image! <http://plants.jstor.org/specimen/viewer/bm001025412>).

Solidago perlonga Fern., Rhodora 40: 469, tab. 532, fig. 1-4. 1938. **TYPE: USA. Virginia.** Southampton Co.: Clearing in wet argillaceous pineland NW of Courtland, 11 Sep 1937, *Fernald & Long 7670* (holotype: GH(2 sheets, one has base rosettes)!; isotypes: BM!, NY!, PH(3) online images!, US online image!).

Solidago virgata Michx., Fl. Bor. Amer. 2: 117. 1803; non St. Lag. (1880). *Lepiactis virgata* (Michx.) Raf. Fl. Tell. 2: 43. 1837 ("1836" Jan-Mar 1837). **TYPE: USA. South Carolina.** "In humidis sylvarum Carolinae inferioris," *Michaux s.n.* (holotype: P small film image on microfiche!).

Solidago angustifolia Ell., Sketch Bot. S. Carolina 2: 388. 1824; non Mill. (1768), nec Druce (1893). *Solidago stricta* Ait. var. *angustifolia* (Ell.) A. Gray, Proc. Amer. Acad. Arts 17: 192. 1882. *Solidago salaria* House, Amer. Midl. Nat. 7: 131. 1921, nom. nov. for *Solidago angustifolia* Ell. (1824), non Mill. (1768). **TYPE: USA. South Carolina.** Paris Island, near Beaufort, Oct, *Elliott s.n.* (holotype: CHARL, not listed by Weatherby (1842) as present; isotype: GH-fragment, digital image!).

ACKNOWLEDGEMENTS

This work was supported by a Natural Sciences and Engineering Research Council of Canada Discovery Grant to JCS.

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Torrey, J. and A. Gray. 1842. *Solidago* L. Flora of North America 2(2): 195–231. Wiley & Putnam, New York.