

## THE IDENTITY AND TYPIIFICATION OF *CARDUUS GLABER* NUTT. (ASTERACEAE)

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### ABSTRACT

*Cirsium nuttallii* DC. (Asteraceae) is usually considered a replacement name of *Carduus glaber* Nutt. I demonstrate here that *Cirsium nuttallii* and *Carduus glaber* are names for two different taxa. Although de Candolle intended *Cirsium nuttallii* to be a replacement name for *Carduus glaber* in the genus *Cirsium* (because *C. glabrum* was already occupied), he provided a clear type specimen and met the criteria for naming a new taxon, the taxon commonly called *Cirsium nuttallii*. Nuttall did not designate a type for *Carduus glaber*, and a lectotype based on the criteria in his protologue and that he likely examined has been searched for but not found. Until original material is found and a lectotype is designated, I tentatively consider it a taxonomic synonym of *Cirsium muticum*.

In 1818, Thomas Nuttall described a new species of *Carduus* sect. *Cnicus* from New Jersey allied to *C. muticus*. He did not specifically contrast the characters of the new species with *Carduus muticus*, but based on the description, the diagnostic differences between the two species were leaf and involucre indumentum. He described his *Carduus glaber* with leaves that are “every where [*sic*] smooth” [his word for glabrous, as evident from his description of *C. virginianus* on the same page] and with glabrous involucre. He did not reference a specimen but indicated that his new species was found in New Jersey.

The name *Carduus glaber* was later used by Elliott (1824) for a species of South Carolina and Georgia, albeit with *Carduus* sect. *Cnicus* raised to generic rank. Elliott, however, had doubts, as he wrote the specific epithet with a question mark, noted that the species was somehow overlooked by Walter and Michaux, and wrote that “the *C. Glaber* of Mr. Nuttall is the only species whose description accords with the character of our plant. I once considered it as the *C. Repandum*, of Michaux, but the plant I have described under that name agrees more accurately with his observations” (Elliott 1824: 271). Later, de Candolle (1838) transferred the species to the genus *Cirsium*, and recognizing that the name *Cirsium glabrum* was already occupied (in fact, by a name he had given), he provided a replacement name in honor of Nuttall, *Cirsium nuttallii* DC. This name was then taken up and used consistently thereafter in floristic works of the southeastern USA (e.g., Chapman 1872; Cronquist 1980; Radford et al. 1968; Small 1933; Weakley 2022).

In 1874, however, Asa Gray concluded that “Nuttall’s New Jersey plant is without much doubt *C. muticus*, and he was probably unacquainted with the present species [i.e., what everyone was referring to as *C. nuttallii* DC.], — for which, however, it is not worth while [*sic*] to coin a new specific name” (Gray 1874: 41). Gray had recognized that the distribution of *C. nuttallii* — South Carolina to Florida — did not extend to New Jersey. *Cirsium nuttallii* could be recognized by its smaller involucre (although the sizes do overlap, cf. Keil 2006) and glabrous involucre (although sometimes thinly arachnoid to glabrate, cf. Keil 2006) with narrower phyllaries. A new specific name, though, as suggested by Gray, was (and is) not needed. Although de Candolle (1838) intended his name to be a replacement name for *Carduus glaber* in *Cirsium*, Article 6.13 of the *Code* (Turland et al. 2018) indicates that a proposed substitute may serve as the name of a new taxon if the replaced synonym is cited (it is) and all requirements for valid publication of the name of a new taxon are met (they are).

Example 17 in the *Code* is very similar to the case given here. In his *Prodromus*, de Candolle described *Cirsium nuttallii* (in Latin), noted its distribution (New Jersey, for which he cited Nuttall, and in South Carolina and Georgia), provided the pages in Nuttall's and Elliott's works, and indicated a specimen that he observed ("Card. Virginianus Bosc.! herb."). That specimen is in the de Candolle collection of the Geneva herbarium (G-DC: <http://www.villege.ch/musinfo/bd/cjb/chg/adetail.php?id=337299&base=img&lang=en>) and is indeed what is commonly referred to as *C. nuttallii*.

The distribution of *Cirsium nuttallii* as circumscribed today runs from southeastern Virginia to Florida and westward to Louisiana (Keil 2006). Elliott (1824) indicated that it grew "in cultivated lands, very common about buildings," and by 1880 there were herbarium specimens from South Carolina, Georgia, Florida, and coastal Mississippi, perhaps reflecting its semi-natural range. By World War II, collections had been made in Louisiana then Virginia (Fernald 1939), and by the mid-1970s, specimens had been collected in inland Mississippi and Louisiana. More recently, in the past decade, specimens have been collected from North Carolina (Krings et al. 2002) and Arkansas (Witsell 2017), indicating that the species is spreading.

Despite its spread, *Cirsium nuttallii* is not known from New Jersey. So, what then is the *Carduus glaber* of New Jersey? Many of the early specimens that Nuttall collected and examined are housed today in the Academy of Natural Sciences herbarium (PH) (Pennell 1936), and his herbarium is housed at the Natural History Museum in London (BM) (Stafleu & Cowan 1981). Unfortunately, a search for a Nuttall specimen of *Cirsium/Carduus/Cnicus* from New Jersey at PH by Guy Nesom and at BM by Ranee Prakash were unsuccessful. Without more exhaustive searches at other institutions, I postpone designating a type until it is clear that original material does not exist. Based on geography and the protologue, I tentatively consider Nuttall's *Carduus glaber* a taxonomic synonym of *Cirsium muticum* Michx.

An updated taxonomy is provided below.

**CIRSIIUM MUTICUM** Michaux, Fl. Bor.-Amer. 2: 89–90. 1803. **TYPE: USA. North Carolina.** In altissimis montibus Carolinæ. A. Michaux s.n. (P! [MNHN-P-P00705963]). <<https://science.mnhn.fr/institution/mnhn/collection/p/item/p00705963?listIndex=46&listCount=1912>>  
*Carduus glaber* Nutt., Gen. N. Amer. Pl. 2: 129. 1818, non *Cirsium glabrum* DC., Fl. Franc. [de Candolle & Lamarck], ed. 3. 6: 463. 1815. *Cnicus glaber* (Nutt.) Elliott, Sketch Bot. S. Carolina 2: 270. 1823. **TYPE:** Currently unknown, but original material would be collected by Nuttall in New Jersey.

For fuller synonymy, see Cronquist (1980) or Keil (2006). Most of Nuttall's types are at PH (Pennell 1936) (page 5); he probably collected this entity from New Jersey while on excursion from Philadelphia, as he lived there 1808–1818.

**CIRSIIUM NUTTALLII** DC., Prodr. 6: 651. 1838. *Cnicus nuttallii* (DC.) A. Gray, Proc. Amer. Acad. Arts 10: 41. 1874. *Carduus nuttallii* (DC.) Pollard, Bull. Torrey Bot. Club 24: 157. 1897. **TYPE: USA. Carol. [probably South Carolina].** 1796–1800, L.A.G. Bosc s.n. (holotype: G-DC [G00486684]!).

Because no illustrations or specimens were given in the works cited by de Candolle, the single specimen that he cited is automatically considered the holotype (Article 9.1 Note 1, Turland et al., 2018). The herbarium specimen at Geneva, labeled as "*Carduus virginianum*," was perhaps collected about 10 miles north of Charleston, South Carolina, at Michaux's botanical garden, where Bosc spent approximately two to four years (October 1796 until ca. 1800) and where he is known to have collected a number of both plants and animals. Bosc was appointed vice-consul at Wilmington and then consul in New York City of the French First Republic ("Directoire" France), but he never obtained *exequatur* from President Adams. Because he was receiving a salary but was

unable to perform his diplomatic duties, he settled with Michaux and worked on his natural history projects (Cuvier 1829; Harper 1940).

#### ACKNOWLEDGMENTS

I thank John Kees of the University of North Carolina–Chapel Hill for bringing this issue to my attention by pointing out the odd distribution of *Cirsium nuttallii* and Jonathon Osborne of the University of Southern Mississippi for downloading and summarizing data from SERNEC regarding collection dates and distribution, Raneer Prakash for searching for a potential Nuttall lectotype at BM, and Guy Nesom for commenting on the paper and searching for a potential Nuttall lectotype at PH. David Keil, retired professor at California Polytechnic State University, San Luis Obispo, is thanked for discussing the nomenclatural and species delimitation issues.

#### LITERATURE CITED

- Candolle, A.P. de. 1837 [1838]. Prodr. [A.P. de Candolle], Vol. 6. Treuttel et Würtz, Paris.
- Chapman, A.W. 1872. Flora of the Southern United States. Ivison, Blakeman, Taylor, and Company, New York.
- Cronquist, A. 1980. Vascular Flora of the Southeastern United States. Volume 1, Asteraceae. Univ. of North Carolina Press, Chapel Hill.
- Cuvier, G. 1829. Éloge historique de M. Bosc. Mém. Mus. Hist. Nat. 18: 69–92.
- Elliott, S. 1824. A Sketch of the Botany of South-Carolina and Georgia, Vol. 2. J.R. Schenck, Charleston.
- Fernald, M.L. 1939. Last survivors in the flora of Tidewater Virginia. Rhodora 41: 465–504, 529–559, 564–574. (See p. 574.)
- Gray, A. 1874. II. Contributions to the botany of North America. I. A synopsis of the North American thistles. Proc. Amer. Acad. Arts 10: 39–48.
- Keil, D.J. 2006. *Cirsium* (Asteraceae). Pp. 95–164, in Flora of North America North of Mexico, Vol. 19. Oxford Univ. Press, New York and Oxford.
- Krings, A., R. Westbrooks, and J. Lloyd. 2002. *Cirsium nuttallii* (Asteraceae: Cynareae) new to North Carolina and an illustrated key to southeastern congeners. Sida 20: 845–848.
- Harper, F. 1940. Some works of Bartram, Daudin, Latreille, and Sonnini, and their bearing upon North American herpetological nomenclature. Amer. Midl. Nat. 23(3): 692–723.
- Natural History Museum. 2023. Data Portal query on 13 resources created at 2023-12-15 01:56:14.810303 PID <<https://doi.org/10.5519/qd.315060c1>>
- Nuttall, T. 1818. The Genera of North American Plants, Vol. 2. D. Heartt, Philadelphia.
- Pennell, F.W. 1936. Travels and scientific collections of Thomas Nuttall. Bartoniana 18: 1–51.
- Radford, A.E., H.E. Ahles, and C.R. Bell. 1968. Manual of the Vascular Flora of the Carolinas. Univ. of North Carolina Press, Chapel Hill.
- Small, J.K. 1933. Manual of the Southeastern Flora. Univ. of North Carolina Press, Chapel Hill.
- Stafleu, F.A., and R.S. Cowan. 1981. Taxonomic Literature: A Selective Guide to Botanical Publications and Collections with Dates, Commentaries and Types (Second edition, Vol. 3). Bohn, Scheltema, and Holkema. <<https://www.sil.si.edu/DigitalCollections/tl-2/browse.cfm?vol=3#page/797>>
- Turland, N.J., J.H. Wiersema, F.R. Barrie, W. Greuter, D. Hawksworth, P.S. Herendeen, S. Knapp, W.-H. Kusber, D.-Z. Li, K. Marhold, T.W. May, J. McNeill, A.M. Monro, J. Prado, M.J. Price, and G.F. Smith (eds.). 2018. International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code). Regnum Vegetabile 159. Koeltz Botanical Books, Glashütten, Germany. <<https://doi.org/10.12705/Code.2018>>
- Weakley, A.S., and Southeastern Flora Team. 2022. Flora of the Southeastern United States. Univ. of North Carolina Herbarium, North Carolina Botanical Garden, Chapel Hill.
- Witsell, T. 2017. Volunteer Keesling assists the ANHC with rare plant species. Arkansas Heritage Blog. <<https://www.arkansasheritage.com/blog/dah/2022/07/13/volunteer-keesling-assists-the-anhc-with-rare-plant-species>>