

New combinations in *Dichantherium* (Poaceae)

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ABSTRACT

The following new combinations are provided in *Dichantherium* for the United States: ***Dichantherium albomarginatum*** (Nash) Wipff, ***Dichantherium chrysopsidifolium*** (Nash) J.R. Thomas & Wipff, ***Dichantherium concinnius*** (Hitchcock & Chase) Wipff, ***Dichantherium equilaterale*** (Scribner) Wipff, ***Dichantherium flavovirens*** (Nash) Wipff, ***Dichantherium languidum*** (Hitchcock & Chase) Wipff, ***Dichantherium mutabile*** (Scribner & J.G. Smith *ex* Nash) Wipff, ***Dichantherium patentifolium*** (Nash) Wipff, ***Dichantherium patulum*** (Scribner & Merrill) Wipff, ***Dichantherium polycaulon*** (Nash) Wipff, ***Dichantherium trifolium*** (Nash) Wipff, ***Dichantherium vernale*** (Hitchcock & Chase) Wipff, ***Dichantherium wilmingtongense*** (Ashe) Wipff, ***Dichantherium xalapense*** (Kunth) Wipff and ***Dichantherium xalapense*** (Kunth) Wipff var. ***strictirameum*** (Hitchcock & Chase) Wipff. Published on-line www.phytologia.org *Published on-line www.phytologia.org Phytologia 102(3): 172-176 (Sept 21, 2020). ISSN 030319430.*

KEY WORDS: *Dichantherium*, *Panicum*, USA.

Hitchcock and Chase (1910) established *Panicum* subgenus *Dichantherium* and continued to recognize it as a subgenus in their later treatments of *Panicum* L. (Hitchcock 1913, 1920, 1935, 1936, 1951; Hitchcock & Chase 1915), as did Silveus (1933, 1942) and other authors. Gould (1974) elevated subg. *Dichantherium* to the rank of genus with the support of this elevation given by Gould and Clark (1978). More recent evidence for the recognition of *Dichantherium* has come from research involving the molecular phylogeny of Panicoideae (Giussani et al. 2001; Aliscioni et al. 2003; Morrone et al. 2008). These studies demonstrate that *Panicum* s.l. is polyphyletic unless *Dichantherium*, among others, is treated as a separate genus. Additionally, many of the presumed intermediate taxa (*Panicum* sect. *Cordovensia* Parodi and the still unresolved *P. longipedicellatum* Swallen) that were used to maintain *Dichantherium* as a subgenus of *Panicum* have been shown to represent distinct lineages (Aliscioni et al. 2003; Morrone et al. 2008). *Panicum* sect. *Cordovensia* has already been transferred into a separate genus (Morrone et al. 2008).

Hitchcock & Chase (1910) recognized 17 informal groups in subg. *Dichantherium*, 109 species and 5 varieties. Radford et al. (1968) reduced the number of recognized taxa in *Panicum* subg. *Dichantherium*. Gould and Clark (1978) made many more reductions in the number of recognized taxa, which they even admitted was “somewhat arbitrary and certainly not entirely satisfactory.” Subsequent work has determined that Radford et al. (1968) and Gould & Clark (1978) had been overzealous reductions. Ladd & Thomas (2015) stated that even the treatment of “...Freckmann and Lelong (2003), does not accurately reflect the morphological entities, ecological performance, and taxonomic relationships of the group. Time and again, morphologically and ecologically distinct entities are subsumed into broad “species,” in the process disenfranchising then meaningful ecological information about habitat affinities and distinctness that are of value in assessing vegetation and habitat conditions. Recent studies (e.g. Thomas 2008[, 2015]) and detailed field assessments support maintaining some narrower species concepts within the group.” Since 1978, a number of the old *Panicum* subg. *Dichantherium* names treated in synonymy by Radford et al. (1968) and Gould & Clark (1978) are now recognized as valid species, subspecies, or varieties in *Dichantherium* (e.g. Mohlenbrock 1985, 2001, 2015; Freckmann & Lelong 2002, 2003; LeBlond 2001, 2016, 2017, 2018; Ladd & Thomas 2015; Thomas 2015, 2017, 2018; Greuter & Rankin Rodríguez 2016; Wilhelm & Rericha 2016; Wipff & Shaw

2018). More of the old *Panicum* subg. *Dichantherium* taxa will be transferred to *Dichantherium* as this very complex group is continually better understood.

During the preparation of the second edition of the *Guide to Texas Grasses*, Texas A&M University Press, it is necessary to make nomenclatural changes to coincide with the author's concept of the taxa involved. The *Dichantherium* treatment for Texas will more reflect the circumscription of species as treated by Hitchcock (1951). So, distinctive taxa, long recognized at species or variety rank in *Panicum* subg. *Dichantherium* in Hitchcock & Chase (1910) and Hitchcock (1951), are here transferred to *Dichantherium*.

Dichantherium albomarginatum (Nash) Wipff, **comb. nov.** BASIONYM: *Panicum albomarginatum* Nash, Bull. Torrey Bot. Club 24(1): 40-41 (1897). **TYPE: FLORIDA: Lake Co.** In vicinity of Eustis, low pine land, 1-15 June 1894, *Nash 925* (HOLOTYPE: NY-00381577, image!; ISOTYPES: NY-00381576, image!, F-0046859F, image!, K-000674410, image!, MO-2151649, image!, NDG-12260, image!, P-00740930 image!, PH-00018616 image!, US-00133064, image!, US-01117846, image!).

Dichantherium chrysopsidifolium (Nash) J.R. Thomas & Wipff, **comb. nov.** BASIONYM: *Panicum chrysopsidifolium* Nash in J.K. Small, Fl. S.E. U.S.: 100, 1327 (1903). **TYPE: FLORIDA: Leon Co.:** Lake Jackson, 12 May 1886, *A.H. Curtiss s.n.* (HOLOTYPE: NY-00413960, image!; ISOTYPE: US-00133142, image!).

Dichantherium concinnius (Hitchcock & Chase) Wipff, **comb. nov.** BASIONYM: *Panicum concinnius* Hitchcock & Chase, Contr. U.S. Natl. Herb. 15: 263 (1910). *Panicum gracilicaule* Nash, in J.K. Small, Fl. S.E. U.S.: 98, 1327 (1903), nom. illeg. hom., non *Panicum gracilicaule* Rendle (1899). **TYPE: Alabama: Jackson Co.:** sandy soil along a creek, Sand Mtn., 5 Jun 1900, *T.G. Harbison 2415* (HOLOTYPE: NY-00381613, image!; ISOTYPE: US-00148543, image!).

Dichantherium equilaterale (Scribner) Wipff, **comb. nov.** BASIONYM: *Panicum equilaterale* Scribner, U.S.D.A., Bull. Div. Agrostol. 11: 42, t.2. 1898 (July). *Dichantherium commutatum* (Schultes) Gould subsp. *equilaterale* (Scribner) Freckmann & Lelong, Sida 20(1): 169. 2002. **TYPE: FLORIDA: Lake Co.:** vicinity of Eustis, scrub hummock, 16-25 August 1894, *G.V. Nash 1674* (LECTOTYPE: US-00147824 (743929), image!; ISOLECTOTYPES: US-01117756 (208318), image!; US-01117758 (480517), image!; US-01117757 (823254), image!; GH-00024100, image!; MICH-1108734, image!; NY-00413980, image! - designated by Hitchcock & Chase, Contr. U.S. Natl. Herb. 15: 310 (1910). SYNTYPE: FLORIDA: Lake Co.: vicinity of Eustis, high pine land, 16-30 June 1894, *G.V. Nash 1120* (K-000674484, image!; US).

Dichantherium flavovirens (Nash) Wipff, **comb. nov.** BASIONYM: *Panicum flavovirens* Nash, Bull. Torrey Bot. Club 26: 572 (1899). **TYPE: FLORIDA: Lake Co.:** Eustis Lake, 16-30 Jun 1895, *G.V. Nash 2061* (HOLOTYPE: NY-00381599, image!; ISOTYPES: NY-00381600, image!, US-00148543, image!, GH-00024103, image!, NDG-06846, image!, US-00147840, image!).

Dichantherium languidum (Hitchcock & Chase) Wipff, **comb. nov.** BASIONYM: *Panicum languidum* Hitchcock & Chase, Contr. U.S. Natl. Herb. 15: 232, f. 245 (1910). *Panicum unciphyllum* forma *prostratum* Scribner & Merrill, Rhodora 3: 124. 1901, non *Panicum prostratum* Lamarck (1791). **TYPE: MAINE: YORK CO.,** South Berwick, dry open woods, 26 September 1897, *M.L. Fernald s.n.* (HOLOTYPE: US-00148071, image!; ISOTYPES: NEBC-00028648, image!, NEBC-00028647, image!).

Dichanthelium mutabile (Scribner & J.G. Smith *ex* Nash) Wipff, **comb. nov.** BASIONYM: *Panicum mutabile* Scribner & J.G. Smith *ex* Nash, in J.K. Small Fl. Southeast. U.S. 103, 1327. 1903 (22 July). **TYPE: MISSISSIPPI:** Biloxi, 15 September 1896, *S.M. Tracy 3074* (HOLOTYPE: NY-00381646, image!; ISOTYPE: US-00132994, image!).

Dichanthelium patentifolium (Nash) Wipff, **comb. nov.** BASIONYM: *Panicum patentifolium* Nash, Bull. Torrey Bot. Club 26(11): 574-575 (1899). **TYPE: FLORIDA: Lake Co.:** vicinity of Eustis, scrub hummock, 12-31 March 1894, *Nash 72* (HOLOTYPE: NY-00381658, image!; ISOTYPES: NY-00381659, image!, G-00176626, image!, GH-00024111, image!, MO-440032, image!, NDG-06613, image!, US-00147942, image!).

Dichanthelium patulum (Scribner & Merrill) Wipff, **comb. nov.** BASIONYM: *Panicum nashianum* var. *patulum* Scribner & Merrill, U.S.D.A. Circ. Div. Agrostol. 27: 9 (1900). *Panicum patulum* (Scribner & Merrill) Hitchcock, Rhodora 8(95): 209 (1906). *Panicum lancearium* Trinius var. *patulum* (Scribner & Merrill) Fernald, Rhodora 36: 80 (1934). *Dichanthelium sabulorum* (Lamarck) Gould & C.A. Clark var. *patulum* (Scribner & Merrill) Gould & C.A. Clark, Ann. Missouri Bot. Gard. 65: 1113 (1979). *Panicum sabulorum* Lamarck var. *patulum* (Scribner & Merrill) C.F. Reed, Phytologia 67: 452 (1989). *Dichanthelium portoricense* (Desvaux *ex* Hamilton) B.F. Hansen & Wunderlin subsp. *patulum* (Scribner & Merrill) Freckmann & Lelong, Sida 20: 170 (2002). **TYPE: FLORIDA: Manatee Co.:** Braidentown [Bradenton], in fertile woods along the Manatee, not frequent, 3 September [October] 1898, *R. Combs 1296* (HOLOTYPE: US-00132997, image!).

Dichanthelium polycaulon (Nash) Wipff, **comb. nov.** BASIONYM: *Panicum polycaulon* Nash, Bull. Torrey Bot. Club 24(4): 200-201 (1897). **TYPE: FLORIDA: Hillsborough Co.:** Tampa, flatwoods, 20 Aug 1895, *G.V. Nash 2420a* (HOLOTYPE: NY-00381668, image!; ISOTYPE: US-00139880, image! (photo of holotype and spikelets in a fragment packet)).

Dichanthelium trifolium (Nash) Wipff, **comb. nov.** BASIONYM: *Panicum trifolium* Nash, Bull. Torrey Bot. Club 26(11): 580 (1899). **TYPE: GEORGIA: Bibb Co.:** in the Ocmulgee River Swamp, below Macon, 18-24 May 1895, *J.K. Small s.n.* (HOLOTYPE: NY-00381691, image!; ISOTYPE: US-00140076, image!).

Dichanthelium vernale (Hitchcock & Chase) Wipff, **comb. nov.** BASIONYM: *Panicum vernale* Hitchcock & Chase, Contr. U.S. Natl. Herb. 15: 266, f. 293 (1910). **TYPE: FLORIDA: Columbia Co.:** Lake City, sphagnum bog, 16 April 1906, *A.S. Hitchcock 1020* (HOLOTYPE: US-00148085, image!; ISOTYPES: GH-00024115, image!, ISC-v-0000582, image!).

Dichanthelium wilmingttonense (Ashe) Wipff, **comb. nov.** BASIONYM: *Panicum wilmingttonense* Ashe, J. Elisha Mitchell Sci. Soc. 16(2): 86 (1899 publ. 1900). **TYPE: NORTH CAROLINA: New Hanover Co.:** Shady slopes on the sand hills one mile to north of Wilmington, 17 May 1899, *W.W. Ashe s.n.* (HOLOTYPE: NCU-00000396, image!, ISOTYPE: US-00148099, image!).

Dichanthelium xalapense (Kunth) Wipff, **comb. nov.** BASIONYM: *Panicum xalapense* Kunth in F.W.H. von Humboldt, A.J.A. Bonpland & C.S. Kunth, Nov. Gen. Sp. (quarto ed.) 1: 103 (1815[1816]). **TYPE: MEXICO: Veracruz:** near Jalapa, "in regno Mexicano prope xalapa, regione temperata." February, *F.W.H.A. von Humboldt, & A.J.A. Bonpland s.n.* (HOLOTYPE: P-00128859, image!; ISOTYPE: P-0012886, image!, US-00140093, image! (2 spikelets)).

Dichanthelium xalapense (Kunth) Wipff var. **strictirameum** (Hitchcock & Chase) Wipff, **comb. nov.** BASIONYM: *Panicum xalapense* Kunth var. *strictirameum* Hitchcock & Chase, Contr. U.S.

Natl. Herb. 15: 161 (1910). **TYPE: MISSISSIPPI:** Jackson, 28 April 1906, A.S. Hitchcock 1311 (HOLOTYPE: US-00148102, image!; ISOTYPE: GH-00023524, image!).

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