

***Jansenella griffithiana* (Müll. Hal.) Bor (Gramineae/Poaceae): a new record for Thailand, and notes on its typification**

ATCHARA TEERAWATANANON*** & TREVOR R. HODKINSON**

ABSTRACT. We report that *Jansenella griffithiana* (Müll. Hal.) Bor is a new genus and species record for Thailand based on collections from Ranong Province by A.F.G. Kerr in 1929 and by A. Teerawatananon & S. Sungkaew in 2001. We also discuss its typification and designate a lectotype.

KEYWORDS: *Jansenella*, Gramineae, Thailand.

INTRODUCTION

Jansenella Bor (1955) (Gramineae, Arundinelleae) is a monotypic genus. It was previously only known from India, Sri Lanka, and Myanmar (Burma). However, Kerr collected it on 1 Feb. 1929, at Khao Pauta Luang Kaew, Ranong Province, at the boundary of the Khlong Nakha Wildlife Sanctuary, Peninsular Thailand (no. 16947). This collection was distributed to **BK**, **BM**, and **K**. We have now identified it as *Jansenella griffithiana* (Müll. Hal.) Bor. In 2001, this species was re-collected at the same location by A. Teerawatananon & S. Sungkaew (no. 2001–1). The occurrence of this species in Thailand is an interesting extension of the geographic distribution and is highly disjunct from previous reports of its range.

There is some confusion about the authorship of the species and the author abbreviation used. The article it appeared in was signed by “C. Müll.”, however, there were several of that name who published around this period. One of the *Griffith* specimens we have examined in **B**, is labelled with “Herb. Karl Müller Hal.”. This is Johann Karl (Carl) August Müller (1818-1899). We have also received the important information from the library of the Botanic Garden and Botanical Museum Berlin-Dahlem, Berlin (BGBM), which confirmed that the full name of “C. Müll.” is “Carolo Müller”. We also found that “Carolo Müller” is the author of *Synopsis Muscorum Frondosorum Omnium Husque Cognitorum* in 1851, while Stafleu & Cowan (1981) reported that Johann Karl August Müller is the author of this book. This would lead us to the conclusion that the names “C. Müll.”, “Johann Karl August Müller”, and “Carolo Müller” are of the same person who is the author of *Danthonia griffithiana* (basonym of *Jansenella griffithiana*). This author is abbreviated “Müll.Hal.” (Brummitt & Powell, 1992). We therefore use this abbreviation for this species.

* Thailand Natural History Museum, National Science Museum, Technopolis, Pathum Thani (THNHM), Thailand. e-mail: teerawaa@tcd.ie.

** Department of Botany, School of Natural Sciences, Trinity College Dublin, University of Dublin, Ireland. e-mail: hodkinst@tcd.ie.

Jansenella griffithiana (Müll.Hal.) Bor in Kew Bull. (10): 98, fig. on page 97. 1955; Conert in Bot. Jahrb. Syst. 77: 236. 1957; Bor in Grass Burma, Ceylon, India & Pakistan: 426, fig. 45. 1960; Gould in Dassanayake, Rev. Handb. Fl. Ceylon 8: 294. 1994.— *Danthonia griffithiana* Müll. Hal. in Bot. Zeit. 14: 347. 1856.— *Arundinella griffithiana* (Müll. Hal.) Bor in Ind. For. Rec. (Bot.) 1, 3: 73. 1938.— *Danthoniopsis griffithiana* (Müll. Hal.) Bor in Fl. Assam 5: 187. 1940.— Type: India, Khasia Hills (“Khasiya”), Griffith 36 in Herb. Karl Müller Hal. (lectotype **B** [Digital image B-10-0240400!], designated by Conert (1957)). [*Aira* sp. Griff., Not. Pl. Asiat. 3: 55. 1851; Ic. Pl. Asiat. 3: t. 146, fig. 3. 1851. (“*Airoideum*”), nom. nud.]. — *Arundinella avenacea* Munro ex Thwaites in Enum. Pl. Zeyl.: 362. 1864; Hook.f. in Trimen, Handb. Fl. Ceylon 5: 176. 1900; Keng in Nat. Centr. Univ. Sci. Rep., Nanking, Ser. B, 2(3): 62, fig. 32. 1936.— Type: Sri Lanka, Saffragam Distr., Thwaites CP 3471 (lectotype **K!**, designated here; isolectotypes **BM!**, **E!**, **K!**, **PDA**).— *Arundinella campbelliana* Lisboa in J. Bomb. Nat. Hist. Soc. 5: 346. 1891.— Type: India, Mahableshwar, com. *Lisboa* (holotype **BLAT!**; isotype **K!**).— *Arundinella avenacea* Thwaites var. *robusta* Hook.f. in Trimen, Handb. Fl. Ceylon 5: 177. 1900.— Type: Sri Lanka, “Herb. Peraden.” (holotype **PDA**, not seen).

Annual, mat-forming. *Culms* 10–30 cm tall, rooting from the lower nodes. *Sheaths* 0.8–3 cm long, margins hairy. *Leaf-blades* lanceolate to ovate-oblong, 1–4(–6) cm by 2–8(–14) mm, veins prominent on upper surface and scabrous, with a few scattered hairs on both sides, base amplexicaul, margins thick and scabrid. *Ligule* a short membrane, ca 0.2 mm long. *Panicles* compact, 1–4 cm long, branches and branchlets hirsute. *Spikelets* 6–7(–9) mm long, pedicels 0.5–2 mm long, scabrous. *Glumes* membranous, aristate to shortly awned; *lower glumes* lanceolate, 3.5–4 mm long, excluding awns, 3-nerved, dorsally with or without a few tubercle-based hairs on or sometimes between the nerves, awns ca 1 mm long, scabrid; *upper glumes* elliptic-oblong, 5–6 mm long, dorsally with or without sparse tubercle-based hairs, awns up to 2 mm long, scabrid. *Lower florets* barren, male, female, or bisexual; *lemmas* membranous, oblong-ovate, 5–6 mm long, 3-nerved, awns ca 1 mm long, scabrous; *paleas* membranous, elliptic-oblong, ca 3 mm long, 2-keeled, very narrowly winged on the keels. *Upper florets* callus hairy, hairs 0.5–1 mm long; *lemmas* coriaceous or subcartilaginous, elliptic-oblong, 2.5–3 mm long, pilose on the dorsal surface with a dense tuft of hair on each side, lateral tufts of hairs 0.5–1.3 mm long, deeply bifid, lateral lobe 1.5–2 mm long, awned from between the sinus, up to 15 mm long; *paleas* coriaceous, oblanceolate, 2–2.5 mm long, narrowly winged on keels, covered on the adaxial surface with 1-celled hairs which are slender below and become thicker towards the apex; *stamens* 3, anthers 0.5–1.75 mm long; *stigma* ca 0.5 mm long; *caryopsis* oblong-obovate, 1–1.5 by 0.5–0.75 mm, hilum punctiform.

Thailand.— PENINSULAR: Ranong [Khlung Nakha Wildlife Sanctuary, Khao Pauta Luang Kaeo, alt. ca 1300 m, 1 Feb. 1929, Kerr 16947 (**BK**, **BM**, **K**)]; [*l.c.*, 1 Jan. 2001, A. Teerawatamanon & S. Sungkaew 2001–1 (**BKF**, **THNHM**)].

Distribution.— India (Chhattisgarh, Karnataka, Kerala, Maharashtra, Meghalaya, Orissa), Sri Lanka, Myanmar, Thailand (Ranong: Khao Pauta Luang Kaeo, 30° 20' N, 98° 30' E).

Ecology.— Open areas on mountain ridges in montane forest, ca 1300 m.

Notes.— *Arundinella avenacea* var. *robusta* Hook. f. was not accounted for by Bor (1955, 1960) and Gould (1994). It is probably just a larger plant (Veldkamp, personal communication).

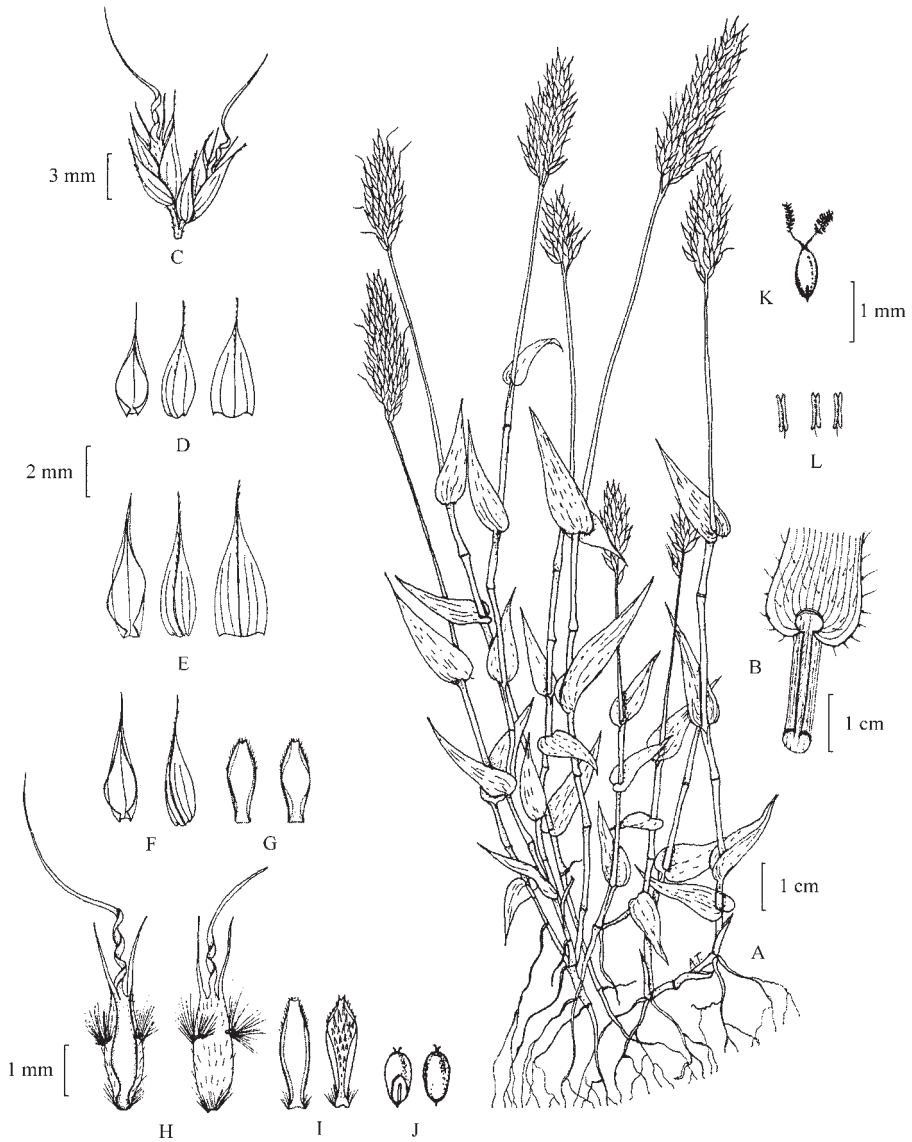


Figure 1. *Jansenella griffithiana* (Müll. Hal.) Bor: A. plant ; B. leaf sheath and blade; C. spikelets; D. lower glumes; E. upper glumes; F. lower lemmas; G. lower paleas; H. upper lemmas; I. upper paleas; J. grains; K. pistil; L. stamens. (A. Teerawatananon & S. Sungkaew 2001–1). Drawn by A. Teerawatananon.

This species has the general appearance, ligule and hilum of *Arundinella*, but the spikelets of *Danthoniopsis*. It was further distinguished by the remarkable one-celled hairs on the palea of the upper floret. This character has never been found in any of the genera in the Arundinelleae (Bor, 1955).

Bor (1955) reported that most parts of the spikelets of this species, from a rather dry habitat in Bombay, were almost coriaceous.

The specimens examined from Thailand have been found to be smaller, have more compact panicles, and are less hairy on the glumes.

Uses.—Grazing (Bor, 1960).

Typification notes.—When Müller (1856) described *Danthonia griffithiana* he cited the specimen *Griffith* legit, collected from India Orientalis, Khasiya, as the type specimen, but he did not mention where it was kept. According to Stafleu & Cowan (1981), the main herbarium of Karl Müller is in **B**. There are two *Griffith* specimens in **B**, one of which is labelled *Griffith* 36 (B-10-0240400, from Röpert, 2000) and one of which has no number (B-10-0240395, from Röpert, 2000). Both are also labelled “*Danthonia griffithiana* n.sp.” in the same hand, possibly Müller’s. In 1938, Bor transferred this species to *Arundinella* and stated that the type herbarium sheet of *D. griffithiana* Müll. Hal., which was made available to him, was deposited in **B**. In 1955, he finally transferred it to *Jansenella*, as *J. griffithiana* (Müll. Hal.) Bor. In 1957, Conert published a monograph of Arundinelleae and stated that *Griffith* 36 in **B** was the holotype of *J. griffithiana*. As there are at least two original specimens neither of these two specimens can be a holotype. However, as Bor stated the type was in Berlin, one of these two specimens must be designated as a lectotype even if further material were to be found in another herbarium. It would appear that the unnumbered *Griffith* specimen (B-10-0240395) was borrowed by Bor in Kew and which he presumed to be the type. Unfortunately, Conert’s incorrect citation of the other specimen, *Griffith* 36 (B-10-0240400), as a holotype did have the effect of establishing that specimen as the lectotype.

When Thwaites (1864) published *Arundinella avenacea* Munro ex Thw., he cited a specimen of *Thwaites* CP 3471 from Ceylon but did not mention where it was kept. We have found several duplicates of *Thwaites* CP 3471 in **BM**, **E** and **K**, and have therefore designated a specimen of *Thwaites* CP 3471 in **K**, as the lectotype and regard the further duplicates in **BM**, **E**, **K**, and **PDA** (Veldkamp, personal communication), as isoelectotypes.

Non-Thai specimens examined.—**India**: Chhattisgarh [Bastar, alt. 3,000 “3,700 ft, 15 Oct. 1940, *Mooney* 1426 (**K**, **SING**)]; Karnataka [Castle Rock, alt. 2,000 ft, Oct. 1908, *Meebold* 10572 (**E**)]; [*l.c.*, alt. 2,000 ft, Oct. 1908, *Meebold* 10576 (**K**)]; [Kodagu (“Coorg”), 1873, *Beddome* s.n. (**K**)]; [Kulhutti, alt. 6,000 m, Oct. 1908, *Meebold* 10571 (**K**)]; [North Kanara, 15 Jan. 1890, *Talbot* 2255 (**K**)]; Kerala [Cochin, alt. 3,000 ft, Nov. 1910, *Meebold* 12179 (**K**)]; [Nilgiris, alt. 4,000 ft, Nov. 1884, *Gamble* 15449 (**K**)]; [*l.c.*, 1886, *Gamble* 18306 (**BM**, **K**)]; [Peermade., *Beddome* s.n. (**BM**)] [*l.c.*, alt. 1,500 m, 1964, *Guy* 8 (**K**)]; Maharashtra [Lonavala (“Lanavli”), 1 Oct. 1898, *Woodrow* s.n. (**E**)]; [Mahabaleshwar (“Mahabaleshwar”), com. *Lisboa* (**K**)]; Meghalaya [Cherra, alt. 4,000 ft, 11 Sept. 1885, *Clarke* 40376B (**BM**)]; [*l.c.*, alt. 4,000 ft, 11 Sept. 1885, *Clarke* 40376C (**K**)]; [*l.c.*, *Griffith* 6784 (2 sheets **K**)]; [Khasia hills, alt. 5,000 ft, 22 Sept. 1886, *Clarke* 45595 (**E**)]; [*l.c.*, *Hooker & Thomson* s.n. (**E**, **TCD**)]; [*l.c.*, *Griffith* 36 (**B**, **K**, **TCD**)]; [*l.c.*, *Griffith* 6785 (**L**, 2 sheets **K**)]; [*l.c.*, *Griffith* s.n. (**B**)]; [*l.c.*, *Griffith* s.n.

(E)]; [Mausmai, alt. 3750 ft, 10 Oct. 1886, *Clarke* 45866E (BM)]; [*l.c.*, alt. 3750 ft, 10 Oct. 1886, *Clarke* 45866D (K)]; [Pynursla, Khasi Hills, alt. 4,000 ft, 5 Sept. 1949, *Thakur Rup Chand* 2167 (K)]; [Sohra, alt. 4,000 ft, 19 Oct. 1871, *Clarke* 15537 (K, BM)]; [*l.c.*, alt. 4,000 ft, 22 Oct. 1871, *Clarke* 15667 (K)]; Orissa [Koraput, alt. 5,200 ft, 10 Oct. 1950, *Mooney* 4082 (GH, K)]. **Myanmar:** Pegu [27 Dec. 1970, *Kurz* 3158 (GH)]; Moulmein [*Griffith* 328 (K)]. **Sri Lanka:** Saffragam [*Thwaites* CP 3471 (2 sheets BM, E, 2 sheets K)]. **No locality** [*Gamble* s.n. (K)]; [*Griffith* 6780 (BM, K)].

ACKNOWLEDGMENTS

The authors are grateful to the curators of the following herbaria: **B, BK, BM, E, GH, K, L, SING,** and **TCD** for the use or loan of specimens. Thanks to Mr. Sarawood Sungkaew, Dr. John Parnell, Dr. David Middleton, Dr. Dokrak Marod, Dr. Prateep Duangkae, The Library at the Botanic Garden and Botanical Museum Berlin-Dahlem, Dr. Robert Vogt, and Dr. Norbert Kilian for their kind assistance. Thanks also to Dr. Jan Frits Veldkamp and Steve Renvoize for their kind comments and useful suggestions. This work was supported by the TRF/BIOTEC Special Program for Biodiversity Research and Training Grant T_148026.

REFERENCES

- Bor, N. L. (1938). A List of Grasses of Assam. *Indian Forest Records* 1 (3): 73.
- _____. (1955). Notes on Asiatic Grasses: 23. *Jansenella* Bor, a new genus of Indian grass. *Kew Bull.* 1955: 93-99.
- _____. (1960). The Grasses of Burma, Ceylon, India and Pakistan (Excluding Bambuseae), vol. 1. International Series of Monographs on Pure and Applied Biology, Division: Botany. Pergamon Press, Oxford, London.
- Brummitt, R. K. & Powell C. E. (eds.) (1992) *Authors of Plant Names*. Royal Botanic Gardens, Kew.
- Conert, H. J. (1957). Beitrage zur Monographie der Arundinelleae. *Bot. Jahrb.* 77(2/3): 226–354.
- Gould, F. (1994). *Arundinella*. In M. D. Dassanayake, F.R Fosberg, D. Clayton. [eds]. A revised handbook to the flora of Ceylon. vol. VIII. Amernd Publishing Co. Pvt Ltd, New Delhi, India.
- Müller, C. (1856). *Genus Danthonia*. *Botanische Zeitung* 14: 347.
- Röpert, D. (ed.) (2000). (continuously updated): Digital specimen images at the Herbarium Berolinense. Published on the Internet <http://ww2.bgbm.org/herbarium/default.cfm>. [accessed 16 Sept. 2006].
- Stafleu, F. A., and R. S. Cowan. (1981). Taxonomic literature, a selective guide to botanical publications and collections with dates, commentaries and types. Volume 3: Lh-O: 638. Utrecht: Bohn, Scheltema & Holkema.
- Thwaites, G.H.K. (1864). *Enumeratio plantarum zeylanicae*. Dulau & Co., London.