

AULONEMIA NITIDA (POACEAE: BAMBUSOIDEAE: BAMBUSEAE), A NEW SPECIES FROM GUYANA

Emmet J. Judziewicz

Department of Biology
University of Wisconsin-Stevens Point
Stevens Point, Wisconsin 54481, U.S.A.
emmet.judziewicz@uwsp.edu

ABSTRACT

A new species, ***Aulonemia nitida*** Judz., is described from the Pakaraima Mountains of Guyana, South America. It is a large-leaved species that differs from the Mesoamerican species *A. laxa* and *A. patriciae* in its smooth, shining, non-striate, non-maculate foliaceous leaf sheaths. An illustration of the new species and a key to the species of *Aulonemia* from the Guayana Highlands are provided.

RESUMEN

Se describe una especie nueva, ***Aulonemia nitida*** Judz., de las montañas de Pakaraima, Guyana, América del Sur. Es una especie con láminas foliares grandes y anchas parecida a las especies Mesoamericanas *A. laxa* y *A. patriciae*, pero se distingue por sus vainas foliares lisas y lustrosas, sin estriaciones o manchitas. Se incluyen una ilustración de la nueva especie y una clave de las especies de *Aulonemia* de las montañas de Guayana.

Since the publication of the grass treatment for the "Flora of the Guianas" project (Judziewicz 1991), several more specimens of a new bamboo (Poaceae: Bambusoideae: Bambuseae: Arthrostylidiinae) species from the Guayana Highlands have come to light. The name *Aulonemia nitida* has long been in print, appearing as a *nomen nudum* in Boggan et al. (1997: 168) checklist of Guianas plants, and, based on the Boyan specimen, was recognized as a likely new species as long ago as 1988. Even though all five known collections are sterile, the taxon is so distinctive that I have chosen to propose it here as a new species, following the example of Clark (1989, 1992) who has named several distinctive species in the bamboo genus *Chusquea* Kunth based on material lacking inflorescences. Specimens were examined from the following herbaria: F (2002), FDG (1988), K (1989), MO (2004), NY (1989), US (2004), UWSP (2004), and WIS (2004).

Aulonemia nitida Judz., sp. nov. (**Fig. 1**). TYPE: GUYANA. POTARO-SIPARUNI REGION: upper slopes of Mt. Wokomung, 5°05'N-59°50'W, 1530 m, *Hedyosmum*-bamboo dominated moist forest, bamboo with culms at base to 2 cm diam., overall height 4 m, common and at times dense on upper slopes, sterile, 14 Jul 1989, B.M. Boom & G.J. Samuels 9224 (HOLOTYPE: FDG!; ISOTYPES: MO-3 sheets!, NY!).

Graminum cespitosum. Culmi usque ad 5 m longi, 2.5 cm lati. Vaginae foliorum glabrae, nitidae, fimbriatae ad apicem tantum; fimbriae 7-10 cm longae; laminae foliorum 25-37 cm longae, 7-10.5 cm latae, lanceolatae-ovatae. Inflorescentia non vidi.

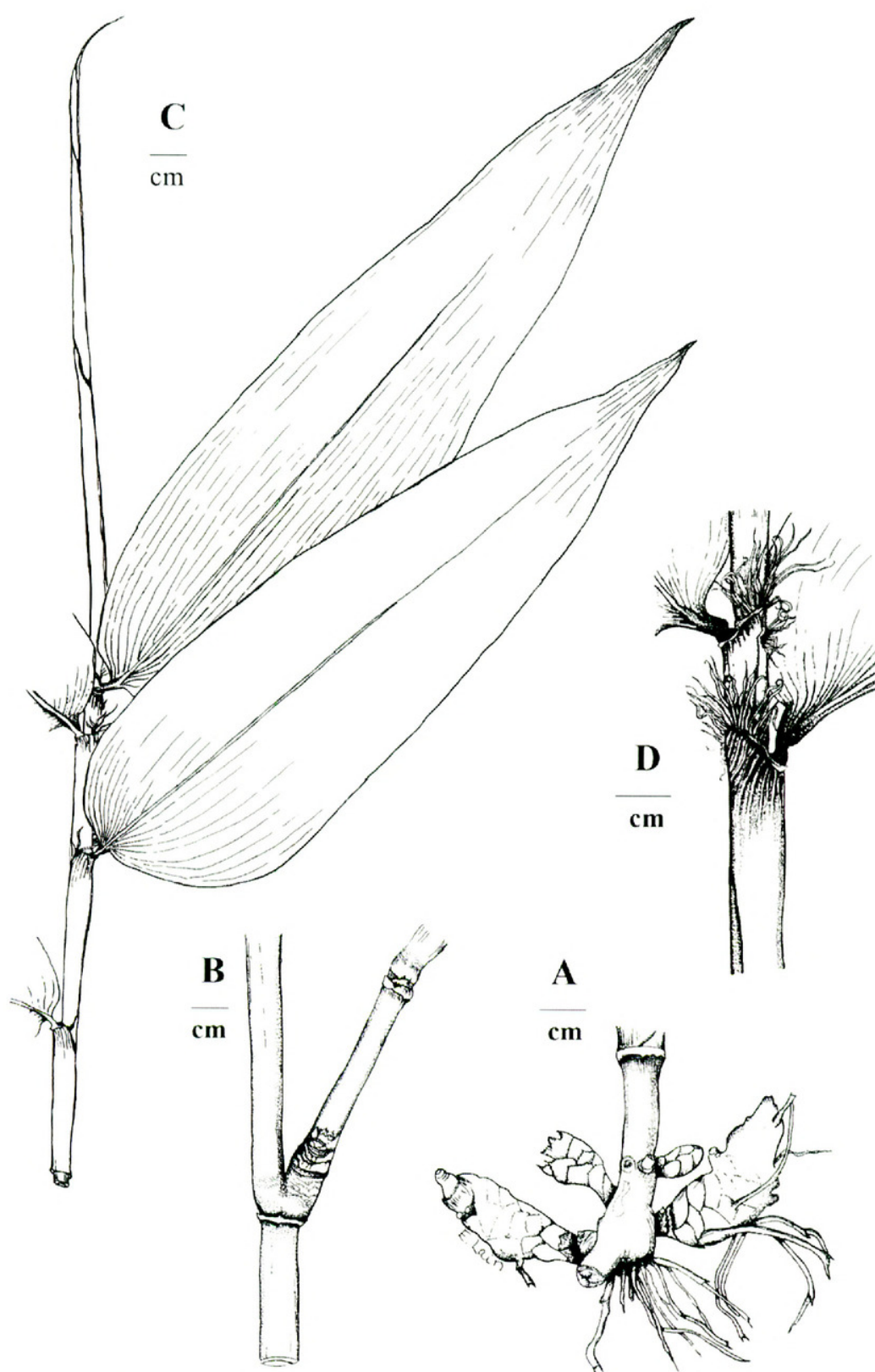


FIG. 1. **A.** Base of plant showing sympodial rhizomes (nodes and internodes decayed or indistinct in available material). **B.** Culm and branch. **C.** Branch with foliage leaves. **D.** Detail of ligular area. Scale bar = 1 cm. Illustration by Emily Lain. A and B based on *Boom & Samuels 9224* (MO), C and D based on *Henkel, Williams, Fratello & Williams 4493* (WIS).

Cespitose perennial, thicket-forming woody bamboo from short, sympodial rhizomes; glabrous throughout. Culms up to 5 m long and at least 2.5 cm in diameter, shiny, hollow, the walls only ca. 1 mm thick with a 1–1.5 mm thick annular ring present at the lower nodes; buds and branches one per node. Culm leaves not seen, perhaps not differentiated from foliage leaves. Foliage leaves at least 5 per complement; sheaths glabrous, smooth, shiny, and stramineous throughout most of their length, strongly keeled 3–5 cm below the apex, striate only in the area 0.5–1 cm below the apex; fimbriae ca. 12–20, each 7–10 mm long, pale, flexuous and spreading, confluent basally and forming an indurate rim at the summit of the leaf sheath; outer ligules ca. 0.2 mm long, indurate, rim-like; inner ligules 1–1.5 mm long, membranous; pseudopetioles 7–10 mm long, pale; blades 25–37 × 7–10.5 cm, narrowly ovate to broadly lanceolate, rounded to very slightly oblique or subcordate at the base, acuminate at the apex, not evidently tessellate, the abaxial surface slightly whitened or bluish green. Inflorescence not seen.

Additional collections examined (PARATYPES): **GUYANA. Cuyuni-Mazaruni Region:** Ayanganna [a sandstone mountain with a summit elevation of over 2100 m] slope, among rocks in low forest, sterile, 2 Mar 1960, R. Boyan 120 [= FD7944] (FDG, NY); Pakaraima Mts., 2 km transect along summit ridge of Mt. Ayanganna, 5°23'N–59°59'W, 1800–2000 m, low sclerophyllous community, organic soils on sandstone, 3 Nov 1992, B. Hoffman & T. Henkel 3209 (US, WIS). **Potaro-Siparuni Region:** Mt. Wokomung, E-most pinnacle of massif, 5°05'34"N–59°50'13"W, 1524 m, coarse herb 4 m, sterile, 13 Jul 2003, H.D. Clarke, R. Williams, C. Perry, E. Tripp, D. Gittens & S. Stern 10808 (US, WIS); Mt. Wokomung, summit ridge of Ka-mie-wah pinnacle NE to S pinnacle, "Little Ayanganna," 5°04'N–59°52'W, 1550–1650 m, mixed hardwood cloud forest grading to Guyana scrub forest on pinnacle escarpments; on sandstone, stout bambusoid grass from 1–5 m tall, forming thickets on rocky ridges, sterile, 17 Nov 1993, T.W. Henkel, R. Williams, S. Fratello, L. Williams 4493 (FDG, MO, US, WIS).

DISCUSSION

Aulonemia nitida is endemic to elevations of 1500–2100 m in cloud forests on sandstone tepuis in the Pakaraima Mountains (Mt. Ayanganna and Mt. Wokomung; all collections come from an area of about 30 km in length) of Guyana near the Brazilian frontier. The species epithet derives from the nitid or shiny foliage leaf sheaths. A vernacular name is "reroballi" (Boyan 120).

There are 35 described species of *Aulonemia* throughout tropical America (Clark et al. 1997; Judziewicz et al. 1999, 2000) and I am currently working on a revision of the genus. *Aulonemia nitida* appears to be most closely related to the Mesoamerican species *A. laxa* (F. Maek.) McClure and *A. patriae* R. Pohl (Pohl & Davidse 1994). All three taxa have broad, fimbriate foliage leaves with distinctive keeled sheaths, but *A. laxa* and *A. patriae* have sheaths that are striate and maculate their entire lengths. *Aulonemia nitida* differs in its smooth, shiny, non-maculate sheaths that are striate, if at all, only in the final 1 cm or so below the ligular area. The two Mesoamerican species also differ in their generally

longer (10–32 mm) fimbriae; those of *A. laxa* are straight and appressed to the culm, not spreading as in *A. nitida* and *A. patriae*.

There are eight species of the *Aulonemia* in the Guayana Highlands (Judziewicz 2004). In the “Flora of the Venezuelan Guayana” (Judziewicz et al. 1991; Judziewicz 2004) *Aulonemia nitida* would key to either *A. deflexa* (N.E. Brown) McClure, *A. chimantaensis* Judz. & Davidse, or *A. jauaensis* Judz. & Davidse. However, these three taxa have smaller foliage leaf blades (a maximum of 22×4.5 cm versus at least 25×7 cm in *A. nitida*), longer fimbriae (10–20 mm long versus 7–10 mm in *A. nitida*), and completely striate foliage leaf sheaths. *Aulonemia deflexa*, the only other species known from Guyana, is present at higher elevations on Mt. Roraima (ca. 2800 m), as well as on several Venezuelan tepuis. *Aulonemia patula* (Pilg.) McClure from Andean Colombia and Ecuador has similarly large foliage leaves, but the sheaths are non-keeled, non-striate, and the fimbriae are conspicuous all along the sheaths margins as well as at the sheath summit. A key differentiating the species of *Aulonemia* found in the Guayana Highlands follows.

KEY TO THE SPECIES OF *AULONEMIA* FROM THE GUAYANA HIGHLANDS

1. Foliage leaf sheaths with marginal fimbriae.
 2. Foliage leaf blades with midrib excentric, placed 5–7 mm from one margin of a blade 22–25 mm wide; 600–700 m, Cerro Huachamacari, Amazonas, Venezuela _____ **A. sp. A** (Judziewicz 2004)
 2. Foliage leaf blades with midrib placed centrally on a blade 30–60 mm wide; 2200 m, Bolívar and Amazonas, Venezuela _____ **A. aff. subpectinata** (Kuntze) McClure
1. Foliage leaf sheaths lacking marginal fimbriae.
 3. Foliage leaf sheath summits prominently auriculate; 1000–2000 m, Cerro Duida, Amazonas, Venezuela _____ **A. sp. B** (Judziewicz 2004)
 3. Foliage leaf sheath summits lacking auricles.
 4. Dwarf plants ca. 0.5 m tall; foliage leaf blades ca. 4 cm long, 0.7 cm wide; 2600 m, Cerro Marahuaka, Amazonas, Venezuela _____ **A. sp. C** (Judziewicz 2004)
 4. Plants 1–3 or more m tall; foliage leaf blades 11–37 cm long, 1.8–10.5 cm wide.
 5. Foliage leaf sheaths smooth and shiny, the blades 25–37 cm long, 7–10.5 cm wide; fimbriae 7–10 mm long; 1500–2100 m, Guyana _____ **A. nitida** Judz.
 5. Foliage leaf sheaths striate and dull, the blades 11–20 cm long, 1.8–4.5 cm wide; fimbriae 10–20 mm long.
 6. Spikelets 12–20 mm long, 4–5-flowered; 2100–2800 m, Bolívar, Venezuela and adjacent Guyana _____ **A. deflexa** (N.E. Brown) McClure
 6. Spikelets 22–70 mm long, 9–23-flowered.
 7. Spikelets 22–40 mm long, 9–15-flowered; lemmas 8–10 mm long, obtuse, slightly tridentate at apex, glabrous to sparsely puberulent on the back, the margins short-ciliate; 2100–2200 m, Macizo de Chimantá, Bolívar, Venezuela _____ **A. chimantaensis** Judz. & Davidse
 7. Spikelets (20–)40–70 mm long, 11–23-flowered; lemmas 10–13 mm long, acute, densely puberulent throughout with prickly-like hairs; 1900–2100 m, Cerro Jaua, Bolívar, Venezuela _____ **A. jauaensis** Judz. & Davidse

ACKNOWLEDGMENTS

I thank Lynn G. Clark for encouraging me to publish this paper; the curators of MO, US, and WIS for loans; Emily Lain for the illustration; and Paul M. Peterson for a thorough and helpful review.

REFERENCES

- BOGGAN, J., V. FUNK, C. KELLOFF, M. HOFF, G. CREMERS, and C. FEUILLET. 1997. Checklist of the plants of the Guianas. 2nd ed. Biological Diversity of the Guianas Program, Smithsonian Institution, Washington, DC.
- CLARK, L.G. 1989. Systematics of *Chusquea* section *Swallenochloa* sect. *Swallenochloa*, section *Verticillatae*, section *Serpentes*, and section *Longifoliae* (Poaceae: Bambusoideae). Syst. Bot. Monogr. 27:1–127.
- CLARK, L.G. 1992. *Chusquea* sect. *Swallenochloa* (Poaceae: Bambusoideae) and allies in Brazil. Brittonia 44:387–422.
- CLARK, L.G., X. LONDOÑO, and M. KOBAYASHII. 1997. *Aulonemia bogotensis* (Poaceae: Bambusoideae), a new species from the Cordillera Oriental of Colombia. Brittonia 49:503–507.
- JUDZIEWICZ, E.J. 1991. Family 187. Poaceae. 1991 [as 1990]. In: A.R.A. Gorts-Van Rijn, ed., Flora of the Guianas, Series A: Phanerogams. Koeltz Scientific Publications, Königstein, Germany.
- JUDZIEWICZ, E.J. 2004. *Aulonemia*. In: Steyermark, J.A., P.E. Berry, K. Yatskievych, and B.K. Holst, eds. Flora of the Venezuelan Guayana, Vol. 8: Poaceae–Rubiaceae. Missouri Botanical Garden Press, St. Louis. Pp. 40–45.
- JUDZIEWICZ, E.J., L.G. CLARK, X. LONDOÑO, and M.J. STERN. 1999. American Bamboos. Smithsonian Institution Press, Washington, DC.
- JUDZIEWICZ, E.J., G. DAVIDSE, and L.G. CLARK. 1991. Six new bamboos (Poaceae: Bambusoideae: Bambuseae) from the Venezuelan Guayana. Novon 1:76–87.
- JUDZIEWICZ, E.J., R.J. SORENG, G. DAVIDSE, P.M. PETERSON, T.S. FILGUEIRAS, and F.O. ZULOAGA. 2000. Catalogue of New World grasses (Poaceae): I. Subfamilies Anomochlooideae, Bambusoideae, Ehrhartoideae, and Pharoideae. Contr. U.S. Natl. Herb. 39:1–128.
- POHL, R.W. and G. DAVIDSE. 1994. *Aulonemia*. In: Davidse, G., M. Sousa-S., and A.O. Chater, eds. Flora Mesoamerica. Vol. 6, Alismataceae a Cyperaceae. Universidad Autónoma de México, Mexico, D.F. Pp. 198–199.



Judziewicz, Emmet J. 2005. "AULONEMIA NITIDA (POACEAE: BAMBUSOIDEAE: BAMBUSEAE), A NEW SPECIES FROM GUYANA." *SIDA, contributions to botany* 21, 1263–1267.

View This Item Online: <https://www.biodiversitylibrary.org/item/34585>

Permalink: <https://www.biodiversitylibrary.org/partpdf/163685>

Holding Institution

Missouri Botanical Garden, Peter H. Raven Library

Sponsored by

Missouri Botanical Garden

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.