

Dendrocalamus xishuangbannaensis (Poaceae: Bambusoideae), a new species from Yunnan, China

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Received 19 Sep. 2008, revised version received 26 Oct. 2008, accepted 12 Dec. 2008

Mao, W., Yang, H. Q. & Li, D. Z. 2009: *Dendrocalamus xishuangbannaensis* (Poaceae: Bambusoideae), a new species from Yunnan, China. — *Ann. Bot. Fennici* 46: 574–576.

Dendrocalamus xishuangbannaensis D.Z. Li & H.Q. Yang (Poaceae: Bambusoideae), a new species from southern Yunnan, China, is described and illustrated. It is characterized by branching from the nodes ca. 0.5–1.0 m above ground, white hairs on lower surface of leaf blade, yellow-green pseudospikelets, four or five florets per pseudospikelet, and only four fertile florets.

Key words: *Dendrocalamus*, new species, Poaceae, taxonomy

During examining of local bamboo species for pulp in Xishuangbanna Autonomous Prefecture, Yunnan Province, China, we found a species resembling *Dendrocalamus giganteus*, yet with clearly different features. After a closer morphological study, concerning in particular inflorescence structures, literature research (Li & Hsueh 1988, 2003, Dransfield & Widjaja 1995, Keng & Wang 1996, Li & Stapleton 2006), and examination of many specimens, we concluded that it represented a new species of *Dendrocalamus*.

Dendrocalamus xishuangbannaensis

D.Z. Li & H.Q. Yang, *sp. nova* (Fig. 1)

Affinis *D. giganteo*, *sed infra nodos ramiferos 0.5–1.0 m alti, laminis subtus pilosis, pseudospiculis flavovirentibus, lemmatis apice aristis*

0.3–1.0 mm longis, flosculis 4 vel 5, et flosculis fertilis 4 differt.

TYPE: China. Yunnan, Menghai County, Gelanghe, 1320m, roadside on edge of bamboo forest, 12.IX.2007 Yang Han-Qi 074 (holotype KUN; isotype SWFC).

Arborescent, culms 14–28 m, 10–22 cm in diameter; tip slightly drooping. Internodes terete, with a ring of brown tomentum below sheath scars; 25–50(55) cm long, wall 1–3 cm thick, initially brown setose and white powdery, becoming glabrous and deep green. Branching from lower nodes ca. 0.5–1.0 m above ground; branches several, usually equal or sometimes 3 dominant. Culm sheaths deciduous, yellowish brown, thickly leathery, brown hairy; margins broadly rounded; auricles 1–3 mm high, reflexed, wavy; oral setae absent; ligule 10–15 mm high, serrulate to dentate; blade reflexed,



Fig. 1. *Dendrocalamus xishuangbannaensis* (from the holotype, drawn by Hongbing Wang). — **A:** Culm sheath exterior. — **B:** Pseudospikelet. — **C:** Leafy branch. — **D:** Part of flowering branch. — **E:** Glume. — **F:** Lemma. — **G:** Palea. — **H:** Pistil. — **I:** Floret. — **J:** Stamen.

lanceolate, 10–25 cm long, involute at the tip. Leaf sheaths glabrous; ligule 1–2 mm high, serrulate; auricles sparsely hispid, usually deciduous; blade 5–10, narrowly lanceolate, 15–35 cm long, 2.0–4.0 cm wide, with white hairs on lower surface. Flowering branches pendulous, leafless, 1–3 m long. 5–10(15) pseudospikelets clustered in a spiky globose mass at each node of flowering branches, 1.5–3.0 cm in diameter. The internodes of secondary flowering branches 1.5–10.0 cm long. Pseudospikelets ovate-lanceolate, apically acute, nearly glabrous, yellow-green, 11–15 mm long, 4–7 mm wide. Florets 4, occasionally 5, apical one sterile when 5; densely imbricated. Glumes 1–3, 4–6 mm long; lemma broadly ovate, 1.0–1.5 cm long, 0.8–1.0 cm wide, margins ciliate, apex mucronate, 0.3–1.0 mm long; palea equal to or slightly longer than lemma, 2-keeled, keels ciliate. Lodicule absent.

Stamens 6, ca. 7.5 mm long. Pistil 1.2–1.5 cm long, shortly hairy. Ovary ovoid, hairy; stigma 1, plumose. Flowering June–October. Fruit unknown.

Dendrocalamus xishuangbannaensis is known only from Xishuangbanna Autonomous Prefecture, at altitudes of ca. 600–1800 m. The first flowering specimens collected in Menghai County, Xishuangbanna, indicate its generic placement. It morphologically resembles *D. giganteus* by having white powdery covering on the surface of internodes when young, and a similar culm sheath. However, there are several differences between the two species (Table 1).

Dendrocalamus xishuangbannaensis is an economically important species in Xishuangbanna. It is one of the toughest bamboos and is thus extensively used for construction purposes and for producing furniture. In addition, the fiber

Table 1. Comparison of *Dendrocalamus xishuangbannaensis* with *D. giganteus*.

Character	<i>D. xishuangbannaensis</i>	<i>D. giganteus</i>
Branching habit	branching from nodes ca. 0.5–1.0 m above ground	branching from nodes ca. 2.5–3.0 m above ground
Leaf blade	white hairs on lower surface	glabrous
Color of pseudospikelet	yellow-green	purple
Apex of lemma	spinescent, awn 0.3–1.0 mm	acuminate
Pseudospikelet	4 or 5 florets	5–8 florets
Fertile florets	4	4–7

length and SiO₂ content of *D. xishuangbannaensis* (5.25 mm and 0.25%, respectively, Lin 2006), indicate that this bamboo has a great potential for paper and pulp industries.

Acknowledgements

We thank anonymous reviewers for their constructive comments and suggestions; Mao-Sheng Sun, Jian-Guo Zhou, Rong Li and Ming-Huan Xiang for their kind help during collecting fertile specimens; Hongbing Wang for drawing the illustration; De-Chang Kong and Jian-Feng Nie for collecting and preliminarily identifying voucher specimens; and Prof. Yu-Ming Yang for taxonomical advice. This work was funded by the projects of Research Institute of Resources Insects, Chinese Academy of Forestry (grant no. Riri200702M), the State Forestry Administration of China (grant no. 2008-4-30), International Centre for Bamboo and Rattan (grant no. 06/07-D37), the Department of Science and Technology of Yunnan (grant no. 2007GA014), and the Ministry of Science and Technology of China (grant no. 2006BAD19B03).

References

- Dransfield, S. & Widjaja, E. A. 1995: *Plant Resources of South-East Asia 7: Bamboos*: 80–97. — Backhuys Publ., Leiden.
- Keng, P. C. & Wang, C. P. 1996: *Flora Reipublicae Popularis Sinicae 9(1): Bambusoideae*: 152–196. — Sci. Press, Beijing.
- Li, D. Z. & Hsueh, C. J. 1988: A study on the genus *Dendrocalamus* Nees from China II. — *J. Bamb. Res.* 7: 4–7.
- Li, D. Z. & Hsueh, C. J. 2003: *Dendrocalamus*. — In: Sun, B. X., Li, D. Z. & Hsueh, C. J. (eds.), *Flora Yunnanica* 9: 33–55. Sci. Press, Beijing.
- Li, D. Z. & Stapleton, C. 2006: *Dendrocalamus*. — In: Wu, Z. Y., Raven, P. H. & Hong, D. Y. (eds.), *Flora of China* 22 (Poaceae): 39–46. Sci. Press, Beijing & Missouri Bot. Garden Press, St. Louis.
- Lin, B. 2006: [Bamboo species choice for pulp project in Jinghong, Xishuangbanna]. — In: [*Integrated investigation and research report on forestation project of 33334 km² bamboo forest for pulp industry in Jinghong, Xishuangbanna*]: 20–23. Kunming Survey & Design Institute of State Forestry Administration. [In Chinese].