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Dendrocalamus exauritus, a new combination (Poaceae: Bambusoideae)

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Based on field studies of morphology and the study of type specimens, a Chinese species of bamboo previously recognized as *Drepanostachyum exauritum* W.T. Lin is treated as *Dendrocalamus exauritus* (W.T. Lin) N.H. Xia & Y.B. Guo, *comb. nova*.

The genus *Dendrocalamus* was established by Nees von Esenbeck (1834) based on *D. strictus*. Up to now the genus is considered to include about 40 species that are widely distributed in tropical and subtropical Asia, from southern China extending to Malaya. *Drepanostachyum* was established by Keng (1983) based on *D. falcatum*. Currently, ten species of the genus are described from the south Himalayan region and south-west of China. The species in the two genera have pachymorph rhizomes and caespitose clumps, and their culm-sheaths are usually deciduous with dark brown hairs. The two genera can be distinguished by many characters, such as leaf ligules (short or long), stem habit (erect or prostrate), inflorescence (interauctant or semelauctant), the number of the stamens (six or three), and so on.

Drepanostachyum exauritum W.T. Lin was published by Lin and Wu (1992) based on a specimen collected from Qixingyan, Guilin, Guangxi, China. They described this bamboo as a species of *Drepanostachyum* without inflorescence, but inflorescence is frequently necessary to correctly place a species in the proper genus of Bambusoideae. The generic placement of this species was regarded as suspect in the *Flora of China* (Li & Stapleton 2006). In 1982, some plants were introduced from the type locality of *D. exauritum* into the Bamboo Garden of SCBG (South China Botanical Garden) by Feng Hok-lam, and they flowered in 2009. It was possible to confirm that this taxon was the same as *D. exauritum* by comparing the characteristics of the SCBG plant from Guilin with those of the type specimen.

According to Lin and Wu's (1992) description, *D. exauritum* has short leaf ligules (ca. 1 mm) and an erect stem (solid or with a thick wall). These characters are closer to *Dendrocalamus* than to *Drepanostachyum*, all species in which always have long leaf ligules and hollow stems with a thin wall (Keng 1983). Also, in *Drepanostachyum* the stems are typically prostrate, unless leaning on other plants. However, most species of *Dendrocalamus* have short leaf ligules and hollow stems with a thick wall, and some species even have solid stems in drier sites. In fact, *Dendrocalamus* belongs to a

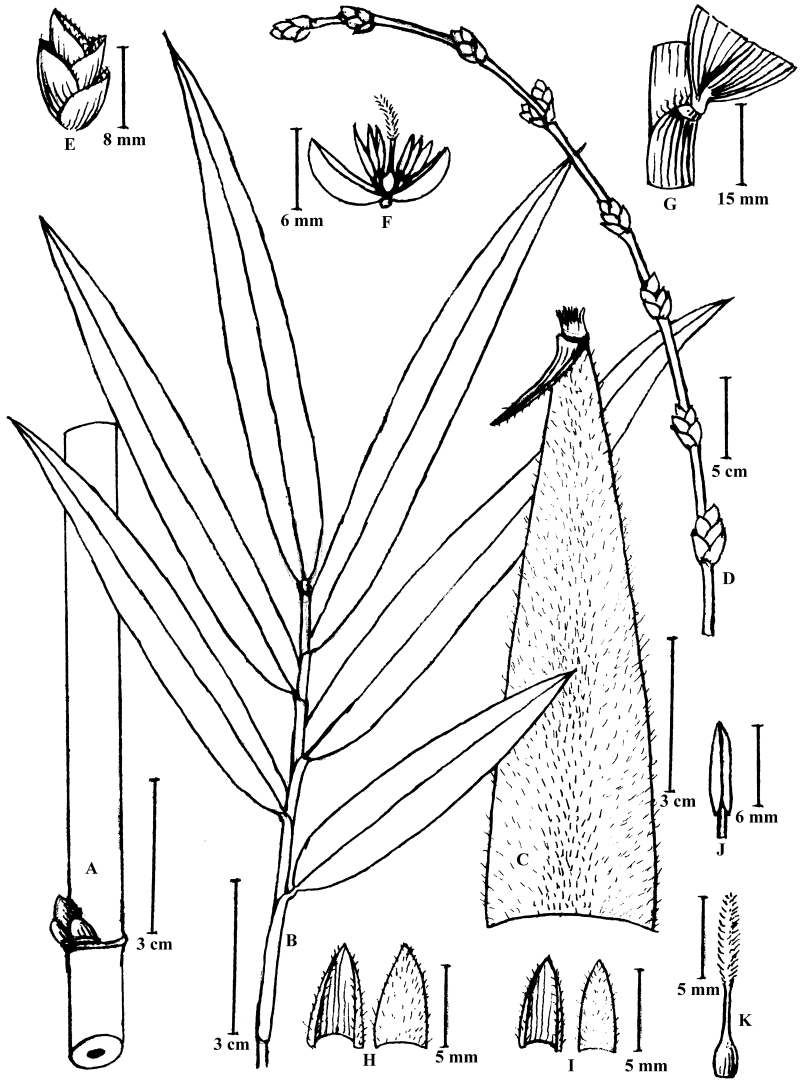

Fig. 1. *Dendrocalamus exauritus* (from *Y. B. Guo & Y. O. Yu 9M003*, IBSC). — **A**: Culm. — **B**: Leafy branch. — **C**: Culm sheath. — **D**: Flowering branch. — **E**: Spikelet. — **F**: Floret. — **G**: Leaf sheath. — **H**: Ventral and dorsal view of lemma. — **I**: Ventral and dorsal view of palea. — **J**: Anther. — **K**: Gynoecium.

tropical woody bamboo clade, now treated as the tribe Dendrocalameae, while *Drepanostachyum* belongs to a temperate woody bamboo clade, now treated as the tribe Arundinarieae (Tzvelev 1989). *Drepanostachyum* species will not survive below about 500 m (Stapleton 1994), and their stems die in the winter every year (Keng 1983), but it was at alt. 200–400 m that Lin got his type specimen with a good amount of leaves, culm sheaths and stems. The plants cultivated in SCBG flowered with interauctant inflorescence and six stamens. It was further clear that Lin's species has interauctant inflorescences and six stamens per flower, and so should not be placed in *Drepanostachyum*, which is characterized by semelauctant inflorescences and three stamens per flower.

Lin's species is closer to *Dendrocalamus dumosus*. The two species could be distinguished by the auricles of the culm leaves, the leaf ligules, the number of fertile florets and palea keeled or unkeeled. It is clear that Lin's species should be placed in *Dendrocalamus*, as the smallest bamboo of the genus in China.

Dendrocalamus exauritus (W.T. Lin) N.H. Xia & Y.B. Guo, *comb. nova* (Fig. 1)

Drepanostachyum exauritum W.T. Lin, Journ. Res. Bamb.

11(1): 30. 1992. — TYPE: China. Guangxi, Guilin, Qixingyan, 15.X.1978 *Wan-tao Lin 31819* (CANT!).

Culms 3–4 m, 20–25 mm in diam., erect often at an angle or curved downwards; internodes terete, covered with white powdery deciduous scurf when young, green on maturity; woody, solid or hollow at base; 7–18.5 cm; wall 4–6 mm thick. Nodes with 3 to several branches, dominant branches longer and thicker; the mid-culm node with a solitary primary bud typically developing a dominant primary axis with two lateral, subdominant, secondary axes at its base. Culm leaves deciduous, 10–12 cm long, 3.2–4 cm broad at base, narrowed upwards; abaxially appressed dark-brown hairs; margin hairy; auricles absent; culm-sheath ligule 5 mm; deeply lacerate, with hairs 5–7 mm; imperfect blade linear-lanceolate; reflexed. Leaf-sheath oral hairs scanty; 5–8 mm; ligules ca. 1 mm; fimbriate; blades lanceolate; 10–17.5 × 1.4–2.5 cm; glabrous above, softly hairy beneath; secondary veins 6–7 at both sides, transverse veinlets inconspicuous; blade base cuneate, or broadly rounded; without a false petiole, or with a brief petiole-like connection to sheath; petiole 1–2 mm. Synflorescence bractiferous; pseudospikelets 4–9 per node; with axillary buds at base of spikelet; prophyllate below lateral spikelets; leafless between clusters. Spikelets purple; 5–10 × 3–5 mm; fertile florets 2–3; without rhachilla extension; breaking up at maturity, disarticulating below each fertile floret. Glumes 2; persistent; similar; shorter than spikelet; lemma broadly ovoid; 5–7 mm; glabrous; chartaceous; apex short mucronate; palea narrowly ovoid, involute, keels 2; glabrous; chartaceous. Lodicules absent. Stamens 6; anthers 5–7 mm; yellow; filaments fine. Ovary umbonate, sessile, hairy above and surmounted by a long style ending in a purple feathery stigma. Caryopsis with adherent pericarp; globose; 2–3 mm in diam.

DISTRIBUTION: It is only found in the type locality in Guilin, Guangxi, China. It grows on the limestone hills at altitude of 200–400 m. Ma and Zhang (2007) reported this species from Huishui County and Changshun County of Guizhou Province, but the pictures of the reported species do not match *Dendrocalamus exauritum*. The first picture shows two flowering branches with semelauctant inflorescence, and the fourth picture shows some diffuse culms.

ADDITIONAL SPECIMEN EXAMINED. — **China**. Guangdong: SCBG, Guangzhou, 50–300 m, 7.VII.2009 *Y. B. Guo & Y. O. Yu 9M003* (IBSC).

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