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Notes on *Dendrocalamus longifimbriatus* (Poaceae-Bambusoideae) from Myanmar

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ABSTRACT. *Dendrocalamus longifimbriatus* Gamble was described based on material with mixed elements. The flowering branches resemble young inflorescences of *Dendrocalamus membranaceus* Munro and the leafy branches belong to a different genus. Accordingly, *D. longifimbriatus* is typified by the flowering branches. That name is also a synonym of *D. membranaceus* Munro.

Gamble (1896) described *Dendrocalamus longifimbriatus* based on poorly documented specimens. There are four mounted specimens consisting of two flowering branches and two leafy branches, all of which make up the original material for Gamble's description. Proper labels are lacking, but there is a piece of paper with Burmese letters and the date 1/11/1891; there is no mention of a collector's name or a number. Gamble mentioned that the specimens were sent from the Kyaukshat and Maliwón forest at the extreme south of the Mergui District, Tenasserim, Myanmar. The specific name alludes to the large auricle of the leaf-blade.

In these two flowering branches, pseudospikelets are present, which are arranged in a fascicle at each node of the main or branch axes. Thus the inflorescence is indeterminate. Gamble stated that the inflorescence is too young for very accurate description, but that it comes near to *Dendrocalamus longispathus* Gamble.

After careful examination of the flowering parts, it seems that the inflorescence and its spikelet resemble those of *Dendrocalamus membranaceus* Munro. The pseudospikelet unit has two florets; the upper floret is perfect, the lower is often imperfect; the ovary has a swollen, minutely pubescent apex and a long style with one stigma.

The leafy branches match those of the bamboo collected by Parker (*Parker* 2733), and by Sukos (*Sukos* 7659) from the same region, which are terminated by inflorescences, apparently resembling those of *Neohouzeoua* A. Camus (Dransfield et al., 2003). The inflorescences of *Parker* 2733 and *Sukos* 7659 are totally different from those in the flowering specimens of *D. longifimbriatus*. Thus there is no doubt that *D. longifimbriatus* is based on a mixed collection. Here we select the flowering branches as lectotype material for the name *D. longifimbriatus*, and also accordingly reduce *D. longifimbriatus* to the synonymy of *D. membranaceus*.

Stapleton & Xia (1997) transferred *D. membranaceus* to *Bambusa* on the grounds that the leaf-blades are small and prophylls in the inflorescence are two-keeled. However, the structure of the pseodospikelet unit was not fully discussed. The authors did not mention to which species of *Bambusa* the new combination is related or resembles,

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but it is compared with *B. bambos*. *Dendrocalamus membranaceus*, however, is distantly related to *B. bambos*. In *Wallich* Cat. 5029 (type of *D. membranaceus*) the spikelet comprises two perfect florets lacking an uppermost vestigial floret, and the ovary has a swollen hairy apex and a long style with one stigma (undivided), two of the characters found in species of *Dendrocalamus* allied closely to the type species, *D. strictus* (Holttum 1956, 1958; Wong, 1995). In *Bambusa bambos*, as in other *Bambusa* species, the spikelets consist of 4–6 florets with a vestigial uppermost floret; the ovary has short style with three plumose stigmas.

Dendrocalamus membranaceus is not the only species in the genus possessing small leaf-blades; *D. elegans* (Ridl.) Holttum, found on limestone hills in Peninsular Malaysia and southern Thailand, also has small leaf-blades. The size of the leaf-blades cannot be used to differentiate *Dendrocalamus* from *Bambusa*, although on occasion it is useful when combined with other characters.

Elucidation of prophyll structure in Stapleton & Xia (1997), in particular that *Bambusa* can be separated from *Dendrocalamus* by the broad, 2-keeled prophyll subtending the synflorescence, may require further substantiation. In this matter, it is important that old, dried material be assessed in relation to fresh material of both genera from field studies. Given the homology between this prophyll and the prophyll subtending the branch complement at culm nodes, marked variation is not expected to occur between *Bambusa* and *Dendrocalamus* which, indeed, do belong to the same group of genera. As far as reported, no careful study of this has been carried out that is mindful of pseudospikelet and flower characters delimiting core alliances around each genus.

Branches at a mid-culm node are typical of a bamboo genus or groups of allied genera. In the closely related genera, *Bambusa*, *Dendrocalamus* and *Gigantochloa*, branches at mid-culm node comprise a dominant middle branch and two to several secondary branches. Stapleton & Xia (1997) state that branches in *Bambusa bambos* and *Bambusa* (*Dendrocalamus*) *membranaceus* are uniform. The branches at mid-culm are in fact not uniform in size, the central or primary axis being typically dominant (Soderstrom & Ellis, 1988; Wong, 1995 a & b; pers. obs.).

Therefore *Dendrocalamus membranaceus* is indeed a species of *Dendrocalamus* and should not have been transferred to *Bambusa*.

Dendrocalamus membranaceus Munro in Trans. Linn. Soc. London 26: 149 (1868).— *Bambusa membranacea* (Munro) Stapleton & N. H. Xia, Kew Bull. 32: 235–238. 1997. Type: Myanmar, *Wallich* Cat. 5029 (lectotype K!, selected by Stapleton & Xia, 1997).— *Dendrocalamus longifimbriatus* Gamble in Ann. Roy. Bot. Calcutta 7: 92–93, Pl. 71. 1896, **synon. nov.** Type: Myanmar, Milwon Forest, flowering branches only, *unknown collector* s.n. (lectotype K!, selected here).

Thailand.— Kanchanaburi, Sisawat, alt. 100 m, fl., 15 Jan. 1926, *Kerr* 10199 (K); Phrae, alt. 700 m, fl., 9 Jan. 1972, *Beusekom et al.* 4764 (BKF, K, L.); Mae Sariang, sterile, 27 Oct. 1997, *Dransfield et al*. SD1446 (BKF, K).

Laos.— Between Ban Thalat and the dam Nam Ngun Reservoir, sterile, 29 Oct. 1974, *Soderstrom* 2088 (K, US).

Myanmar (Burma).— Tharawaddy, Gamon-Minhla watershed, alt. 230 m, fl., 3 March, 1911, *Rogers* 45 (K); l.c., Gamon Reserve, alt. 150 m, fl., 3 March 1911, *Rogers* 46 (K).

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