**Gigantochloa multifloscula** sp. nov. (Poaceae: Bambusoideae), a new species from Vietnam

**Hoang Nghia NGUYEN**
Forest Science Institute of Vietnam, Dong Ngac, Tu Liem, Hanoi (Vietnam)
nhngia@netnam.vn

**Nianhe XIA**
Key Laboratory of Plant Resources and Sustainable Utilization
Guangdong Provincial Key Laboratory of Digital Botanical Garden, South China Botanical Garden, 510650 Guangzhou (China)
nhxia@scbg.ac.cn

**Van Tien TRAN**
Chinese Academy of Sciences, Key Laboratory of Plant Resources and Sustainable Utilization
Guangdong Provincial Key Laboratory of Digital Botanical Garden, South China Botanical Garden, 510650 Guangzhou (China) and Forest Science Institute of Vietnam, Dong Ngac, Tu Liem, Hanoi (Vietnam)
tvtien117@yahoo.com


**ABSTRACT**

*Gigantochloa multifloscula* H.N.Nguyen, N.Xia & V.T.Trans, sp. nov. is described and illustrated as a new plant species that was previously treated as *Gigantochloa* sp. Pham, but unnamed. Based on its vegetative, inflorescence, and basic spikelet structures, *Gigantochloa multifloscula* sp. nov. shares characters with most other *Gigantochloa* species but differs in the position of florets in pseudospikelet and branches. Investigating essentially these aspects for *G. multifloscula* sp. nov., we found many additional characters for this genus, which indeed has mid-culm branch complement with no dominant branch, culm wall thin and florets falling together.

**KEY WORDS**
INTRODUCTION

The genus *Gigantochloa* Kurz ex Munro, 1868 was established by Kurz ex Munro in 1868, based on *Gigantochloa atter* Kurz and currently consists of about 30 species, distributed in South and Southeast Asia, with the majority of the species in India, Malaysia, Indonesia, Philippines, Thailand, Laos and Vietnam (Ohrnberger 1999; Li & Stapleton 2006). This genus is characterized with respect to the other genera of the subtribe Bambusinae Presl by its spikelets with a sterile terminal floret with lemma only, sessile, lodicules absent, filaments joined to form a tube, ovary with hairs at top, stigma 1 (Munro 1868; Gamble 1896; Holttum 1946, 1956, 1958; Wong 1995; Dransfield & Widjaja 1995; Widjaja 1997; Li & Stapleton 2006).

In Vietnam, the genus *Gigantochloa* was taxonomically studied by several authors (Camus & Camus 1923; Ho 2000), and currently consists of about 8 species (Pham 2000). Among these taxa, *Gigantochloa* sp. whose vernacular name is “mum” was described by Pham (2000) in *An Illustrated Flora of Vietnam* based on specimens in Paris (P). In distinguishing among related taxa, Pham discovered that *Gigantochloa* sp. has in common such character as the presence of pseudospikelets consisting of 4-5 perfect flowers. Otherwise, we checked all the specimens of this species that have been collected in Vietnam during the years 1865-1954 and stored in P such as: Pierre 6665 (1865), Poilane 17328 (1930), Schmid 1506 (1953), 1828 (1954); none of them was designated as type. Thus the brief description given in this book was still inadequate for assessment of which species Ho intended to name (Ho 2000), because he did not cite any holotype, Latin diagnosis and did not provide anymore for that species.

In May 2005 and August 2008, expeditions to Da Huoai and Da Teh districts (Lam Dong Province), Chua Chan Mountain (Dong Nai Province), Southern Vietnam, the localities of the specimens collected by Pierre, Poilane and Schmid, were undertaken by us. Some gathered specimens matched the description and illustration of *Gigantochloa* sp. in the structure and position of their spikelets. The present paper is a description of this interesting species, including fresh materials and sheets kept in Paris (P).

MATERIAL AND METHODS

All Vietnam *Gigantochloa* specimens in the herbarium of the Muséum national d’Histoire na-
A new species of *Gigantochloa* from Vietnam

turelle, Paris (P), and especially referred to *Pierre 6662, Poilane 17328, Schmid 1506, 1828*, were examined in 2010. Field surveys were conducted in all areas where *Gigantochloa* sp. is growing in Vietnam. Furthermore, related literature (Munro 1868; Gamble 1896; Holttum 1958; Wong 1995; Dransfield & Widjaja 1995; Widjaja 1997; Li & Stapleton 2006) was also used.

![Fig. 1. — Gigantochloa multifloscula H.N.Nguyen, N.Xia & V.T.Tran, sp. nov.: A, culm; B, culm sheath; C, section of leafy branch; D, section of flowering branch; E, spikelet; F, florets; G, lemma; H, dorsal (right) & ventral (left) views of palea; I, sterile terminal floret with lemma only; J, stamen; K, ovary. A-C, drawn from paratype; D-K, drawn from type. Scale bars: A, 2 cm; B, 3 cm; C, 3.5 cm; D, E, 2.5 cm; G, 1.5 mm; H, 0.6 mm; I, 0.5 cm; J, 0.8 mm.](image-url)
SYSTEMATICS

*Gigantochloa multifloscula*

H.N.Nguyen, N.Xia & V.T.Tran, sp. nov.  
(Fig. 1)

*Species nova habitu ceteris Gigantochloae speciebus similis, sed ramis aequalis, flosculisque compositis, differt.*


**Paratypus.** — *Vietnam*. Prov. Dong Nai, Cat Tien, Km 140 on the road Saigon to Dalat, fl. 15.V.2005, 150 m asl, *H.N.Nguyen, V.T.Tran 52005460* (Herbarium of the Forest Science Institute of Vietnam – FSIV!).


**Distribution Habitat and Local uses.** — *Gigantochloa multifloscula* sp. nov. was found in several populations. They grow in the degraded natural forest in valleys and mountain gorges, between 100 and 800 m asl, southern Vietnam. This species is of considerable importance to the local people. Its culms are used for making handicrafts and household tools. The shoots are edible.

**Etymology.** — The specific epithet refers to the spikelet comprising 4-5 florets.

**Description**

Densely tufted with rhizomes short, pachymorphous. Culms erect, 4-8 m tall; internodes 20-30 cm long and 3-5 cm in diameter, when young densely covered with appressed white hairs, becoming rough by silicifying; culm walls 3-5 mm thick; nodes slightly swollen. Mid-culm branch complement with three subequal branches, and usually several smaller branchlets from its base. Culm sheaths early deciduous, when young greenish brown and densely covered with appressed black brown bristles on the abaxial side, then becoming yellow and glabrous, 13-15 × 9-11 cm, apex 3-4 cm wide, with dense purple brown marginal hairs; blade triangular, erected, when young densely covered with appressed black brown bristles on both sides, then glabrous, 8-10 × 2.5-3.5 cm: auriculate low rim c. 2 × 1 mm; ligule 1-2 mm long. Leaf blades oblong-ovate, base broadly cuneate, 24-28 × 3-3.5 cm, veins 9-10 pairs, adaxial side densely covered by white cilia; leaf sheaths glabrous, one margin erect the second horizontal; ligulate low rim c. 2 mm long; petiole 4 × 3 mm. Pseudospikelets in clusters at the distal nodes, c. 10 mm long; 4-5 fertile florets, falling together, a sterile terminal floret and 2-3 sterile basal florets with lemma only; lemma ovate-orbicular, c. 8-9 mm wide, veins 18-20 pairs, apex obtuse with a mucro c. 0.5 mm long, densely covered by white cilia along the margins hyaline, and white bristles at the base of the abaxial side; palea 2-keeled, oblong-lanceolate 5-7 × 3-4 mm, veins inconspicuous, with dense white bristles along the margins and sparse white cilia on the abaxial side, apex bifid; lodicules absent; stamens 6, filaments joined in a tube c. 5-6 × 0.3 mm: style slender; stigma 1 plumose; ovary hairy. Fruit unknown.

**Remarks**

This remarkable species is quite dissimilar to those already published for *Gigantochloa*, currently recognized by its mid-culm branch complement with no dominant branch, wall thin, florets falling together, lemma ovate-orbicular, 8-9 × 8-9 mm.

**Acknowledgements**

The authors would like to express their sincere thanks to IPGRI, especially to Dr L.T. Hong for supporting the field surveys of bamboo species in Vietnam; to Ministry of Scientific and Technology, Ministry of Agriculture and Rural Development for supporting the research project on Conservation of Forest Genetic Resources in Vietnam which also includes bamboo species; to National Foundation for Science & Technology Development for supporting the research project on enumeration of bamboo taxa in Southern and Central Vietnam. We also gratefully acknowledge South China Botanical Garden (SCBG), Dr Diep My Hanh (leader of the SEP Bamboos Project) for supporting to check the collected specimen of *Gigantochloa* sp. in the Muséum national d’Histoire naturelle, Paris. We
A new species of *Gigantochloa* from Vietnam

Fig. 2. — Field photographs of *Gigantochloa multifloscula* H.N.Nguyen, N.Xia & V.T.Tran, sp. nov.: A-E, holotype (Schmid 1506); B, lemma; C, dorsal & ventral views of palea; D, sterile terminal floret with lemma only; E, ovary; F, clump; G, section of culm bearing culm sheaths; H, paratype (H.N.Nguyen, V.T.Tran 52005460), culm sheath; I, flowering branches; J, section of flowering branches; K, spikelet; L, M, florets; N, stamens; O, filaments fused into a tube.
also thank Drs E. A. Widjaja and V. Malécot for their valuable comments.

REFERENCES


Submitted on 3 September 2010; accepted on 5 May 2011.