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Bambusa nghiana sp. nov. (Poaceae: Bambusoideae),
a new species from Thanh Hoa Province, Vietnam

Van Tien TRAN



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***Bambusa nghiana* sp. nov. (Poaceae: Bambusoideae), a new species from Thanh Hoa Province, Vietnam**

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KEY WORDS

Bambusineae,
Poaceae,
Vietnam,
bamboo,
new species.

ABSTRACT

A new species of *Bambusa* (Poaceae: Bambusoideae), *B. nghiana* V.T. Tran, sp. nov., is described and illustrated from Thanh Hoa Province, Vietnam. This species is similar to *B. gurgandii* K.M. Wong & Diep, but differs by its long internodes, blade auricles lobed and not spreading, and upcurved at the end, 2-4 perfect flowers, one terminal vestigial flower.

RÉSUMÉ

Bambusa nghiana sp. nov. (Poaceae: Bambusoideae), une espèce nouvelle de la province de Thanh Hoa, Vietnam. Une espèce nouvelle du genre *Bambusa* (Poaceae: Bambusoideae), *B. nghiana* V.T. Tran, sp. nov., est décrite et illustrée de la province de Thanh Hoa, Vietnam. Cette espèce ressemble à *B. gurgandii* K.M. Wong & Diep, mais en diffère par ses longs entrenœuds, ses auricules foliaires lobées, non étalées et recourbées vers le haut à leur extrémité, ses 2-4 fleurs complètes et son unique fleur vestigiale terminale.

MOTS CLÉS

Bambusineae,
Poaceae,
Vietnam,
bamboo,
espèce nouvelle.

INTRODUCTION

Bambusa Schreb. (Schreber 1789) is one of the biggest genera in the subtribe Bambusinae of subfamily Bambusoideae (Ohrnberger 1999). More than 156 species are currently recognized in the genus, which is widely distributed in tropical and subtropical Asia (Vorontsova *et al.* 2016). All species of *Bambusa* have sympodially branching rhizomes; erect-suberect culm habit, culm-sheath blades with conspicuously lobed bristly auricles, mid-culm branch complement with a dominant primary axis, pseudospikelets with 3-10 perfect flowers and terminal floret sterile, elongated rachilla internode that disarticulates below the flowers, and hairy ovary apex (Wong 2005; Wong & Diep 2015).

During our investigation of the bamboos from Thanh Hoa Province of North-Centre, Vietnam in August 2005, Dr Nguyen Hoang Nghia collected specimens of a bamboo locally called “Lùng”. Sterile specimens of branches and culm sheaths were collected. Because of this rather limited material and especially in the absence of fertile material, we were only able to determine this bamboo as being a member of genus *Bambusa*, but not determine it as belonging to any currently known species. During a recent visit to Son Dien Commune (Quan Son District, Thanh Hoa Province) in 2019, Dr Nguyen Hoang Nghia fortunately found flowering material. The pseudospikelets of this species are purple brown and characterized by 2-4 perfect flowers and 1 terminal vestigial flower, elongated rachilla internode dislocating below the flowers, hairy ovary apex. Otherwise culm internodes are long and branches are usually absent on lower culms, thus pointing out it is clearly a member of the genus *Bambusa* and belonging to subg. *Lingnania* (McClure 1940; Chia & Fung 1980). After studying specimens and the literature (Chia & Fung 1980; Wong 2005; Wong & Diep 2015), we found they are similar to *Bambusa gurgandii* K.M. Wong & Diep by some features, but differ from *B. gurgandii* by blade no spreading lobed auricles, yet upcurved at the end, 2-4 perfect flowers, and 1 terminal vestigial flower. Therefore, we conclude that “Lùng” is an unknown species and is described here as new.

MATERIAL AND METHODS

Living plants of the species were located in Son Dien Commune of Quan Son District, Thanh Hoa Province, Vietnam. The materials were collected and preserved at the following herbaria: VNMN, VAFS-Herbarium of Vietnamese Academy of Forest Sciences (Thiers 2020, continuously updated).

Vegetative parts were measured in the field, and the reproductive parts were examined and imaged under a stereomicroscope (Olympus CSZ16) linked to a computer. Morphological studies were compared with type specimens in herbaria (CANT, HITBC, IBSC, KUN, LE, P, PE, SING, SWFC, SYS), pictures of the type specimens on websites of herbaria (E, K, L, P, US, W), and the publications by McClure (1940: 1-67), Chia & Fung (1980: 213), Wong (2005: 425-441), Le *et al.* (2006: 9-38), Wong & Diep (2015: 212-218).

SYSTEMATICS

Family POACEAE Rchb.
Subfamily BAMBUSOIDEAE Luerss.
Subtribe BAMBUSINAE J. Presl
Genus *Bambusa* Schreb.

Bambusa nghiana V.T. Tran, sp.nov.
(Figs 1; 2)

This species is distinguished from the closely related *Bambusa gurgandii* K.M. Wong & Diep by having long internode, blade with non spreading lobe-like auricles, auricles upcurved at the end, 2-4 perfect flowers.

TYPUS. — Vietnam. Thanh Hoa Province, Quan Son District, Son Dien Commune, Ban Village, elevation 700 m, 20°27'0.227"N, 104°81'0.713"E, 3.IX.2019, H.N. Nguyen HNN0067 (holo-, Dalat University [DLU]!); iso-, VNMN!, Tay Nguyen Institute for Scientific research [VTN]!).

DISTRIBUTION AND HABITAT. — This species is growing along roads or forest edges in Son Dien Commune, Quan Son District, Thanh Hoa Province, Vietnam. Shoot season is from August to October.

ETYMOLOGY. — The new species is named in honor of Dr Nguyen Hoang Nghia, for his contributions to the bamboo research in Vietnam.

VERNACULAR NAME. — Lùng.

LOCAL USES. — This species is economically valuable to the local people. Its shoots can be used for food, while the culms are often used for house construction, split form as material for making handicrafts, tightening rice cake (the local populations harvest from the wild).

DESCRIPTION

Woody bamboo, rhizomes pachymorph, short-necked. Culm erect, plain color, green when young maturing to yellow, 13-15 m tall, 7-10 cm in diameter. Culm internode terete, basal internode covered with appressed pale hairs with a consistent narrow ring of dense appressed hairs at each node, with a slight white-waxy bloom just above, 60-80 cm long, or up to *c.* 100 cm long; wall thin, often less than 9 mm thick. Branches usually absent on lower culm, branches at mid-culm with the primary axis dominant in size with 2 or several higher-order subequal branches from its base. Culm sheaths on mature culm 25-35 cm long, pale green, infused with white green or yellow green at the top and dense black hairs at the base; basal part at the sheath insertion with a 2-3 mm long, narrow ring-like band of dense dark brown hairs 2-3 mm long; blade 5-8 cm long, broad triangular, erect, not tightly appressed against the next sheath or internode green, with a slight white-waxy bloom on abaxial side, with 1-2 cm long pale brown bristles at the base of the margins; auricles 7-10 mm high, protruding, 1-2 cm long and slightly upcurved at the end, purplish brown with sinuous bristles on the edge 5-10 mm long, ligule a leathery low subentire rim 2-2.5 cm high with narrow triangular margin teeth. Leaves 18-20 × 2.9-3 cm, green on the adaxial side and white green on the abaxial side, glabrous on both surface; auricles with a conspicuous

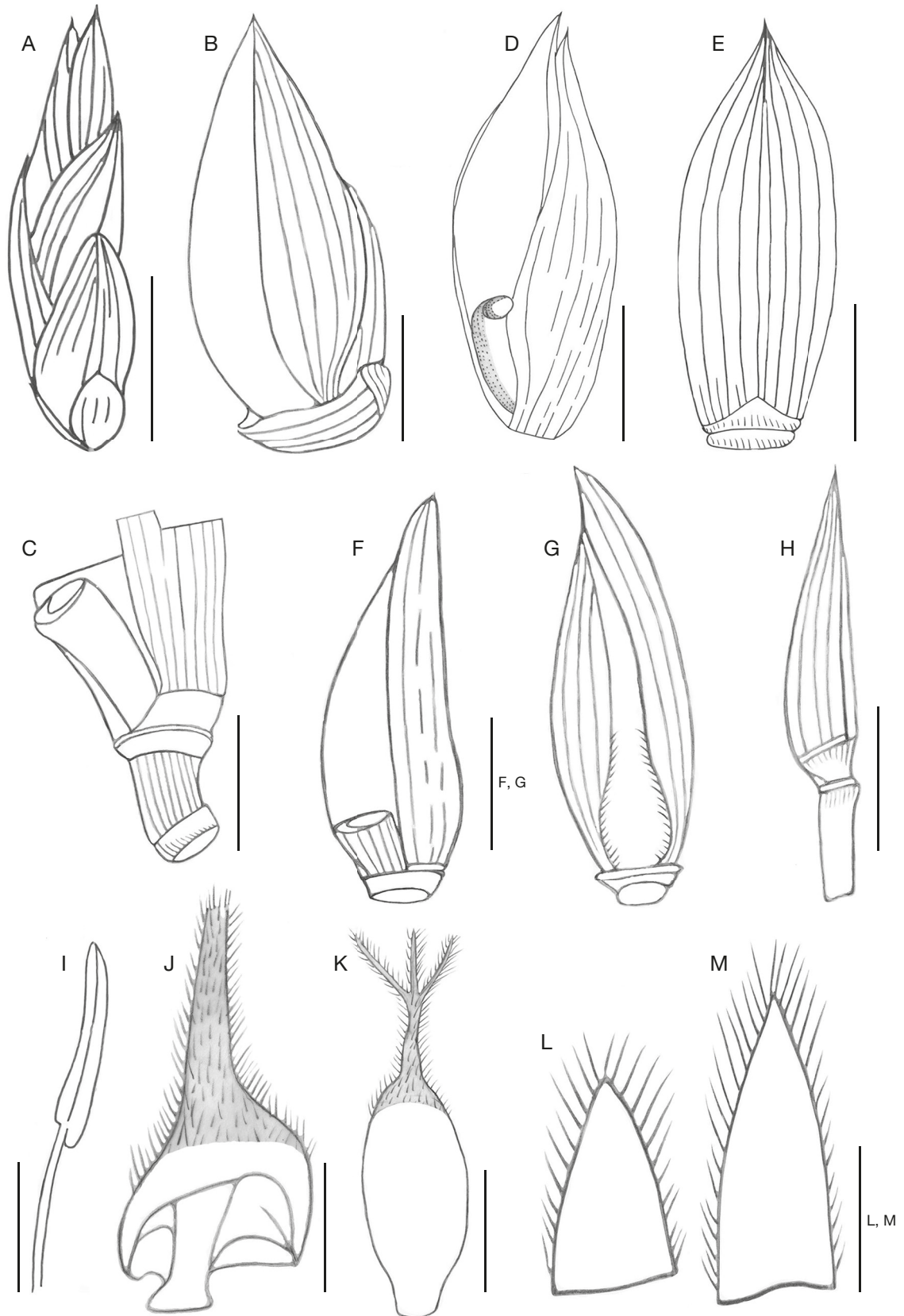


FIG. 1. — *Bambusa nghiana* V.T. Tran, sp. nov.: **A**, pseudospikelet; **B**, two bracts subtending prophyllate buds; **C**, rachilla segment; **D**, flower; **E**, lemma, dorsal view; **F**, palea, dorsal view; **G**, palea, ventral view; **H**, terminal vestigial flower; **I**, anther; **J**, ovary; **K**, fruit; **L**, **M**, lodicules. Drawing by V.T. Tran from the type specimens. Scale bars: A, 1 cm; B, 0.5 cm; C, F, G, 0.2 cm; D, E, 0.3 cm; H, J, 1 mm; I, L, M, 1.5 mm; K, 2.5 mm. Drawn by V.T. Tran.

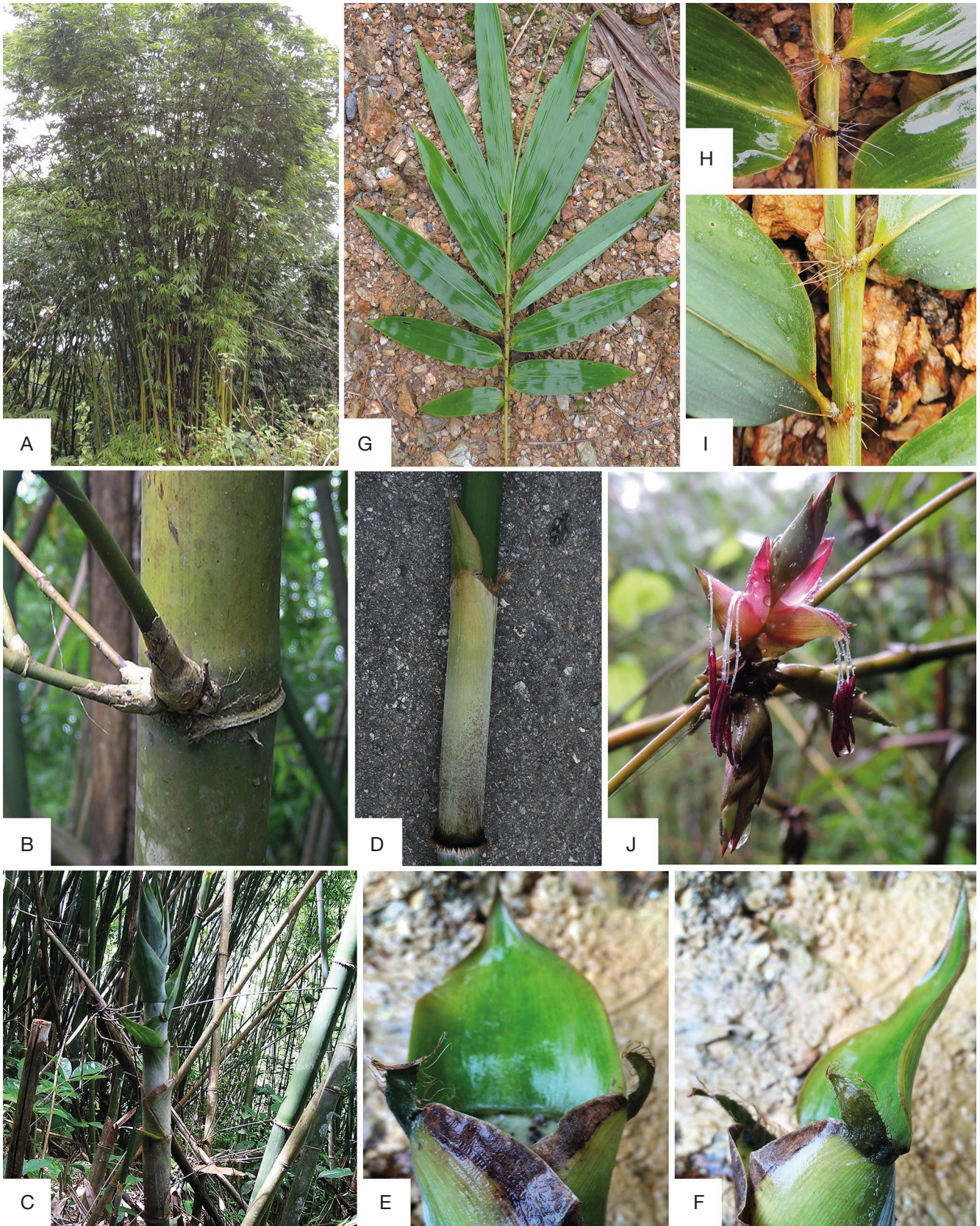


FIG. 2. — *Bambusa nghiana* V.T. Tran, sp. nov.: **A**, clump; **B**, culm and branches complements; **C**, young shoot; **D**, section of shoot; **E**, ventral view of culm sheath; **F**, lateral view of culm sheath; **G**, leaf-complement; **H**, section of upper leaf-complement; **I**, section of below leaf-complement; **J**, part of flowering branch. Photos by H.N. Nguyen.

TABLE 1. — Comparison of *Bambusa nghiana* sp. nov. with *Bambusa gurgandii* K.M.Wong & Diep.

Characters	<i>Bambusa gurgandii</i>	<i>Bambusa nghiana</i> sp. nov.
Internode	40-50 cm	60-80 cm or up to 100 cm
Culm sheath	pale brown to medium brown or black appressed hairs	black appressed hairs at ½ basal part
Culm sheath auricles	spreading lobed auricles, protruding from the sheath, slightly downcurved at the end	not spreading lobed auricles, protruding from the sheath, slightly upcurved at the end
Pseudospikelets	2-3.8 cm	1.7-2 cm
Flower	5-9 perfect flowers	2-4 perfect flowers
Terminal vestigial flowers	1-2	1

laterally spreading narrow lobe 0.5-1 mm high and 1-2 mm long, upcurved at the end, margins with spreading bristles 1-2 cm long; ligule inconspicuous; sheath glabrous. Inflorescences iterant, with the basis flower-bearing unit consisting of pseudospikelets comprising prophyllate buds at their base with the spikelets proper distal to these, the prophyllate buds themselves developing into new pseudospikelet. Pseudospikelet, when mature, pink, 2-2.5 × 1-1.5 cm, each with 1-3 bracts subtending prophyllate buds, large one 0.3-0.5 cm long; 1 empty glume with ciliae margins, 2-4 perfect flowers and 1 terminal vestigial flower consisting of palea only, *c.* 1 cm long; rachilla internode 0.3-0.5 cm long, glabrous and disarticulating between flowers. Flower with lemma 1-1.5 × 0.5-0.8 mm, 18-20 veined, back glabrous and pink, apex acuminate *c.* 1 mm; palea 1-1.1 × 0.5-0.8 mm, 2-keeled, back strongly sulcate, 14-16 veined, glabrous, apex acuminate, the keel thickened, glabrous, the wing 4-veined, glabrous but minutely ciliate margins; lodicules 3, oblong or triangular, 2-3 mm long, 1-2 mm wide, bearing 1-2 mm long cilia on the margins; stamens 6 pink, filaments free, anther 2-3 mm long when extruded; ovary *c.* 1 mm long, ovoid, with thick long hairs *c.* 1 mm long, style *c.* 1 mm long bearing 3 linear stigmas *c.* 2.5 mm long with short hairs. Fruit a caryopsis, obovoid, 5-7 mm long, apex conspicuous acute tip *c.* 1 mm, hairy.

REMARKS

Bambusa nghiana sp. nov. is placed in subgenus *Lingnania* by the characters of culm internodes long, branches usually absent on lower culm, flowers purple. Otherwise, this species may be close to *Bambusa gurgandii*, a species discovered in Khe Tre area, Nam Dong District, Thua Thien Hue Province. It is similar to *B. gurgandii* in basal part at the sheath insertion with a narrow ring-like band of dense spreading hairs, large auricles protruding. However, the new species

differs from the latter by having long internode, blade with non spreading lobe-like auricles, auricles upcurved at the end, 2-4 perfect flowers, one terminal vestigial flower. Differences are summarised in Table 1.

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