



## *Schizostachyum nghianum* (Poaceae: Bambusoideae), a new species from Vietnam

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### Key words

*Bambusoideae*  
new species  
*Schizostachyum*  
*Schizostachyum nghianum*  
taxonomy

**Abstract** A new species of Bamboo from Vietnam is described and illustrated. *Schizostachyum nghianum* is recognized from northern Vietnam, where it occurs at 300 m in Trung Ha Commune, Chiem Hoa District, Tuyen Quang Province. It is distinguished from the closely related *S. funghomii* and *S. pseudolima* by sheath apex truncate, bract one, lemma with apical mucro c. 1 mm, the palea apex entire (not bifid) and the filaments.

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### INTRODUCTION

*Schizostachyum* Nees, one of the biggest genera in the subtribe *Melocannineae*, *Bambusoideae* of *Poaceae*, was established by Nees von Esenbeck (1829). More than 50 species are currently recognized in the genus, which is widely distributed in tropical and subtropical Asia, from southern China, to the Malesian region and extending to the Pacific Islands, with the majority of the species in China, Malaysia and Indonesia (Xia 1993, 1996, Ohrnberger 1999, Xia & Stapleton 2006).

In Vietnam, a total of 11 species have been recorded (Pham 2000), but since Balansa (1809), the genus has not been revised for Vietnam. In order to carry out a revision of *Schizostachyum* in Vietnam, we have studied specimens from various herbaria (FSIV (Herbarium of Forest Science Institute of Vietnam), HN, HNU, IBSC, K, P, SYS, US, VNM) and living specimens throughout Vietnam. As a result, we recognize nine species occurring in Vietnam. Moreover, one of these species, called 'hung' by the Mong people, which was found flowering in 2009, could not be keyed out to any named species from Vietnam and neighbouring regions. It is very similar to *S. funghomii* McClure and *S. pseudolima* McClure. After consulting the relevant literature (McClure 1935, 1940, Dransfield & Widjaja 1995, Wong 1995, Xia 1996, Xia & Stapleton 2006), and careful dissection of the flowering material, we found that it differs from both *S. funghomii* and *S. pseudolima* by culm sheath apex truncate, bract 1, lemma with apical mucro c. 1 mm long, palea with apex entire (not bifid) (Fig. 1i) and free filaments (Table 1). Therefore, we conclude that 'hung' is an unknown species and it is described here as new.

*Schizostachyum nghianum* N.H.Xia, V.T.Tran, *sp. nov.* —  
Fig. 1

Species nova habitu *S. funghomii* McClure, *S. pseudolimae* McClure similis, sed vaginis culmorum apicis truncatis, bracteis unicus, lemmatibus ca 1 mm

mucronatis, paleis apicibus integris, filamentis liberis differt. — Typus: *H.N. Nguyen 1200904712* (holo FSIV; iso IBSC), Vietnam, Tuyen Quang Province, Chiem Hoa District, Trung Ha Commune, elevation 300 m asl, N22°13'943", E105°10'513", lowland, 12 December 2009.

**Etymology.** The new species is named in honour of Dr. Nguyen Hoang Nghia, for his contributions to the bamboo research in Vietnam.

Sympodial bamboo. *Culms* erect, 8–12 m tall, 5–6 cm diam, apically suberect; internodes terete, straight, 50–70 cm long, densely covered with appressed white hairs when young and white powdery, becoming rough later; wall 0.3–0.5 cm thick; nodes slightly swollen with a ring of white powder 1.5 cm high below each node. *Branches* numerous on each node, slender, subequal, 30–50 cm long. *Culm sheaths* tardily deciduous, 20–22 cm high, straw-colored, abaxially white powdery, with stiff, brown hairs, margins ciliate, apex truncate; auricles inconspicuous; oral setae many, c. 3 mm long; ligule subtruncate, short, 1–2 mm high, margin lobed, with fimbriae 3–5 mm long; blade reflexed, linear-lanceolate, less than 1/2 the length of the sheath, adaxially hairy at base, abaxially glabrous, apex acuminate. *Leaves* 4–6 per ultimate branch; sheaths often white powdery; auricles inconspicuous; oral setae numerous, 5–6 mm long; petiole 0.4–0.5 cm long, 0.1 cm thick; blades oblong-lanceolate or ovate-lanceolate, 20–25 by 3.5–4.5 cm, lower surface fine-hairy, base acute, slightly oblique, apex long acuminate. *Pseudospikelets*, c. 3 cm long, white villous; prophylls oblong-obovate, 5–6 mm long, papery, apex obtuse, 2-keeled, ciliate; bract 1, oblong, 0.6–1.5 cm long, papery, many-veined, apex obtuse to acute and mucronate, margin ciliate; floret 1, fertile; rachilla disarticulating below the floret; the extension of the rachilla nearly as long as the palea with the terminal rudimentary floret conspicuous; glumes absent. *Lemma* oblong-lanceolate, 1.5–1.6 cm long, sparse white-ciliate towards apex, strongly convolute, many-veined, apex scabrous, mucronate, mucro c. 1 mm long; palea c. 2.6 cm long, base spirally convolute, papery, 2-keeled toward the apex, apex not bifid (fertile floret), keels apically ciliate, the two sides outside the keels equal in width; lodicules absent; stamens 6, filaments free, anthers white-yellow, c. 1 cm long; stigmas 3, pink, plumose. *Fruit* unknown.

**Distribution** — Trung Hoa Commune, Chiem Hoa District, Tuyen Quang Province, northern Vietnam.

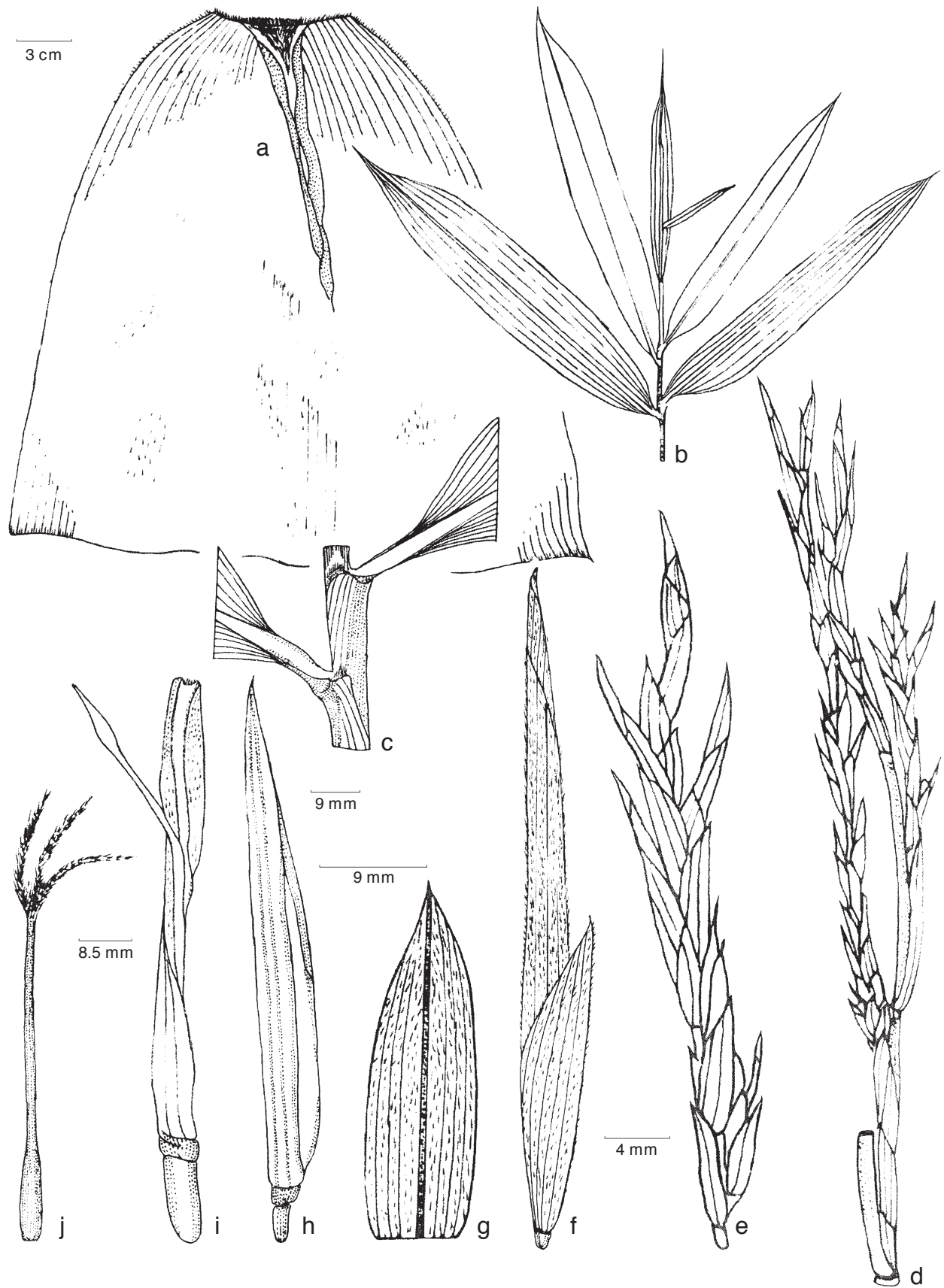
**Habitat** — The species grows within degraded valleys and mountain gorges at elevation of 300 m asl. Stands were found

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**Fig. 1** *Schizostachyum ngghanum* N.H.Xia, V.T.Tran & H.N.Nguyen. a. Culm sheath; b. branchlets with leaves; c. portion of leafy branch; d. flowering branch; e. portion of flowering branch; f. spikelet; g. bract; h. lemma; i. palea with the prolongation of the rachilla; j. gynoceium (drawn from the holotype).

**Table 1** Morphological comparison of *Schizostachyum nghianum* with similar species.

Characters	<i>S. funghomii</i>	<i>S. pseudolima</i>	<i>S. nghianum</i>
Culm	4–10 cm diam	c. 4 cm diam	4–6 cm diam
Culm sheath	apex concave or slightly concave	truncate or slightly concave	apex truncate
Leaf blades	20–30 by 2.5–4 cm	18–30 by 2–2.5 cm	20–25 by 3.5–4.5 cm
Pseudospiklets	white villous	glabrous	white villous
Bract	2–3	1 to several	1
Lemma	apical mucro c. 2 mm long	apical mucro c. 1.5 mm long	apical mucro c. 1 mm long
Palea	apex bifid, 2-keeled unequal in width	apex bifid, 2-keeled equal in width	apex entire, 2-keeled equal in width
Filaments	basally connate in pairs	basally connate in pairs	free

mass flowering from October to December 2009. New shoots were observed from September to December.

**Uses** — This bamboo is widely used. Culms are used without splitting for lathing the mud plastered walls of houses, and in split form as material for making handicrafts, and tightening rice cakes.

*Specimen examined.* *Tran Van Tien 2010481*, Vietnam, Tuyen Quang Province, Chiem Hoa District, Trung Ha Commune, elevation 300 m asl, N22°13'943"; E105°10'513", lowland, 1 January 2011.

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## REFERENCES

- Balansa B. 1890. Catalogue des Graminées de l'Indo-Chine Française: Bambusées. *Journal de Botanique, Rédigé par une Société di Botanistes (Desvaux)* 4: 27–32.
- Dransfield S, Widjaja EA. 1995. *Schizostachyum*. In: *Plant Resources of South-East Asia* 7: 130–145. Backhuys Publishers, Leiden.
- McClure FA. 1935. The Chinese species of *Schizostachyum*. *Lingnan Science Journal* 14, 4: 575–602.
- McClure FA. 1940. Five new bamboos from southern China. *Lingnan Science Journal* 19, 4: 531–542.
- Nees von Esenbeck CGD. 1829. *Agrostologia brasiliensis: seu descriptio Graminum in imperio Brasiliensi huc usque detectorum* 2: 535.
- Ohrnberger D. 1999. *Schizostachyum* Nees. In: *The bamboos of the world*: 330–337. Elsevier, Amsterdam, etc.
- Pham HH. 2000. *An illustrated flora of Vietnam*. Youth Publish House 3: 560–627.
- Wong KM. 1995. *The bamboos of peninsular Malaysia*. Sabah, Malaysia. Forest Research Institute Malaysia: 1–45.
- Xia NH. 1993. Studies on the genus *Schizostachyum* and other bamboos from China. *Journal of Tropical and Subtropical Botany* 1: 1–10.
- Xia NH. 1996. *Schizostachyum*. In: Keng PC (ed), *Flora Reipublicae Popularis Sinicae* 9: 15–17. Science Press, Beijing
- Xia NH, Stapleton C. 2006. *Schizostachyum*. In: Wu CY et al. (eds), *Flora of China* 22: 50–51. Missouri Botanical Garden Press, Science Press, Beijing.