



## *Schizostachyum longinternodium* (Poaceae: Bambusoideae), a new species from Yunnan, China

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### Abstract

A new species, *Schizostachyum longinternodium*, is described and illustrated. It is closely related to *S. funghomii*, but differs by its shorter culm sheaths with protuberances on culm sheaths shoulders, prophyll with an acuminate apex and tubular connate filaments.

**Key words:** bamboo, Gramineae, Menlun, Xishuangbanna

### Introduction

The genus *Schizostachyum* Nees von Esenbeck (1829: 535) was established with *S. blumei* Nees (1829: 535) from Java, Indonesia. The genus consists of more than 50 species and is distributed in tropical and subtropical Asia, from southern China, throughout Malaysia, and extending to the Pacific Islands, with the majority found in Malaysia and Indonesia (Dransfield 1983, Xia 1993 & 1996, Wong 1995, Ohrnberger 1999, Widjaja 1997, Xia & Stapleton 2006). Ten species of *Schizostachyum* with six endemics have been recorded in China (Xia & Stapleton 2006, Zhang *et al.* 2008).

The genus *Schizostachyum* was divided into two subgenera, subgen. *Leptocanna* (L.C. Chia & H.L. Fung) Xia (1993: 5) and subgen. *Schizostachyum*, based on the structure of the pseudospikelet. Subgenus *Leptocanna* only includes one species, *S. chinense* Rendle (1904: 448), its spikelet has two glumes and a sterile lemma and its rachilla is disarticulating, whereas subgen. *Schizostachyum* species have no glumes and no sterile lemma, and the rachilla does not disarticulate (Chia & Fung 1981). It includes *Neohouzeaua* Camus (1922: 100), *Teinostachyum* Munro (1868: 142) and *Dendrochloa* Parkinson (1933: 707). *Neohouzeaua* has tubular and connate filaments—the only character that distinguishes it from *Schizostachyum*. It was later synonymised with *Schizostachyum* by Holttum (1967) because some species of *Schizostachyum* also have partially connate stamens. This treatment was supported by later researchers (Clayton & Renvoize 1986, Xia 1993 & 1996, Xia & Stapleton 2006, Sungkaew *et al.* 2009). *Dendrochloa* was established with partially connate stamens (1+2+3) and 5–7 florets per spikelet. Holttum (1946) did not support it as a distinct genus and reduced it to *Schizostachyum*. Munro (1868) first described *Teinostachyum* with several florets per spikelet, differing from *Schizostachyum* with only 1 floret; McClure (1936) later found *S. biflorum* to have two florets per spikelet, and so the gap between them disappeared. Recently, according to molecular phylogenetic evidence, Yang *et al.* (2007) moved *Schizostachyum* subgen. *Leptocanna* and *S. sanguineum* W.P. Zhang (1989: 12) into *Cephalostachyum* Munro (1868: 138).

During the survey in Xishuangbanna, Yunnan, China, we found a peculiar species with two protuberances on the culm sheath shoulders and introduced it to Guangzhou, Guangdong. It flowered in 2010. We found its filaments connate into a tube. This character is distinctive in *Schizostachyum*.

## Key to the *Schizostachyum longinternodium* and similar species

- 1 Culms not rigidly erect or suberect, apically long pendulous or clambering.....*S. pseudolima* McClure (1940: 537)  
- Culms self-supporting, apically suberect or some culms slightly drooping at the apex. ....2  
2 Culm sheath >1/3 length of internode, without protuberances on its shoulders; pairs of stamen filaments basally connate.....*S. funghomii* McClure (1935: 585)  
- Culm sheath ≤1/3 length of internode, with protuberances on its shoulders; all stamen filaments connate.....*S. longinternodium*

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## References

- Camus, A. (1922) Un Genre Nouveau de Bambusees. *Bulletin du Museum National d'Histoire Naturelle* 28: 100–102.
- Chia, L.C. & Fung, H.L. (1981) Leptocana, a new genus of Bambusoideae from China. *Acta phytotaxonomica sinica* 19: 211–214.
- Clayton, W.D. & Renvoize, S.A. (1986) Genera graminum. Grasses of the world. *Kew Bulletin, Additional Series* 13: 1–389.
- Dransfield, S. (1983) Notes on *Schizostachyum* (Gramineae: Bambusoideae) from Borneo and Sumatra. *Kew Bulletin* 38: 321–332.  
<http://dx.doi.org/10.2307/4108116>
- Holtum, R.E. (1946) The classification of Malayan bamboos. *Journal of the Arnold Arboretum* 27: 340–346.
- Holtum, R.E. (1967) The Bamboos of New Guinea. *Kew Bulletin* 21: 277–281.  
<http://dx.doi.org/10.2307/4108518>
- McClure, F.A. (1936) The generic type and new species of bamboo genus *Schizostachyum* from Java. *Blumea* 2: 86–97.
- McClure, F.A. (1935) The Chinese species of *Schizostachyum*. *Lingnan Science Journal* 14(4): 575–602, pl. 34–39.
- McClure, F.A. (1940) Five new bamboos from southern China. *Lingnan Science Journal* 19(4): 531–542, pl. 35–40.
- Munro, W.A. (1868) Monograph of the Bambusaceae. *Transactions of the Linnean Society of London* 26: 1–157.  
<http://dx.doi.org/10.1111/j.1096-3642.1968.tb00502.x>
- Nees von Esenbeck, C.G.D. (1829) *Schizostachyum blumei*. In: Martius, C.F.P. von. (Ed.) *Flora Brasiliensis seu Enumeratio Plantarum*, vol. 2. J. G. Cottae. Stuttgart & Tübingen, 535 pp.
- Ohrnberger, D. (1999) *The bamboos of the world: Annotated Nomenclature and Literature of the Species and the Higher and Lower Taxa*. Elsevier Science B.V., Amsterdam, 330–336 pp.
- Parkinson, C.F. (1933) A new Burmese bamboo. *Indian Forester* 59: 707–749.
- Rendle, A.B. (1904) Gramineae. *Journal of the Linnean Society, Botany* 36: 448–449.
- Sungkaew, S., Stapleton, M.A., Salamin, N. & Hodkinson, T.R. (2009) Non monophyly of the wood bamboos (Bambuseae; Poaceae): A multi-gene region phylogenetic analysis of Bambusoideae s.s. *Journal of Plant Research* 122: 95–108.  
<http://dx.doi.org/10.1007/s10265-008-0192-6>
- Xia, N.H. (1993) Studies on the genus *Schizostachyum* and other bamboos from China. *Journal of Tropical and Subtropical Botany* 1: 1–10.
- Xia, N.H. (1996) *Schizostachyum*. In: Keng, P.C. & Wang, Z.P. (Eds.) *Flora Reipublicae Popularis Sinicae Volume 9(1)*, Science Press, pp. 15–26.
- Xia, N.H. & Stapleton, C. (2006) *Schizostachyum*. In: Wu, Z.Y., Raven, P.H. & Hong, D.Y. (Eds.) *Flora of China, Volume 22*. Science Press, Beijing & Missouri Botanical Garden Press, St. Louis, pp. 50–51.
- Yang, H.Q., Peng, S. & Li, D.Z. (2007) Generic delimitations of *Schizostachyum* and its allies (Gramineae: Bambusoideae) inferred from GBSSI and *trnL-F* sequence phylogenies. *Taxon* 56(1): 45–54.
- Widjaja, E.A. (1997) New taxa in Indonesian bamboos. *Reinwardtia* 11(2): 131–146.
- Wong, K.M. (1995) *The Bamboos of Peninsular Malaysia*. Malayan Forest Record No. 41 Forest Research Institute Malaysia, Kuala Lumpur, 200 pp.
- Zhang, L.L., Lin, R.S. & Xia, N.H. (2008) *Schizostachyum diaoluoshanense* sp. nov. (Poaceae: Bambusoideae) from Hainan, China. *Nordic Journal of Botany* 26: 21–24.  
<http://dx.doi.org/10.1111/j.1756-1051.2008.00185.x>
- Zhang, W.P. (1989) A new species of *Schizostachyum* Nees, *Schizostachyum sanguineum*. *Journal of Bamboo Research* 4: 12.