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Bambusoideae)

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A new combination in *Ampelocalamus* and notes on *A. patellaris* (Gramineae: Bambusoideae)

DE-ZHU LI¹, C. M. A. STAPLETON² & JIA-RONG XUE³

Summary. *Dendrocalamus mianningensis* X. Jiang & Q. Li from W Yunnan and SW Sichuan is transferred into *Ampelocalamus* S. L. Chen, T. H. Wen & G. Y. Sheng. This species forms a morphological and geographical link between the Sino-Himalayan species *Ampelocalamus patellaris* (Gamble) Stapleton and other members of the genus from S China.

THE SPECIES OF *Ampelocalamus*: A BRIEF HISTORY

Ampelocalamus was initially described as a monotypic Chinese genus, with *A. actinotrichus* restricted to Hainan Island (Chen *et al.* 1981). A second species, *A. calcareus*, was found in the mainland province of Guizhou (Chao & Chu 1983). Five more species, namely, *A. luodianensis*, *A. microphyllus*, *A. saxitilis*, *A. scandens* and *A. yongshanensis*, were later discovered in Guizhou, Sichuan and Yunnan provinces (Hsueh & Yi 1985; Hsueh & Li 1987).

The eighth species placed in this genus, *Ampelocalamus patellaris*, was transferred from *Dendrocalamus* after it flowered in Nepal and was seen to have a semelauctant 3-stamened inflorescence (Stapleton 1994). The inclusion of this species in *Ampelocalamus* was surprising. The other seven species are semi-scandent, with a dominant central branch capable of replacing the culm, while *A. patellaris* is a more erect plant with sub-equal branches. Apparent geographical isolation was another concern. The other species of *Ampelocalamus* occur mainly in tropical or subtropical calcareous river valleys below 1000 m and in other calcareous sites in S China, centred in the Sino-Japanese floristic region (Wu 1979). *D. patellaris* Gamble was described from Sikkim, and occurs in S and SW Yunnan at an altitude of 1400–1800 m.

The flowers tentatively included in the type collection of *Dendrocalamus patellaris* (Gamble 1896) are now considered to have come from *D. hamiltonii*. *D. patellaris* was placed in its own genus, *Patellocalamus* (Lin 1989) on the basis of its vegetative characters anomalous in *Dendrocalamus*, but in fact characteristic of *Ampelocalamus*. The description of the flowers of the new genus was, unfortunately, based entirely on those of *D. hamiltonii*. The senior author included *Patellocalamus* as a synonym of *Dendrocalamus* (Li 1994). However, it must now be listed as a synonym of

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Ampelocalamus after lectotypification of the vegetative component of *Dendrocalamus patellaris* (Stapleton 1994).

Dendrocalamus mianningensis was described from Mianning Xian (County) in SW Sichuan (Li & Jiang 1984), sharing a similar habitat with other *Ampelocalamus* species. Although its flowers are not known, better collections have demonstrated that this species is vegetatively a close ally of *A. patellaris*. Both species have a projecting corky collar and well developed fringes on the culm-sheath margins. However, it is smaller than *A. patellaris*, with less conspicuous sheath-fringes, and central branches that are able to replace the culm and allow a semi-scandent growth habit. It was previously only known from the type locality, but has now also been found by an upper branch of the Mekong River. This means that it is a species crossing the Red River, a boundary between the Sino-Himalayan and the Sino-Japanese floristic regions (Li & Li 1992 and literature therein). It is indeed a species not only bridging the geographical gap between the main stock of *Ampelocalamus* and *A. patellaris*, but also linking them morphologically.

Living plants of *Ampelocalamus patellaris* have now been examined in Nepal and near the southern border of Yunnan, confirming the wide range of this species which is remarkable for such a relatively small bamboo. It now seems likely that the report of the common occurrence of this species in Tonkin and central Vietnam is correct (Camus & Camus 1923), and further synonymy can now be given. This extended range, together with the discovery of *A. mianningensis* in western Yunnan, links the species of *Ampelocalamus* geographically, strengthening their new generic attribution.

RELATIONSHIPS OF *Ampelocalamus*

Soderstrom & Ellis (1987) recognized *Ampelocalamus* as a good genus. Keng (1986) and Yi (1993) restricted the genus to the type and *A. calcareus*, preferring to place the other five species in *Drepanostachyum*. Clayton & Renvoize (1986) and Yang & Chao (1994) included *Ampelocalamus* under a broad interpretation of *Sinarundinaria*.

Ampelocalamus, as here defined, is a genus of climbing tropical (to subtropical) bamboos with pachymorph rhizomes (i.e., without underground running stems), many branches at each node, usually the main branch equalling and replacing the main culm, each sheath-scar bearing a prominent corky collar, a semelauctant inflorescence comprising pendulous spikelets and flowers with 3 stamens and 2 stigmas. It forms a natural group which differs from its allied genera, one disputably known as *Sinarundinaria* or *Yushania* (Li 1996), the others being *Chimonocalamus* and *Drepanostachyum*. Vegetative characters show adaptation to a scrambling growth habit in subtropical areas. As well as a re-iterative central branch, the genus shows strongly geniculate branchlets to allow reorientation, as well as corky nodal rings and scabrous culms for support. In contrast, *Sinarundinaria* (or *Yushania*) and *Chimonocalamus* are self-supporting temperate bamboos, without any adaptation for climbing, and with more erect inflorescences with more robust glumes. The branching pattern in *Chimonocalamus* is somewhat similar to that of *Chimonobambusa*, both of which produce root-thorns between ridges at culm-nodes.

Ampelocalamus would certainly appear to be morphologically close to the warm-temperate Sino-Himalayan genus *Drepanostachyum*. It differs florally in having a more drooping inflorescence with larger spikelets on more delicate, usually scabrous pedicels, and with stronger fasciculation of less falcate inflorescence branches. *Ampelocalamus* and *Drepanostachyum* are both found in subtropical habitats, but their growth habits are different. The latter is much smaller, never climbs, and has a profusion of small branches without a dominant central branch. *A. patellaris* is somewhat intermediate between them, but dissections of branch buds (Stapleton 1991) showed *A. patellaris* to have a distinctive fusion of sheaths never seen in *Drepanostachyum*. Moreover, *Ampelocalamus* has nomenclatural priority over *Drepanostachyum*.

Ampelocalamus patellaris (Gamble emend. Stapleton) Stapleton in Edinburgh J. Bot. 51: 321. 1994. Lectotype: India, Sikkim, Jungat, alt. 1200 m, Nov. 1881, Gamble 10045 (fide Stapleton 1994, holotype K!).

Dendrocalamus patellaris Gamble in Ann. Roy. Bot. Gard. (Calcutta) 7: 86. pl. 76 (1896), pro parte, excl. fl.

Patellocalamus patellaris (Gamble) W. T. Lin in J. S. China Agric. Coll. 10(2):46 (1989), pro parte, excl. fl.

Sinocalamus patellaris (Gamble) T. Q. Nguyen in Bot. Zhurn. (Moscow & Leningrad) 74 (11): 1662 (1989).

Drepanostachyum patellaris (Gamble emend. Stapleton) C. J. Hsueh & D. Z. Li, in MS. *Chimonobambusa jainiana* C. R. Das & D. C. Pal, J. Econ. Taxon. Bot. 4(3): 1023 (1983). Type: India, West Bengal, Kalimpong, CNH 12178 (holotype CAL n.v.).

Drepanostachyum jainianum (C. R. Dal & D. C. Pal) R. B. Majumdar, Bull. Bot. Surv. India 25: 235 (1985).

SPECIMENS EXAMINED: CHINA. Yunnan Prov., Gengma Xian (County), Nov. 1978, Zhang 15 (SWFC); Longchuan Xian, March 1992, Jia-Rong Xue 9201 (SWFC, with flowers); Luchun Xian, alt. 1600 m, 18 March 1986, Wang et al. 82006 (SWFC); ibidem, Hsueh 821 (SWFC); 15 Oct. 1995, Li, Jia-Rong Xue & Stapleton 9518 (KUN, SWFC); Jianshui Xian, alt. 1440 m, 18 Nov. 1978, Hsueh 6 (SWFC); alt. 1450 m, Hsueh 7 (SWFC); alt. 1454 m, 19 Nov. 1978, Hsueh 8 (SWFC); Ruili Xian, 23 Sept. 1979, Yunnan Forest Research Institute 40 (SWFC); 5 Sept. 1977, Hsueh 1179 (SWFC); Yingjiang Xian, 25 July 1984, Li 84013, 84033 (SWFC); ibidem, 2 Sept. 1980, Wang s.n. (SWFC); Yuanyang Xian, alt. 1550 – 1730 m, 1 April 1986, Yang et al. 820035 (SWFC); Tibet Autonomous Reg., Medog Xian (Tsangpo Gorge), alt. 1500 – 1800 m, 9 Dec. 1924, Kingdon-Ward 6368 (K, E).

INDIA: Sikkim, Pagjiok Pao, alt. 2000 m, Feb. 1889, Gammie s.n. (K, BM); Assam, 22 Nov. 1890, Sri Gopal Bannerjee s.n. (BM).

NEPAL: Terhathum, 1800 m, Stapleton 132 (E) (with fl.).

Ampelocalamus mianningensis (Q. Li & X. Jiang) D. Z. Li & Stapleton, **comb. nov.** Type: China, Sichuan Prov., Mianning Xian, alt. 1600 – 1700 m, 13 Aug. 1977, Li 1128 (holotype Herbarium of Ya'an School, Ya'an City, Sichuan, n.v.; isotype SWFC!).

Dendrocalamus mianningensis Q. Li & X. Jiang in J. Yunnan Forest. Coll. (1): 134. f. 1 (1984)

Patellocalamus mianningensis (Q. Li et X. Jiang) T. P. Yi in J. Bamboo Res. 12 (2): 54 (1993).

SPECIMENS EXAMINED: CHINA. Yunnan Prov., Yangbi Xian, alt. 1320 m, 22 Oct. 1995, Li & Jia-Rong Xue 9532 (KUN, SWFC); same locality, Stapleton 1050 (K).

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REFERENCES

- Camus, E. G. & Camus, A. (1923). Graminees. In: M. H. Lecomte, Flora Generale de L'Indo-Chine 7(5): 481 – 649.
- Chao, Chi-Son & Chu, Cheng-De (1983). A new species of genus *Ampelocalamus*. Acta Phytotax. Sin. 21(2): 204 – 206.
- Chen, Shou-Liang, Sheng, Guo-Ying & Wen, Tai-Hui (1981). *Ampelocalamus* a new genus of Chinese bamboo. Acta Phytotax. Sin. 19(3): 332 – 334.
- Clayton, W. D. & Renvoize, S. A. (1986). Genera Graminum. Grasses of the world. Kew Bull., Addit. Ser. 13. London: Her Majesty's Stationery Office.
- Gamble, J. S. (1896). *Bambuseae* of British India. Ann. Roy. Bot. Gard. (Calcutta) 7: 58 – 59.
- Hsueh, Chi-Ju (Xue, J. R.) & Li, De-Zhu (1987). New taxa of *Bambusoideae* from Sichuan and Yunnan, with discussion on concepts of related genera. J. Bamboo Res. 6(2): 16 – 19.
- & Yi, Tong-Pei (1985). New taxa of the genus *Ampelocalamus* (Gramineae). J. Bamboo Res. 4(2): 1 – 8.
- Keng, Pai-Chieh (1986). A new discovery of bamboo genus *Drepanostachyum* Keng f. in China. J. Bamboo Res. 5(2): 28 – 40.
- Li, De-Zhu (1994). On some problems of methodology of bamboo classification with special reference to the circumscription of *Dendrocalamus*. Acta Phytotax. Sin. 32 (3): 283 – 289.
- (1996). Proposal to conserve the name *Sinarundinaria* Nakai (Gramineae) with a conserved type. Taxon 45: 321 – 322.
- Li, Qian & Jiang, Xin (1984) A new species of *Dendrocalamus*. J. Yunnan Forest. Coll. 1984 (1): 68 – 73.
- Li, Xi-Wen (Li, H. W.) & Li, Jie (1992). On the validity of the Tanaka Line and its significance viewed from the distribution of eastern Asiatic genera in Yunnan. Acta Bot. Yunnan. 14: 1 – 12.
- Lin, Wan-Tao (1989). Discussion on Chinese *Dendrocalamus* and related two new genera. J. S. China Agric. Coll. 10(2): 40 – 47.

- Soderstrom, T. R. & Ellis, R. P. (1987): The position of bamboo genera and allies in a system of grass classification. In: T. R. Soderstrom, K. W. Hilu, C. S. Campbell, and M. E. Barkworth, (eds.), Grass systematics and Evolution. Washington D.C.: Smithsonian Institution Press.
- Stapleton, C. M. A. (1991). A morphological investigation of some Himalayan bamboos with an enumeration of taxa in Nepal and Bhutan. University of Aberdeen (Unpublished PhD thesis).
- (1994). The bamboos of Nepal and Bhutan, Part III: *Drepanostachyum*, *Himalayacalamus*, *Ampelocalamus*, *Neomicrocalamus* and *Chimonobambusa* (Gramineae: Poaceae, Bambusoideae). Edinburgh J. Bot. 51: 310 – 330.
- Wu, Cheng-Yih (1979). The regionalization of Chinese flora. Acta Bot. Yunnan. 1(1): 1 – 22.
- Yang, Guang-Yao & Chao, Chi-Son (1994). A revision of the genus *Arundinaria* Michaux in China. J. Bamboo Res. 13 (1): 19.
- Yi, Tong-Pei (1993). New taxa of *Drepanostachyum* and other new combinations of bamboo in China. J. Bamboo Res. 12 (4):42 – 47.