



Smilax jiankunii, a new synonym in Chinese *Smilax* (Liliales: Smilacaceae)

ZHECHEN QI^{1,2}, PAN LI³, YUJUAN DU⁴ & CHENGXIN FU^{1,*}

¹The Key Laboratory of Conservation Biology for Endangered Wildlife of the Ministry of Education, and Laboratory of Systematic & Evolutionary Botany and Biodiversity, College of Life Sciences, Zhejiang University, Hangzhou 310058, China

²Present address: College of Life Sciences, Zhejiang Sci-Tech University, Hangzhou 310018, China

³Research & Development Centre, Firmenich Aromatics (China), Shanghai 201108, China

⁴Patent Examination Cooperation Jiangsu Center of the Patent Office, SIPO, Suzhou 215011, China

*Author for correspondence, email: cxfu@zju.edu.cn

Smilax Linnaeus (1753: 1028), the only genus of Smilacaceae, consists of over 200 species (with ca. 90 in China), and is widely distributed from tropical to temperate areas (Qi *et al.* 2012). Li (1992: 21) published *Smilax jiankunii* H.Li, based on specimens collected in the Dulongjiang Valley, Gongshan County, northwestern Yunnan Province, China. *Smilax jiankunii* was characterized by having a smooth stem, abaxially glaucous leaves, slender peduncles 9 to 10 cm long, densely flowered umbels (with 60–100 flowers), and the whole plant becoming blackish when dried (Li 1992), a feature shared with *Smilax pottingeri* Prain (1900: 174). Since Wang & Tang (1978) transferred *S. pottingeri* to the genus *Heterosmilax* Kunth (1850: 270) as *H. pottingeri* (Prain) Wang & Tang (1978: 245), based on the leaf shape and flattened peduncles, it is understandable that Li failed to compare her new species with it at that time. However, the name *Smilax pottingeri* was more recently accepted under *Smilax* again, due to more collections and knowledge of this plant becoming available (Chen & Koyama 2000), and the genus *Heterosmilax* having been merged with *Smilax* based on morphological and molecular studies (Judd 1998, Cameron & Fu 2006, Qi *et al.* 2012, 2013). After comparing the descriptions of both, we recognized that *Smilax pottingeri* appears to be similar to *S. jiankunii*, which has smooth stems, abaxially glaucous leaves, a slender peduncle 3 to 6 cm long and densely flowered umbels (with 40–70 flowers), but a more southern distribution in eastern Myanmar, southeastern Yunnan, Vietnam, northern Laos and northern Thailand (Koyama 1975, Chen & Koyama 2000, Nguyễn 2007).

We therefore examined the type specimens of *S. jiankunii* and *S. pottingeri*, as well as living plants, and found them to be identical. DNA barcoding markers (*matK*, *rbcL*) of the two were also analyzed to test the species boundaries. The results showed that *S. jiankunii* was within the range of morphological and genetic variation of *S. pottingeri* (Qi *et al.*, unpublished data). Moreover, we simulated the potential distribution of *S. pottingeri* based on specimen occurrence (Fig. 1) with the ecological niche modeling method of Elith *et al.* (2011) and found *Smilax jiankunii* to be within the predicted distribution range of *S. pottingeri*, which further supported recognition of only a single species. Therefore, we here propose *S. jiankunii* as a synonym of *S. pottingeri*.

Smilax pottingeri Prain (1900: 174) = *Heterosmilax pottingeri* (Prain) Wang & Tang (1978: 245). Lectotype (designated by Koyama 1983: 76):—MYANMAR. Kachin: Myaungjong, 12 June 1897, *Pottinger s.n.* (K!). Syntype:—MYANMAR. Kachin: near Sadon, s. dat., *Prain's Collector s.n.* (K!).

Smilax jiankunii Li (1992: 21), *syn. nov.* Type:—CHINA. Yunnan: Gongshan Xian, Dulongjiang Valley, Meiliwang, 1800 m, 20 May 1991, *Dulongjiang Bot. Expedition 6962* (holotype KUN!). Paratypes:—CHINA. Yunnan: Nanpula, 1300 m, *Dulongjiang Bot. Expedition 4025* (KUN!), 6709 (KUN!); Bapou, *Dulongjiang Bot. Expedition 4102* (KUN!), 4749 (KUN!); Mabidan, *Dulongjiang Bot. Expedition 4073* (KUN!), 4625 (KUN!).

References

- Cameron, K.M. & Fu, C.X. (2006) A nuclear rDNA phylogeny of *Smilax* (Smilacaceae). *Aliso* 22: 598–605.
- Chen, S.Q. & Koyama, T. (2000) *Smilax*. In: Wu, Z.Y. & Raven, P.H. (eds.) *Flora of China* 24. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis, Missouri, pp. 96–115.
- Elith, J., Phillips, S.J., Hastie, T., Dudik, M., Chee, Y.E. & Yates, C.J. (2011) A statistical explanation of MaxEnt for ecologists. *Diversity and Distributions* 17: 43–57.
- Judd, W.S. (1998) The Smilacaceae in the southeastern United States. *Harvard Papers in Botany* 3: 147–169.
- Koyama, T. (1975) Smilacaceae. In: Smitinand, T. & Larsen, K. (eds.) *Flora of Thailand* 2. The Forest Herbarium, Royal Forest Department, Bangkok, pp. 210–250.
- Koyama, T. (1983) Smilacaceae. In: Leroy, J.-F. (ed.) *Flore du Cambodge, du Laos et du Viêt Nam* 20. Muséum National d'Histoire Naturelle, Laboratoire de Phanérogamie, Paris, pp. 69–124.
- Kunth, K.S. (1850) *Enumeratio plantarum* 5. Cotta, Stuttgart, 908 pp.
- Li, H. (1992) New taxa of the genus *Smilax* from Dulongjiang. *Acta Botanica Yunnanica* 14(S5): 19–21.
- Linnaeus, C. (1753) *Species plantarum*. Laurentius Salvius, Stockholm, 1200 pp.
- Nguyễn, T.H. (2007) Smilacaceae. In: National Center for Natural Science and Technology (ed.) *Flora of Vietnam* 8. Science and Technics Publishing House, Hanoi, pp. 388–454.
- Prain, D. (1900) Some new plants from Eastern India. *The Journal of the Asiatic Society of Bengal* 69: 168–186.
- Qi, Z.C., Li, P. & Fu, C.X. (2013) New combinations and a new name in *Smilax* for species of *Heterosmilax* in Eastern and Southeast Asian Smilacaceae (Liliales). *Phytotaxa* 117: 58–60.
<http://dx.doi.org/10.11646/phytotaxa.117.2.4>
- Qi, Z.C., Li, P., Zhao, Y.P., Cameron, K.M. & Fu, C.X. (2012) Molecular phylogeny and biogeography of Smilacaceae (Liliales), a cosmopolitan family of monocots. In: Botanical Society of America (ed.) *Botany 2012: The next generation. Annual meeting of the Botanical Society of America*. Columbus, Ohio, p. 197. Available from: <http://www.2012.botanyconference.org/engine/search/index.php?func=detail&aid=441> .Accessed 07 July 2013.
- Wang, F.T. & Tang, T. (1978) *Heterosmilax*. In: Wang, F.T., Tang, T., Chen, S.Q., Chang, C.Y., Dai, L.K., Liang, S.Y., Tang, Y.C., Liou, L. & Lang K.Y. (eds.) *Flora Reipublicae Popularis Sinicae* 15. Science Press, Beijing, pp. 238–245.