



Valid publication of the name *Carex henryi* (Cyperaceae) from Asia

YUNFEI DENG

Key Laboratory of Plant Resources Conservation and Sustainable Utilization, South China Botanical Garden, Chinese Academy of Sciences, Guangzhou, 510650, People's Republic of China. E-mail: yfdeng@scbg.ac.cn

Carex Linnaeus (1753: 972) is one of the largest genera of seed plants (Frodin 2004). It comprises about 2,000 species worldwide and is easily distinguished from other genera of Cyperaceae by having perigynia enclosing the nutlets (Reznicek 1990, Goetghebeur 1998, Govaerts *et al.* 2007, Mabberley 2008, Dai *et al.* 2010). There are 535 species in three subgenera and 57 sections recognized in China (Dai *et al.* 2010, Wang *et al.* 2012).

Carex sect. *Graciles* Kükenthal (1899: 516) is characterized by the sheathed involucre bracts, two to numerous spikes, usually one to several spikes borne in an involucre bract sheath, rarely arranged in a compound inflorescence, the female spikes sparsely flowered, rarely slightly more densely flowered, two stigmas, and plano-convex or biconvex utricles (Dai *et al.* 2010). It consists of about thirty species distributed in tropical and subtropical regions of Asia, Australia and the Pacific islands. Twenty-one species, with thirteen of them endemic, were recorded in China (Dai *et al.* 2010).

Carex henryi belongs to sect. *Graciles* and was reported from China and Nepal (Dai *et al.* 2010, Yano *et al.* 2013). The name *Carex henryi* was originally used on herbarium specimens by Clarke in the 1880s–1890s, but it was not formally published then. Later, it was mentioned by Franchet (1896) under the name *C. bodinieri* Franchet (1896: 243). The name *Carex henryi* was however not accepted by Franchet, and no description was provided. Therefore, this name was not validly published then, and the authorship should not be attributed to “C. B. Clarke ex Franchet” as cited by the later authors (Clarke 1903, Kükenthal 1909, Koyama 1956, Zhongguo Kexueyuan Xibei Zhiwu Yanjiusuo 1970, Instituto Botanico Boreali-Occidentali Academiae Sinicae 1976, Institute of Botany Chinese Academy of Sciences 1976, Wang 1988, Su 1992, Zheng 1993, Li 1994, Liang 1995, Ding & Wang 1998, Dai 2000, 2009, Fu 2002, Dai *et al.* 2003).

In 1903, Clarke himself validly published the name *Carex longicuris* Nees in Wight (1834: 124) var. *henryi* Clarke (1903: 295) for this taxon and cited “*C. henryi* C. B. Clarke ex Franchet” as synonym. Clarke’s treatment was accepted by some later authors (Kükenthal 1909, Handel-Mazzetti 1936, Wu 1984). But his var. *henryi* differs from typical *C. longicuris*, which is distributed in the west Himalayan regions, in its smaller perigynia with the less scabrous beak and looser panicles (Koyama 1956), and was recognized as a separate species independent from *C. longicuris* in the recently published Chinese floras (Zhongguo Kexueyuan Xibei Zhiwu Yanjiusuo 1970, Instituto Botanico Boreali-Occidentali Academiae Sinicae 1976, Institute of Botany Chinese Academy of Sciences 1976, Wang 1988, Su 1992, Zheng 1993, Li 1994, Liang 1995, Ding & Wang 1998, Dai 2000, 2009, Fu 2002, Dai *et al.* 2003, 2010).

Dai *et al.* (2010) noticed for the first time that the name *C. henryi* was not validated by Franchet (1896), and they treated it as being validated by Dai (2000) through full and direct reference to Clarke’s *C. longicuris* var. *henryi*. When Yano *et al.* (2013) reported the new record of *Carex henryi* for Nepal, they were aware of that the first use of the name *C. henryi* in Chinese floras was in the *Flora Tsinlingensis* (Zhongguo Kexueyuan Xibei Zhiwu Yanjiusuo 1970, Instituto Botanico Boreali-Occidentali Academiae Sinicae 1976), where the authorship of *Carex henryi* was also cited as “C. B. Clarke ex Franchet” with full and direct reference to *C. longicuris* var. *henryi*, and they therefore presumed that the name *C. henryi* was validated in this publication. Though no author of Cyperaceae was indicated in the flora, Yano *et al.* (2013) ascribed the authorship to “K. T. Fu” who is the author of the new species of *Carex* described in *Flora Tsinlingensis*.

However, both Dai *et al.* (2010) and Yano *et al.* (2013) overlooked that Koyama (1956) was the first to validly publish the name *Carex henryi* when he recognized it as an independent species. It is true that Koyama (1956) did not cite the correct publication of the basionym and cited “*Carex longicruris* Nees var. *henryi* (C. B. Clarke ex Franch.) Kükenth. in Engl., Pflanzenr. 4–20: 603 (1909)” as basionym, but Koyama provided a Latin description for the name *C. henryi* that fulfilled the conditions of valid publication of names of new taxa (ICN Art. 38–40, McNeill *et al.* 2012). According to Article 41.8(d) of the ICN (McNeill *et al.* 2012), the citation errors of Koyama can be corrected, and accordingly, a new combination *Carex henryi* (C. B. Clarke) Koyama was validly published by Koyama (1956), otherwise a new species was validly published by him. The correct author and the place of valid publication of *Carex henryi* are corrected below.

***Carex henryi* (C. B. Clarke) Koyama (1956: 175)**

Basionym: *Carex longicruris* var. *henryi* Clarke (1903: 295). Lectotype (designated by Yano *et al.* 2013: 144):—CHINA. Hubei: Yichang, *A. Henry* 4266 (K!, isolectotypes BM, E!, GH!, K!, US!).

Acknowledgements

This work was supported by the National Natural Science Foundation of China (grant no. 31110103911), and Main Direction Program of Knowledge Innovation of Chinese Academy of Sciences (grant no. KSCX2-EW-Z-1). I am grateful to the curators of E, K, GH and US for their support of my studies.

References

- Clarke, C.B. (1903) Cyperaceae. In: Forbes, F. B. & Hemsley, W. B. (eds.) An enumeration of all the plants known from China Proper, Formosa, Hainan, Corea, the Luchu Archipelago, and the Island of Hongkong, together with their distribution and synonymy, part XVII. *Journal of the Linnean Society, Botany* 36: 217–296.
<http://dx.doi.org/10.1111/j.1095-8339.1903.tb00652.x>
- Dai, L.K. (2000) *Carex* sect. *Graciles*. In: Dai, L.K. & Liang, S.Y. (eds.) *Flora Reipublicae Popularis Sinicae* 12. Science Press, Beijing, pp. 434–453.
- Dai, L.K. (2009) *Carex* sect. *Graciles*. In: Lin, Q. & Fu, L. K. (eds.) *Higher Plants of China* 12. Qingdao Publishing House, Qingdao, pp. 518–525.
- Dai, L.K., Liang, S. Y. & Zhang, S. R. (2003) Cyperaceae. In: Wu, Z. Y. (ed.) *Flora of Yunnan* 15. Science Press, Beijing, pp. 567–803.
- Dai, L.K., Liang, S.Y., Zhang, S.R., Tang, Y.C., Koyama, T. & Tucker, G.C. (2010) *Carex* Linnaeus. In: Wu, Z. Y., Raven, P. H. & Hong, D. Y. (eds.) *Flora of China* 23. Science Press, Beijing & Missouri Botanical Garden Press, St. Louis, pp. 285–461.
- Ding, B.Z. & Wang, S.Y. (1998) *Henan Zhiwuzhi* 4. Henan Science and Technology Press, Zhengzhou, 581 pp.
- Franchet, A. (1896) Les *Carex* de l'Asie orientale. *Nouvelles Archives du Muséum d'Histoire Naturelle sér. 3*, 8: 179–259.
- Frodin, D.G. (2004) History and concepts of big plant genera. *Taxon* 53: 753–776.
<http://dx.doi.org/10.2307/4135449>
- Fu, S.H. (2002) *Flora Hubeiensis* 4. Hubei Kexue Chubanshe, Wuhan, 692 pp.
- Goetghebeur, P. (1998) Cyperaceae. In: Kubitzki, K., Huber, H., Rudall, P. J., Stevens, P. S. & Stützel, T. (eds.) *The families and genera of vascular plants* 4. Springer, Berlin, pp. 141–190.
- Govaerts, R., Simpson, D.A., Bruhl, J., Egorova, T., Goetghebeur, P. & Wilson, K. (2007) *World checklist of Cyperaceae*. Royal Botanic Gardens, Kew, 760 pp.
- Handel-Mazzetti, H. (1936) *Symbolae Sinicae* 7(5). Julius Springer, Wien, pp. 1187–1450.
- Institute of Botany Chinese Academy of Sciences (1976) *Iconographia Cormophytorum Sinicorum* 5. Science Press, Beijing, 1144 pp.
- Instituto Botanico Boreali-Occidentali Academiae Sinicae (1976) *Flora Tsinlingensis* 1(1). Typis Academiae Scientiarum Sinicae, Peking. 476 pp.
- Koyama, T. (1956) New or noteworthy species of Cyperaceae from China. *Japanese Journal of Botany* 15: 164–185.
- Kükenthal, G. (1899) Die Carexvegetation des außertropischen Südamerika (ausgenommen Paraguay und Südbrasilien).

- Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 27: 485–563.
- Kükenthal, G. (1909) Cyperaceae—Caricoideae. In: Engler, A. (ed.) *Das Pflanzenreich IV.20 (Heft 38)*. Engelmann, Leipzig, 824 pp.
- Li, P.C. (1994) Cyperaceae. In: Wang, W. T. (ed.) *Vascular plants of the Hengduan Mountains 2*. Science Press, Beijing, pp. 2321–2387.
- Liang, S.Y. (1995) Cyperaceae. In: Wang, W. T. (ed.) *Keys to the vascular plants of the Wuling Mountains*. Science Press, Beijing, pp. 508–514.
- Linnaeus, C. (1753) *Species Plantarum*. Impensis Laurentii Salvii, Stockholm, 1200 pp.
- Mabberley, D.J. (2008) *Mabberley's Plant-book: a portable dictionary of plants, their classification and uses. Third edition*. Cambridge University Press, Cambridge, 1021 pp.
- McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud'Homme Van Reine, W.F., Smith, G.F., Wiersema, J.H. & Turland, N.J. (2012) *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code) adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011* [Regnum Vegetabile 154]. Gantner, Ruggell, 240 pp.
- Reznicek, A.A. (1990) Evolution in sedges (*Carex*, Cyperaceae). *Canadian Journal of Botany* 68: 1409–1432.
<http://dx.doi.org/10.1139/b90-180>
- Su, S.W. (1992) Cyperaceae. In: Qian, X. H. (ed.) *Flora of Anhui 5*. Anhui Science and Technology Publishing House, Hefei, pp. 380–516.
- Wang, Q.L., Yang, H.B., Deng, Y.F., Wang, Z.N., & Liu, G.D. (2012) *Carex longipetiolata* (Cyperaceae), a new sedge from Hainan, China. *Phytotaxa* 75: 65–69.
<http://dx.doi.org/10.11646/phytotaxa.75.1.6>
- Wang, X.M. (1988) Caricoideae. In: Li, Y. K. (ed.) *Flora Guizhouensis* 8. Sichuan Nationality Press, Chengdu, pp. 620–667.
- Wight, R. (1834) *Contributions to the Botany of India*. Parbury, Allen & Co., London, 136 pp.
- Wu, C.Y. (1984) *Index Florae Yunnanensis 2*. Yunnan People's Publishing House, Kunming, pp. 1071–2259.
- Yano, O., Katsuyama, T., Ikeda, H., Watson, M. F. & Rajibhandari, K. R. (2013) Nomenclature and lectotypification of *Carex henryi* (Cyperaceae) with a new record from Nepal. *Acta Phytotaxonomica et Geobotanica* 63: 143–148.
- Zheng, C.Z. (1993) Cyperaceae. In: Lin, Q. (ed.) *Flora of Zhejiang 7*. Zhejiang Science and Technology Publishing House, Hangzhou, pp. 233–322.
- Zhongguo Kexueyuan Xibei Zhiwu Yanjiusuo (1970) *Qinling Zhiwuzhi* 1(1). Zhongguo Kexueyuan Xibei Zhiwu Yanjiusuo, Xian, 456 pp.