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Summary: *Carex capricornis* Meinsh. ex Maxim. (Cyperaceae) is reported from Khar-Us Lake in Khovd Province, western Mongolia. This is the first report of *C. capricornis* from Mongolia and is considered to be at the westernmost range of its distribution.

Carex L. (Cyperaceae) contains more than 2,000 species (Ball and Reznicek 2002), of which 100 taxa (include *Kobresia* Willd.) have been enumerated in Mongolia (Nyambayar 2009, Urgamal et al. 2014). During a 2019 Korea-Mongolia-Japan botanical expedition around Khar-Us Lake in Khovd Province, western Mongolia (Fig. 1), *Carex capricornis* Meinsh. ex Maxim. was found in the Chono Kharaikh River, which runs from Khar-Us Lake (Fig. 2). Khar-Us Lake belongs to the Great Lakes Depression (GLD) phytogeographical region (no. 10), one of the 16 phytogeographical regions of Mongolia defined by Grubov (1982) (Fig. 1). The GLD region contains the largest lakes in Mongolia, including Uvs, Khar-Us, Khar, Durgun, Khyargas, and Airag Lakes, with rich aquatic vegetation and their associated wetlands spread out there. In Khar-Us Lake and its associated wetlands, many new records of vascular plants from Mongolia have recently been discovered by Shiga et al. (2020). *Carex capricornis*, we report here, is one such new discovery. It was growing in a wet terrestrial

area and in shallow water in association with two other members of Cyperaceae (*Bolboschoenus maritimus* (L.) Palla and *Eleocharis palustris* (L.) Roem. & Schult.), *Cicuta virosa* L. (Apiaceae), *Myriophyllum verticillatum* L. (Haloragaceae), *Phragmites australis* (Cav.) Trin. ex Steud. (Poaceae) and *Typha angustifolia* L. (Typhaceae).

Carex capricornis belongs to sect. *Pseudocypereae* Tuck. ex Kük., which comprises 14 species in Africa, Asia, Australia, Europe, New Guinea, New Zealand, North and South America, and the West Indies (Dai et al. 2010, Koopman 2011). Two species in sect. *Pseudocypereae*, *C. capricornis* and *C. pseudocyperus* L., occur in Eurasia (Asia). In contrast to *C. pseudocyperus*, which is widely distributed in Africa, Asia, Australia, Europe, and North and South America (Koopman 2011), *C. capricornis* has been known to be restricted to China, Japan, Korea and Russia (Dai et al. 2010, Katsuyama 2015, Park et al. 2016, Yang et al. 2018). Judging from the distribution, this new record of *C. capricornis* from Mongolia is considered to be at the westernmost distribution of the species.

Carex capricornis and *C. pseudocyperus* can be distinguished mainly by characteristics of the pistillate spikes and utricles. Pistillate spikes of *C. pseudocyperus* are cylindrical, 2–5 cm long and 6–8 mm wide and rather long pedunculate;

and in shallow water on the shore of the river flowing from Khar-Us Lake.

Note: We propose Ямаан эвэрт өлөн (Yamaan evert ulun) as the Mongolian name for the species.

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References

- Ball P.W. and Reznicek A.A. 2002. *Carex*. In: Flora of North America Editorial Committee (ed.), Flora of North America North of Mexico **23**: 254–572. Oxford University Press, New York.
- Dai L.K., Liang S.Y., Zhang S., Tang Y., Koyama T. and Tucker G.C. 2010. *Carex* In: Wu Z.-Y., Raven P.H. and Hong D.-Y. (eds.), Flora of China **23**: 285–461. Science Press, Beijing and Missouri Botanical Garden Press, St. Louis.
- Grubov V.I. 1982. Key to the Vascular Plants of Mongolia (with an atlas). Nauka, Leningrad (in Russian).
- Hoshino T., Katsuyama T., Masaki T. and Michikawa M. 2020. *Carex*. In: Iwatsuki K., Boufford D.E. and Ohba H. (eds.), Flora of Japan. **IVa**: 226–344. Kodansha, Tokyo.
- Katsuyama T. 2015. *Carex* of Japan, Enlarged and Revised ed. Bunichi-Sogoshuppan, Tokyo (in Japanese).
- Koopman J. 2011. *Carex* Europaea. The Genus *Carex* L. (*Cyperaceae*) in Europe, 1. Margraf Publishers, Weikersheim.
- Nyambayar D. 2009. Flora of Mongolia. **17. Cyperaceae**. Bembi san Press, Ulaanbaatar (in Mongolia).
- Park S.H., Lee Y.M., Kim H.J., Yang J.C., Jang C.S., Lee K.H., Lee J., Han J.S., Kim H.J., Jeong K.S., Son D.C., Lee D.H., Joo M., Sun E.M., Shin C.H., Choi K., Oh S.H., Chang K.S., Jung S.Y. and Ji S.J. 2016. Illustrated *Cyperaceae* of Korea. Korea National Arboretum, Pocheon.
- Shiga T., Khaliunaa K., Baasanmunkh S., Oyuntsetseg B., Midorikawa S. and Choi H.J. 2020. New Mongolian records of two genera, seven species, and two hybrid nothospecies from Khar-Us Lake and its associated wetlands. *J. Asia-Pac. Biodivers.* **13**: 443–453.
- Urgamal M., Oyuntsetseg B., Nyambayar D. and Dulamsuren Ch. 2014. Conspectus of the Vascular Plants of Mongolia. Admon Printing Press, Ulaanbaatar.
- Yang L., Cao X.P., Shang C. and Zhao L. 2018. New records of angiosperm provincial distribution in China [J]. *Guihaia* **38**(8): 1096–1101.

矢野興一^a, 志賀 隆^b, K.Khaliunaa^c, S.Baasanmunkh^d, B.Oyuntsetseg^c, H.J.Choi^d: モンゴル新産のジョウロウスゲ (カヤツリグサ科)

モンゴルの西部からスゲ属ジョウロウスゲ *Carex capricornis* Meinsh. ex Maxim. (カヤツリグサ科) を初めて記録した。これまで本種は日本、韓国、中国、ロシア (極東) に分布することが報告されていたが、モンゴルはこの種の分布西限と考えられる。北半球に広く分布するクグスゲ *C. pseudocyperus* L. に似るが、クグスゲは雌小穂が長さ 2–5 cm, 幅 6–8 mm の円柱形で長い柄があり、果胞が長さ 4–5 mm の楕円形で嘴が直立するのに対

し、ジョウロウスゲは雌小穂が長さ 2–3 cm, 幅 15–18 mm の楕円形で柄がほとんどなく、果胞が長さ 6–9 mm の披針形で嘴が外曲することで区別される。

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