



CAREX BILATERALIS HAYATA (CYPERACEAE): A NEW DISTRIBUTIONAL RECORD FOR INDIA

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ABSTRACT: *Carex bilateralis* Hayata, a perennial sedge species, known from Malaysia and China has been reported for the first time from India. The study provides a detailed taxonomic description, photographs and relevant information based on fresh collection.

Key Words: *Carex*, Cyperaceae, Western Ghats, Nilgiri Biosphere Reserve.

INTRODUCTION

Carex L. is one of the most species-rich genera in the family Cyperaceae with more than 2000 species, distributed in temperate and cold regions, especially in the higher altitudes in the tropics [1, 2, 3]. In India, it is represented by 160 species [4, 5]. It is an interesting genus and can be easily recognised by the presence of unisexual flowers and perigynium (utricle) enclosing the nut [6]. As part of the taxonomic revision of the family Cyperaceae in Nilgiri Biosphere Reserve, an interesting specimen of *Carex* belongs to section *Graciles* was collected from the Upper Bhavani grasslands, Western Ghats, India. The section *Graciles* is characterised by the presence of sheathed involucre bracts, two to numerous spikes and plano-convex or biconvex utricles [7] distributed in tropical and subtropical regions of Asia, Australia, Pacific Islands etc. with thirty species. On critical examination and perusal of literature the specimen was identified as *Carex bilateralis* Hayata hitherto known from Malaysia and China [7, 8]. Thus, our collection represents a new record for India and therefore a detailed description, photographs and other relevant notes are provided for easy identification.

TAXONOMIC TREATMENT

Carex bilateralis Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30 (1): 380. 1911; Dai & Koyama in Wu & Raven, Fl. China 23: 433. 2010. *C. subteinogyna* Ohwi, Mem. Coll. Sc. Kyoto Imp. Un. B11: 469. 1936. *C. spathaceo-bracteata* Kuek. Bot. Jahrb. 70: 466. 1940. *C. acrophila* S. T. Blake, J. Arn. Arb. 28: 114. 1947; Nelms, Renwardtia 1: 354. 1951. *C. asperinervis* Koyama, Act. Phytotax. Geobot. 16: 6. 1956.

Perennial herbs. Rhizome short, woody. Culms tufted, 20 – 95 cm tall, 0.5 – 1.5 mm thick, slender, erect, trigonous, smooth except on the angles above; the base surrounded by shining, fuscous to blackish sheaths and its remnants. Leaves 15 – 95 cm long, 1 – 2.5 mm wide, rigid, keeled, often flexuous at the long attenuate apex, scabrid. Inflorescence with 5 – 10 fascicles of spikelet, narrow, 5 – 15 cm long; involucre bracts shorter than inflorescence, lower ones shortly leaf-like, upper ones setaceous, sheathed. Spike narrowly lanceolate, upper spikes contiguous, lower ones rather spaced. Spikelets erect, linear-cylindric, 1 – 5 cm long, simple, rather densely flowered, androgynous, upper spikelets sessile or subsessile on included peduncles, lower one included to long-exserted, smooth or scaberulous peduncles. Glumes slightly shorter than utricles, oblong-lanceolate, 3.5 – 4 mm long, translucent, glabrous or sparsely hispidulous on the midrib towards apex, 3-nerved in the centre, ferruginous to fuscous with rather wide, whitish-hyaline margins, acute to obtuse, mucous or apiculate. Stamens 3; anthers linear, 1 – 1.4 mm long; filaments ca. 0.5 mm long. Ovary obovoid; style slightly short, base thickened; stigma 2, 3 – 7 mm long, persistent. Utricles narrowly elliptic, plano-convex, ca. 4 mm long, membranous, slenderly multi nerved, sub erect, reddish brown, whitish hispidulous on the margins in the upper half and often on the nerves, contracted below into a stout stipe, 0.5 – 1 mm long, beak bidenticulate, 1 – 1.75 mm long. Nut elliptic, oblong-elliptic, compressed-biconvex, 1.5 – 2.3 x 1 – 1.3 mm, not stipitate, shortly beaked, brown (Fig. 1).



Fig. 1. *Carex bilateralis* Hayata. A. Habit; B. Inflorescence; C. Spikelet; D-E. Glumes; F. Stamen; G. Nut; H. Utricle.

Flowering & Fruiting: May – December.

Habitat & Ecology: Shola-Grasslands Mountain ridges from 2000 – 2371 m ASL. The associated species in the community are *Carex longipes* D. Don., *C. longicuris* Nees, *Eulalia phaeothrix* (Hack.) Kuntze, *Eragrostis nigra* Nees ex Steud., *Crysopogon nodulibarbis* (Steud.) Henrard etc.

Distribution: Malaysia, China. **India:** Western Ghats, Upper Bhavani in Nilgiri Biosphere Reserve.

Specimen examined: India, Tamil Nadu, Nilgiri Distr., Upper Bhavani, ± 2371m, 11°13 32.6 N & 76°31 43.06 E, 09-11-2012, A. R. Viji & A. G. Pandurangan 75087 (TBGT).

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