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NOTE

Didymocarpus bhutanicus W.T. Wang (Gesneriaceae): a new addition to the herbs of India

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Didymocarpus bhutanicus W.T. Wang (Gesneriaceae), an uncommon mossy herb species from the eastern Himalaya is reported here as a new record for Indian flora. The species was earlier known only from Bhutan and listed as 'Least Concern' in the IUCN Red List (Bhutan Endemic Flowering Plants Workshop 2017). A detailed description along with an image of the habitat and a photo showing a dissected flower is provided. A comparison with its most similar allied species, *Didymocarpus oblongus* Wall. ex D.Don, is also provided for easy identification (Table 1).

Didymocarpus Wall., with 60 species worldwide, is mainly distributed in Nepal, Bhutan, northeastern India, Myanmar, southern China, Vietnam, Laos, Cambodia, Thailand, and the Malay peninsula. It is represented by 23 species in India, mainly restricted to the northeastern regions (Moller et al. 2016). The taxonomy and delimitation of *Didymocarpus* has varied considerably from time to time (Burtt 1998; Weber et al. 2000, 2011; Möller et al. 2011; Möller & Clark 2013; Li et al. 2016) and the circumscription of its members have also been subjected to various changes based on molecular phylogenetic studies and morphological revisions (Xu et al. 2019). Recent studies reveal the need for taxonomic rearrangement of the members, particularly those in northeastern India and in southeastern Asia (Weber & Burtt 1998; Möller et al. 2016).

During a floristic and ecological study in Sikkim in July 2019, under the auspices of the project entitled 'Biodiversity Assessment through Long Term Monitoring Plots in Indian Himalayan Landscape' an isolated population of an interesting species of *Didymocarpus* Wall. was discovered near Radong, East District, Sikkim (Figure 1). Through a survey of literature (Wang 1983; Wang et al. 1998; Weber et al. 2000; Hilliard 2001) and a comparison of herbarium specimens at ARUN, BSHC, CAL, we identified the plants as *Didymocarpus bhutanicus* W.T. Wang, a species hitherto not reported from India. A detailed description of *D. bhutanicus* along with a field photograph (Image 1), locality map (Figure. 1) and notes are provided. The presence of *D. bhutanicus* in Sikkim also establishes an eastward extension of its range.

Macro and micro morphology of dissected floral parts were observed using an Olympus stereo-zoom dissecting microscope (Olympus SZ61). Photographs were taken in the field with a Sony HX 400V Camera. The

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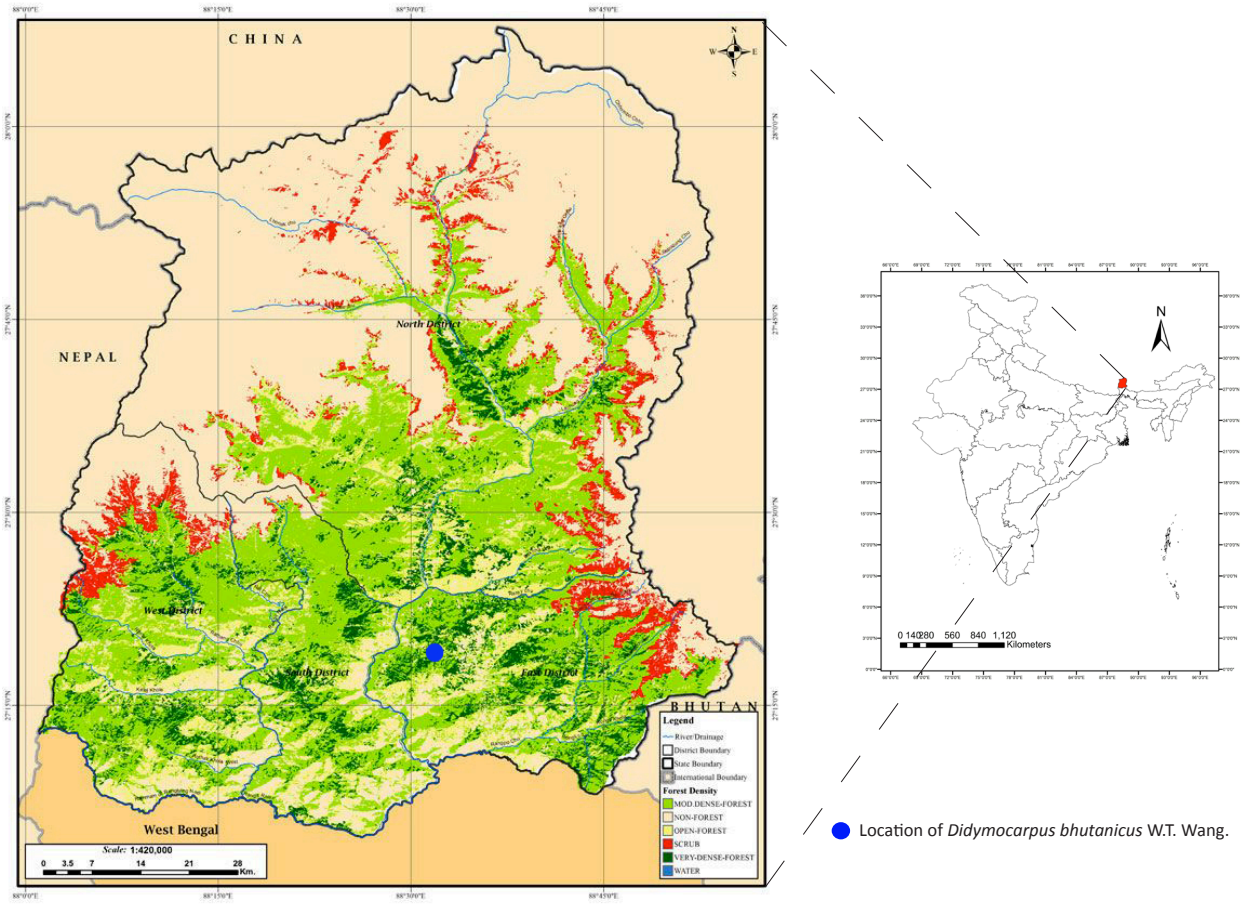

Figure 1. Location of *Didymocarpus bhutanicus* W.T. Wang near Rakdong area, East District, Sikkim.

coloured photo plate was made using Adobe Photoshop CS3; the locality map was created by using Arc Map (ver. 10.1) and Google Earth Pro.

***Didymocarpus bhutanicus* W.T. Wang,**

Bull. Bot. Res., Harbin 3(4): 46. 1983.

Type: E. Bhutan, Trashi Yangsi Chu, Tobrang, 2,600m, on mossy stones, in dense mixed forest, 5 July 1949, F. Ludlow, G. Sherriff and J.H. Hicks n. 20840 (Holotype, TI) (digital image!).

Herbs, erect, perennial. Roots woody, fibrous. Stem erect, 9–12 cm long, spreading, light brownish puberulous. Leaves 4, sub-verticillate, distal on stem; petiole 1.4–2.8 cm long; lamina herbaceous, slight unequally oblong or narrowly oval, 3.5–12 × 2.6–5 cm, base obliquely cuneate or obliquely rounded, margin double toothed, apex acute to acuminate, abaxially puberulous, adaxially glabrous or appressed puberulous, midvein prominent, lateral veins 5–7 pairs. Inflorescences cymes, axillary, peduncle 7.5–9.5 cm long, 2 or 3 times branched, distally spreading puberulous, ca. 6–10 flowered; bracts opposite, rounded-oval, 7.5–8 × 7–9 mm. Flowers: calyx campanulate, ca. 5mm long, light pink, glabrous, 5–lobed, lobes 1.4–2.1 mm long, obtuse; corolla pink or pale lilac, 1.7–2 cm long, glabrous, tube cylindrical, lower lip suborbicular, 8.5–9 mm long, 9–10 mm wide, 3-lobed; stamens inserted 2.3–3.5 mm above base of corolla, anthers oval, dorsifixed, glabrous; ovary lanceolate 2–3.8 mm long, stigma disciform. Capsule 1.8–2.3 cm long.

Flowering and fruiting: July–August.

Habitat and ecology: In wet moss-covered rocky crevices; 2,000–2,300 m. Main associated species: *Caulokaempferia sikkimensis* (King ex Baker) K. Larsen, *Impatiens purpurea* Hand.-Mazz., *Lycopodium japonicum* Thunb., *Adiantum incisum* Forssk.

Distribution: Bhutan; India (Sikkim).

Conservation status: Least Concern (Bhutan Endemic Flowering Plants Workshop 2017).

Specimen examined: 95701, 01.vii.2019, India, Sikkim, East District, near Rakdong, 27.385^{0}N & 88.528^{0}E, 2,100m, coll. S. Lahiri & M. Das (CAL!) (Image 2).

Notes: *Didymocarpus bhutanicus* is morphologically similar to *D. oblongus* Wall. ex D.Don. Both species

Image 1. *Didymocarpus bhutanicus* W.T. Wang: A—habitat | B_adaxial surface of leaf | C—abaxial surface of leaf | D—inflorescence | E—calyx | F—corolla | G—corolla split to show stamen | H—pistil | I—capsules. @ Subhajit Lahiri.

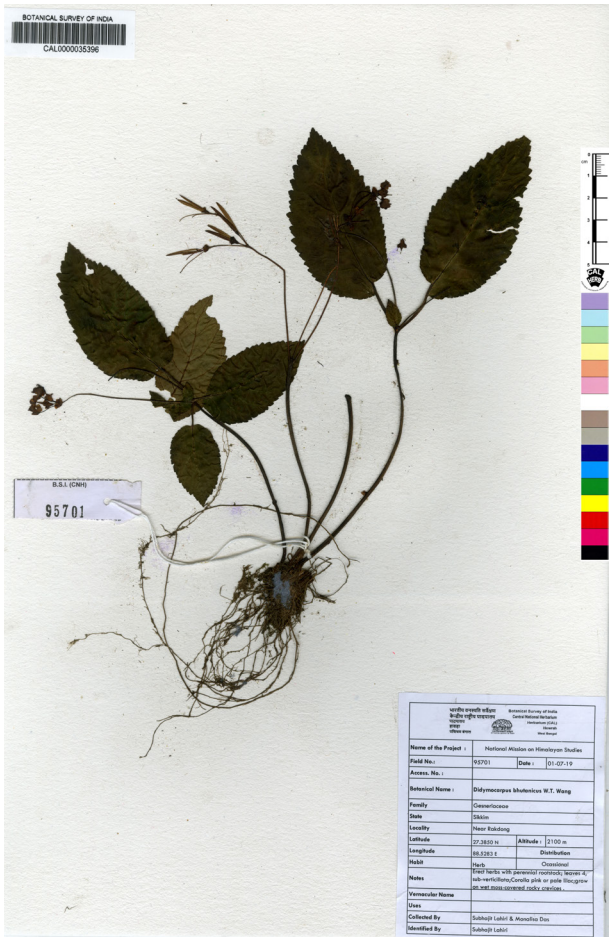

Image 2. Herbarium sheet of *Didymocarpus bhutanicus* (CAL! 95701).

occur between 1,500 and 3,000 m elevation. Both have well-developed stems and a pink corolla. *Didymocarpus bhutanicus* can be differentiated from *D. oblongus* by the longer peduncle, larger flowers and longer petiole. The leaves are rounded and densely puberulous to villous in *D. oblongus*; *D. bhutanica* has oblique, rounder leaves glabrous on the adaxial surface.

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