

# First record of a less known Asian moonflower (*Ipomoea aspera*: Convolvulaceae) from India

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**Abstract:** *Ipomoea aspera* (Choisy) Vatke, an Asian moonflower is reported here for the first time from India. A brief description of the plant along with photographs and distribution map are provided to facilitate its future unambiguous identification. Its taxonomic relationships with other closely allied taxa are examined and discussed.

**Keywords:** *Ipomoea*, Sect. *Calonyction*, Moon Flower, New record, Pollination syndrome.

## Introduction

*Ipomoea* L. is a large and diverse genus in the morning glory family Convolvulaceae and comprises over 600 species of vines and shrubs. The genus is distributed throughout the tropics and subtropics (Fang & Staples, 1995; Miller *et al.*, 2004; Staples, 2010; Khalik, 2013) and majority are found in the Americas (Austin & Huaman, 1996). In India, the genus is represented by approximately 57 species (Clarke, 1883; Johri, 1984). Chowdhury (2005) listed 18 species from the state of Assam.

Moonflowers are night-flowering species with a distinctive suite of floral characters: white salverform corolla, sweet fragrance, often exerted stamens and stigma. These conform to a nocturnal moth pollination syndrome (Staples & Traiperm, 2008). Gunn (1972) recognized four species of moonflower morning glories in temperate America, which he assembled in *Ipomoea* sect. *Calonyction* (Choisy) Griseb. This assemblage was circumscribed on the basis of warty or fleshy spinous stems, simple leaves, axillary dichasia, and salverform corolla with a prominent tube

(hawkmoth pollination syndrome). However, McDonald (1993) had the opinion that, nocturnal moth pollination syndrome has multiple origins in *Ipomoea* and evolved independently yet in other sections of the genus.

The Asian night-flowering species of *Ipomoea* (moonflowers) have not been taxonomically studied in the same degree of thoroughness as their tropical American counterparts (Staples & Traiperm, 2008). The Asian night flowering group comprises less than 10 taxa and the species *Ipomoea aspera* (Choisy) Vatke is one of them. It was first described by Choisy (1834) as *Calonyction asperum* Choisy based on collection made by F. de Silva from Sylhet district of Bangladesh. Clarke (1883) reduced *C. asperum* under the synonymy of *I. grandiflora sensu* C.B. Clarke (= *I. violacea* L.). Thereafter, the species was lingered in obscurity, as there is no mention of the species in regional floras (Clarke, 1939; Deb, 1983; Khan, 1985; Haridasan & Rao, 1987; Mill, 1999; Giri *et al.*, 2008; Sinha, 2012; Mao *et al.*, 2016, 2017). Recently, Staples and Traiperm (2008) recognized *I. aspera* as a distinct species and reported its occurrence from Myanmar and Thailand.

During a field study in 2011 at Borail Wildlife Sanctuary located in Cachar district of Assam, the first author collected a few specimens of the plant in flowering condition. After critical morphological study, the specimens are identified as *I. aspera*, which forms a new addition to the flora of India.

***Ipomoea aspera*** (Choisy) Vatke, Linnaea 43: 508. 1882; Staples & Traiperm, Thai For. Bull. (Bot.) 36: 95. 2008; Staples in Santisuk *et al.*, Fl. Thailand 10(3): 409. 2010. *Calonyction asperum* Choisy, Mém. Soc. Phys. Genève 6: 442. 1834. *Convolvulus aspera* Wall., Numer. List no. 1388. 1829. *nom. inval.*

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*Type:* BANGLADESH, *Sillet* (Sylhet), *s.d.*, *Wallich Cat. No.* 1388 (syntype G-DC-00135407 digital image!).

**Fig. 1**

Herbaceous climber. Stems terete with short fleshy spines, greenish, 2.5–4.6 mm in diam. Leaves ovate-cordate, 8.5–13.5 × 7.5–11.3 cm, cordate at base, caudate-acuminate at apex, margins sparsely dentate (never deeply lobed), rarely entire, glabrous, lateral nerves 7–8 pairs; petioles slender, 5.5–9.5 cm long. Flowers nocturnal, solitary, axillary; pedicels stout, 1.1–1.6 cm long, gradually thickened upwards. Sepals unequal; outer 2 smaller, ovate-elliptic, 13.5–14.5 × 8.5–9.5 mm, obtuse at apex; inner ones larger, oblong-elliptic, 17.2–21.5 × 8.4–12.6 mm, margins thinner, apex rounded, mucronate. Corolla salverform, white, greenish outside; tube 8.5–9.7 cm long; limb shallowly 5-lobed, 6–7 cm in diam., midpetaline bands distinct, white or creamy. Stamens inserted near the base of corolla tube; anthers elliptic-oblong, longitudinally dehiscent. Carpels included, ovary glabrous. Fruits not seen.

*Flowering:* October –November.

*Habitat:* On shady hill slopes in evergreen forest at altitudes ranging from 58–120 m. It was found climbing on shrubs and trees present in the vicinity, occasionally forming dense clumps. The main components of the forest were *viz.* *Schima wallichii* (DC.) Korth. (Theaceae), *Callicarpa arborea* Roxb. (Lamiaceae), *Ficus cyrtophylla* (Wall. ex Miq.) Miq. (Moraceae), *Dendrocnide sinuata* (Blume) Chew, *Oreocnide integrifolia* (Gaudich.) Miq. (Urticaceae),

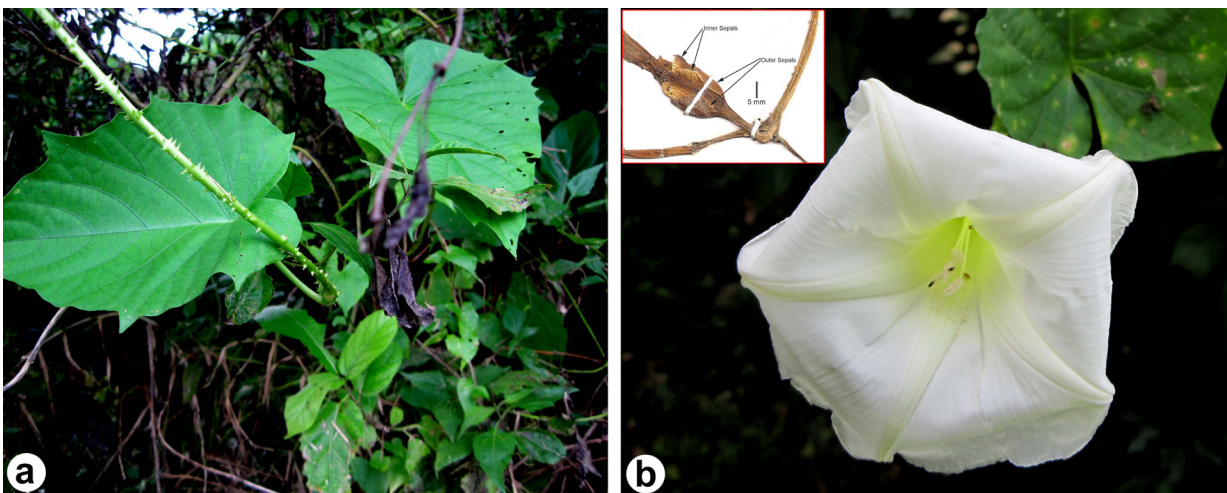
*Ardisia khasiana* C.B. Clarke (Primulaceae), *Macropanax dispermus* (Blume) Kuntze (Araliaceae), *Psychotria monticola* Kurz (Rubiaceae), etc.

*Distribution:* India (Assam), Bangladesh (Sylhet), Myanmar (Yangon, Thaninthanyi), Thailand (Loei, Kanchanaburi, Saraburi).

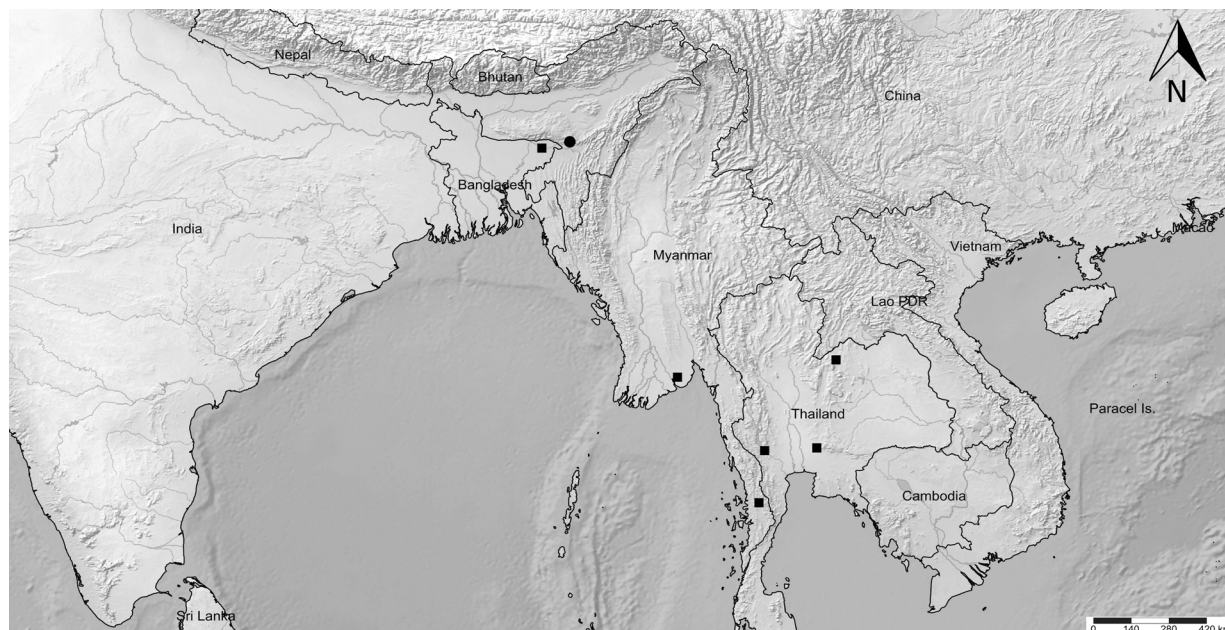
**Fig. 2**

*Specimen examined:* INDIA, Assam, Cachar, Borail Wildlife Sanctuary, Kalain Range, 15 no. Hill, 25°01'05.08" N, 92°37'43.74"E, alt. *c.* 120 m, 11.11.2011, *H.A. Barbhuiya* 800 (HBARC-00006401!).

*Notes:* *Ipomoea aspera* shows affinity with *I. aculeata* Blume and *I. violacea* L. in having salverform corolla with a long narrow tube, white midpetaline bands, obtuse sepals and hairy nature of seeds. However, the former differs from the latter in having shorter outer sepals and insertion of stamens near the base of corolla tube against the outer sepals slightly longer than the inner ones and stamens usually inserted near the middle of the corolla tube in *I. aculeata*. *I. aspera* also differs from *I. violacea* by the presence of dentate leaf margins, soft muricate or spiny stem, seed edges with long (*c.* 10 mm) yellowish, wavy hairs. Whereas in *I. violacea* leaves are always entire, the stem is a little bit woody at base, surface verrucose or warty, often longitudinally wrinkled and seeds with short (*c.* 3 mm) black-velvety, hairs on the edges (Staples, 2010). *I. aspera* also shows a close affinity with Malesian *I. trichosperma* Blume. However, the latter is distinct from the former in having woody stems with smooth or minutely verrucose surface, deeply lobed leaves and corolla



**Fig. 1.** *Ipomoea aspera* (Choisy) Vatke. **a.** Leaves with a portion of muricate stem; **b.** Front view of the flower showing 5-lobed corolla limb, midpetaline bands and stamens. Flower base showing outer and inner sepals (in caption).



**Fig. 2.** Distribution map of *Ipomoea aspera* (Choisy) Vatke. Square (■) indicates the previously known localities while circle (●) indicates the currently reported locality. Map Created with Simple Mappr, <http://www.simplemappr.net> (Shorthouse, 2010).

with reddish midpetaline bands (Van Oostroom, 1940; Van Oostroom & Hoogland, 1953).

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