

## Rediscovery of an endemic species, *Impatiens trigonopteris* Hooker f. (Balsaminaceae) from Sikkim Himalaya

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### Abstract

*Impatiens trigonopteris* Hooker f. (Balsaminaceae) is first time reported from Sikkim Himalaya. It has been rediscovered after its type collection from the Enchey Monastery, Gangtok in Sikkim Himalaya after a lapse of 106 years. Details of its new distribution, habitat, specimens studied, photograph and description are provided for easy identification.

**Key words:** *Impatiens trigonopteris*, New record, Rediscovery, Sikkim Himalaya.

### INTRODUCTION

*Impatiens* Linnaeus is one of the interesting and the largest genera of Balsaminaceae, comprising of about 1000 species distributed mostly in Tropical and subtropical regions of the northern temperate regions, especially India, China and Africa with few representing in America and Europe (Grey-Wilson 1980; Mabberley 2008). In Indian subcontinent, for the first time, this genus was studied by Hooker and Thomson (Hooker 1875) and recorded 123 species and the Flora of India reported 210 species (Vivekanathan *et al.* 1997). According to Jyosna and Janarthanam (2011) most of the species of this genus are endemic to Himalayas and the Western Ghats. So far, 32 species were reported from Sikkim Himalayas (Srivastava 1998), 34 from Arunachal Pradesh (Hajra *et al.* 1996), 32 from West Bengal (Ghara 1997) and 39 from Bhutan (Grey-Wilson 1991). Bhaskar (2012) reported 76 species including 48 endemics in the entire Western Ghats. Pusalkar and Singh (2010) described three new species of *Impatiens* from Western Himalaya, India. Pandurangan (pers. comm., Oct. 2016) collected around 90 species from the entire Western Ghats area.

In July 2012, a botanical expedition was conducted under the auspicious of Center of Excellence project, New Delhi on which a species of *Impatiens* was collected from the forest area near Enchey Monastery at Gangtok in Sikkim. These specimens were critically studied using different literature including Hooker (1875), Vivekanathan *et al.* (1997), Srivastava (1998), Ghara (1997), and Chakrabarty (2009). The specimen was coming close to *Impatiens lutea* and *I. urticifolia*. Further critical examination by comparing with the state floras and the revisions and also the type specimens available at CNH (Dr. W. Arisdason,



**PLATE - I:** *Impatiens trigonoptera*: A. voucher specimen; B. & C. flowering twigs; D. close view of flower

pers. comm.) and Kew, interestingly it turned out to be *Impatiens trigonopteris* Hooker f. This species is endemic and was recorded only from Darjeeling (West Bengal) by Prain (1903) and Burkill (1906). The present collection from Sikkim is a rediscovery, and first collection from outside its type locality that too after a lapse of 106 years. The voucher specimens were deposited at FRLH National Herbarium, Bangalore. The taxonomic descriptions, plant images and digitized herbarium are provided for easy identification.

### Taxonomy treatment

*Impatiens trigonopteris* Hooker f. in J. & Proc. Asiat. Soc. Bengal new ser. 4: 189. 1908; K. Vivekananthan & al. in P.K. Hajra & al., Fl. Ind. 4: 219. 1997.

Herb, up to 50 cm high; branches striate, glabrous or glabrescent. Leaves ovate-elliptic, lanceolate, 4.5 – 5.5 x 1.5 – 2.2 cm, cuneate at base, serrate at margins, acuminate at apex, glabrescent; lateral nerves 5 – 9 pairs; petiole c. 1.5 cm long. Flowers in pedunculate cymes, axillary, 2 – 4 in each peduncles; bracts ovate-lanceolate, c. 3 mm long; peduncles slender, striate, c. 3.5 cm long, sparsely hairy; pedicels filiform, c. 1.5 cm long. Petals yellow; anterior ones obovate-triangular or cucullate, slightly 2-lobed, c. 3.5 mm across, purple spot; posterior ones 3-lobed, c. 1 cm long; lateral lobes 2, oblong, c. 2.5 mm long, purple spot; central lobes 2, ovate-oblong, c. 3.5 x 2.5 mm, golden yellow, notched at apex; spur pendulous, cylindrical, c. 3 cm long with purple spot. Capsules linear, oblongoid, c. 1 cm long, glabrous; seeds c. 12, ellipsoid-obovoid, apiculate at apex, c. 1 x 1 mm long, pubescent.

*Flowering & Fruiting:* July – October

*Habitat:* Moist localities along road cuttings, growing with *Hedychium* sp., *Maesa indica* (Roxburgh) A. DC., *Thunbergia* sp., *Phyllanthus urinaria* Linnaeus and *Stephania japonica* (Thunberg) Miers.

*Distribution:* Endemic to Eastern Himalaya (West Bengal, Sikkim). 1800 – 2200 m amsl.

*Specimens Examined:* INDIA: Sikkim: Enchey Monastery, Gangtok, 1970 m, N: 27° 20' 26" N and 88° 37' 39" E, 27.07.2012, K. Ravikumar, T.S. Suma & M.V. Sumanth 111286 (FRLH). West Bengal: Lamtey, Sep. 1903, Prain, D. 417 (CAL!); Jarpokri, 03.10.1906, Burkill, I.H 27760 (K000694751!).

*Conservation:* The sighting of only few plants of *Impatiens trigonopteris* in the study area indicates its rarity. As the occurrence of the species is found in highly disturbed area and the only known population is with few individuals, the species could fall very well under IUCN-threat categories. Further explorations to look for the species in similar locations may throw more light on the threat status which will help to conserve this very rare species.

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