



A new species of *Impatiens* (Balsaminaceae) from Southwestern Thailand

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Abstract

Impatiens suksathanii Ruchis. & Triboun, a new species from a limestone area in Kanchanaburi Province in Southwestern Thailand, is described and illustrated. This endemic new species is clearly distinguished from the most similar *I. namkatensis* T. Shimizu by having sessile to very short petioles, linear, narrowly lanceolate to narrowly oblanceolate laminae, and pale pink flowers. Its conservation status is also assessed as Critically Endangered.

Key words: Kanchanaburi province, *Semeiocardium*, limestone, endemic species

Introduction

Balsaminaceae consists of two genera: the monotypic genus *Hydrocera* Blume ex Wight & Arnott (1834: 140) with only a single species, *H. triflora* (L.) Wight & Arnott (1834: 140) distributed in the Indo-Malayan region; the other genus, *Impatiens* Linnaeus (1753: 937), is very variable and comprises over 1,000 species which are mostly found in tropical and subtropical rain forests, particularly in the Old World (Grey-Wilson 1980, Lens *et al.* 2012). In the last decade, many new *Impatiens* species have been discovered from throughout the world (Fischer & Rahelivololona 2004, Janssens *et al.* 2009, Suksathan & Triboun 2009, Dessai & Janarthanam 2011, Janssens *et al.* 2011, Shui *et al.* 2011, Dong *et al.* 2012, Utami 2012, Gogoi & Borah 2013), but particularly from South-East Asia which is an area of high endemism (Yuan *et al.* 2004).

In Thailand, sixty native *Impatiens* species have been enumerated in previous works (Shimizu 1970, 1977, 1991, 2000, Shimizu & Suksathan 2004, Suksathan & Triboun 2009). Current studies on the genus, however, are revealing many new records and new species such that the total number of species in Thailand may eventually be around 100 (Suksathan pers. comm.). Most Thai *Impatiens* species are lithophytic and confined to limestone habitats.

In 2008, an unidentified taxon in a limestone area in Kanchanaburi province, Southwestern Thailand, was collected by Piyakaset Suksathan and his collaborators. After intensive investigation of the previous literature, no species could be matched to this taxon. Therefore, a new species is here described.

The terminology used in this paper follows Suksathan & Triboun (2009: 159). All specimens listed have been seen by the authors.

Taxonomy

Impatiens suksathanii Ruchis. & Triboun, *sp. nov.* (Figs. 1, 2)

Impatiens suksathanii Ruchis. & Triboun is clearly distinguished from the most similar *I. namkatensis* T. Shimizu by having sessile to very short petioles, linear, narrowly lanceolate to narrowly oblanceolate laminae, and pale pink flowers.

Type:—THAILAND. Kanchanaburi: Thong Phaphum district, Wat Tha Khanun, on limestone rock, ca. 120 m elevation, 5 August 2008, Suksathan *et al.* 4325 (holotype BK, isotype QBG).

Additional specimens examined (paratypes):—THAILAND. Kanchanaburi: Sai Yok district, Mahidol University, Kanchanaburi campus, growing naturally on small limestone hills in the campus, 6 August 2011, *Ruchisansakul* 210 (BK); Thong Phaphum district, Wat Tha Khanun, 5 August 2012, *Middleton et al.* 5255 (BK, BKF, E); *ibid.*, 4 December 2005, *Pooma et al.* 5859 (BKF 163999); *ibid.*, 21 August 2005, *Ruchisansakul* 215 (BK).

Notes:—*Impatiens suksathanii* Ruchis. & Triboun is one of the smallest-flowered *Impatiens* species in Thailand and belongs to subgenus *Semeiocardium* (Zoll.) N.Utami (Utami 2009) with 4-carpellate ovaries and connate lateral united petals. This new species is closely related to *I. namkatensis* T.Shimizu (Shimizu 2000: 37), a northern Thailand endemic, but differs from it in having sessile to very short petioles (up to 3 mm long), linear, narrowly lanceolate to narrowly oblanceolate laminas, and pale pink flowers (Table 1). The new species also has similarities to two Indian species, *I. rosea* Lindl. (Lindley 1841: 27) and *I. scabriuscula* B.Heyne (in Roxburgh 1824: 464) but can clearly be distinguished from the first species by having a much smaller habit (up to 45 cm vs up to 150 cm tall), a glabrous stem, an un-horned apex to the dorsal petal, and glabrous lateral sepals (vs hairy along margins and mid-vein). From *I. scabriuscula* it can be distinguished by having an un-horned apex to the dorsal petal, a lower sepal with a distinct spur (vs no spur) and glabrous flowers and fruits. Also, both Indian species have a 5-carpellate ovary and free lateral united petals (Table 1).

TABLE 1. Morphological comparison of distinguishing characters of *Impatiens suksathanii*, *I. namkatensis*, *I. rosea*, and *I. scabriuscula*.

Characters	<i>I. suksathanii</i>	<i>I. namkatensis</i>	<i>I. rosea</i>	<i>I. scabriuscula</i>
Habit	15–45 cm high	10–40 cm high	up to 150 cm high	about 30 high
Stems	glabrous	glabrous	hairy	villous
Flowers	pale pink with red marks, glabrous	white with red and yellow marks, glabrous	pink, hairy along margins and mid-vein of lateral sepals	pale pink, villous
Lower sepal	distinct spur	distinct spur	distinct spur	spurless
Dorsal petal	un-horned apex	un-horned apex	horned apex	horned apex
Lateral united petals	connate	connate	free	free
Ovary	4-carpellate	4-carpellate	5-carpellate	5-carpellate
Fruit	glabrous	glabrous	hairy	hairy

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