

***IMPATIENS MOHANA* (BALSAMINACEAE),
A NEW SCAPIGEROUS BALSAM FROM
WAYANAD, WESTERN GHATS, INDIA**

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A new species of *Impatiens* L. (Balsaminaceae) from Wayanad District, Kerala, India, *Impatiens mohana* Ratheesh, Sujana & Anil, is described, illustrated and compared with *I. modesta* Wight.

Keywords. Balsaminaceae, endemic species, *Impatiens mohana*, India, Kerala, new species, Wayanad, Western Ghats.

INTRODUCTION

The family Balsaminaceae is a mid-sized family of flowering plants, comprising about 1000 species in just two genera (Mabberley, 2008). *Hydrocera* Blume, from Sri Lanka, India to Java, South Borneo and Sulawesi, is monotypic; all other species belong to *Impatiens* L., primarily an Old World genus distributed throughout much of tropical Africa, India, Southwest Asia and Japan (Grey-Wilson, 1980). In India the genus is represented by more than 203 taxa, mainly distributed in three major centres of diversity: the Western Himalayas, Northeast India, and the Western Ghats. Each of these areas is a centre of radiation for a particular group of species (Hooker, 1908; Gamble, 1915; Vivekananthan *et al.*, 1997). Of the 90 species in Peninsular India, more than 80 are endemic and are confined to the Western Ghats (Rajalal *et al.*, 1996). In India *Impatiens* section *Scapigerae* Hook.f. & Thomson, with 19 known species, is restricted to the latter area and belongs to the Western Ghats–Sri Lanka Hotspot of Biodiversity (Bhaskar, 1981, 2006; Bhaskar & Razi, 1983; Vivekananthan *et al.*, 1997; Viswanathan & Manikandan, 2003). Classification within the section is mainly based on the lobes of the lateral petals, the spur of the lip and the dorsal auricle on the lateral petals. Among the 15 species with three-lobed lateral petals *Impatiens agumbeana* Bhaskar & Razi, *I. barberi* Hook.f., *I. crenata* Bedd., *I. laticornis* C.E.C.Fisch., *I. lawsonii* Hook.f., *I. modesta* Wight, *I. nilgirica* C.E.C.Fisch. and *I. tirunelvelica* M.B.Viswan. & Manik. have a spur less than 1 cm long.

The Wayanad District of Kerala forms a biodiversity-rich area in the Nilgiri phytogeographical region of the Western Ghats. During an exploration of the

flowering plants there, 21 species of *Impatiens* were collected in various habitats (Ratheesh Narayanan, 2010). One specimen, with a spur less than 5 mm long, was collected from high-altitude rock crevices in the grassland and is quite distinct from the hitherto known scapigerous species. It is described and illustrated here as new.

SPECIES DESCRIPTION

Impatiens mohana Ratheesh, Sujana & Anil, **sp. nov.** Fig. 1.

Impatiens modestae similis foliis ovato-cordatis, petalis lateralibus 3-lobatis, calcare minus 5 mm longo, capsulo ellipsoideo, sed pedunculis in parte inferiore 2/3 trichomatibus multicellularibus, floribus roseis, calcare stricto cylindrico, petalis lateralibus basi lobo minore, seminibus granulatis contra pedunculis glabris, floribus albis, calcare recurvato, petalis lateralibus subaequalibus basaliter lobo magno, seminibus pubescentibus differt. – Type: India, Kerala, Wayanad District, Aranamala Hills, c.1700 m, rock crevices in grassland, 17 viii 2006, M.K. Ratheesh Narayanan 2451 (holo CALI; iso MSS¹).

Scapigerous perennial herbs, lithophytic, 8–15 cm tall, rhizome tuberous, tubers whitish. *Leaves* 1–3, radical, petiolate, membranous, 4–8 × 3–4 cm, lamina ovate, slightly inequilateral, attenuate, margins bristly crenate, serrate, base deeply cordate, apex obtusely rounded or notched, 3–5 nerved, adaxially pale brown, abaxially deep pink, with multicellular trichomes on both surfaces; petiole 3–5 cm long, yellowish green, trichomatous. *Inflorescence* a racemose scape, unbranched; peduncles longer than the leaves, 12–18 cm long, 6 to 12-flowered, villous with multicellular trichomes and yellowish green in the lower 2/3, distally glabrous and pinkish streaked, flowers distal, 1.4–1.6 × 0.7–1 cm, pink with white margins, bracts fleshy, broadly ovate, c.4 × 2 mm, concave, obtuse, pale greenish with pink streaks, glabrous; pedicel longer than the flower, 2–3 cm long, elongating in fruit. *Lateral sepals* fleshy, broadly ovate, c.1.7 × 1.5 mm, apex rounded, glabrous, pinkish with white dots; lower sepal broadly ovate, c.4 × 3.5 mm, white, glabrous; spur cylindrical, 3.7–4 mm long, white. *Dorsal petal* elliptic-orbicular, 2–3 × 3–4 mm, broader than long, saccate, dorsally with a projection, glabrous, white margins wavy; lateral united petals 3-lobed, c.1.2 cm long, deep pink with a tuft of pink and yellow hairs a little above the base; basal lobes smaller, broadly oblong, with tuft of yellow hairs at the centre, c.2 × 2 mm, middle lobe larger, broadly oblong, c.5 × 4 mm long, distal lobe narrowly oblong, straight, c.4 × 2 mm. *Stamens* 5, connate; filaments white with pink tinge above, anthers pale blue. *Ovary* pale yellowish green, elliptic, acute at apex, glabrous. *Capsule* broadly ellipsoid, 0.9–1 cm long, acute; seeds many, minute, testa white, granulate.

Distribution. Endemic to the Aranamala Hills, Wayanad District, Kerala, India.

¹ M. S. Swaminathan Research Foundation.

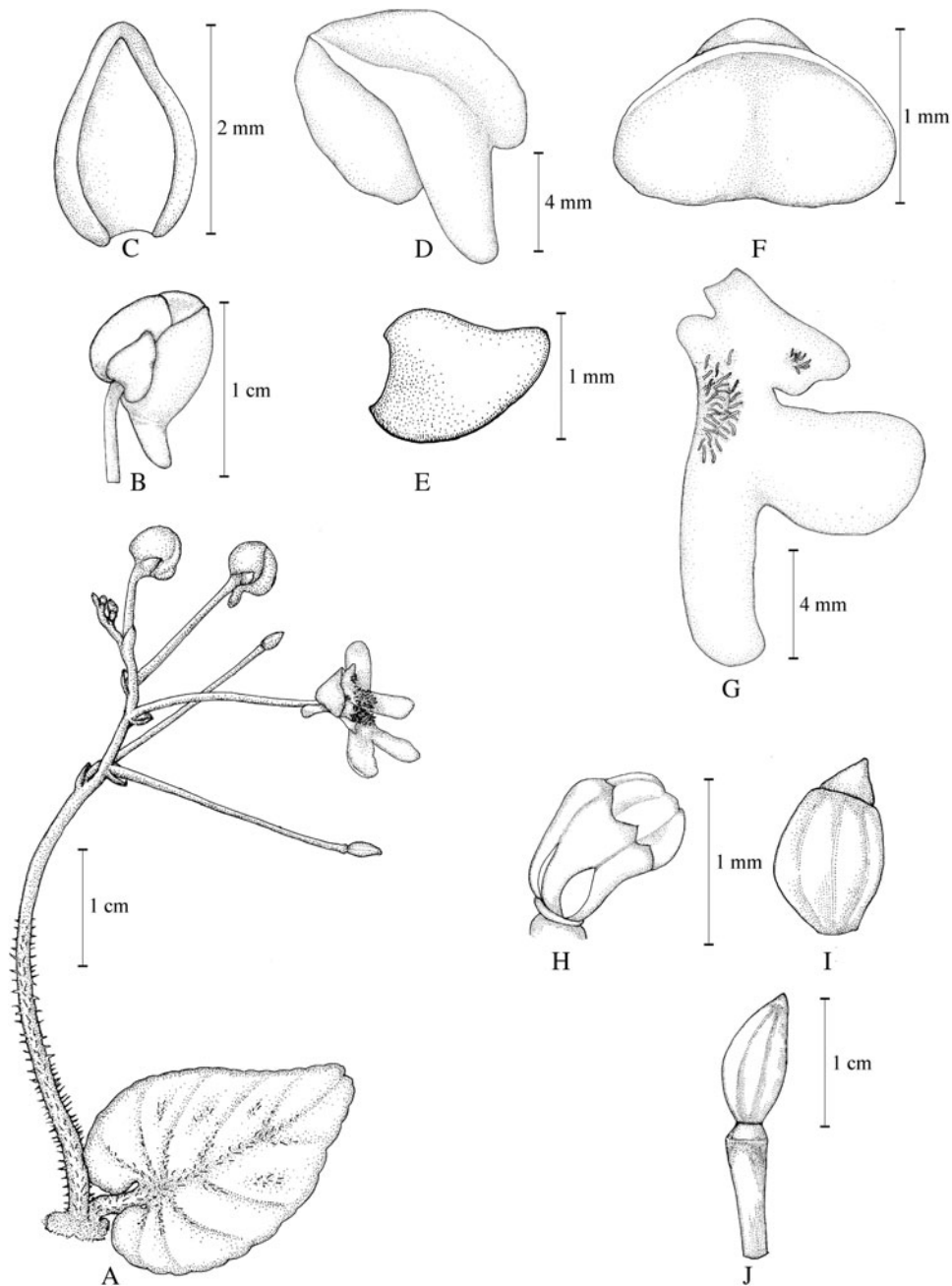


FIG. 1. *Impatiens mohana* Ratheesh, Sujana & Anil. A, habit; B, flower bud; C, bract; D, lower sepal; E, lateral sepal; F, dorsal petal; G, lateral united petal; H, anthers; I, ovary; J, fruit.

Habitat and ecology. Dripping shady rock crevices in grassy slopes at an altitude of 1600–1800 m.

Phenology. Flowering is from July with a peak in August. Fruit maturing in September.

Etymology. The specific epithet ‘mohana’ is derived from the Malayalam word ‘mohanam’ indicating the very beautiful pink flowers of the plant.

Taxonomic note. *Impatiens mohana* is similar to *I. modesta* in its ovate-cordate leaves, three-lobed lateral united petals, a spur less than 5 mm long and an ellipsoid capsule, but differs in having peduncles with multicellular trichomes in the lower 2/3, pink flowers, a straight, cylindrical spur, unequal lateral united petals with a smaller lobe basally, and granulate seed. *Impatiens modesta*, by contrast, has glabrous peduncles, white (rarely pink) flowers, a recurved spur, subequal lateral united petals with a large basal lobe, and hairy seeds. *Impatiens modesta* is a succulent epiphyte on wet moss-covered trees or is lithophytic in damp shady areas in evergreen forests at an altitude of 1200–2000 m in the southern Western Ghats. However, *Impatiens mohana* is found on very wet shady rock crevices in grassy slopes at an altitude of 1600–1800 m. A more detailed morphological comparison of these two species is given in Table 1.

Additional specimens examined. INDIA. Kerala, Wayanad District, Aranamala Hills, c.1800 m, 20 viii 2009, M.K. Ratheesh Narayanan 5232 (MSSH).

TABLE 1. Comparison between *Impatiens mohana* and *Impatiens modesta*

Character	<i>Impatiens mohana</i>	<i>Impatiens modesta</i>
Leaves	Brown, with multicellular trichomes on both side, 4–8 × 3–4 cm	Green, sparsely unicellular hairy above, 2.5–14 × 2–9 cm
Scapes	Thick, with multicellular trichomes in the lower 2/3, distally glabrous	Slender, glabrous
Flowers	Deep pink, 1.4–1.6 cm across	White or pink, 0.8–1 cm across
Bracts	Broadly ovate, obtuse	Subulate, lanceolate
Lateral sepals	Broadly ovate, rounded at apex	Narrowly lanceolate or subulate
Spur	Cylindric, straight, 3.7–4 mm long, white	Obtuse, recurved, 2–3 mm long, white
Dorsal petals	Elliptic, orbicular, margins wavy, a projection on dorsal side, 2–3 × 3–4 mm	Orbicular, margins entire, 2–3 × 3–4 mm
Lateral united petals	3-lobed, lobes unequal, basal lobes smaller than distal lobes, c.2 × 2 mm, straight, slightly bilabiate	3-lobed, lobes subequal, basal lobes larger than distal lobes, c.4 × 2 mm, curved upwards
Capsule	Broadly ellipsoid, 0.9–1 cm long	Ellipsoid, 4–6 mm long
Seeds	Granulate	Hairy

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