

# Three new species of *Impatiens* (Balsaminaceae) from Sumatra, Indonesia

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**Summary.** Three new species of *Impatiens* from West Sumatra, Indonesia, are proposed: *Impatiens ekapaksiana*, *I. tribuana* and *I. wirabraja*. A description, illustration and IUCN conservation status is provided for each species.

**Key Words.** Taxonomy.

## Introduction

The genus *Impatiens* is well represented on the major Malesian islands, e.g. Sumatra, Java, Borneo, the Philippines and New Guinea. On Sumatra most species are confined to the montane forest region along the entire western seaboard (Grey-Wilson 1989). Since we started exploring this area, several new species of *Impatiens* have been described in addition to the ones mentioned in Grey-Wilson's treatment (Shimizu & Utami 1997; Utami 2005, 2009, 2011). Here we present three hitherto undescribed Sumatran species discovered in 2010. The floral description of the species follows Grey-Wilson (1989).

## Taxonomy

***Impatiens ekapaksiana* Utami sp. nov.** Type: Indonesia, Sumatra, Mt Pantai Cermin, Deden Girmansyah 1536 (holotype BO!).

<http://www.ipni.org/urn:lsid:ipni.org:names:77121634-1>

*Perennial herb* up to 35 mm tall; simple, rooting at the lower nodes, pubescent. *Leaves* alternate, congested towards the apices of the stems, purple and sometimes green; lamina ovate, 4 – 55 × 8 – 27 mm, base acute, margin serrate to crenate, apex acute, lateral veins 3 – 7 pairs, venation obvious, pubescent, petiole 10 – 25 mm long, pubescent. *Inflorescences* 1 or 2-flowered; flowers obvious, pubescent, petiole 10 – 25 mm long, pubescent, flowers yellow with a red blotch on the lower part. *Peduncles* c. 45 mm long, pubescent. *Bracts* linear, 5 – 7 mm, pubescent. *Pedicel* c. 18 mm long, *Lateral sepals* 2, ovate to elliptic, 4 – 5 × 7 – 9 mm, reddish to yellowish, pubescent. *Lower sepal* shallowly navicular, c. 5 × 10 mm, blotched with red inside, abruptly constricted into a

filiform spur, 20 – 25 mm long, curved towards the tip, reddish to yellowish, pubescent. *Dorsal petal* shallowly cuculate, c. 5 × 10 mm, reddish to yellowish, pubescent. *Lateral petals* united, upper part of each pair ovate to oblong, apiculate, c. 15 × 10 mm, yellow, lower part of each pair asymmetrical, ± ovate, c. 4 × 6 mm, yellow with red spot. *Ovary* glabrous. *Fruit* a capsule, fusiform, c. 5 × 14 mm, glabrous. Figs 1 and 2.

**DISTRIBUTION.** Endemic to Indonesia: West Sumatra. Known only from Mt Pantai Cermin in South Solok (1.16546°S, 100.51266°E).

**SPECIMENS EXAMINED. INDONESIA.** Sumatra: Mt Pantai Cermin, South Solok, 8 Oct. 2010, Deden Girmansyah 1536 (holotype BO).

**HABITAT.** Growing along riverside; alt. 1600 m.

**CONSERVATION STATUS.** The species only grows in this area and appears to be common only on Mt Pantai Cermin. The population needs to be assessed accurately before it can be classified as anything other than Data Deficient (DD) (IUCN 2001).

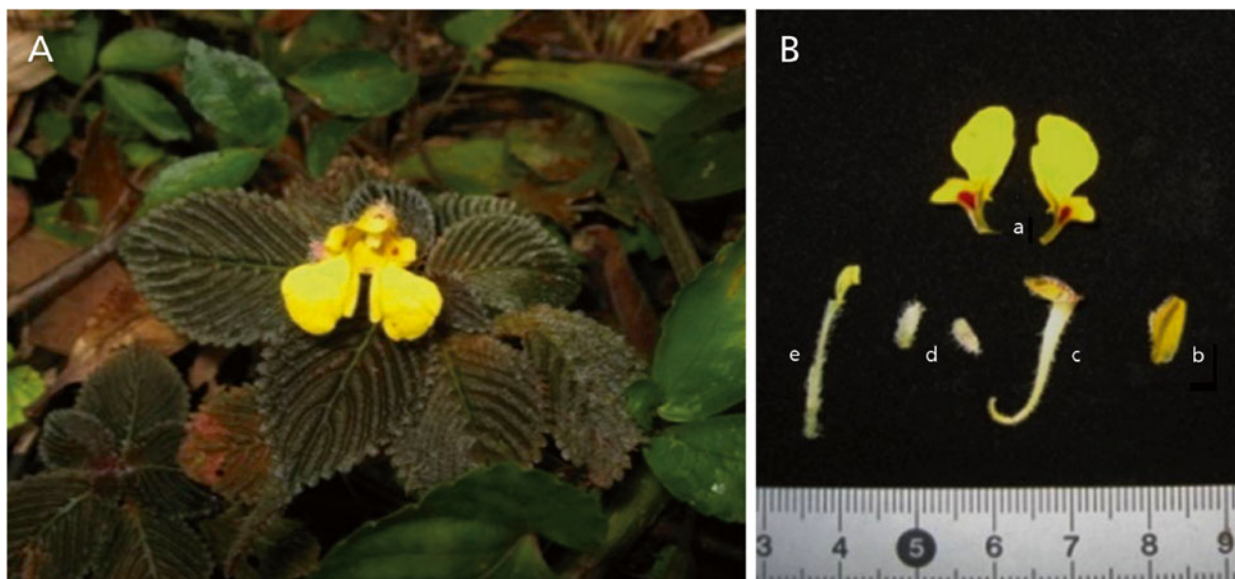
**PHENOLOGY.** Flowering May – Oct.

**ETYMOLOGY.** The species epithet is given in honour of TNI-KOPASSUS (the Indonesian Special Forces) for their dedication and encouragement to conserve the environment and biodiversity in Sumatra. *Ekapaksiana* is derived from 'Bintang Karthika Eka Paksi', a sign of appreciation issued by the army of Indonesia.

**NOTES.** *Impatiens ekapaksiana* typically has small yellow, red-marked flowers and finely pubescent peduncles, venations and petioles. *I. ekapaksiana* closely resembles *I. sidikalangensis* Grey-Wilson; they differ in floral details, the latter species having white or pale pink flowers, and a lilac purple stain on the dorsal petal and at the base of the two lateral petals.

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**Fig. 1.** *Impatiens ekapaksiana*. A flower; B floral organs: a two lateral united petals; b dorsal petal; c spur and lower spur; d spur and lower sepal; e ovary. PHOTOS: MARLINA ARDIYANI.

***Impatiens wirabraja* Utami sp. nov.** Type: Indonesia, Sumatra, Paninggahan, Deden Girmansyah 1530 (holotype BO!).

<http://www.ipni.org/urn:lsid:ipni.org:names:77121636-1>

*Perennial herb*, 100 – 150 mm tall, stem erect, brownish. *Leaves* alternate, lamina ovate to elliptic, 25 – 50 × 35 – 120 mm, base acute, margin serrate, apex acute, lateral veins 4 – 6 pairs; petiole 20 – 40 mm long, glabrous. *Inflorescences* 2 or 3-flowered, flowers yellow, base of the lower parts stained and blotched with deep purplish red. *Peduncle* slender, c. 40 mm long, glabrous. *Bracts* ovate-elliptic, c. 10 mm long, green. *Lateral sepals* 2, greenish, ovate, c. 15 mm long, with yellow on the tip. *Lower sepal* navicular, yellow with deep purplish red veins, c. 11 × 24 mm, abruptly constricted into a curved short spur, spur c. 10 mm long, yellow, glabrous. *Dorsal petal* cucullate, yellow with deep purplish red, c. 20 × 25 mm when flattened, with a shallow keel-like crest above. *Lateral petals* united, upper part of each pair ± obovate, ± slightly emarginate, c. 15 × 15 mm, yellow, lower part of each pair ± obovate, c. 7 × 17 mm, blotched deep purplish red. *Ovary* glabrous. *Mature fruit* unknown. Figs 3 and 4.

**DISTRIBUTION.** Endemic to Indonesia: West Sumatra. Known only from Paninggahan in South Solok (004°11'47"S, 100°29'176"E).

**SPECIMENS EXAMINED. INDONESIA.** Sumatra: Paninggahan, South Solok, 6 Oct. 2010, Deden Girmansyah 1530 (holotype BO).

**HABITAT.** Growing at the riverside; alt. c. 900 m.

**CONSERVATION STATUS.** The populations of this species are small but, while it would be useful to monitor this and evaluate the exact size of each population, there does not seem to be any obvious threat either to the populations themselves or their habitat. For the moment this species should be treated as IUCN (2001) category Data Deficient (DD).

**PHENOLOGY.** Flowering May – Oct.

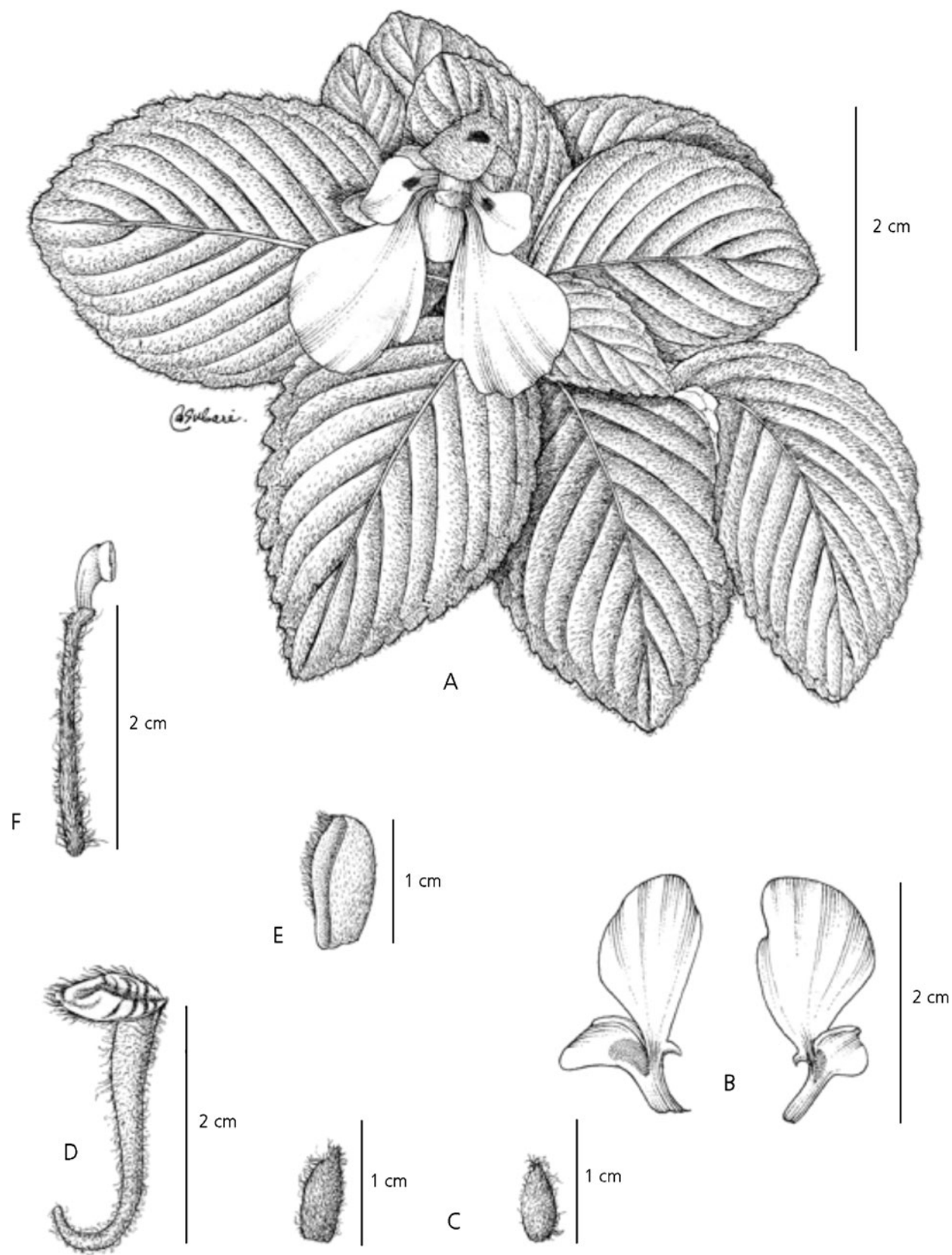
**ETYMOLOGY.** The species epithet *wirabraja* refers to the emblem used on the red beret of the Indonesian Special Forces, TNI-KOPASSUS.

**NOTES.** *Impatiens wirabraja* has unique characters; slightly emarginate, obovate upper lateral united petals, a combination of yellow and deep purplish red in the flowers and red stripes on the lower sepals. These have never been found before in any *Impatiens* species.

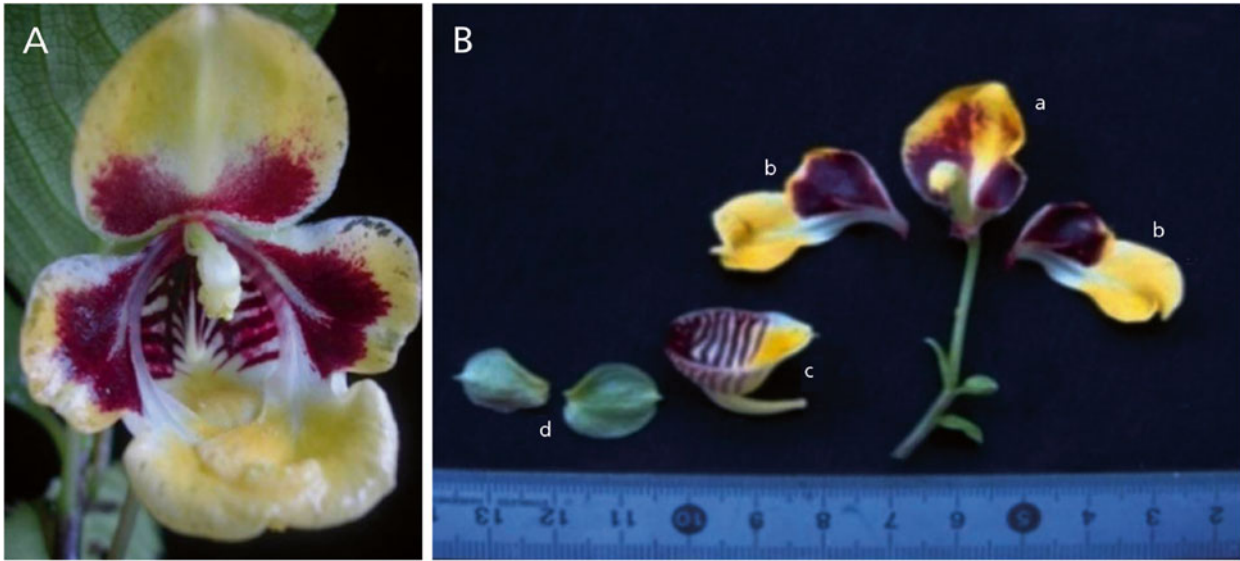
***Impatiens tribuana* Utami & Nurainas sp. nov.** Type: Indonesia, Sumatra, Batang Pangean Natural Reserve, Deden Girmansyah 1534 (holotype BO!).

<http://www.ipni.org/urn:lsid:ipni.org:names:77121635-1>

*Perennial herbs*, up to 80 cm tall; stems ± erect, glabrous. *Leaves* alternate, crowded on the upper part of the stem; lamina ovate to elliptic, 75 – 110 × 25 – 40 mm, coriaceous, base long cuneate, margin acutely serrate, apex acuminate; petiole 20 – 55 mm long; *Inflorescences* 2 – 8-flowered; terminal, flowers yellow with red spot. *Peduncles* c. 40 mm long. *Bracts* ovate,



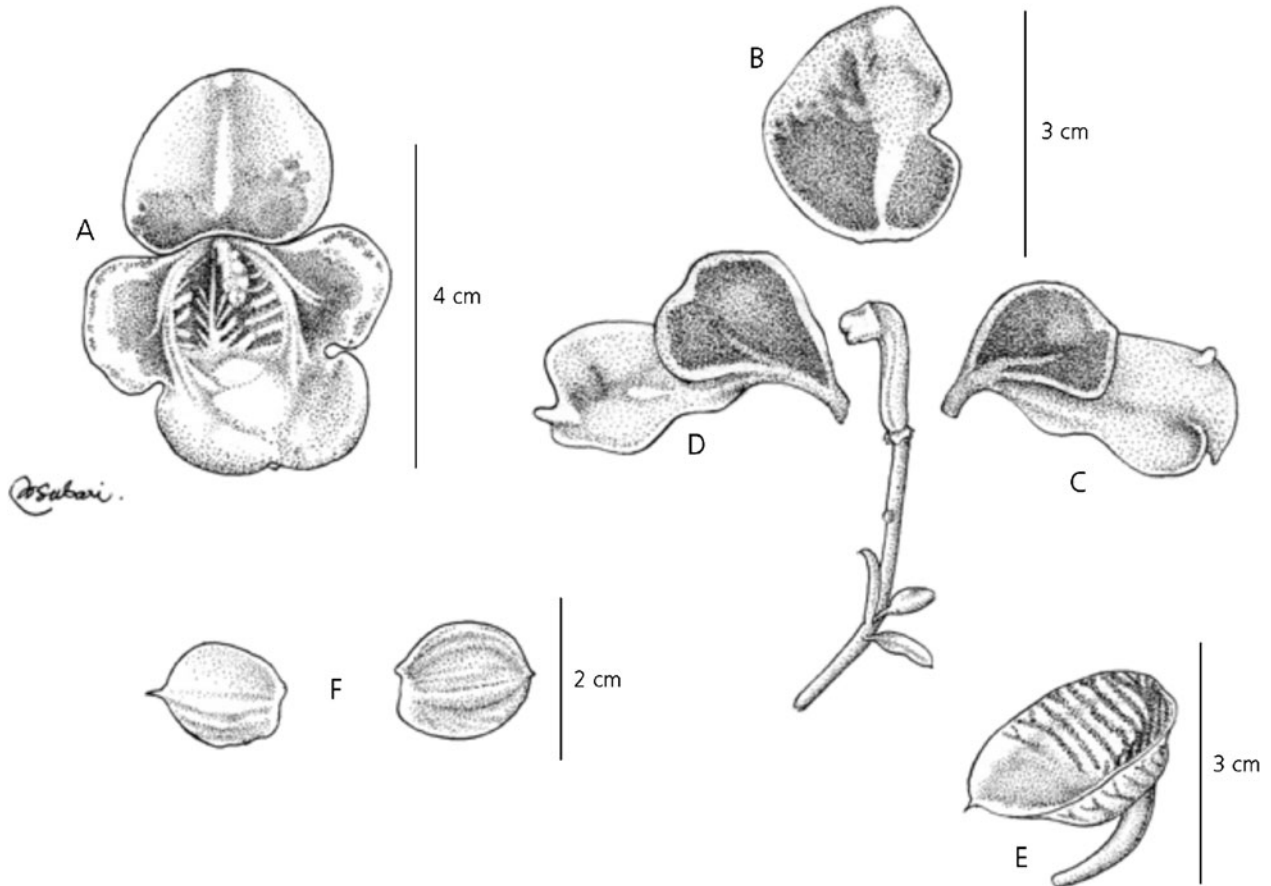
**Fig. 2.** *Impatiens ekapaksiana*. A leaves and flower; B two lateral united petals; C two lateral sepals; D spur and lower sepal; E dorsal petal; F ovary. From Deden Girmansyah 1536. DRAWN BY SOBARY.



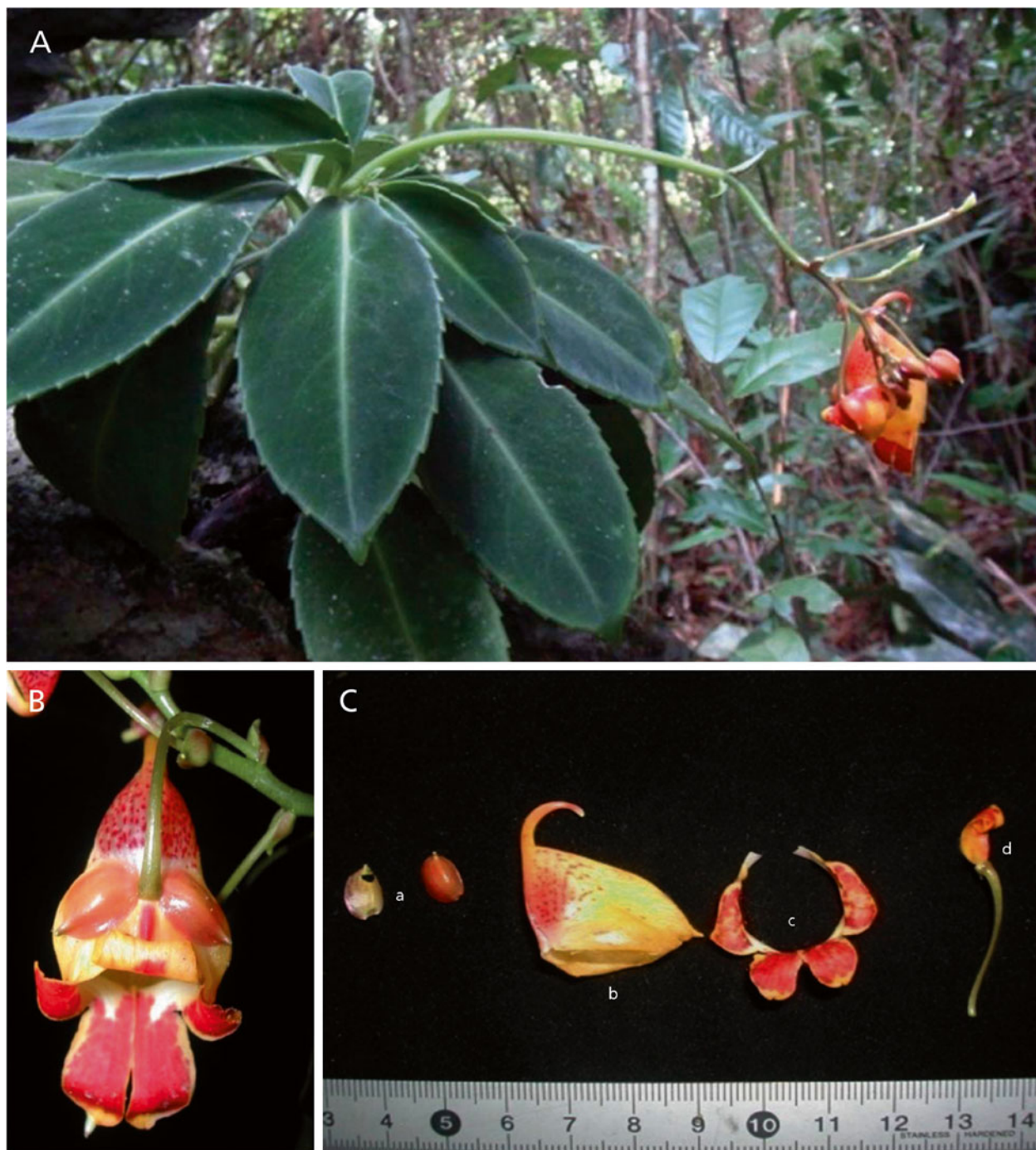
**Fig. 3.** *Impatiens wirabraja*. A flower; B floral organs: a dorsal petal; b lateral united petals; c lower sepal and spur; d two lateral sepals. PHOTOS: MARLINA ARDIYANI.

c. 5 × 15 mm, acute, pale green. *Pedicels* c. 35 mm long, *lateral sepals* 2, ovate, c. 7 × 10 mm, pale yellow-orange, glabrous. *Lower sepal* deeply navicular, c. 20 ×

28 mm, yellow with a red spot inside, abruptly constricted into a curved spur, c. 15 mm long, reddish yellow, glabrous. *Dorsal petal* slightly cucul-



**Fig. 4.** *Impatiens wirabraja*. A flower; B dorsal petal; C two lateral united petals; D ovary, in the middle of two lateral united petals; E lower sepal and spur; F two lateral sepals. From *Deden Girmansyah* 1530. DRAWN BY SOBARY.



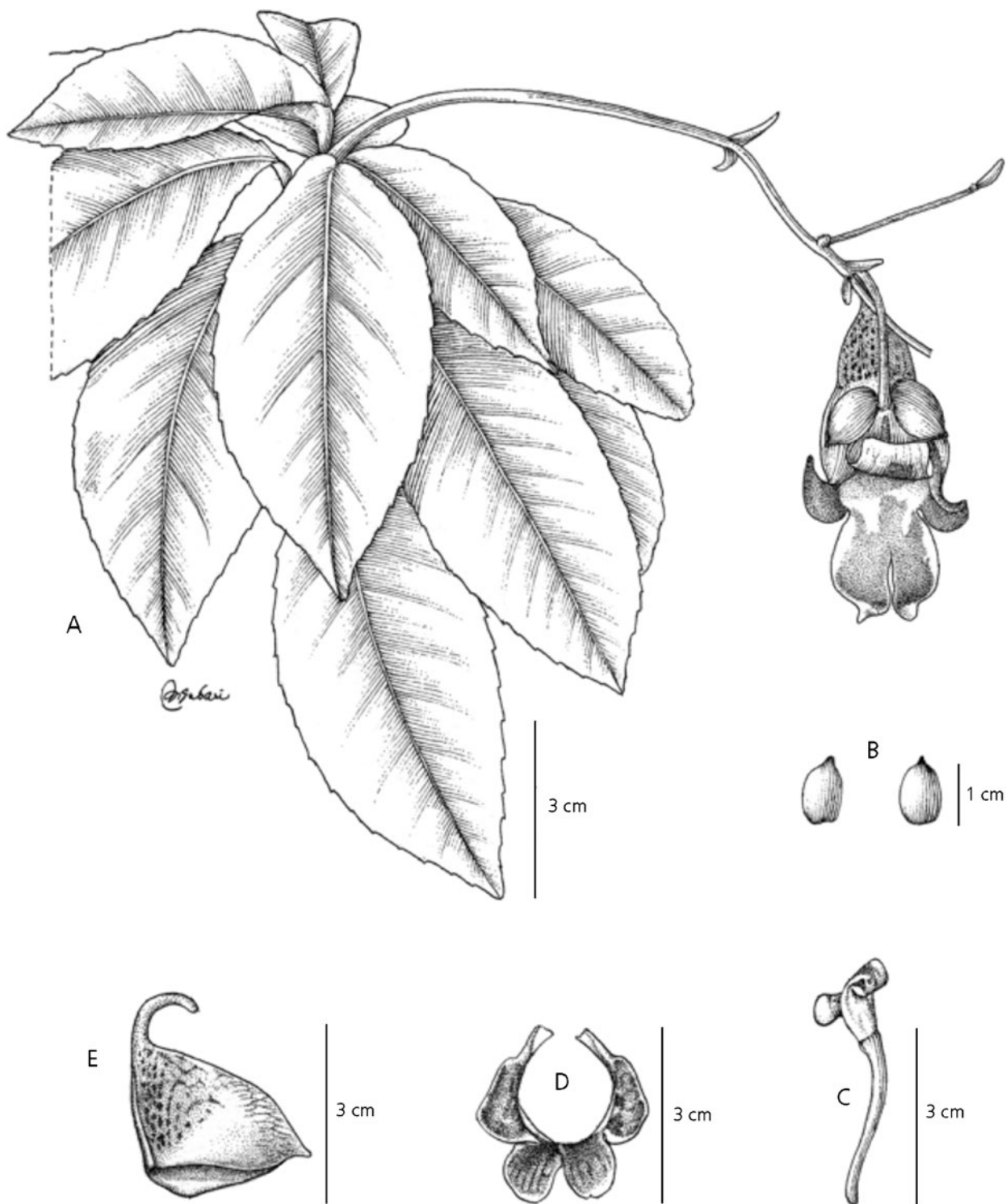
**Fig. 5.** *Impatiens tribuana*. **A** plant in flower; **B** flower, front view; **C** floral organs: **a** two lateral sepals; **b** lower sepal and spur; **c** two united lateral petals; **d** dorsal petal. PHOTOS: MARLINA ARDIYANI.

late, broadly obovate, c.  $5 \times 14$  mm, strongly reflexed in the upper half, yellow with red blotches. *Lateral petals* united, upper part of each pair broadly ovate, short-apiculate at apex, c.  $8 \times 10$  mm, yellow mixed with red spot, lower part of each pair lanceolate, c.  $6 \times 51$  mm, yellow mixed with red spot. *Ovary* glabrous. *Fruit* a capsule, fusiform, c.  $7 \times 22$  mm. Figs 5 and 6.

**DISTRIBUTION.** Endemic to Indonesia: West Sumatra. Only found in Batang Pangean Natural Reserve, Sijunjung District ( $00^{\circ}43'18''S$ ,  $101^{\circ}07'18''E$ ).

**SPECIMEN EXAMINED.** INDONESIA. Sumatra: Batang Pangean Natural Reserve, Sijunjung Distr., *Deden Girmansyah* 1534 (holotype BO).

**HABITAT.** Present on limestone; alt. c. 400 m.



**Fig. 6.** *Impatiens tribuana*. A habit; B two lateral sepals; C dorsal petal; D lateral united petals; E lower sepal and spur. From Deden Girmansyah 1534. DRAWN BY SOBARY.

**PHENOLOGY.** Flowering May – Oct.

**CONSERVATION STATUS.** Data Deficient (DD) following IUCN (2001) criteria. This species was collected from one locality, where it was growing in a small

population. More data regarding the populations are needed.

**ETYMOLOGY.** The species epithet *tribuana* refers to the three elements: land, sea and air in which a

special forces soldier must operate, in honour of TNI-KOPASSUS.

**NOTES.** *Impatiens tribuana* is closely related to *I. laumonieri* T. Shimizu but can be distinguished by the dorsal petal which is reflexed/folded in the upper half, the yellow lower sepal with a red spot inside and the presence of two lateral sepals only; *I. laumonieri* has an orbicular dorsal petal, and four lateral sepals.

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