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NOTE

LECTOTYPIFICTION OF *IMPATIENS DUCLOUXII* HOOK.F., A NEW ADDITION TO THE FLORA OF INDIA FROM ARUNACHAL PRADESH

Rajib Gogoi, Umeshkumar L. Tiwari, Souravjyoti Borah &
Bladimir Bajur Theodore Tham

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LECTOTYPIFICTION OF *IMPATIENS DUCLOUXII* HOOK.F., A NEW ADDITION TO THE FLORA OF INDIA FROM ARUNACHAL PRADESH

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The floristic diversity of the northeastern region of India is not well-documented due to its inaccessibility and difficult terrain. *Impatiens* is one such floristic genus that is not well-documented from the state of Arunachal Pradesh, a part of the eastern Himalaya. The genus is represented in India by more than 210 species (Bhaskar 2012), of which 137 are endemic (Vivekananthan et al. 1997; Swaminathan et al. 2001). In the recent past, however, many new species of *Impatiens* were discovered (Gogoi & Borah 2013a, 2014, 2015a,b,c,d,e, 2017a,b; Gogoi et al. 2017a,b; Hareesh et al. 2016a,b, 2017a,b; Hareesh & Sabu 2017; Liden & Bharali 2017), rediscovered (Gogoi et al. 2013b), and extended in range (Gogoi & Borah 2013b; Borah et al. 2015; Gogoi et al. 2015a,b, 2016; Tiwari et al. 2018) in the region.

During two expeditions to the West and East Kameng districts of Arunachal Pradesh in 2014 and 2017, respectively, one specimen of *Impatiens* with red-spotted yellow-coloured flowers was collected. After critical examination of the specimen and of the detailed

literature dealing with *Impatiens* of the Indian subcontinent and adjacent areas (Hooker 1875, 1908a,b, 1910; Toppin 1920; Grey-Wilson 1989, 1991; Vivekananthan et al. 1997; Swaminathan et al. 2001; Huang et al. 2003; Huang 2006; Chen et al. 2008, 2012; Pusalkar & Singh 2010; Dessai & Janarthanam 2011; Bhaskar 2012; Gogoi & Borah 2013a,b, 2014, 2015a,b,c,d,e; Gogoi et al. 2013, 2015; Ruchisansakun et al. 2014; Borah et al. 2015), the species was identified to be *Impatiens duclouxii* Hook.f. (Balsaminaceae). A perusal of literature revealed that the species was not reported from India so far. Hence, it is reported here for the first time with descriptions and colour illustrations for easy identification in the field.

Impatiens duclouxii Hook.f.

Nouv. Arch. Mus. Hist. Nat., sér. 4, 10: 245 1908; Chen et al., Fl. China, 12: 64. 2007.

Lectotype (designated here): China, Yunnan, 5,000ft, 1900, A. Henry 12559 K (K000694008), image!; isolectotype: China, Yunnan, 5,000ft, 1900, A. Henry 12559 E (E00313630) (Images 1 & 2).

Perennial, sparsely branched, up to 100cm tall. Stem terete, slightly ridged, hairy. Leaves confined to the upper part of the stem, alternate, petiole up to 5.5cm long, with glands, stipule absent; lamina elliptic to ovate, 8.5–13.5 x 4–5 cm, ventrally pubescent along nerves, dorsally glabrous, base cuneate to obtuse, apex acute to acuminate, margin serrate, setose between teeth, lateral veins to 11 pairs, subopposite. Inflorescence axillary, 3–5 flowered, peduncle up to 2.5cm long,



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glabrous, bud yellowish-green with red spots, pedicel to 1.5cm long, green, bracts at the base, triangular, persistent, apex acute, mid-vein indistinct, glabrous. Lateral sepals two, obovate to orbicular, greenish-white, sometimes with red spots, to 1.3 x 1.5 cm, apex minutely mucronate, margins entire. Lower sepal bucciniform, pale yellow, up to 2.5cm long, spur coiled, up to 1.2cm long, yellow. Upper petal obovate, pale yellow with red spots, to 2 x 1.7 cm, apex emarginated, dorsally with a prominent horn, horn pale green. Lateral united petals pale yellow with red spots in basal lobe, bilobed, subequal, up to 3cm long (whole), basal lobe obovate,

apex slightly emarginate, up to 1.5cm long, 1cm wide, clawed, distal lobe dolabriform, apex obtuse, 2cm long, 1.3cm wide, basal auricle orange, triangular, 2mm long. Stamens five, united, upright, 8mm long, anther lobes acute. Capsule not seen.

Flowering & fruiting: July–November

Habitat: The species was found growing in a moist habitat at 30–45 °C in a gentle slope along a small stream in Jamiri area in West Kameng District. It was later collected from Richikurung of East Kameng District, where the area is dominated by *Terminalia myriocarpa*, *Ficus semicordata*, *Bauhinia purpurea*, *Saurauia*

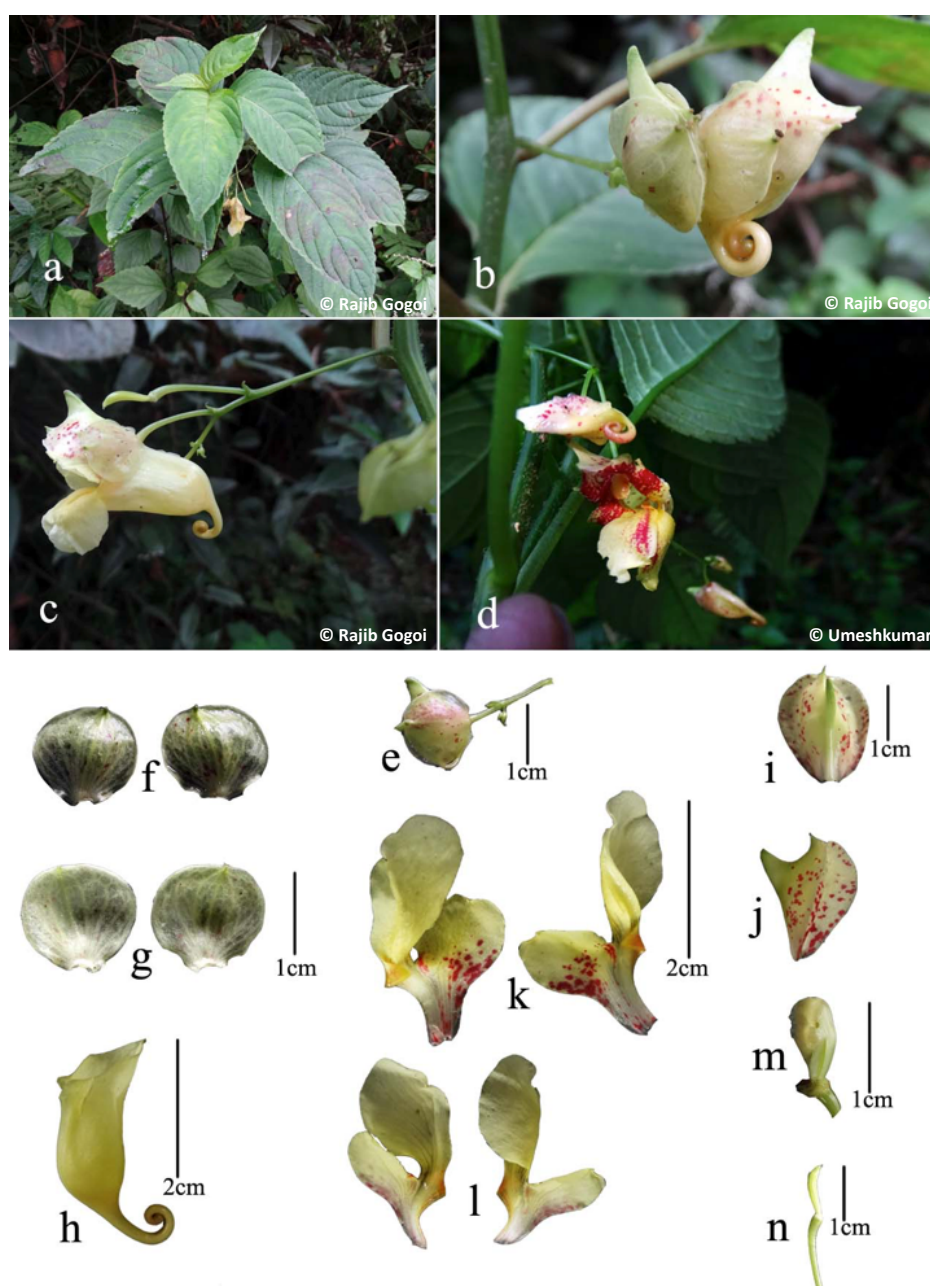


Image 1. *Impatiens duclouxii*. a - individual in its habitat, b - flower bud, c - lateral view of the flower, d - inflorescence, e - bud, f - dorsal view of lateral sepals, g - ventral view of lateral sepals, h - lower sepal, i - upper view of dorsal petal, j - lateral view of dorsal petal, k - ventral view of lateral united petals, l - dorsal view of lateral united petals, m - androecium, n - gynoecium.

roxburghii, *Kydia calycina*; the associated shrubs were *Melastoma normale*, *Alpinia nigra*, *Musa acuminata*, *Trevesia palmata*, *Bambusa pallida*, and *Strobilanthes paniculata*.

Distribution: China and India (West Kameng District in Jamiri, Arunachal Pradesh).

Conservation status: Chen et al. 2008 mentioned neither the distribution of the species in Yunnan in China nor its population. Herbarium records show that this species is represented by ca. 120-year-old collections. Therefore, it could have an extended distribution and new species record in India. Based on the distribution records, the authors would like to assess the species as Indeterminate (I) due to insufficient information on its distribution. Intensive explorations are required in similar habitats in adjacent areas for the possible location of the species. During the present survey, only 12 mature individuals were located, which were growing as undergrowth in a semi-evergreen forest along a stream.

Lectotypification: While describing this species, Hooker (1908) referred to three herbarium sheets of *I. duclouxii* as held at P, E & K (P - Herbarium, Muséum National d'Histoire Naturelle, Paris France; E - Herbarium, Royal Botanic Gardens, Edinburgh, EH3 5LR, Scotland, UK; K - Herbarium, Royal Botanic Gardens, Kew, Richmond Surrey, TW9 3AE, England, UK. LWG). Among these, one sheet, A. Henry 12559 (K000694008) (Image 2), was selected as the lectotype. This sheet was examined by Hooker and found to closely match the protologue. Since the other sheets with the same collection number by A. Henry 12559 (E00313630) are regarded as part of the original gathering and match the protologue, it is here designated as an isolectotype.

Other specimens examined: 21969 (CAL), 27.x.2014, India, Arunachal Pradesh, West Kameng District, Jamiri, 1,200m, coll. R. Gogoi & B.B.T. Tham; 47947 (ARUN), 08.x.2017, East Kameng District, Palejee (Sube) on the way to Richikurung, 27.353°N & 92.770°E, 1,103m, coll. U.K. Tiwari.

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Image 2. Lectotype of *Impatiens duclouxii* (designated here). Source: <http://apps.kew.org/herbcat/getImage.do?imageBarcode=K000694008>

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