

那坡凤仙花, 越南凤仙花科新记录

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摘要: 报道了越南凤仙花科(Balsaminaceae) 1 新记录种: 那坡凤仙花(*Impatiens napoensis* Y. L. Chen)。该种产自越南北部河江省(Ha Giang)的 Quan Ba 地区, 凭证标本保存在越南科学技术院生态和生物资源研究所标本馆(HN)和中国科学院华南植物园标本馆(IBSC)。提供了该种的描述、彩色照片、生态学、花果期等信息。

关键词: 凤仙花科; 凤仙花属; 那坡凤仙花; 新记录; 越南

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Impatiens napoensis Y. L. Chen, A Newly Recorded Species for the Flora of Vietnam

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Abstract: *Impatiens napoensis* Y. L. Chen, previously known only from China, is newly found in Quan Ba District, Ha Giang Province, North Vietnam, and the vouchers are kept in the herbaria of Institute of Ecology and Biological Resources, Hanoi, Vietnam (HN) and South China Botanical Garden, Chinese Academy of Sciences (IBSC). Its morphological description, color photos, ecology and phenology are provided in this paper.

Key words: Balsaminaceae; *Impatiens*; *I. napoensis*; New record; Vietnam

Impatiens L., the largest genus of Balsaminaceae, comprises about a thousand species distributed primarily in the Old World tropics and subtropics. *Impatiens* species occur from sea level to 4 000 m altitude, often in forest understory, roadside ditches, valleys, abandoned fields, along streams, and usually in mesic or wet conditions, but some species can tolerate drier habitats^[1]. In Vietnam, several taxonomic works on *Impatiens* had been done in the past^[2-10]. Tardieu described and recorded 20 species of *Impatiens* from Vietnam in

1944^[3]. Pham made short descriptions and illustrations for 35 *Impatiens* species in 2003^[4]. Recently, some new species and new records of *Impatiens* for the flora of Vietnam have been reported^[6-10], which increased the number to around 40 in Vietnam^[2-10].

During a field survey of plant diversity in Northeastern Vietnam in 2017, we collected several specimens of an interesting *Impatiens* species, which is different from all the previously recorded species from Vietnam. It has prostrate stems, pubescent

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branchlets, leaves and inflorescences, ovate to ovate-elliptic leaf blade with 6–7 lateral veins, 1–2 floriferous inflorescences, pink or purple flowers, ovate to broadly elliptic lateral sepals, and linear ovary with incurved-rostrate apex (Fig. 1). After careful comparison with species from neighboring countries, we came to the conclusion that all these morphological characteristics of this plant are fully consistent with *I. napoensis* Y. L. Chen^[11], a species previously only recorded from Guangxi, China^[12–13]. Thus, it represents a new record for the flora of Vietnam, and its morphological description, color photos and data on its distribution, phenology and ecology are provided herein.

Impatiens napoensis Y. L. Chen, Acta Phytotax. Sin. **38**(6): 557. f. 1. 2000; Fl. China **12**: 84. 2007; S. X. Yu, Balsaminaceae of China: 101, 2012. Type: China, Guangxi, Napo, Defu Nature Reserve, alt. 1 300 m, in rocky valleys. 5 Nov. 1998, H. N. Qin et al. 1939 (lectotype PE01879289!, designated here; isolectotype PE01879290!).

Terrestrial plants, 40–60 cm tall. Stem prostrate or procumbent, branched, sparsely short pilose, with adventitious roots at old nodes. Branchlets erect or ascending, dull white to brown pubescent, densely when young. Leaves simple, alternate; petiole (0.7) 1.0–1.5(2.0) cm long; leaf blade membranous, ovate to ovate-elliptic, (3.5)4.5–6.5(7.5) cm × (2.5)3.0–3.5 (4.0) cm, base broadly cuneate to subrounded, attenuate into petiole, apex acute to shortly acuminate, margin serrulate, pale green abaxially, green to dark green adaxially, covered by dull white pilose on both surfaces, with 2–3 pairs of stipitate glands at basal margin or petiole, mid-vein and 6–7 pairs of lateral veins prominent abaxially and depressed adaxially. Inflorescences arising from leaf axils of branchlets, 1–2 flowered. Peduncles erect, densely pubescent, 1.2–1.8 cm long; pedicels slender, densely pubescent, 1.1–1.5 cm long, bearing 1–2 bracts at base; bracts persistent, narrowly subulate or narrowly triangular, 3–5 mm long, 1–2 mm wide. Flowers whitish purple to reddish purple, large, 3–4 cm deep. Lateral sepals 2,

ovate to broadly elliptic, (8)10–13(15) mm long, (4) 5–7(8) mm wide, pale greenish at apex to dark purple or red at base, inconspicuous 3–5 veins, abaxially longitudinal ribbed, sparsely puberulent, adaxially glabrous, apex acuminate to mucronate, base broadly cuneate to subrounded. Lower sepals broadly funnel-form, purple, adaxially sparsely puberulent, 1.8–2.1 cm in diam., 1.5–2.0 cm deep, gradually narrowed into an incurved spur ca. 2.0–2.2 cm long, with an acuminate tip at vertical mouth. Dorsal petals suborbicular, (1.8) 1.9–2.0(2.1) cm × (1.5)1.6–1.7(1.8) cm, with a small crest-like appendage ca. 1.5–2.0 mm high; apex emarginate, mid vein sparsely puberulent, abaxially narrowly carinate. Lateral united petals 2-lobed, 2.6–2.8 cm × 1.3–1.5 cm, glabrous; upper petals (basal lobes) overlapped on lower petals, obovate or pisiform, 1.5–1.7 cm × 0.8–1.0 cm, with apex short acute or obtuse; lower petals (distal lobes) dolabriform, 1.7–1.9 cm × 1.0–1.2 cm, apex obtuse; auricle inflexed, bright yellow. Filaments linear, dull white to purplish, 5–7 mm; anthers ovoid, apex obtuse. Ovary linear, apex incurved-rostrate, glabrous, 6–8 mm long. Fruits green, glabrous when young.

Distribution: China, Guangxi, Napo County; Vietnam, Ha Giang Province, Quan Ba District, Cao Ma Po Commune.

Ecology and phenology: *Impatiens napoensis* grows in degraded primary and secondary evergreen broad-leaved forests on limestone mountains of Cao Ma Po Commune, at elevations of 1 600–1 750 m a.s.l. This area is characterized by the tropical climate monsoon associated with mountains, which has mean average temperature around 13°C–16°C, mean average rainfall of 2 800–3 500 mm, and mean average relative humidity of 85%–90%^[14–15]. *Impatiens napoensis* usually occurs in wet, humid shaded areas along watershed of mountain slopes. Population of *I. napoensis* in Cao Ma Po Commune is often associated with *Cinnamomum parthenoxylon* (Jack) Meisner, *Morella esculenta* (Buch.-Ham. ex D. Don) I. M. Turner, *M. rubra* Lour., *Alnus nepalensis* D. Don, *Schima* sp., *Lyonia* sp., *Viburnum* sp., etc., and some species of ferns and orchids to form a forest structured



Fig. 1 *Impatiens napoensis* Y. L. Chen. A: A flowering branch; B: Leaves; C: Stem and radicle roots; D: Inflorescence; E: Flower (front view); F: Flower (lateral view); G: Flower (back view); H: Flower dissection (DP: Dorsal petal; LAS: Lateral sepal; LUP: Lateral united petal; UP: Upper petal; LP: Lower petal; LOS: Lower sepal; SP: Spur); I: Stamens. (Photographed by K. S. Ngyuen)

by three main strata (trees, shrubs and herbs). *Impatiens napoensis* flowers in May.

Examined materials: Vietnam. Ha Giang Province: Quan Ba District, Cao Ma Po Commune, Chin Chu Lin Village, 23°06' N, 104°48' E, at elevations of 1 650–1 780 m a.s.l., May 14–15, 2017, Nguyen Sinh Khang & Truong Van Van, NSK 925, NSK 932, NSK 940.

Notes: When describing *I. napoensis*, Chen compared it with *I. reptans*. However, the differences of the two species are so obvious that they are hardly

to be confused. *Impatiens napoensis* has pilose or puberulent stems 40–60 cm long, whitish purple to reddish purple flowers, ovate to broadly elliptic lateral sepals, ovoid anthers and linear ovary with incurved-rostrate apex, while *I. reptans* has glabrous stems 20 cm long, yellow flowers, falcate-ovate lateral sepals, acute anthers and fusiform ovary with erect apex^[16]. The species truly closely related to *I. napoensis* Y. L. Chen is *I. chlorosepala* Hand.-Mazz. on morphology^[12]. However, *I. napoensis* differs from *I. chlorosepala* by several characteristics such as its prostrate or procum-

bent stem (vs. erect), pilose or puberulent stems and branchlets (vs. glabrous), densely dull white pilose leaf blade (vs. abaxially glabrous), lateral sepals with thickened mid-vein (vs. not thickened), suborbicular dorsal petals, (1.8)1.9–2.0(2.1) cm × (1.5)1.6–1.7 (1.8) cm (vs. orbicular, 0.8–1.2 cm), lateral united petals with upper petals obovate or pisiform (vs. suborbicular), apex short acute (vs. broadly obtuse or subrounded), filaments with obtuse apex (vs. dilated apex), and ovary linear (vs. fusiform), apex incurved-rostrate (vs. erect). *Impatiens napoensis* is also close to *I. begoniifolia*^[17], but it is distinguishable by the prostrate or procumbent stems 40–60 cm long (vs. erect, 10–20 cm long), leaves covered by dull white pilose on both surfaces (vs. glabrous), inflorescences with peduncles and pedicels densely pubescent (vs. glabrous), lateral sepals ovate to broadly elliptic, (8) 10–13(15) mm long (vs. subulate-lanceolate, 4 mm long), lower sepal broadly funnel-form, purple, 1.8–2.1 cm in diam., 1.5–2.0 cm deep, with spur incurved (vs. navicular, 1.5 cm in diam., 1.1 cm deep, spur nearly straight), dorsal petals suborbicular, (1.8)1.9–2.0 (2.1) cm × (1.5)1.6–1.7(1.8) cm (vs. orbicular, 1.0 cm × 0.9 cm), lateral united petals with upper petals overlapped on lower petals, obovate or pisiform, with apex short acute or obtuse (vs. not overlapped, apex rounded), lower petals dolabriform, apex obtuse (vs. ovate, apex rounded), and ovary linear (vs. fusiform).

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