

New Records of *Impatiens* (Balsaminaceae) in Hokkaido, Japan

Shinobu Akiyama

Department of Botany, National Science Museum,
4–1–1 Amakubo, Tsukuba, Ibaraki, 305–0005 Japan

Abstract *Impatiens glandulifera* and *I. balfourii* were recently found naturalized in Hokkaido. They are both Himalayan species and are known to be widely naturalized in Europe and N. America.

Key words: *Impatiens*, naturalized species

The genus *Impatiens* includes more than 500 species distributed in the mountains of tropical Asia, the Himalaya, Africa, northern Asia, North America and temperate Europe. In Japan there are three species of *Impatiens*: *I. noli-tangere* L., *I. tetra-lorata* Miq. and *I. hypophylla* Makino (including var. *microhypophylla* (Nakai) H. Hara (Akiyama, 1999)). One species, *I. balsamina* L., is widely cultivated in gardens and is occasionally naturalized. Recently I examined *Impatiens* collected in Hokkaido. These proved to be *I. glandulifera* and *I. balfourii*, Himalayan species known to be widely naturalized in Europe (Hermann, 1956; Moore, 1968; Heß *et al.*, 1970; Polunin and Smythies, 1973).

Impatiens glandulifera Royle, Ill. Bot. Him. t. 28, f. 2 (1834). [Figs. 1 and 4-1]

Impatiens roylei Walp., Repert. 1: 475 (1842), nom. superfl.

Plants (20–) 60–150 (–200) cm tall, annual. Leaves opposite basally, alternate or 3-whorled in the upper part of stem, with petioles 1–5 cm long or upper leaves sessile; blade elliptic, to 15 cm long, to 4 cm wide, gradually smaller toward apex, apex acuminate, base attenuate, margins crenate or serrate, glabrous on both surfaces. Inflorescences racemes, (3–) 5–10 (–15)-flowered, ascending, in uppermost leaf axils. Flowers pink, 2.5–3 cm long and deep. Lower sepal pale pink, bucciniform, abruptly constricted into a straight downward-oriented short spur; spur ca. 4 mm long. Dorsal petal ca. 1 cm long and wide when flattened, without crest-like appendage. Lateral united petals ca. 2.5 cm long; upper lobe widely oblong, apex cuspidate, ca. 1 cm long and wide; lower lobe widely elliptic, apex acute, ca. 1.5 cm long, ca. 1 cm wide. Fruits obovate, ca. 1.5 cm long.

Japanese name: Roiru-tsurifunesô (Murakoshi 1925), Dakiba-tsurifunesô (Togashi, on a specimen, not published).

Specimens examined: **Japan**. Hokkaido. Sapporo-shi, Toyohira-ku, Nakano-shima, left side of Shojin River, 30 m. Naturalized (H. Igarashi 980803, 31 Aug.

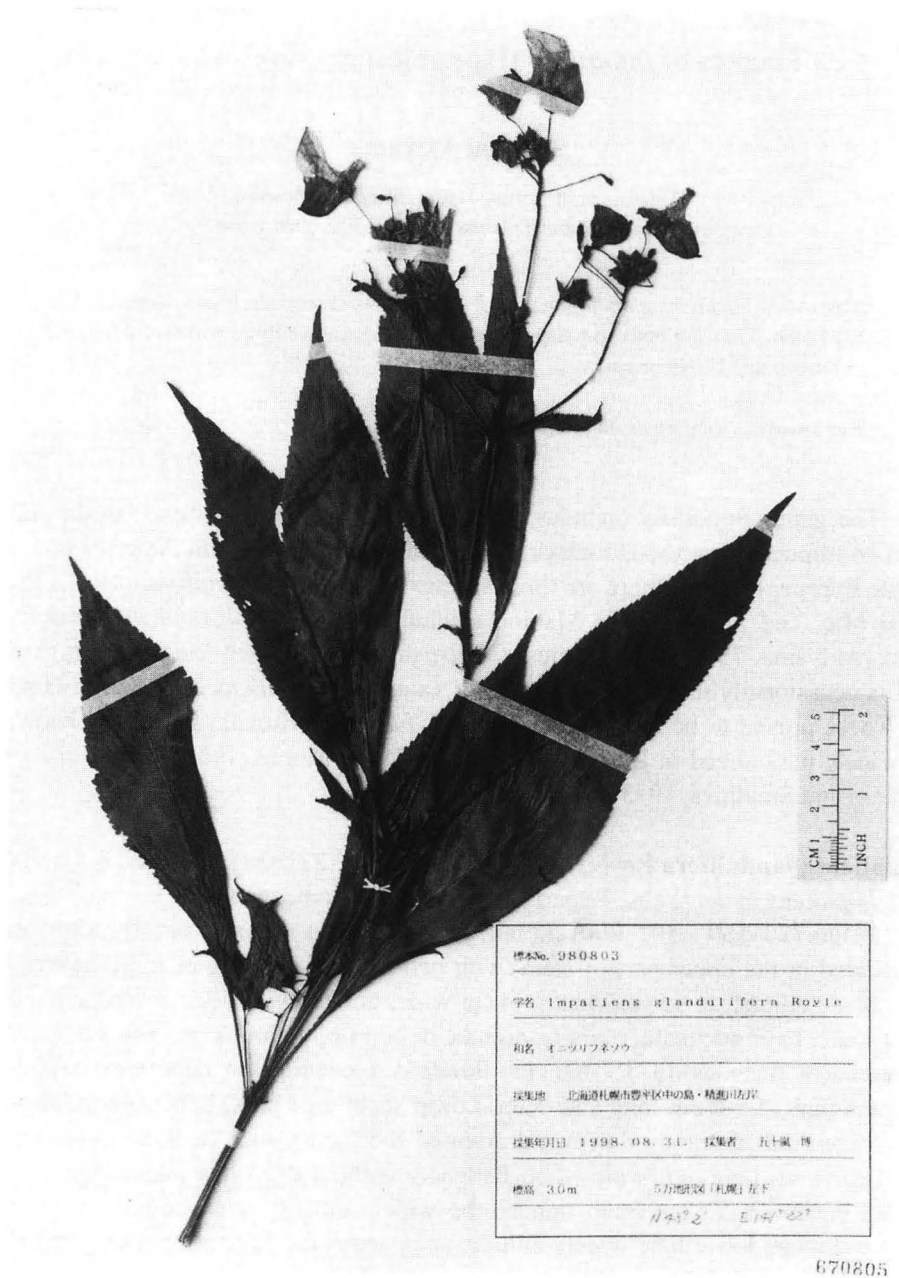


Fig. 1. *Impatiens glandulifera* Royle (H. Igarashi 980803, 31 Aug. 1998, TNS).

1998, TNS). Honshu. Yamanashi Pref., Minamitsuru-gun, Oshino-mura, cult. Kitafuji Garden (M. Togashi, 2 Sept. 1967, TI; 9 Sept. 1968, TI, TNS; 12 Aug. 1970, TI, TNS). **Europe. Finland.** South Häme (EH/Ta). Hämeenlinna, village of Kirstula, Härkiluh-ta, 350 m E of the railway bridge of the road Hämeenlinna–Pälkäne, alt. 80 m (R. Lampinen 16067, 24 Aug. 1992, TNS). **Sweden.** Uppland. Bondkyrka parish, Graneberg, shore of Lake Mälaren south of Vårdsätra Natural Monument. Naturalized (C. G. Alm, 3 Sept. 1953, TNS). **Norway.** Tønsberg. Ved en bekk nær et gartneri, men ikke innført av gartneren (M. Hauge, 4 Sept. 1947, TNS). **Canada.** New Brunswick, Charlotte County, St. Andrew's (C. A. & U. F. Weatherby, 1 & 2 Sept. 1946, TI).

Impatiens glandulifera is distributed in the western Himalaya and has been cultivated in Europe from the 1840's (Lindley, 1840 [ut '*glanduligera*']; Hooker, 1843 [ut '*glanduligera*']) and is naturalized in Europe and North America. In Japan it has been known since the 1920s as an ornamental plant (Murakoshi, 1925). The route of naturalization in Hokkaido is uncertain but is considered to be as an escape from cultivation.

Impatiens balfourii Hook. f. in Bot. Mag. **129**: t. 7878 (1903).

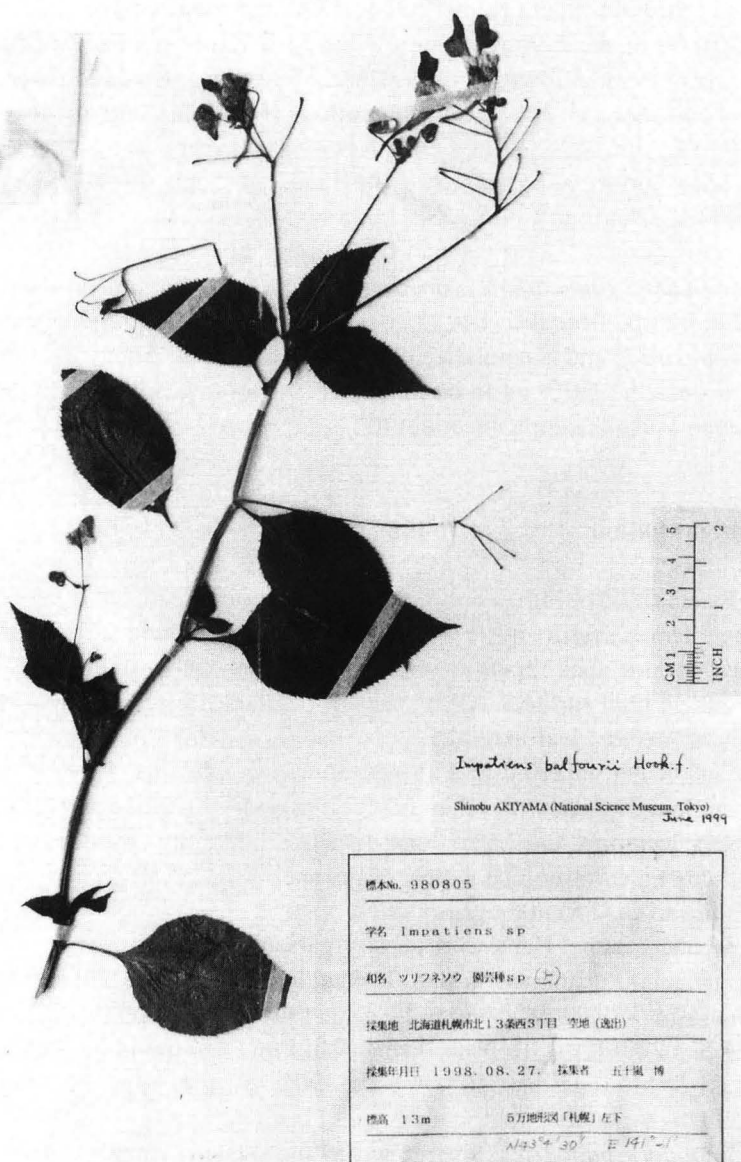
[Figs. 2, 3 and 4-2 & 3]

Plants (20–) 60–100 cm tall, annual. Leaves alternate, with petioles 1–4 cm long or upper leaves sessile; blade widely ovate, 3.5–14 cm long, 2–7.5 cm wide, gradually smaller toward apex, apex acuminate, base rounded to attenuate, margins serrate, glabrous on both surfaces. Inflorescences racemes, (3–) 5–10 (–15)-flowered, ascending, in uppermost leaf axils. Flowers pink, 3 cm long and deep. Lower sepal nearly white, navicular, tapering to a straight long spur; spur ca. 1.5 cm long. Dorsal petal ca. 1 cm long, 1.5 cm wide when flattened, without crest-like appendage. Lateral united petals deep pink, ca. 2.5 cm long; upper lobe obovate, apex obtuse, 0.8–1 cm long, ca. 0.5 cm wide; lower lobe widely ovate, apex obtuse, ca. 1.5 cm long, ca. 1 cm wide. Fruits linear, ca. 2.5 cm long.

Japanese name: Hana-tsurifunesô (Igarashi, nov.).

Specimens examined: **Japan.** Hokkaido. Sapporo-shi, Kita 13, Nishi 3, alt. 13 m (H. Igarashi 980804 & 980805, 27 Aug. 1998, TNS). Sapporo-shi, Ainosato (Nakao 21–27 Sept. 1998, TI). Honshu. Yamanashi Pref., Oshino-mura, cult. Kitafuji Garden (Masaki & M. Togashi 65403, 4 Sept. 1965, TI); (M. Togashi, 9 Sept. 1968, TI; 12 Aug. 1970, TI, TNS).

Impatiens balfourii is distributed in the western Himalaya and flowered in the Royal Botanic Garden, Edinburgh, in September and October, 1901 (Hooker, 1903). It is naturalized in Europe. In Japan it was only known to be cultivated in the experimental garden in the 1960s. The route of naturalization in Hokkaido is uncertain but considered to be as an escape from cultivation, as in *I. glandulifera*.



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Fig. 2. *Impatiens balfourii* Hook. f. (H. Igarashi 980805, 27 Aug. 1998, TNS).

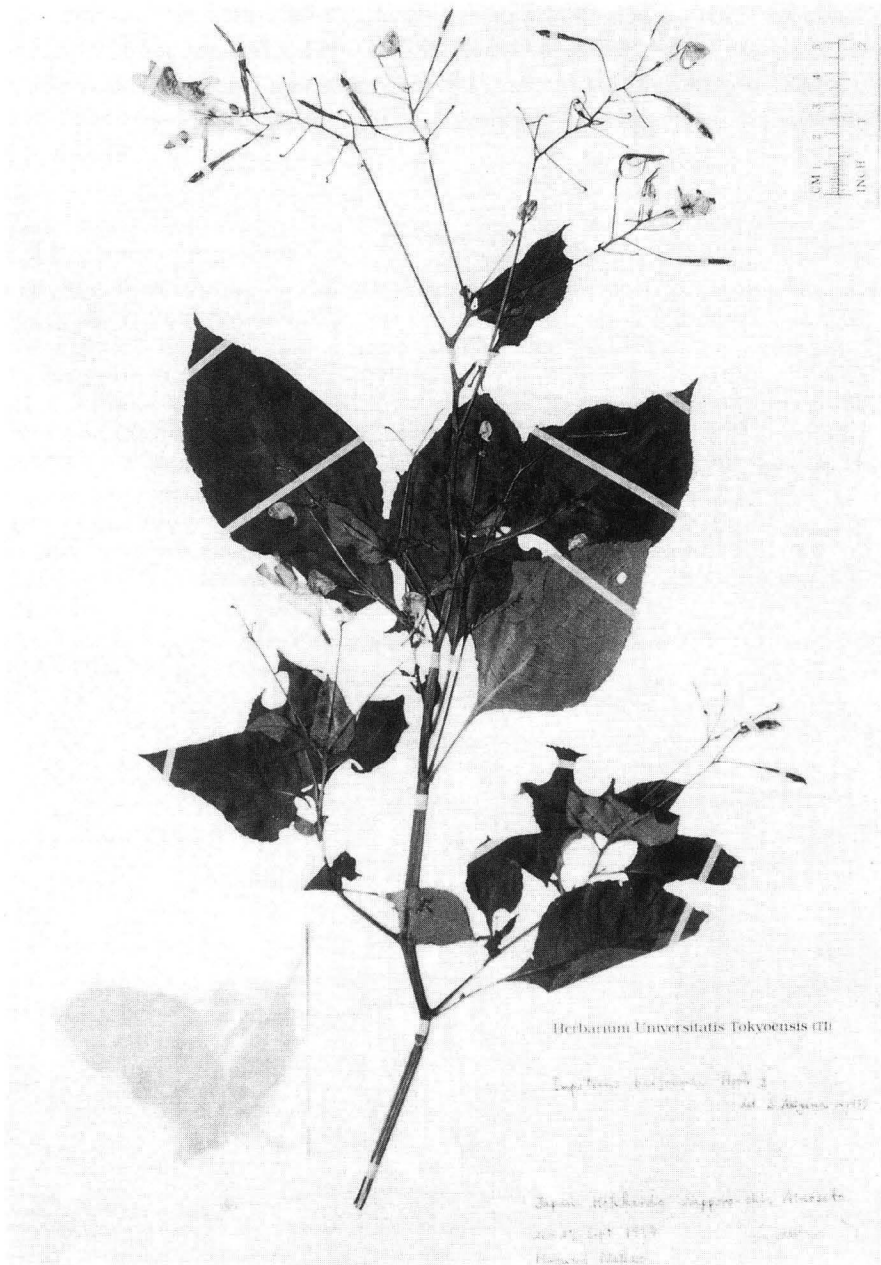
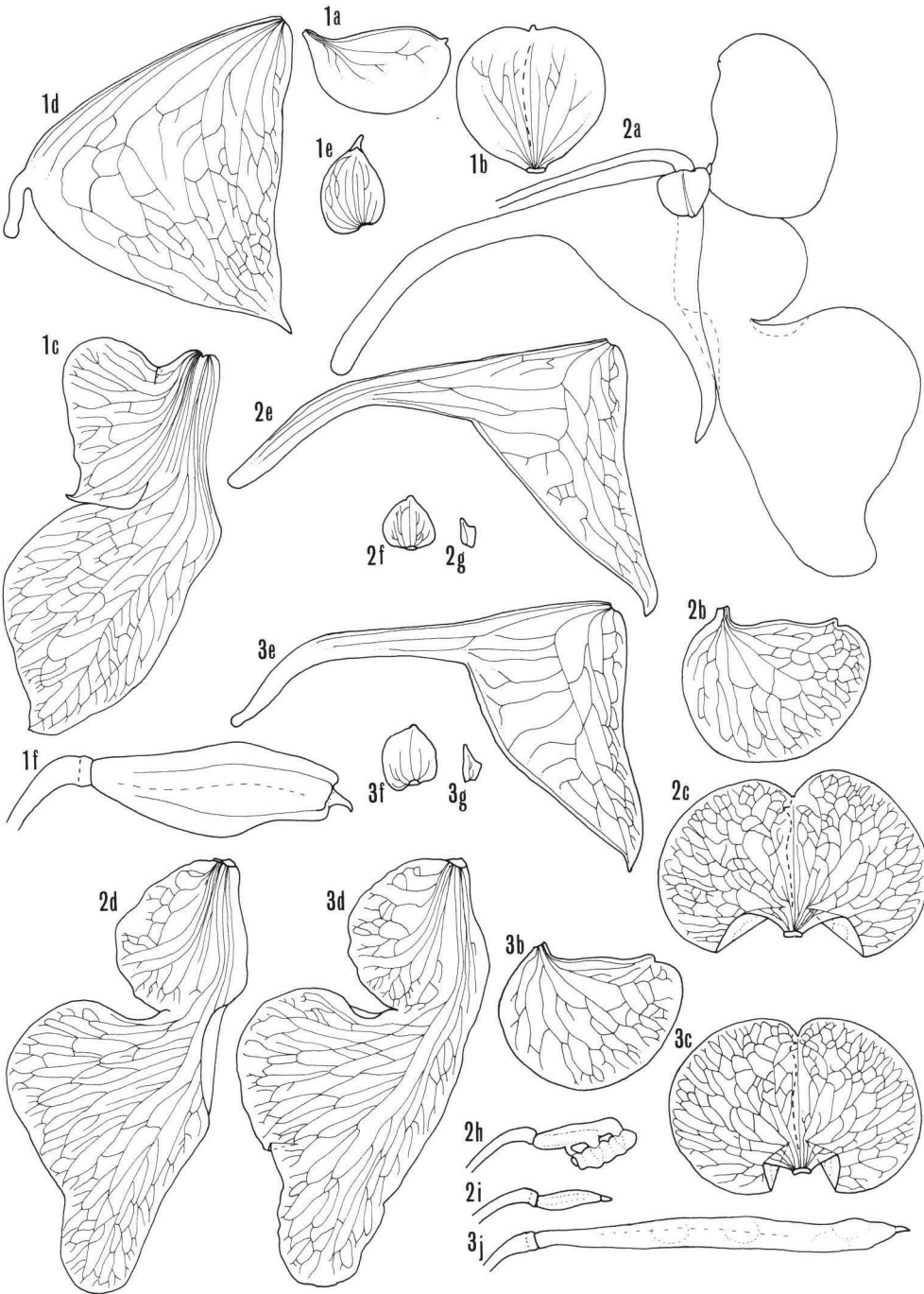


Fig. 3. *Impatiens balfourii* Hook. f. (M. Nakao 21–27 Sept. 1998, TI).



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Fig. 4. *Impatiens glandulifera* Royle (1: Collected on side of Shojin River, Toyohira-ku, Sapporo-shi, Hokkaido by H. Igarashi on 16 Oct. 1998; bottled specimen in TNS) and *I. balfourii* Hook. f. (2: M. Nakao, 21–27 Sept. 1998, TI. 3: Collected in Kita 22 and Nishi 3, Sapporo-shi, Hokkaido by H. Igarashi on 10 Oct. 1998; bottled specimen in TNS). 2a. Flower. 1a, 1b, 2b, 2c, 3b & 3c. Dorsal petal. 1c, 2d & 3d. Lateral united petals. 1d, 2e & 3e. Lower sepal. 1e, 2f, 2g, 3f & 3g. Lateral sepal (2g & 3g: inner pair). 1f & 3j. Fruits. All $\times 2.5$.

