

## A New Species of *Potentilla* (Rosaceae) from Korea

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A new species, *Potentilla koreana* H. Ikeda & Im, is described. *Potentilla koreana*, found in the central and the southern part of the Korean Peninsula, is similar to *P. freyniana* Bornm. and *P. riparia* Murata, but differs from *P. freyniana* in having rhizomes not thickened and lower bract on peduncle with degenerated lamina, and from *P. riparia* in having boat-shaped scaly leaves on rhizome. The chromosome number of *P. koreana* is  $2n=14$ , diploid level in this genus.

**Key words:** New species, *Potentilla*, Rosaceae

During the course of revising Korean flora, Im collected a *Potentilla* species at Mt. Chabyoung-san, Kangwon Province, NE Korea, in 1995. Hong and Im (1997) listed this as *Potentilla freyniana* Bornm., but after examining morphological characters, this has become clear to be an undescribed species. This, *P. koreana*, is similar to *P. freyniana* and *P. riparia* Murata in the stoloniferous habit and having trifoliolate leaves, but differs from *P. freyniana* in having rhizomes not thickened (thickened in *P. freyniana*) and lower bract on peduncle with degenerated lamina (with developed lamina in *P. freyniana*), and differs from *P. riparia* in having boat-shaped scaly leaves on rhizome (without such scales in *P. riparia*).

Somatic chromosomes were investigated using root tips. The pretreatment, fixation, maceration, and staining methods for the cytological study follow Ikeda and Ohba (1993).

***Potentilla koreana* H. Ikeda & Im, sp. nov.**

[Fig. 1]

*Potentilla freyniana* Bornm. var. *villosa* Nakai in Bull. Natn. Sci. Mus., Tokyo **31**: 58 (1952), nom. nud.—T.H. Chung, Korean Fl. (Herb. Pl.): 321 (1958)—Y.N. Lee, Fl. Korea: 317 (1996), pro parte.

*Potentilla freyniana* auct. non Bornm.: Hong & Im in Bull. KACN ser. **16**: 10 (1997).

*Potentillae freynianae* Bornm. et *P. ripariae* Murata simile, sed ab hac rhizomatibus insufflatis et pedunculi bractea inferna lamina redacta, ab illa ad apicem rhizomatis foliis squamosis edentibus bene differt.

Types: Korea. Kangwon Province, Tonghae-shi, Mt. Chabyoung-san, 780 m alt. (H. Ikeda, T. Hoshino, H. T. Im & T. Katsuyama 99050402, May 4, 1999, TI-holo; SNU, Herb. Chonnam Univ.-iso).

Perennial stoloniferous herb, 5–13 cm high. Stolons slender, with dense patent or descending hairs. Rhizome short, not thickened with several boat-shaped scaly leaves.

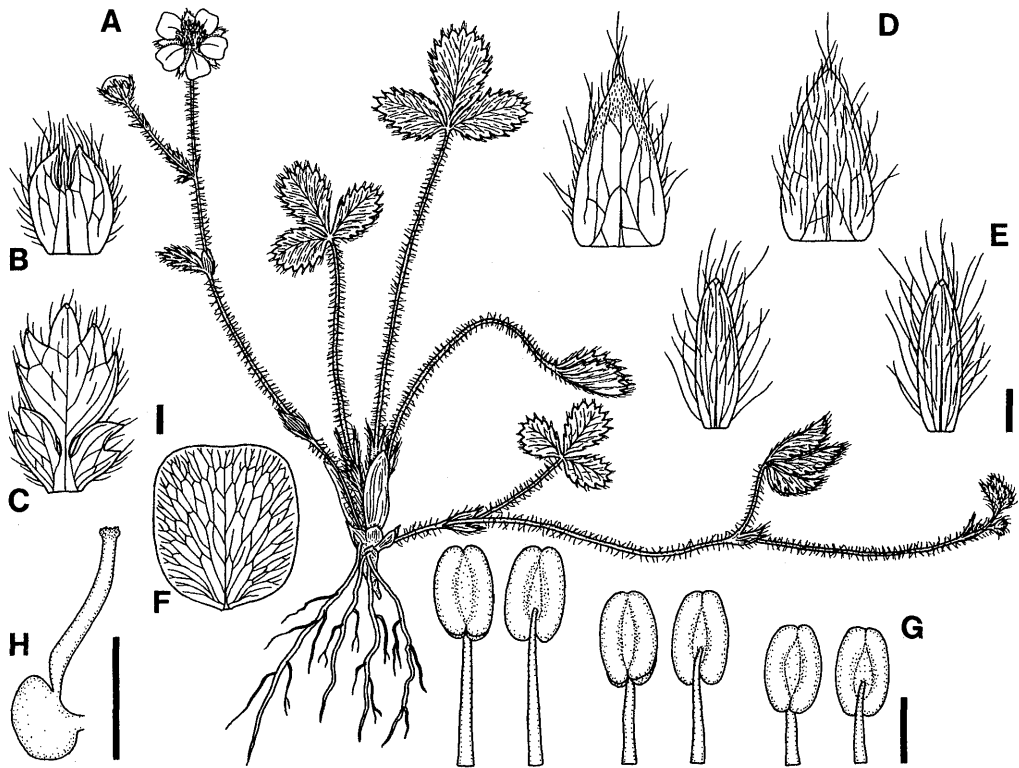


Fig. 1. *Potentilla koreana* H.Ikeda & Im. A: Habit. B: Lower bract on peduncle. C: Upper bract on peduncle. D: Sepals, inner surface (left) and outer surface (right). E: Episepals, inner surface (left) and outer surface (right). F: Petal. G: Three types of stamens, antisepalous (left two), antipetalous (right two) and those between petals and sepals (middle two). For each pair, inner surface (left) and outer surface (right). H: Pistil. Bars = 1 mm.

Radical leaves (in flowering) trifoliate, 3–10 cm long, 1.5–3.5 cm wide; petiole slender, 2.5–8.0 cm long; leaflets with spreading or appressed hairs on both surfaces; terminal leaflet sessile or subsessile, elliptic to broadly obovate, 0.8–2 cm long, 0.6–1.5 cm wide, serrate with 9–17 teeth; stipule adnate to petiole in lower half, auricles free, long triangular to lanceolate with acute tip. Peduncles from axils of scaly leaves on rhizomes, 5–13 cm long with spreading or ascending hairs. Bracts without axillary flowers, 2, with spreading or ascending hairs, lower one with degenerated lamina, upper one leafy, 1–3-divided lamina; stipule adnate to petiole in lower half, auri-

cles triangular to ovate, entire or with 2 or 3 teeth with acuminate tip. Pedicels 0.7–2.3 cm long with spreading or ascending hairs.

Flowers in dichasium, hermaphroditic, actinomorphic, 1–1.5 cm across; hypanthium 2–2.7 mm across with spreading or appressed hairs on outer surface. Episepals 5, lanceolate to narrowly elliptic, 2.3–4.3 mm long, 0.6–1.1 mm wide, entire, apex acute or obtuse, strigose on both surfaces. Sepals 5, oblong to ovate, 2.8–4.3 mm long, 1.2–2.2 mm wide, entire, apex acute or obtuse, lanate on upper half of inner surface, strigose on outer surface. Petals 5, yellow, elliptic to obovate, 4–6.8 mm long, 3.8–6.4 mm wide, apex rounded or retuse. Stamens 20, in 3

whorls; 5 in inner whorl antiseptalous, longer than others, 2.7–3.2 mm long; 5 in middle whorl antipetalous, shorter than others; 10 in outer whorl alternate to petals and sepals; anthers ellipsoid, smooth, 1.2–1.4 mm long, 0.8–0.9 mm wide. Pistils many, on dome-shaped receptacle; ovary glabrous, 0.7–0.8 mm long, 0.4–0.5 mm wide; style lateral, 1.3–1.5 mm long; stigma slightly inflated and papillate; placenta ventro-lateral.

Chromosome number:  $2n=14$ .

Korean name: Tulyangjikot (nov.).

Distribution: Endemic to Korea; Seoul, Kangwon Province, Chungchongbuk Province, Kyongsangbuk Province, Pusan, and Kyongsangnam Province.

Specimens examined: Korea. Seoul, Mt. Dobongsan, 23 May 1988. C. W. Yang 26958 (SKK); Kangwon Province, Mt. Chabyoung-san, 15 May 1995. H. T. Im & H. H. Hong 34576 (Herb. Chonnam Univ.); *ibid.*, 18 April 1997. H. H. Hong, Y. S. Kwon & S. P. Lee 974010 (Herb. Chonnam Univ.); Kangwon Province, Mt. Doota-san, 15 May 1990. S. T. Kim 26891 (SKK); Kangwon Province, Mt. Myen, 26 May 1990. S. H. Oh 74309 (SNU); Chungchongbuk Province, Mt. Wolak, 16 May 1986. M. K. Lee 61608 (SNU); *ibid.*, 16 May 1986. C. Y. Yoo 61560 (SNU); *ibid.*, 16 May 1986. Y. H. Cho 61762 (SNU); *ibid.*, 16 May 1986. H. K. Park s.n. (SNU); *ibid.*, 5 May 1988. C. H. Lee 70403 (SNU); *ibid.*, 29 April 1988. collector unknown 67973 (SNU); Kyongsangbuk Province, Mt. Tonggo, 8 July 1964. T. B. Lee, J. D. Park & M. Y. Cho 3314 (SNUA); Kyongsangbuk Province, Mt. Choochul, 16 May 1986. S. H. Song & S. B. Chung

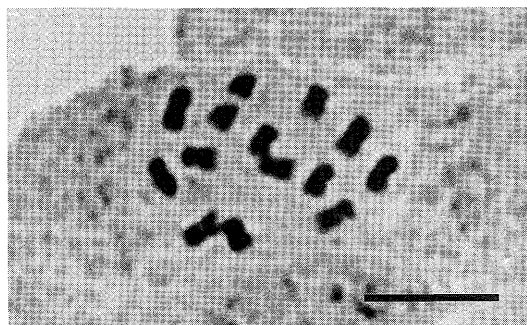


Fig. 2. Somatic chromosomes at metaphase of *Potentilla koreana* H. Ikeda & Im. Bar = 5  $\mu$ m.

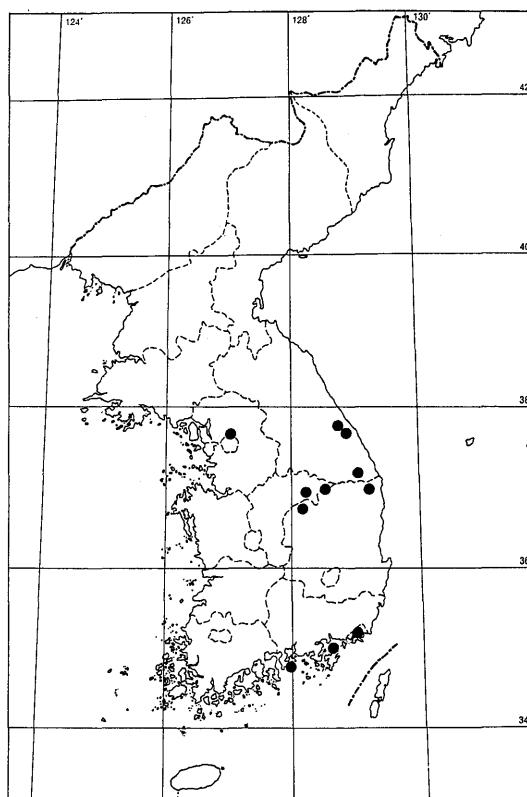


Fig. 3. Distribution map of *Potentilla koreana* H. Ikeda & Im.

66609 (SNU); *ibid.*, 16 May 1986. H. S. Kim & Y. K. Lee 65765 (SNU); *ibid.*, 10 May 1991. Y. B. Ku 75154 (SNU); *ibid.*, 10 May 1991. K. D. Kim 75214 (SNU); *ibid.*, 10 May 1991. J. S. Shin 75073 (SNU); Pusan, 29 April 1928. T. Nakai 11403 (TI); *ibid.*, 29 April 1928. T. Nakai 5525 (SNU); Kyongsangnam Province, Koje Island, Oknyon-bong, 5 May 1928. T. Nakai 11404 (TI); Kyongsangnam Province, Namhae, Mt. Kum, 14 May 1988. S. C. Kim 26170 (SKK).

Nakai (1952) enumerated 21 species of *Potentilla* in Korea and he listed "*P. freyniana* var. *villosa*" without description. We found two specimens collected in Pusan and Koje Island (Nakai 11403, 11404 in TI), which were identified by Nakai as *P. freyniana* var. *villosa*. These specimens are identical with *P. koreana*.

Figure 2 shows the somatic chromosomes of *P. koreana*,  $2n=14$ . Since the basic chro-

mosome number of *Potentilla* is  $x=7$ , *P. koreana* is a diploid species. Iwatsubo and Naruhashi (1991) reported the same chromosome numbers,  $2n=14$ , for *P. freyniana* and *P. riparia*.

In Mt. Chabyoung-san, *P. koreana* occurs on open grassland slopes with spring-flowered plants, such as *Potentilla fragarioides* L. var. *major* Maxim., *Viola orientalis* W.Becker, and *Carex lanceolata* Boott at edge of temperate deciduous forests. *Potentilla koreana* is endemic to Korea and is distributed in the central and the southern part of the Korean Peninsula (Fig. 3).

We appreciate the directors and curators of the herbaria of SKK, SNU, SNUA, and

TI, who provided facilities for our study. We also thank to Professor Hideaki Ohba, University of Tokyo, for his critical reading and correcting the Latin description.

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池田 博<sup>a</sup>, 任 炯卓<sup>b</sup>: 韓国産キジムシロ属植物 (バラ科) の1新種

韓国産キジムシロ属 (バラ科) の1新種を記載した。 *Potentilla koreana* H.Ikeda & Im は、ミツバツチグリ (*P. freyniana* Bornm.) およびテリハキンバイ (*P. riparia* Murata) に似るが、ミツバツチグリからは地下に肥厚する根茎を持たないことにより、またテリハキンバイからは根茎にボート型

の鱗片葉を持つことにより区別される。 *Potentilla koreana* は染色体数  $2n=14$  の2倍体であり、朝鮮半島中部および南部に分布する。

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