

***Potentilla ghazniensis* (Rosaceae), a new record from central Iran**

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Abstract

Potentilla ghazniensis is reported as a new record species from central Iran for the first time. This species is recognized by diverse indumentum (long and short erect-subpatent hairs) on the petiole of the basal leaves; and also by subterminal style, thickened at the base and non broadened stigma. *P. ghazniensis* is the second representative of the section *Lipskyanae* in Iran that differs from its closely related species, *P. botschantzeviana*, by having shorter style. The photographs of the plant and its morphological peculiarities are presented.

Key words: Flora of Iran, New report, Section *Lipskyanae*, *Potentilla*

Introduction

Potentilla L. (Rosaceae) was introduced primarily to the area covered by Flora Iranica by Schiman-Czeika (1969) (including 18 sections and 51 species). Khatamsaz (1993) classified the genus in to 4 subgenera, 14 sections and 39 species for the flora of Iran. Following Soják's extensive morphological studies (1989, 2004, 2007, 2008, 2009) and molecular phylogenetic analysis of Eriksson *et al.* (1998, 2003) and later Dobeš and Paule (2010), several subgenera and sections of the genus were treated as segregated genera (Ertter and Attar, 2007; Faghir, 2010; Soják, 2010).

In the recent years, Faghir *et al.* (2010a, 2011, 2012) took up the morphological, palynological and anatomical studies of the genus and added three new record species (*Potentilla radiata* Lehm., *P. balansae* Soják and *P. botschantzeviana* Adylov) (Faghir *et al.*, 2010b, 2011a) to the flora of Iran. Iranian species of *Potentilla* are mainly distributed in Irano-Turanian and Euro-Siberian phytogeographical regions (Schiman-Czeika, 1969; Khatamsaz, 1993; Faghir, 2010). In the framework of floristic studies in different parts of the country, *Potentilla ghazniensis* Soják was collected from steppic mountains of Shirkuh (Yazd province) and introduced for the first time for the flora of Iran.

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Materials and Methods

The detailed study of different morphological characters were photographed by digital microscope, Dino-Lite, AN-413T model. The collected and examined specimens were deposited in the Mazandaran University Herbarium. The species identification was carried out using Flora Iranica (Schiman-Czeika, 1969), Flora of USSR (Shishkin and Yuzepchuk, 1941), Soják's recent papers (2008, 2009) and Faghir (2010).

Results

Potentilla ghazniensis Soják, Bot. Jahrb. Syst. 109 (1): 42. 1987. (Figures 1-2)



Figure 1. *Potentilla ghazniensis* Soják

Perennial herbs, caudex simple, sturdy, multicapital, covered with grayish brown relics of stipules. Stems decumbent, 4-5 cm long, covered with long or short and wavy erect hairs. Radical leaves digitate (Figure 2A), petiole 0.8-1.7 cm long, covered with long and short, erect or subpatent hairs (1-2.5 mm long) (Figure 2B); leaflets 2×1.5 cm, deeply pinnate, with 5-6 oblong-linear teeth on each side, covered with long appressed-erect hairs on the upper side (Figure 2C), and dense long hairs on the lower side (Figure 2D). Cauline leaves with 0.8×1 cm petiole, or subsessile (Figure 2A), digitate (Figures 2C, D) and ternate on

the apical parts. Inflorescence subcontracted, with 3-5 flowers, pedicels long. Flowers 0.8-1 cm width; outer sepals lanceolate, 1-2 × 2-3.5 mm; inner sepals triangular, 2-4 × 8-10 mm (Figure 2E, F); stamens ± 20 in two whorls, the outer ones longer; anthers ovate, 5-9 mm long (Figure 2F), covered with straight and appressed indumentum; petals yellow, 8-1 × 4-5 mm, emarginated (Figure 2G); styles subterminal, thickened at base, 1-1.3 mm long; stigma non broadened (Figure 2H).



Figures 2: *Potentilla ghazniensis* Soják. 2. Radical (2a-2c) and cauline (2d-2e) leaves plus stipules (2e-2g); 3. Leaf upper surface; 4. Leaf lower surface; 5. Indumentum of petiole of the basal leaf; 6. External view of calyx and epicalyx; 7. Internal view of flower showing long and short stamens; 8. Petal; 9. Style and stigma. Scale Bars: 3-5 = 1 mm, 7 and 8 = 1 mm, 9 = 0.4 mm.

Potentilla ghazniensis is reported for the first time from central Iran based on the presence of some important characters especially long and short erect-subpatent hairs (0.7-1.8 mm long) of the basal leaves (Figure 2B); subterminal style thickened at the base and non broadened stigma (Figure 2H). This species was collected from Iran: Yazd province (at 31° 37' 50" N, 54° 04' 3" E), Taft city, Shirkuh Mts. at 3000-3300 m a.s.l.

Discussion

Potentilla ghazniensis was collected from Afghanistan (Ghazni, Dasht-i-Nawar at 3000 m, 37274 LD; isotype K) (Schiman-Czeika, 1969; Soják, 1987) and later described by Soják (1987). The current species and *P. botschantzeviana* are the two representatives of the section *Lipskyanae* Czevtajbva (Faghir *et al.* 2011) in Iran. Despite of sharing common morphological traits (e.g. style somewhat thickened at base and non-widened stigma) (Soják, 2009), these two species cover different centers of distributions. *P. botschantzeviana* like several other species of the genus are distributed in north of the country (Mazandaran province, in Firuzkuh region at 2000-2500 m a.s.l.) (Faghir *et al.*, 2011b). While *P. ghazniensis* is among a small number of species (e.g. *P. nuda* Boiss., *P. supina* L.) that reported from central and southern parts of the country (Faghir, 2010). *Potentilla ghazniensis* differs from its closely related species, *P. botschantzeviana* (with 1.5-2.5 mm style) (Soják, 1987), by having shorter style (1-1.3 mm long).

Acknowledgement

The authors had honor to cooperate with of Dr. Jiří Soják (Department of Botany, National Museum in Prague Czech Republic). Also, we would like to thank Ms. Robabeh Shahi Shavvon (Department of Biology, Faculty of Sciences, University of Guilan, Rasht, Iran) for her help in slide preparations.

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گزارش گونه *Potentilla ghazniensis* از تیره Rosaceae به عنوان گونه جدید از مرکز ایران

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چکیده

گونه *Potentilla ghazniensis* به عنوان گزارشی جدید از مرکز ایران معرفی می‌شود. این گونه با داشتن کرک‌های متنوع (بلند و کوتاه، افراشته/تقریباً گسترده) روی دمبرگ برگ‌های قاعده‌ای، خامه تقریباً انتهایی و در قاعده ضخیم و همچنین کلاله غیر گسترده قابل شناسایی است. *P. ghazniensis* دومین نماینده از بخش *Lipskyanae* در ایران است که از نظر دارا بودن خامه کوتاه‌تر از گونه وابسته خود *P. botschantzeviana* تفکیک می‌شود. تصاویر گیاه و ویژگی‌های ریخت‌شناسی آن ارائه شده است.

واژه‌های کلیدی: فلور ایران، گزارش جدید، بخش *Potentilla Lipskyana*