Potentilla psammophila (Rosaceae), a new species from N Bohemia

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Abstract

A new species from the Collinae group is described from northern Bohemia, Czech Republic. It is allied to Potentilla lindackeri but reminds of P. rhenana in the shape of its leaflets and their dentation.

Additional key words: Potentilla sect. Terminales subsect. Collinae, taxonomy, endemism

Revising Potentilla material of the Herbarium of the Department of Botany of the National Museum in Prague (PR) and of the Herbarium of the Faculty of Natural Sciences of the Charles University in Prague, the author came across a few specimens, all collected in the vicinity of the northern Bohemian village Doksy, Česká Lípa district, in 1923. They represent a hitherto undescribed and apparently very localized species of P. sect. Terminales subsect. Collinae (Th. Wolf) Juz. The region in which that species was collected had long been neglected by botanists, and there are no newer records of that species in PR and PRC. For health and age reasons it has not been possible for the author to attempt a rediscovery of that species. Hence, it is the purpose of this contribution to make aware of this neglected species and in this way to promote its rediscovery and future conservation.

Potentilla psammophila Soják, sp. nov.
Holotypus: [Czech Republic, Bohemia, Doksy, 1923, Domin PRC 400 403b (PRC; isotypi: B, PR) – Fig. 1.

Species nostra a Potentilla rhenana, cui foliolorum forma fere aequali admonet, praesertim petalis multo minoribus distat; a P. lindackeri praecipue foliolorum forma alia differt.

Caudex ramosus, rami eius ± breves, e internodiis brevibus (rarius etiam longioribus) formati, rosulis foliorum terminati. Caules arcuato-ascendentes, interdum fere erecti, 7-15(-22) cm alti, (2-)3-4-phylli, a (1/3-)1/2-3/4(-4/5) ramosi, plerumque pilos modice flexuosos (raro fere rectis), 0.4-1.5 mm longi, ± modice numerosis vestiti. Petiolis nonnullis deficientibus, vestiti. Foliola intermedia (0.5-)1-1.5 (raro usque 2.5) cm longa, cuneato-obovata, rarius cuneato-oblonga, apice rotundata vel rarius fere truncate, dentibus utrinque 2-3 (raro 4), saepe ± flabelliformibus; dentes (segmenta) pars superioris fere ad costam attingentes (i.e. pars folioli media indivisa omnino 0.7-1 mm lata), eidem pars inferioris ad 1/3 laminae costam versus vel paulum profundius tangeant; lamina supra glabra, raro pilis singularibus praeedita, subtus plerumque tantum ad nervos pilis rectis, apressis, non admodum longis tecta, interdum etiam inter nervos pilos rectis, apressissim vel subpatentibus, modice densis induta. Infiiorescentia insigniter laxa usque diffusa, (3-)6-10(-13)-flora. Episepala oblonga vel oblongo-elliptica, 3-4 × 0.7-1.4 mm magna, sepalis breviora, aequilonga vel longiora. Petala 3-4 × 1.5-2 mm magna. Antherae 0.6-0.8 mm longae. Stylus 1.1-2.2 mm longus, basi modice (sed semper distincte) intumescentes, stigmatibus dilatato. Nuculae dilute fuscae, modice rugulosae, 1.3 mm magnae.

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Additional specimens examined. — CZECH REPUBLIC: Bohemia: Doksy, 1923, Domin PRC 400 398-404 (PRC, seven herbarium sheets); písníčý za humny v Doksech u dráhy, 1923, Klásterský PR 683/5039 (PR); lesní cesta pod Bezdězem, 1923, Klásterský 2275, PR 683/5037, 683/5038 (PR).

Relationship and delimitation. — Potentilla psammophila belongs to P. subsect. Collinae (Th. Wolf) Juz. of the section Terminales (Döll) Gren. & Godr. This group includes hybridogenous species arisen from hybridization of P. argentea L. with P. verna L. (nom. cons. prop., Soják 2009 = P. tabernaemontani Asch.) and P. incana G. Gaertn. & al. of P. sect. Aureae (Th. Wolf) Juz. Possibly, some other species of this section (i.e., P. crantzii (Crantz) Beck ex Fritsch, P. heptaphylla L. and P. pusilla Host) participated in the hybridization, but this has never been proven.

Potentilla subsect. Collinae is an exclusively European group (from central France to the Urals and from southern Sweden to northern Italy). Three “oriental” species from western Asia are generally referred to it, but this is an error, these being products of hybridization between P. argentea and P. thuringiaca Bernh. ex Link of P. sect. Chrysanthae (Th. Wolf) Juz., not of P. sect. Aureae, and do not therefore belong to the Collinae group. I consider these western Asian plants to represent a single species, for which the unused name P. radiata Lehm. is available.

Collinae are considered to be an extremely difficult group. Ascherson & Graebner (1904: 702) wrote: “Die Collinae sind weit die schwierigste Gruppe, die bei der schon an sich schwierigen Gattung Potentilla vorkommt” and Wolf (1903: 19) observed: “Die Gruppe der Collinae ist bekanntlich eine der schwierigsten der ganzen Gattung Potentilla”.

Fig.1. A: Potentilla psammophila, habit; B-D: leaves of basal rosettes of P. rhenana (B), P. lindackeri (C) and P. psammophila (D). – Scale bars: A-D = 2 cm.
By 1904, 40 taxa with binomials were described in this group. The monographer Wolf (1908) attempted to cope with the intricate chaos to find and issue a reasonable solution. He divided the group into ten species, adding the aforementioned three Asian species, which are now to be transferred. His classification, considered by himself as provisionally, has in the main survived to the present time (Gregor 2002).

The derivatives of two parental combinations in the Collinae, Potentilla argentea × P. verna and P. argentea × P. incana, differ by the following characters. Taxa derived from the former combination usually have leaflets with greenish or greyish lower face and never with substellate hairs on the upper face and can be denoted with the collective name P. lindackeri Tausch. Taxa derived from the other combination usually have leaflets with greyish white lower face, incompletely (to various degrees) stellate hairs admixed with small bristles at the base of long, simple hairs on the upper face, and the collective name P. collina Wibel refers to them.

Potentilla psammophila belongs among the close relatives of P. lindackeri s.str. and seven other microspecies derived from P. argentea × P. verna. By the dentation of its leaflets, which is unusual among the members of the Collinae in Bohemia and adjacent regions, P. psammophila approaches P. rhenana P. J. Müll. ex Zimm. from the Rhineland-Palatinate (the valleys Mosel and Ahr). Both taxa differ first of all by the size of their flowers: P. rhenana has large flowers, 1.5 cm and more in diameter (Gregor 2002); P. psammophila (as P. lindackeri) has small flowers, ± 1.2 cm in diameter. This is a constant difference. From P. lindackeri the new species differs in the shape of its leaflets and their dentation: the upper pair of lobes reaches to 2/3 of the distance to the midrib or slightly deeper (see Fig. 1B-C). This is also a constant difference, as I have not found any specimen of P. lindackeri with leaflets toothed like P. psammophila among 566 herbarium sheets in PP and PRC.

The taxonomic value of Potentilla psammophila is comparable with that of the remaining microspecies derived from P. argentea × P. verna accepted by contemporaneous authors (Gregor 2002; Kurtto & al. 2004).

The small distribution area of Potentilla psammophila is not uncommon in the Collinae. Also P. rhenana, P. praecox F. W. Schultz and P. wismariensis T. Gregor & Henker have very localized areas of distribution. The environmental conditions in the region of its occurrence practically have not changed in the last one hundred years. The habitats suitable for P. psammophila are apparently sandy places in the vast pine forest of the region.

The rapid decline in the number of sites of the Potentilla lindackeri group is most likely due to their strict ecological specialization and inability to adapt to changing environment. These species soon vanish under a canopy and never occur on rocks. In Bohemia they are exclusively confined to open plant communities, such as on shallow soil in pastures close to rocky outcrops or in rocky terrain (these places, more or less dismissed in the past are suitable for holiday homes), or in sands of sparse pine woods. Secondarily, they also grow on paved river banks (before they become overgrown with vegetation). In western Europe they also occur, e.g., at the base of walls in vineyards and on not yet overgrown road margins.

References


Soják J. 2009: (1892) Proposal to conserve the name Potentilla verna (Rosaceae) with a conserved type. – Taxon 58: 652-653.
