

A new nothospecies in the genus *Potentilla* L. (Rosaceae)

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The morphological, ecological and chorological features of a new hybrid from Poland are described and illustrated. The morphological characteristics of the new nothospecies *Potentilla* × *gabarae* Kolodziejek are compared with those of related species.

Keywords: Rosaceae, *Potentilla*, hybrid, morphology, taxonomy

Introduction

During an expedition to Częstochowska Upland, Poland, in June 2003, the author found five specimens (from the same plant) of *Potentilla* that differ from congeners in Poland and the neighbouring countries.

Material and methods

After a morphological study, literature searches (WOLF 1908, SZAFER and PAWŁOWSKI 1955, SOJÁK J. 1995, GERSTBERGER 2002, KURTTO et al. 2004) and examination of many species, the author concluded that it represents a new nothospecies, a hybrid of *P. leucopolitana* P. J. Müll. and *P. incana* P. Gertner, B. Meyer et Scherb.

Results and discussion

Potentilla × *gabarae* Kolodziejek, nothosp. nova = *P. leucopolitana* P. J. Müll. × *P. incana* P. Gertner, B. Meyer et Scherb (Fig. 1).

Type: Poland. Częstochowska Upland: Jaroszów village near Zarki 50°39'21"N/19°21'32"E, thermophilous grassland, 21.VI.2003, J. KOŁODZIEJEK (holotype LOD).

Habitu et indumento inter parentes media. P. leucopolitana foliolis supra plerumque dense sericeo-pilosa vel cano-tomentosa, subtus cano-tomentosa. P. incana foliolis densissime stellato-tomentosa et cinerascens, supra parce pilosa vel subglabra et viridia.

Caules basi ascendentes vel suberecti (14.2–)15.4(–16.7) cm longi raro longiores, ramis paniculato-corymbosis multifloris. Folia basalia et caulina inferna 5–7-nata, foliolis plerumque 1.5–2 cm longis, basi longe cuneatis, antice breviter late obovatis multi-

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Fig. 1. *Potentilla* × *gabarae* (from holotype).

dentata, dentibus utrinque 4–5 obtusis aequalibus. Dens terminalis foliorum (1.8–)2(–2.3) mm longis non aut parum prominens. Folia caulina media 5–nata; folia caulina supera 3–nata. Pagina inferior foliolorum cana, plerumque parce pilosa, subtus dense tomentosa; pilis crassiusculis rectis et imperfecte stellatis composito oblecta. Flores numerosi, cymosi, 5-partiti, 8–10 mm lati. Petala luteola, (3.2–)3.6(–3.9) mm, obovata. Sepala externi (2.7–)2.9(–3.2) mm longi, acuto-elliptici, pilis flexuosibus dense villosi. Stamina 20 antheris parvis subrotundo-ovatis. Carpella valde numerosa, stylus non typice coniformis basi papilloso-incrassatus. Floret VI–VIII.

Description: Flowering stems (14.2–)15.4(–16.7) cm, lateral; glabrous to white-tomentose. Stock with a terminal rosette of leaves during flowering. Leaves digitate; leaflets 5–7, (18–)20(–24.2) × (9.4–)9.9(–10.3) mm, oblong-ovate with 4–5 teeth; terminal tooth of leaflet (1.8–)2(–2.3) × (1.5–)1.8(–2.2) mm, smaller in size than adjacent lateral (2.8–)3(–3.2) × (1.7–)1.8(–1.9) mm. Cauline leaves with 5 leaflets (7.6–)9.1(–12.1) × (3.4–)4.5(–5.3) mm with 2–3 teeth; terminal tooth of leaflet (1.2–)1.5(–1.9) × (0.8–)1.1(–1.4) mm, smaller in size than lateral (1.7–)1.9(–2.5) × (1.5–)1.7(–1.8) mm. Leaflets sparsely sericeous hairy with numerous unicellular imperfect hairs, having a variable number of arms (3–7) radiating from a large basal cell. Flowers numerous, (7.8–)8.5(–9.9) mm in diameter; sepals ovate (2.7–)2.9(–3.2) × (0.4)0.5(–0.6) mm; epicalyx segments linear-lanceolate (1.7–)2.1(–2.4) × (0.4–)0.5(–0.6) mm, shorter than sepals; petals (3.2–)3.6(–4.2) × (1.8–)2.3(–2.9) mm, only slightly longer than sepals. Stamens (19–)20; carpel styles 30, longitudinally filiform-elongated, i.e. from the middle up to the stigma equally thick. Achenes ovate, laterally flattened. Apex obtuse, curved, base obtuse. Surface dull, glabrous, strongly rugose-ribbed, between ribs reticulate. Interspaces wider than ribs; ribs ca 10 μm wide and 10 μm high. The style scar is well above the middle of the achene (subterminal), notch prominent ca. 60 μm deep. Attachment scar subbasal, without aril, 40 μm long and 30 μm wide. Dorsal margin with a ridge 10 μm high. Ventral suture 40 μm long and 10 μm wide. Colour pale brown. Size: 0.84–1.20 (0.97±0.13) mm long, 0.61–0.80 (0.64±0.09) mm wide, 0.59–0.87 (0.67±0.11) mm thick. Flowering: V–VI, fruiting: VII–VIII.

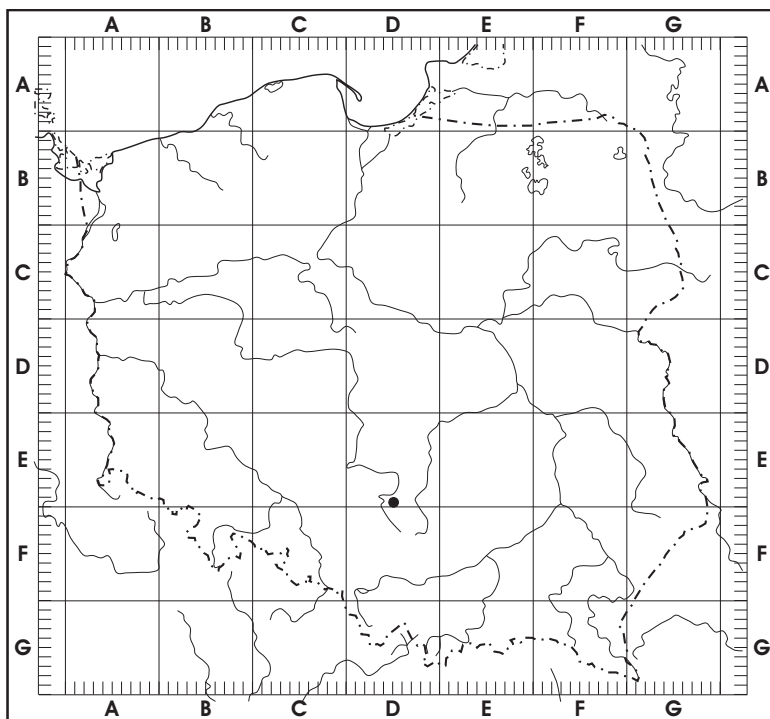


Fig. 2. Distribution of *Potentilla* × *gabarae* – cartographic square in Poland ATPOL (ZAJAC 1978).

Distribution: The rare species occurs in a restricted number of localities in Poland, i.e. only on the Czestochowska Upland, in the vicinity of Jarosłów and Zaborze village (Fig. 2). In Zaborze, the nothospecies occurs in mixed populations with *Acinos arvensis*, *Brachythecium albicans*, *Carlina vulgaris*, *Centaurea stoebe*, *Cladonia* sp., *Clinopodium vulgare*, *Dianthus carthusianorum*, *Euphorbia cyparissias*, *Festuca ovina*, *Lolium perenne*, *Origanum vulgare*, *Peucedanum oreoselinum*, *Plantago media*, *Poa compressa*, *Potentilla incana*, *P. leucopolitana*, *P. tabernaemontani*, *Scabiosa columbaria*, *Sedum acre*, *Stachys recta*, *Thymus serpyllum*, *Trifolium arvense*. This type of vegetation can be classified as *Origano-Brachypodietum* Medw.-Korn. et Kornaś 1963.

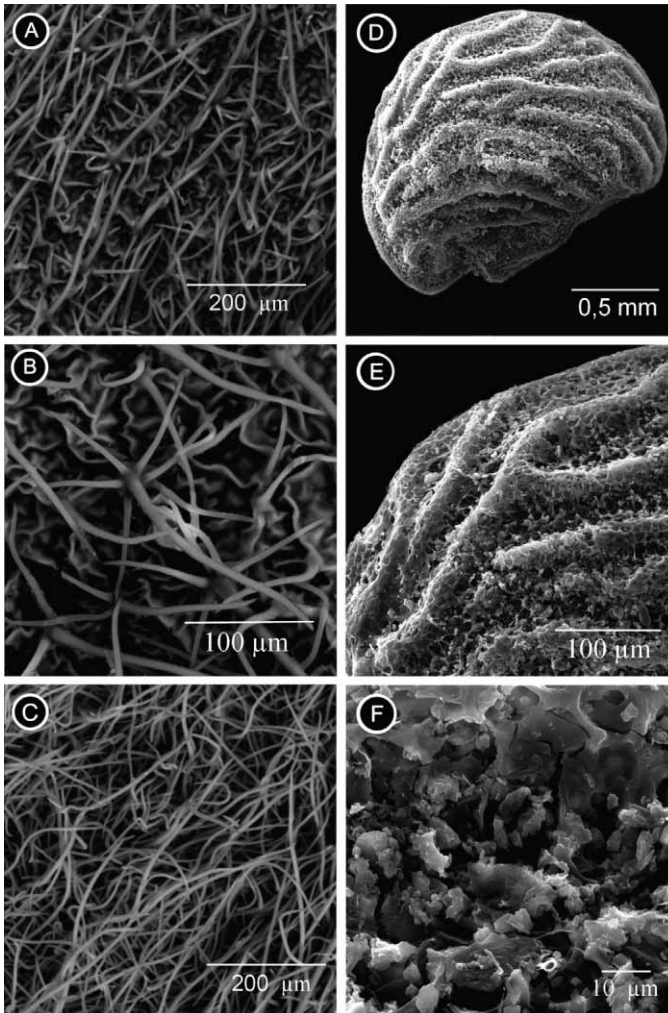


Fig. 3. A – leaf ultrastructure morphology (from holotype), upper leaf surface; B – imperfectly stellate hairs, lower leaf surface; C – lower leaf surface; D – achene of outline ovoid, laterally flattened; E – surface of achene strongly rugose-ribbed; F – close up of achene surface between ribs with thick-walled reticulate microsculpture.

Etymology: The species epithet honours Professor Barbara Gabara, Łódź, for her contribution to the knowledge of the plant anatomy and embryology.

Further specimens examined: Częstochowska Upland: Zaborze near Żarki 50°40' 31"N/ 19°20' 00"E, 333 m, thermophilous grassland, 3 June 2003, 17 July 2007, 14 June 2004, 30 June 2004 (J. KOŁODZIEJEK LOD).

Affinities: *P. × gabarae* resembles *P. leucopolitana* in having dense tomentum and leaves with 5–7 leaflets. However, there are many differences that render identification easy. The former has numerous incomplete stellate hairs on the upper side of leaves, terminal tooth of leaflet smaller in size than adjacent lateral and smaller leaves and flowers. *P. × gabarae* also resembles to some extent *Potentilla incana* and *P. × subarenaria* Borbás ex Zimmeter by having stellate hairs. Leaves of *P. incana* are covered with stellate hairs mixed with long hairs which make the plant greyish; *P. × subarenaria*, which is considered to be of hybrid origin (*P. incana* × *tabernaemontani* Ascherson), has curved and stellate hairs on the surface. The stellate hairs of *P. incana*, which were described by WOLF (1908) as »Sternhaare«, may consist of up to 30 identically long rays, while those of *P. × subarenaria* have about 10 or less identically rays. Leaflets of *P. × gabarae* are covered with straight and crispate hairs mixed with imperfectly stellate hairs which make the leaves sparsely sericeous hairy; the imperfectly stellate hairs (»Zackenhaare«) consist of up to 7 not identically long arms (Fig. 3 A, B).

References

- GERSTBERGER, P., 2002: *Potentilla* L. In: CONERT, H. J., HAMANN, A., SCHULTZE-MOTEL, W., WAGENITZ, G. (eds), G. Hegi: Illustrierte Flora von Mitteleuropa 4(2C), 109–205. Blackwell, Berlin.
- KURTTA, A., LAMPINEN, R., JUNIKKA, L., 2004: 13. Rosaceae (*Spiraea* to *Fragaria*, excl. *Rubus*). In: KURTTA A., LAMPINEN R., JUNIKKA L. (eds.), Atlas Florae Europaeae. Distribution of vascular plants in Europe 13. Rosaceae (*Spiraea* to *Fragaria*, escl. *Rubus*). The Committee for Mapping the Flora of Europe Societas Biologica Fennica, Vanamo, Helsinki.
- SOJÁK, J., 1995: *Potentilla* L. In: SLAVÍK, B. (ed.), Flora of the Czech Republic 4, 283 – 314. Academia, Praha.
- SZAFER, W., PAWŁOWSKI, B., 1955: *Potentilla* L. In: SZAFER, W., PAWŁOWSKI, B. (eds.), Flora polska 7, 96–143. Wydawnictwo Naukowe PWN, Warszawa-Kraków.
- WOLF, T., 1908: Monographie der Gattung *Potentilla* L. Bibliotheca Botanica 71, 6 + [1] + 714 + 2 maps.
- ZAJAC, A., 1978: Atlas of distribution of vascular plants in Poland. Taxon 27, 481 – 484.