

Two new American species of *Potentilla* (Rosaceae) (Notes on *Potentilla* XXIII.)

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Abstract: Two new North American species of *Potentilla* have been found in collections of NY and ALA. *P. psychrophila* is a hybrid derivative of sect. *Niveae* x sect. *Pensylvanicae*, and *P. johnstonii* is close to *P. concinna*.

Keywords: *Potentilla*, new species, Alaska, Nevada

Hybridization between species of sect. *Niveae* and members of sect. *Pensylvanicae* (*Multifidae*) is relatively frequent in the Arctic Region and locally in adjacent areas. The hybrid derivatives differ at first sight from the basic species by the shape of leaves. Sect. *Niveae* has ternate leaves, sect. *Pensylvanicae* has pinnate leaves and taxa derived from them have palmate (quinate) leaves or pinnate with two (exceptionally three) pairs of approximate leaflets (different types of leaves may be found in the same individual). Even though the ancestral species of sect. *Pensylvanicae* (*P. pulchella* R. Br., *P. anachoretica* Soják, *P. bimundorum* Soják, *P. litoralis* Rydb.) are much different from each other, the hybrid offspring of various parent combinations is difficult to distinguish. The most important differences are in the indumentum of petioles (cf. Soják 1986: 154, 156). Should *P. nivea* L. s.l. take part in the origin of a hybrid taxon, the petioles have, besides straight long hairs, also flexuous, subcrispate, rarely crispate hairs. Taxa derived from *P. arenosa* (Turcz.) Juz. have petioles with long straight and short straight hairs. The latter are usually numerous and horizontally patent. Taxa derived from the *P. uniflora* Ledeb. – *P. subvahliana*

Jurtzev – *P. vahliana* Lehm. complex may have both types of petiole indumentum because this character is not constant in the complex.

Mr. David Murray (Fairbanks) kindly sent me an interesting collection of critical specimens from Alaska for determination. It seems to be clear that four hybrid species derived from sect. *Niveae* × sect. *Pensylvanicae* occur in Alaska, including *P. murrayi* Jurtzev, *P. rubricaulis* Lehm. (*P. furcata* Porsild, *P. quinquefolia* Rydb.), *P. subquinata* (Lange) Rydb. and a new species very close to it which I describe here as *P. psychrophila*.

Of the four species mentioned, the most easy to identify is *P. rubricaulis* Lehm. sensu orig. It has conspicuously small calyces and petals and congested 5–12-flowered inflorescence. The petioles have both long and numerous very short hairs, both straight. The remaining three Alaskan species have long straight and even flexuous or subcrispate (to crispate) hairs on the petioles (*P. murrayi* can produce forms with only straight hairs on petioles). *P. murrayi* and *P. subquinata* differ, inter alia, from *P. psychrophila*, by larger flowers and absence of leaves with three pairs of leaflets grey-green beneath. The number of leaflet pairs and their indumentum is subject to variation in *P. psychrophila* but occasional occurrence of three pairs of leaflets with sparse tomentum indicates that other parent of sect. *Pensylvanicae* than other similar Alaskan species was involved.

During his visit to Fairbanks (1900, 1992) Boris Jurtzev, a distinguished specialist in Arctic *Potentillas*, named *P. petrovskyi* Soják all specimens of *P. psychrophila* seen. This is not surprising because *P. petrovskyi* growing in Chukotskiy avtonomnyy okrug, undoubtedly derived from *P. anachoretica* Soják × *P. nivea* L. s.l., is very similar to Alaskan *P. psychrophila*. *P. petrovskyi* has leaflets always in two pairs, with dense tomentum beneath, larger flowers and petioles with numerous, better developed flexuous-subcrispate hairs. Canadian and American collectors have usually named *P. psychrophila* *P. rubricaulis* or *P. hookeriana* Lehm.

***Potentilla psychrophila* Soják, sp. nova**

Caudex ramosus, ramis longis, reliquiis stipularum emortuarum ferrugineis ± omnino obtectis. Caules ± ascendentes, 7–23(–27) cm alti, violaceo-suffusi, 1–5-flori, superne, interdum a dimidio ramosi, pilis aut omnibus flexuosis (interdum usque subcrispatis) vel ± rectiusculis subpatentibus et item brevibus ± curvatis densiuscule vestiti. Folia basalia pinnata, 2- vel 3-juga, jugis approximatis [(0.5–)2–5(–6) mm], rarius digitata, quinata, interdum nonnulla ternata immixta, 2–10 cm longa. Petioli pilis ± rectis, 0.6–1.5 (raro usque 2) mm longis, oblique subpatentibus et item brevibus, curvatis vel flexuosis densiuscule induti. Foliola ambitu ± cuneato-elliptica vel oblonga, sessilia, ad (3/5–)3/4–4/5 pinnatisecta, segmentis oblongis, plerumque obtusis, ± approximatis, supra pilis rectis, longiusculis, subpatentibus, ± densiusculis, et item glandulis minutis, sessilibus praedita, subtus plerumque canescentia, pilis rectis longis et tomento vero continuo, sed non admodum denso tecta, interdum foliola nonnulla cano-viridia, pilis curvatis, brevibus, patentibus, non densis (pagina folioli sub indumento sub

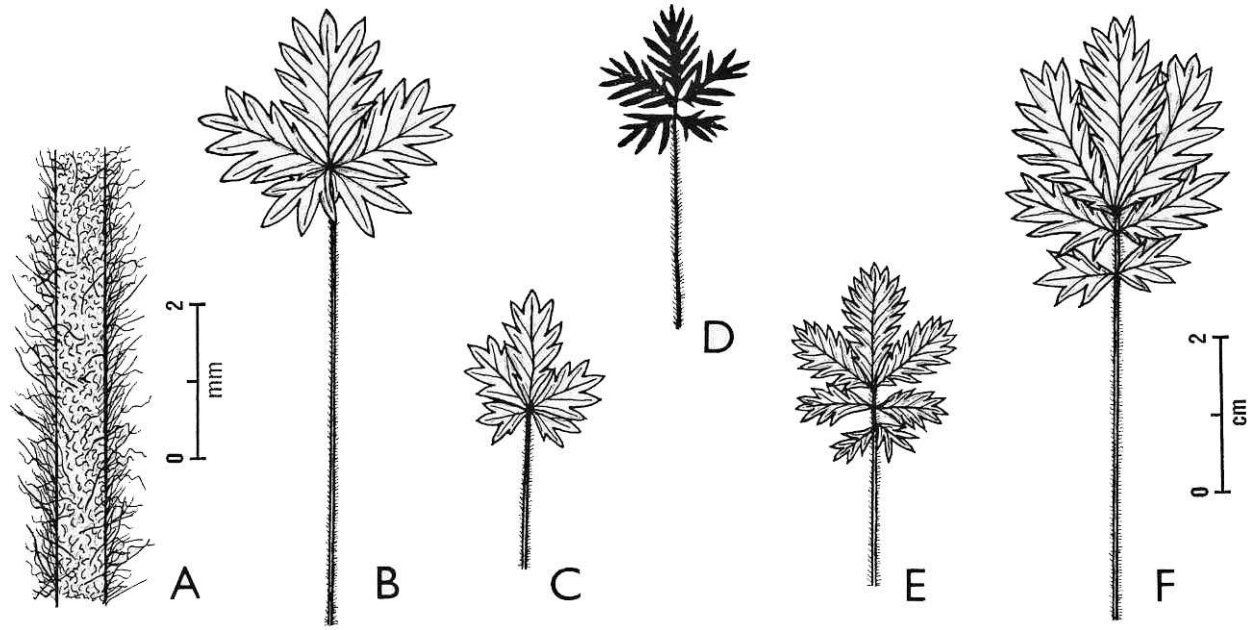


Fig. 1: *Potentilla psychrophila*. A, indumentum of petiole; B–F, basal leaves.

lente visibilis), rarius folia nonnulla subtus alba, tomento denso induta. Foliolum terminale 1–2.2 × 0.7–1.5 cm magnum, segmentis utrinque 4–7, parte media indivisa 1.5–4(–6) mm lata. Folium caulinum ± unum, parvum, ternatum. Inflorescentia insigniter lata, flores insigniter longe pedicellati, (1.3–)1.5(–1.6) cm in diam. Calyx pilosus, glandulis minutis instructus. Sepala 4–5(–6) × 2–3 mm magna. Episepala lanceolata, lineari-lanceolata vel ± elliptica, 3–4(–5) × 0.5–1.5 mm magna, sepalis breviora. Petala 6(–6.5) mm longa, sepalis manifeste longiora. Antherae 0.3–0.6 mm longae. Stylus basi modice incrassatus, non papillosus vel interdum leviter brevipapillosus, 1–1.2 mm longus.

Typus: Alaska, Northeastern Brooks Range, Lake Peters area, Mt. Michelson Quad: Coke Creek drainage, 69°21' N, 144°57' W, 1973 Batten 250 (ALA).

Caudex branched, with long branches covered by rusty rests of dead stipules. Stems ± ascending 7–23(–27) cm high, violet tinged, 1–5-flowered, above or from middle branched, covered either with all hairs flexuous (sometimes to subcrispate) or with ± straight erecto-patent and shorter, ± curved, rather dense hairs. Basal leaves with 2 or 3 approximated [(0.5–)2–5(–6) mm] pairs of leaflets, rarely palmate, quinately, sometimes with ternate admixed, 2–10 cm long. Petioles covered with 0.6–1.5 (rarely to 2) mm long, ± straight hairs, also with shorter, rather dense, curved or flexuous hairs. Leaflets ± cuneate-elliptic or oblong in outline, sessile, to (3/5–)3/4–4/5 pinnatisect, segments oblong, usually obtuse, ± approximate, above with straight, ± long, usually ± dense, subpatent hairs and with minute, sessile glands, below usually greyish, with long straight hairs and continuous but not very much dense tomentum, sometimes some leaflets grey-green, only with curved, short, patent, not very much dense hairs (leaflet surface visible through the indumentum by means of a lens), rarely some leaves densely whitish tomentose beneath. Terminal leaflet 1–2.2 × 0.7–1.5 cm, on both sides with 4–7 segments, with middle undivided part 1.5–4(–6) mm wide. Cauline leaf usually one, small, ternate. Inflorescence conspicuously lax. Flowers very long pedicellate, (1.3–)1.5(–1.6) cm in diam. Calyx pilose, with minute glands. Sepals 4–5(–6) mm. Episepals lanceolate, linear-lanceolate or elliptic, 3–4(–5) × 0.5–1.5 mm, shorter than sepals. Petals 6(–6.5) mm, conspicuously longer than sepals. Anthers 0.3–0.6 mm long. Styles at base slightly thickened, not papillose or slightly papillose, 1–1.2 mm long.

Specimens examined: Alaska: Cape Beaufort, 69°02' N, 163°50' W, 1966 Argus & Chunis 5486 (ALA); Chandlar Lake Quad, Endicott Mts., Upper Encampment Cr., 68°14'22'' N, 152°11'40'' W, 2002 Parker & Solstad 13428 (ALA); Northeastern Brooks Range, Lake Peters area, Mt. Michelson Quad, 69°18' N, 145°11' W, 1973 Batten 368B (ALA); W side of Lake Peters, 69°18' N, 145°05' W, 1973 Batten 709A (ALA); NE end of Lake Peters, 69°20' N, 145°01' W, 1973 Batten 768 (ALA); E side of Lake Peters, 69°20' N, 145°01' W, 1973 Batten 535 (ALA); Coke Creek drain., 69°22' N, 144°58' W, 1973 Batten 474 (ALA); Ambresvajun Lake (Last Lake), 68°39' N, 143°43' W, 1975 Batten 75-2378 (ALA); Kluane National Park, Yukon Territory, Hoge Creek, SSW of

Burwash landing, 61°17' N, 139°35' W, 1976 G. W. & G. G. Douglas & Freese 9825 (ALA).

***Potentilla johnstonii* Soják, sp. nova**

Caules ± 15 cm alti. Folia basalia digitata, 5–7-nata, ca. 5–10 cm longa. Petioli pilis rectis, appressis vel arrecte patentibus, 0.5–2 mm longis vestiti. Foliola lineari- vel oblongo-cuneata, ad latera integra, apice tridentata, media 2–4 × 0.4–0.7 cm magna, omnia utrinque pilis appressis rectis 1–1.5 mm longis modice densis induta. Inflorescentia 4–11-flora; pedicelli post anthesin arcuate reflexi. Flores ± 1.3 cm in diam. Petala ca. 5 mm longa. Stamina ± 20. Stylus 2.2–2.4 mm longus, basi modice intumescens. Achenes ± 2.5 mm, sculpturatae.

A speciebus Americanis habitu similibus (i.e. foliolis tridentatis instructis) differt foliolis subtus pilis 1–1.5 mm longis indutis, non glabris nec pilis 0.2–0.4 mm longis vestitis, et notis aliis.

Typus: Nevada National Forest, Quinn Canyon Range, Nye Co., 1945 Maguire & A. Holmgren 25352 (NY holotype, isotypes UTC, UC, CAS, WS).

Syn.: *Potentilla concinna* var. *curvata* B. C. Johnston in sched., also in facsimile printed by microfilm/xerography in 1984, 169.

Stems ± 15 cm high. Basal leaves palmate, 5–7-foliolate, ca. 5–10 cm long. Petioles with straight, appressed or erecto-patent, 0.5–2 mm long hairs. Leaflets linear- or oblong-cuneate, entire except for 3-dentate apex, middle 2–4 × 0.4–0.7 cm, on both sides with appressed, straight, 1–1.5 mm long hairs. Inflorescence 4–11-flowered, at base moderately thickened. Achenes ± 2.5 mm long, sculptured.

B. C. Johnston designated this new species as *Potentilla concinna* var. *curvata* on a herbarium label. According to Art. 29 of the Code 2000, Johnston did not publish this name effectively in 1984 (see the above mentioned microfilm/xerography). The characteristic feature is tridentate leaflets. From all similar species having tridentate leaflets *P. johnstonii* differs by the indumentum of the underside of leaflets. To my knowledge, this species had been collected in the same area three times in 1945, 1960 and 1975 by different collectors.

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