

Some new northern hybrids in *Potentilla* L.

Některé nové severské hybridy r. *Potentilla* L.

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A hybridization occurs in some places of North and West Scandinavia between *P. crantzii* (CR.) BECK ex FRITSCH and *P. gelida* C. A. MEY. These hybrids exhibit mixed both ternate and quinate basal leaves and are described here as *P. × scandica* SOJÁK hybr. n. Plants very similar to the last hybrid originating from the hybridization of *P. crantzii* (CR.) BECK ex FRITSCH × *P. hyparctica* MALTE in Novaya Zemlya, in Greenland and in Canada called here *P. × protea* SOJÁK hybr. n. A hybrid *P. villosa* PALL. × *P. hyparctica* MALTE (= *P. × aleutica* SOJÁK hybr. n.) was found on Aleutian Is. It differs from the very close *P. villosa* PALL. × *P. fragiformis* WILLD. (= *P. × lucida* WILLD. pro sp.) in shorter styles and from *P. villosa* PALL. in another leaflets indument.

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As early as in the last century, remarkable plants differing from the typical *Potentilla crantzii* (CR.) BECK ex FRITSCH by their ternate basal leaves were found in several regions in northern and western Scandinavia. As a rule, these aberrant plants were regarded as a variety (or a form) of this species and, in consequence, named as var. (f.) *ternata* (A. BLYTT) LINDM., sometimes also as var. (f.) *gelida* (C. A. MEY.). After a thorough examination and detailed comparisons of an extensive material, I came to the conclusion that this taxon had not originated in Scandinavia as a result of reduction of the leaflet number in *P. crantzii*, and should be identified with *P. gelida* C. A. MEY. — an Asian species which evidently migrated from West Siberia via Ural Mts. westwards as far as to Norway.

Potentilla gelida and *P. crantzii* can be distinguished only by a number of leaflets (ternate in the former, and quinate in the latter). In spite of this minor difference, they should be indubitably considered as distinct, “good” species not only in large areas where only one of them occurs but also in restricted contact region which is shared by both of them, i.e. above all in the Caucasus, Transcaucasia and Eastern Anatolia. This presumption was confirmed by my field observations at some Caucasian localities where these two species grew abundantly in mixed populations.

In my opinion, *P. crantzii* is a relatively old species representing a descendant of more primitive *P. gelida*. The speciation took place probably in the Caucasus or in the adjacent regions of West Asia, and *P. crantzii* penetrated through Central Europe (where its tetraploid cytotype occurs) to Northern Europe (hexaploid cytotype) and finally reached eastern part of North America.

In northern and western Scandinavia, *P. crantzii* came in secondary contact with *P. gelida* of eastern origin, and the hybridization between these two species gave rise to plants characterized by a common presence of ternate and quinate leaves (a variable proportion of the two types of leaves can be found in the hybrid plants). Treating both parental taxa as species (and I believe this opinion to be justified), it seems useful to propose a binomial for their hybrid: *Potentilla* $\times$ *scandica*.

Potentilla $\times$ ***scandica*** SOJÁK, hybr. nova

Caudex residuis stipularum bifariis obtectus. Folia radicalia ternata et quinata in eadem planta promiscue occurrentia. Flores 1,2—2,2 cm in diam., petala 5,5—9 mm lg., antherae (0,4—) 0,5—0,8 (—0,9) mm lg., stylus subterminalis, basi non intumescens, (1,2—) 1,4—1,6 mm longus.

Planta inter *P. gelidam* et *P. crantzii* transiens, ab utrisque foliis radicalibus 3— et 5-natis commixtis distat. A *P. crantzii* $\times$ *P. hyparctica*, cui simillima et saepe difficiliter distinguenda, interdum antheris petalisque majoribus, interdum glandulis foliorum minus evolutis, foliis radicalibus semper distichis et imprimis area geographica alia differt.

Typus: Norway, Sogn: Luster, Fanaraaken, BLYTT 7. 9. 1864 (O).

Specimina examinata:

Norway: Buskerud; Hol, RUI 4012, 1939 (O); Hordaland: Ulvik, JØRSTAD 1913 (O); Ullensvang, herb. NORMAN (O); Oppland: Dovre, AHLBERG et AXELL 1864 (LD), AHLBERG 1870 (O), RUD 1878 (O), BRAUN 1880 (LD), MØLER 1887 (O), DAHL 1889 (O), GULDBERG 1903 (O); Vang, BLYTT 1863 (O), SÖDERÉN et EISEN 1870 (O); Lom, BLYTT s.d. (O), POULSSON 1879 (O), NORDHAGEN 1952 (O); Fron, LIEUNGH 1899 (O); Gausdal, JEBE 1937 (O); Øystre Slidre, BLYTT 1863 (O); Sogn og Fjordane: Laerdal, BLYTT 1829 (O), BLYTT 1864 (O); Luster, BLYTT 1864 (O); Sør — Trøndelag: Oppdal, THOMLE 1882 (O), RESVOLL 1901 (O), AUGUSTINSSON 1904 (LD), JEBE 1908 (O); Røros, DYRING 1926 (O); Nordland: Saltdalen, SCHLEGEL et ARNELL 1869 (O); Salten, GULDBERG 1904 (LD); Fauske, NOTO 1924 (O); Ofoten, NOTO 1931 (O); Sulitjelmaområdet, SJÖVALL 1907 (LD); Troms: Bardu, NYHUUS 1886 (O), NOTO 1908, (O); Kvaenangen, NOTO 1901 (O, LD); Kåfjord, NOTO 1897 (O); Målselv, NOTO 1902 (O); Nordreisa, RESVOLL-HOLMSEN 1910 (O); Skjervøy, RESVOLL-HOLMSEN 1910 (O); Finnmark: Karasjok, NORMAN 1864 (O).

Sweden: Jämtland: Storlien, leg.? 1897 (LD), ALMQUIST 1902 (LD), AHLQVIST 1902 (O), RINGENSON 1915 (LD), NILSSON 1932 (LD); Lycksele Lappmark: Sorsele socken — Tjulträsk, NYHOLM 1949 (LD); Lule Lappmark: Kivickjock, SIMMONS 1906 (LD); Jokkmokk — Niauve, SYLVÉN 1901 (LD); Pietnosluokte, JÖNSSON 1910 (LD); Torne Lappmark: Abisko, TENGVALL 1908 (LD); Nrialjajatsko (?), WARODELL 1908 (LD); Låktåive, JOHNSSON 1929 (LD); Jukkasjärvi sn — Vassitjåkko, HOLMBERG 1926 (LD).

Finland: Lapponia enontekiensis: Kilpisjaur strand, c. 69°, MONTELL 1912 (O); Lapponia Inarensis: Utsjoki, FINNILÄ 1915 (O).

Populations exceedingly similar to *P. × scandica* are occasionally found in Novaya Zemlya, in Greenland, in the whole northern Canada and rarely also in Jan Mayen Is. Their origin, however, cannot be searched for in the hybrid contact between *P. crantzii* and *P. gelida* — they came into being by hybridization between *P. crantzii* and *P. hyparctica* MALTE. Despite the fact, that *P. hyparctica* differs substantially from *P. gelida* by its imbricate stipules on the caudex and by shorter styles and anthers, the hybrids between *P. crantzii* and the other two species, respectively, are often only hardly distinguishable. This similarity follows from the fact that *P. crantzii* $\times$ *P. hyparctica* is morphologically closer to the first parental species and that is why it imitates *P. crantzii* $\times$ *P. gelida*. Nevertheless, since *P. gelida* ceases to

occur in the region between Novaya Zemlya and Canada, the identification of hybrid plants is not complicated.

As a binomial for the hybrid between *P. hyparctica* and *P. crantzii* should be introduced, I propose the name *P. × protea*. A misidentification of *P. × protea* with the parental species is not probable because the hybrid plants possess both 3- and 5-foliolate leaves (the rare nothomorph with exclusively quinate leaves can be distinguished from *P. crantzii* by its imbricate stipules on the caudex).

P. × protea is fertile as a rule and, in some regions, it has a character of a hybridogenous species with an independent spreading. The presence of this taxon in British Columbia is surprising as *P. crantzii* is not known to occur in western part of Canada.

Potentilla × protea SOJÁK, hybr. nova

Caudex residuis stipularum bifariis vel rarius imbricatis tectus. Folia radicalia ternata et quinata in eadem planta promiscua (raro omnia quinata, tunc residua stipularum imbricata). Flores 1,1–1,7 cm in diam., petala 4,5–7 mm lg., antherae 0,35–0,6 (–0,8) mm lg., styli subterminales, basi non incrassati, 1,1–1,3 (–1,5) mm longi.

Planta notis suis inter *P. hyparcticam* et *P. crantzii* fluctuans, ab utrisque parentibus foliis radicalibus 3- et 5-natis commixtis bene dignoscitur. A *P. crantzii × P. gelida*, cui simillima et plerumque difficiliter discrepans, interdum petalis, stylis antherisque minoribus, interdum foliorum glandulis magis numerosis et majoribus et praesertim distributione alia differt.

Typus: East Greenland, E. Jameson Land, N.N.W. of Dusén Bjerg, 71°02' N, 22°48' W, MARRIS 1598, 1961 (BM).

Specimina examinata:

Novaya Zemlya: Karmakola, EKSTAM 1895 (O); Bessimyanii (Bezimjannyj) Fjord, LYNGE 1921 (O). Jan Mayen: Hope Bay, RUSSELL, WESTWOOD et WELLINGTON 176, 1938 (GB). Greenland: Central SW Jameson Land (Scoresby Sund), 71°01' N, 23°35' W, MARRIS 1672, 1961 (BM); Scoresby Land, Fleming Fjord, Rhaetelv delta, 71°38' N, 23°10' W, MARRIS 1189, 1961 (BM). Canada: James Bay, South Twin Island, 53°05' N, 80°02' W, BALDWIN 1619, 1949 (LD); British Columbia, Summit Lake, Mile 392, Alaska Hwy., 58°37' N, 124°42' W, A. CESKA, O. CESKA et GOWARD 12837, 1982 (V, PR).

Potentilla × aleutica SOJÁK, hybr. nova

Caudex crassus, ± simplex. Folia radicalia ternata, ± magna. Petioli pilis rectis (1,5–) 2–2,5 mm longis densis oblique patentibus et interdum in foliis nonnullis item brevioribus tenerrimis flexuosis vel subcrispatis dispersis vestiti. Foliolum intermedium ambitu ± ovatum, adultum 1,5–3 × 1,3–2,5 cm magnum, crenato-dentatum vel crenatum, crenis utrinque (2–) 3–6, latis, approximatis, apice abrupte angustatis, rotundatis vel ± acutatis; foliola supra viridia, opaca, pilis longis rectis tenuibus ± patentibus modice dense vel dense tecta, subtus viridia vel cana, opaca, ad nervos pilis ± tenuibus rectis longis subappressis vel patentibus densis, ad paginam pilis longiusculis tenuissimis flexuosis (interdum in foliis nonnullis tantum rectis) patentibus ± modice densis vestita, ± parviglandulosa; pagina foliolorum inferior aut bene visibilis, aut pilis rectis densis oblecta, semper etomentosa (pili crispato-floccosi deficientes).

Inflorescentia laxa, 1-2-flora. Episepala lanceolata vel ovato- usque elliptico-lanceolata, sepalis $\pm$ subaequilonga, apice obtusa vel acuta, sicut sepala patenter longe pilosa. Petala $\pm$ 10 mm lg. Antherae 0,5—0,6 mm lg. Stylus basi intumescens, $\pm$ epapillosus, tenuis, 1,2—1,3 (—1,4) mm lg. Nuculae maturae fuscae, sublaeves, 1,6—1,9 mm longae.

P. villosae habitu similis, sed foliola omnia subtus etomentosa (pilis crispatis vel floccosis deficientibus). A *P. hyparctica* praecipue stylis ad basin distincte incrassatis et pilis ad paginam foliolorum inferiorem tenuissimis mollibus distincte flexuosis et a *P. fragiformi* imprimis stylis $\pm$ dimidio brevioribus distat. A *P. × lucida*, cui proxima, differt stylis multo brevioribus (1,2—1,4 mm, non 1,9—2,1 mm longis).

Typus: Aleutian Islands, Kiska Island, HUTCHINSON s.n. (PR).

This plant exhibits a strong similarity to *P. villosa* PALL. in general habit but differs from it by absence of tomentum on the lower surface of leaflets. *P. × aleutica* closely resembles also the forms of *P. fragiformis* WILLD. and *P. hyparctica* MALTE with dense indument but substantial difference between it and the two latter species can be found in the character of style: In *P. fragiformis* the style is much longer (almost two times) and *P. hyparctica* possesses the conspicuously short style almost without basal thickening.

P. × aleutica represents almost indubitably a hybrid (or a hybridogenous species) the parent combination of which was *P. villosa* $\times$ *P. hyparctica*.

P. × lucida WILLD. ex SCHLECHT. pro sp. (having probably *P. villosa* and *P. fragiformis* as parental species) is the closest phenetic neighbour of our new taxon which differs from it by conspicuously shorter styles (these two taxa would be probably undistinguishable without taking this feature into consideration).

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