

Potentilla vorobievii, a new species from the Far East

Potentilla vorobievii, nový druh z Dálného východu

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A new species, *Potentilla vorobievii* NECHAEVA et SOJÁK, is being described from the surroundings of Vladivostok. It belongs to the section *Rivales* and is characterized by pinnate leaves whose uppermost two pairs of leaflets are approximated, sessile and not decurrent.

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Potentilla vorobievii NECHAEVA³⁾ et SOJÁK, sp. nova

Caudex sicut folia radicalia et caulina infima ignota. Caules erecti vel a basi arcuata adscendentes et tunc rosulas foliorum longe petiolorum ex axillis foliorum caulinarum inferiorum emittens (solum post partes superiores caulium amissas?), $\pm$ 50–60 cm alti, toti bene foliati, firmi, $\pm$ crassi, viriduli vel rubroviolaceo-suffusi, apice vel $\pm$ a medio ramosi, pilis in parte inferiore patentibus vel subappressis, longis, modice densis vel dispersis (usque secundarie evanescentes), in parte superiore $\pm$ horizontaliter patentibus, longis, rectis vel rectiusculis et aliis brevibus, rectiusculis vel curvatis, mediocriter densis tecti.

Folia caulina numerosa, bene evoluta, inferiora 3–4-jugo-pinnata jugis duobus superioribus approximatis (0,5–5 mm), inferioribus remotis (13–20 mm) et e foliolis insigniter minoribus consistentibus; folia caulina media longe petiolata, $\pm$ 3-juga, jugis duobus superioribus approximatis (0,5–2 mm), jugo inferiori remoto (c. 5–13 mm), foliolis 5 superioribus distincte majoribus quam foliola duo infima; folia superiora quinato-digitata vel subdigitata (jugis $\pm$ 1 mm remotis), suprema (floralia) ternata, breviter petiolata vel subsessilia.

Folia rosularum lateralium in parte caulium inferiore 2–3-jugo-pinnata; si folia 2-juga, tunc jugis aut distincte remotis aut valde approximatis (folia $\pm$ digitata), si 3-juga, tunc foliolis 5 superioribus semper approximatis, magnis et jugo inferiori remoto (3–15 mm), parvo (ideo folia pinnato-digitata).

3) NECHAEVA = NECZAEVA = NĚČAJEVA

Stipulae lineari-triangulares usque asymmetricice ovato-lanceolatae, inferiores longe adnatae, omnes mediocriter magnae, $\pm$ integerrimae. Petioli pilis $\pm$ horizontaliter patentibus, (1—)1,5—2(—2,5) mm longis, $\pm$ rectis, firmulis, mediocriter densis et plerumque etiam aliis brevibus, mollibus, rectis vel curvatis, dispersis vestiti.

Foliola $\pm$ sessilia, omnia non decurrentia, $\pm$ rigidiuscula, ambitu elliptica vel oblonga, basi apicemque versus sensim attenuata, in medio latissima, $\pm$ crenato-dentata dentibus ovato-lanceolatis vel triangularibus, a sese modice remotis, mediocriter latis et profundis, $\pm$ subacutis, supra viridia, opaca, pilis rectis, haud longis, $\pm$ densiuscule tecta, subtus $\pm$ viridia vel sordide cinerea, opaca, pilis ad nervos patentibus, rectis, longis et saepe etiam brevissimis immixtis, inter nervos pilis brevioribus, mollibus, tenuissimis, curvatis vel rectiusculis (non crispatis), densiusculis vel densis, tomentum non efficientibus oblecta (superficies folioli sub vestimento bene visibilis). Foliolum terminale foliorum caulinorum medium c. 4—6 cm longum, 1,4—2,4 cm latum, dentibus utrinque 8—11, lateralibus mediis $\pm$ 4—5 mm longis.

Inflorescentia saepe multiflora, initio $\pm$ subcontracta, denique laxa usque divaricata, ramis longis expansa. Flores tenuiter, $\pm$ longiuscule pedicellati, $\pm$ 1—1,2 cm in diam. Calyx pilis rectis, $\pm$ subpatentibus, longis et brevissimis, modice vel mediocriter dense vestitus. Sepala $\pm$ ovato-triangularia, (2,3—)3—4,5 mm longa et 1,4—2,5 mm lata. Epispala oblonga, (2—)3 usque 5(—6) mm longa, 0,5—1,5(—2) mm lata, sepalis breviora vel aequilonga, interdum longiora. Petala lutea, $\pm$ 5 mm longa, calycem distincte superantia, apice sinuata. Stamina $\pm$ 20, antheris $\pm$ ovatis vel ellipticis, 0,5—0,6 mm longis. Stylus subterminalis, tenuis, basi parum vel minime, sed distincte incrassatus, 1,1—1,2(—1,3) mm longus. Nuculae rarissimae, fuscae, rugulosae, 1,1—1,2 mm longae.

A *P. supina* L. foliolis jugi supremi sessilibus, non decurrentibus, jugis 2 superioribus approximatis, foliolis eorum majoribus quam foliola 1—2 jugorum inferiorum, petalis calycem manifeste superantibus, calycibus fructiferis erectis et notis aliis admodum differt. A speciebus sectionis *Rivales* ceteris praesertim forma foliorum foliolorumque differenti bene distat. Primo obtutu species nonnullas sectionis *Tanacetifoliae* revocat, a quibus foliis paucijugis, jugis 2 superioribus insigniter approximatis, inflorescentia saepe divaricata etc. discrepat.

Typus: Vladivostok, ad marginem arenoso-glareosum viae 1,5 km a sinu Lazurnaja, Nechaeva 1978 (holotypus LE, isotypus PR); specimina examinata: Vladivostok, „prospekt Stoletija Vladivostoku“, NECHAEVA 1974; distr. Škotovskij, ad vicum Novo-Nežino, loco sicco haud procul a rivo, NECHAEVA 1973.

Potentilla vorobievii is a conspicuous species, hardly to confuse with any other. With respect to the well-developed leaves even in the upper part of the stem and, in some specimens, to the straggling large and richly leafy inflorescence, the species is to be classified to the section *Rivales* (WOLF) JUZ. The pinnate and non-tomentous leaves and the short styles might also qualify the species for the section *Tanacetifoliae* (WOLF) JUZ. but its strongly approximated uppermost pairs of leaflets, well-developed leaves along the entire stem and, possibly, also the straggling inflorescences are features that



Fig. 1. — *Potentilla vorobievii* NECHAEVA et SOJÁK

are not typical of the section *Tanacetifoliae*. The strong similarity in habit between *P. vorobievii* and certain representatives of the American section *Graciles* (WOLF) SOJÁK is a manifestation of convergence: these species differ substantially from *P. vorobievii* by their long styles and are evidently unrelated.

P. vorobievii occupies a rather isolated position among the Asian species of the section *Rivales*, above all because of the unusual shape of its leaves: the lower cauline leaves are 3 to 4-paired, with the two apical pairs of leaflets closely approximated and consisting of large and sessile, non-decurrent leaflets while the lower pairs of the small leaflets are remote. Pinnate leaves are also characteristic of *P. supina* L. (incl. *P. paradoxa* NUTT.) but this species possesses so many substantially differing characters that any closer relation with *P. vorobievii* is highly improbable. The uppermost lateral leaflets of *P. supina* are decurrent and the three terminal leaflets are not larger than the leaflets forming the lower pairs, the short petals never exceed the sepals, the calyx is never erect at fructification time, the styles are shorter, etc. *P. amurensis* MAXIM. has ternate leaves whose terminal leaflet is 3-sect (or we can describe it as two-paired with longly decurrent lateral leaflets of the uppermost pair). *P. tobolensis* WOLF ex JUZ. has ternate, digitate or pinnate leaves with terminal leaflet 3-sect (or the uppermost lateral leaflets are decurrent); the lower leaflet surface is covered with either sparse or dense crisped hairs. Other Asian species of this section do not possess pinnate leaves.

Apart from the species already mentioned, there exist 5 more American species of the section *Rivales* that have pinnate leaves. All of them differ substantially from *P. vorobievii* by their whole habit as well as by the shape of their leaves and leaflets; in addition, *P. rivalis* NUTT. is distinguished from this species by its very short petals, *P. newberryi* GRAY is by its white flowers, *P. heterosepala* FRITSCH possesses epicalyx-segments of an entirely different shape, *P. dombeyi* NESTL. has short stem and sparse inflorescence and the stem of *P. richardii* LEHM. is short, bearing only 1 to 3 flowers.

The strange habitus of *P. vorobievii*, in connection with the characteristic leaf shape (both approximated and remote pairs of leaflets occurring in one plant) and with the very rare fruit formation suggests that *P. vorobievii* might represent a fixed hybridogenous species that came into being by hybridization of species belonging to two different and taxonomically rather remote sections of the genus *Potentilla*. If this hypothesis is correct it is *P. cryptotaeniae* MAXIM. (sect. *Rivales*) that may have been one of the parent species while the other parent may have been some species of the sections *Multifidae* or *Tanacetifoliae*. In our opinion, the most likely parent combination was *P. cryptotaeniae* MAXIM. $\times$ *P. chinensis* SER. in DC. But this hypothesis has for the time being been confirmed neither by field observations nor by results of hybridization experiments. The participation of *P. chinensis* in the formation of *P. vorobievii* cannot be proved reliably: the main reason is that the crisped tomentum is not developed (not even in a rudimentary form) on the lower sides of the *P. vorobievii* leaflets. Yet, the combination of possible ancestral species suggested by us seems rather probable.

Notwithstanding whether it was hybridization or some quite different developmental process that gave rise to *P. vorobievii*, this taxon has now the character of an independent species with constant features and its own

characteristic area of distribution. It has been hitherto found at three localities distant about 40 km from one another in Vladivostok and in its surroundings. The plants from all three localities are uniform morphologically. So far, *P. vorobievii* has been found to occur only in habitats secondarily disturbed by anthropogenic impact and it seems to be a rather rare species wherever it occurs.

The species has been named in honour of the outstanding specialist in the flora of the Soviet Far East, Dmitrii Petrovich Vorobyev.

SOUHRN

Z okolí Vladivostoku je popsán nový druh, *Potentilla vorobievii* NECHAEVA et SOJÁK. Patří do sekce *Rivales* a vyznačuje se zpeřenými listy, jejichž horní dvě jařma jsou sblížená a nesou přisedlé (nikoli sbíhavé) listky.

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