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New species *Veronica* × *albachii* Kosachev (Plantaginaceae) from Southern Siberia and Northern Mongolia

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Summary. A new species *Veronica* × *albachii* (Plantaginaceae Juss.), discovered in the mountains of Southern Siberia (Russia), as well as in Northern Mongolia, is described and illustrated in the article. The species is a hybrid taxon originating from the parent pair of *V. incana* L. and *V. pinnata* L. s. l.

Новый вид *Veronica* × *albachii* Kosachev (Plantaginaceae) из Южной Сибири и Северной Монголии

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Ключевые слова: гибридогенный вид, вероника, подрод *Pseudolysimachium*, Республика Тыва, Республика Хакасия, Южная Сибирь.

Аннотация. В статье описывается новый вид *Veronica* × *albachii* (Plantaginaceae Juss.), обнаруженный в горах Южной Сибири (Россия), а также в Северной Монголии. *Veronica* × *albachii* является гибридогенным таксоном, происходящим от скрещивания *V. incana* L. и *V. pinnata* L. s. l.

Veronica subgenus *Pseudolysimachium* (W. D. J. Koch) Buchenau (Plantaginaceae Juss.) on the territory of the Altai Mountains reveals almost all possible variants of hybridization between species most of which are already described (Kosachev et al., 2013, 2015).

Species of this subgenus often grow in completely different ecological conditions, sometimes extremely dry and rocky steppe (*V. pinnata* L.,

V. porphyriana Pavl., *V. incana* L.), sometimes mesic and swampy, along the banks of rivers, streams and lakes (*V. longifolia* L.). But in the conditions of variegated mosaic and complex altitudinal zonation in the mountains of Southern Siberia, different plant communities come into contact with each other. As a result, common occurrence of species with different ecological requirements becomes possible that opens the possibility of inter-species hybridization.

When processing herbarium materials in the ALTB Herbarium (Russia, Barnaul) from the genus *Veronica* from the Republic of Tuva (Russia), plants were discovered that differed from all species of *Veronica* we had seen. The plants had linear-lanceolate pinnatifid leaves, and according to these characters they were similar to *Veronica* × *sessiliflora* Bunge. However, the pubescence of all parts of the plant with long sinuous simple hairs, and at the same time the complete absence of glandular hairs, clearly distinguished the studied plants from *V.* × *sessiliflora*. This prompted us to undertake a detailed morphological study of these plants. As a result of the study, it was found that we have a new species, which probably arose as a result of crossing *V. incana* (as indicated by the nature of the plant's pubescence) and *V. pinnata* (pinnatifid leaves – as was already shown in Kosachev et al., 2018, 2019). Subsequently, we undertook a special search for this new species in nature in 2021. The plants were found in two localities in the Republic of Tuva, where they grew on dry mountain steppe slopes together with populations of *V. incana* and *V. pinnata*. This observation strengthened our assumption about the hybridogenic origin of the species. In addition, based on the studied herbarium materials in the ALTB Herbarium, three more localities were discovered in the Republics of Tuva, Khakassia and Mongolia (Fig. 1).

Possible parent species belong to different sections: *Veronica pinnata* L. s. l. (sect. *Pinnatae* (Hob.) Kosachev et Albach) and *V. incana* L. (sect. *Pseudolysimachium* W. D. J. Koch).

Below we provide a description of the new species, images of the type, general appearance and individual parts of the plant.

Veronica × *albachii* Kosachev, **nothosp. nov.** (Fig. 2).

Description. Plants grayish-green, stems 1–3, ascending, 8–25 cm high (Fig. 3). All parts of the plant are covered with long, matted and sinuous hairs (Fig. 4). The pubescence of the sepals and bracts is sparse; the stems and leaves have almost felt-like pubescence. All leaves opposite, oblong-lanceolate, 1.5–3 cm long and 0.2–0.8 cm wide, coarsely incised-toothed along the edges (Fig. 5), upper leaves finely toothed. Lower leaves on long petioles, 1–1.2 cm long, upper ones sessile. Flowering racemes terminal, 4–8.5 cm long and up to 2 cm wide. Pedicels 1.5–2 mm long. Bracts linear, 1.5–2 times longer than the pedicels (Fig. 6). Calyx is 2/3 dissected into lanceolate, short pointed lobes, about 2–3 mm long (Fig. 7b), covered throughout with sparse sinuous simple hairs. Corolla blue, 5–6 mm long, limb lobes ovoid, 3–3.5 mm long, 2 × 2.4 mm wide, rounded at the apex, one of the lobes wider than the others, 3.4 × 3.2 mm (Fig. 7a). Corolla tube about 2.5 mm long. Filaments slightly longer than the corolla. Anthers dark blue. Capsule round, about 2 mm in diameter, with a very small notch, in the upper part covered with sparse straight and short (0.2 mm long) hairs (Fig. 7c). Column is about 6 mm long. The seeds are not developed.

Ecology. Rocky steppe mountain slopes.



Fig. 1. Distribution of *Veronica* × *albachii*.



Fig. 2. Type of *Veronica × albachii* Kosachev.



Fig. 3. General view of *Veronica* × *albachii*.



Fig. 4. Pubescence of the stem and leaf petioles with long sinuous hairs in the lower third of the stem.



Fig. 5. Leaves in the middle part of the stem.



Fig. 6. Part of the inflorescence in the lower third: a – bract; b – peduncle.

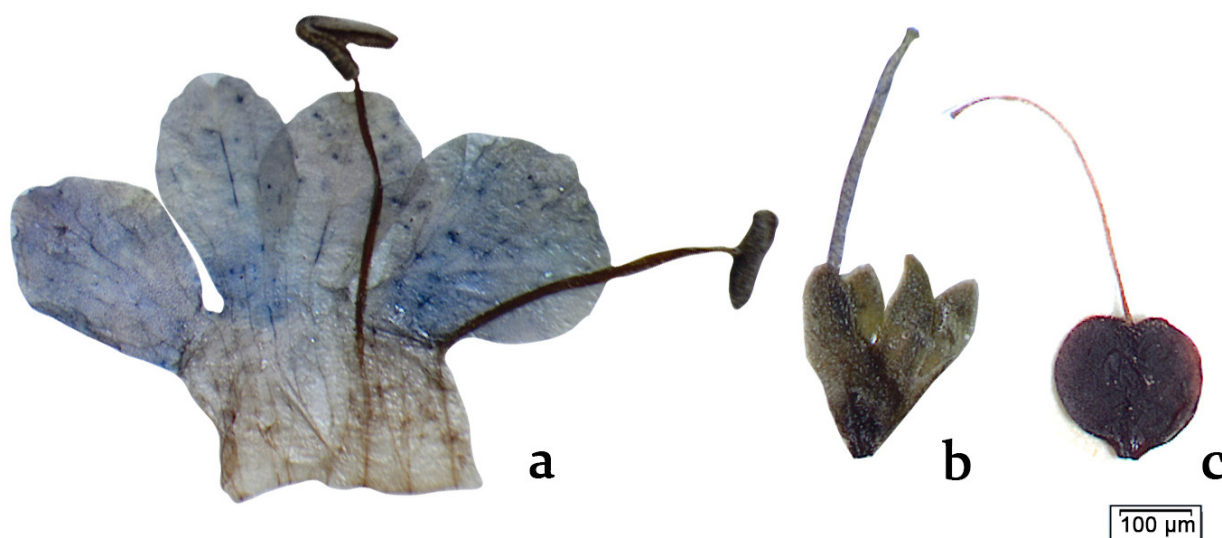


Fig. 7. *Veronica* × *albachii*: a – unfolded flower; b – calyx; c – capsule.

Type: “Republic Tuva, Ovyurskii distr., 10 km NE settl. Sagli, NW macroslope mt. Orta-Turuk, 50°33'15"N, 91°26'23"E, H = 1818 m. KZ 2302. 17 VII 2006. A. I. Shmakov, S. V. Smirnov, M. G. Kutsev, A. V. Vaganov, R. A. Zubov, M. S. Ivanova, A. A. Kechaikin, A. P. Shalimov” (ALTB1100055884, iso – ALTB, OLD) (Fig. 2).

Paratypes: “Russia, Republic of Tuva, Ovyurskii distr., 20 km W settl. Chandagaiti, Sap pass.

50°44'31.1"N, 91°50'11.2"E. H = 1827 m. 20 VII 2006. KZ2383. A. I. Shmakov, S. V. Smirnov, M. G. Kutsev, A. V. Vaganov, R. A. Zubov, M. S. Ivanova, A. A. Kechaikin, A. P. Shalimov” (ALTB); “Russia, Republic of Tuva, Piy-Khemskaia distr., river valley Seseerlig, 500 m from the highway R-257, 51.868955N, 94.355088E, H = 774,7 m, northern slope of the mountain, grass petrophytic steppe with *Artemisia*. 13 VIII 2021. P. A. Kosachev, P. Ryzhko-

va" (ALTB); "Russia, Khakassia Republic, right bank the Abakan river, upper of settl. Isichskie Kopji, mt. Isich, 53°30'N, 91°12'E, steppe. 01 VIII 2005. TGK №1657. A. I. Shmakov, M. G. Kutsev, S. A. Kostyukov, A. V. Vaganov" (ALTB1100050114); "Mongolia, Khubsugul aimag, Mountains between the river Dzargalant Gol and Lake Tsagaan Nuur, 49°25'34"N, 98°06'29"E. 24 VI 2007. SME №153. R. V. Kamelin, A. I. Shmakov, S. Dariymaa, A. V. Vaganov, R. A. Zubov, O. P. Kamelina, V. I. Dorofeev" (ALTB).

In 2021, we repeated the collection of the new species in locus classicus: "Russia, Republic of Tuva, Ovyurskii distr., 10 km NE settl. Sagli, NW macro-slope mt. Orta-Turuk, 50°33'15"N, 91°26'23"E, H = 1818 m, cryophytic steppe. 15 VIII 2021. P. A. Kosachev, P. Ryzhkova" (ALTB).

Affinity. The species differs from the putative parent species (*V. incana* and *V. pinnata*) in its oblong-lanceolate shape and incised-toothed edge of the leaf blade. The plants are pubescent with long, sinuous, simple hairs characteristic of *V. incana* on all vegetative parts. This feature also distinguishes it from the morphologically close *V. × sessiliflora*. The shape of the sepals and capsules, the structure of the calyx, are similar to those of *V. pinnata*.

Etymology. The species is named after the famous modern researcher of the genus *Veronica*, Dirk Albach.

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