***Scutellaria krasevii* Kom. & I. Schischk. ex Juz. (Lamiaceae): a new record species from Mongolia**

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ABSTRACT: We report *Scutellaria krasevii* Kom. & I. Schischk. ex Juz. (subfamily Scutellarioideae, family Lamiaceae) as a new recorded species of Mongolia. This species is morphologically similar to *S. galericulata* but can be differentiated by the presence of comparatively thick and triangular-cordate leaves having a heteromerously deep-crenate margin, a densely reclinate pubescent stem, and a densely pubescent corolla. A taxonomic description, a key to the genus in Mongolia, habit photographs, and scanning electron photomicrographs of nutlets are provided for species identification. We also present a table for a comparison of the diagnostic characteristics with those of related species. This species grows along the banks of the Unit river, Khutag-Undur soum, Bulgan province, Mongolia, approximately 2,300 km far away from the type locality in Russia.

Keywords: *Scutellaria krasevii*, *S. galericulata*, Lamiaceae, new record, Mongolia

The genus *Scutellaria* L., a member of subfamily Scutellarioideae (Lamiaceae), comprises more than 360 species and is distributed in the Irano-Turanian Region, the Mediterranean area, and the Andes (Paton, 1990; Harley et al., 2004; Hasani-Nejad et al., 2009; Jamzad and Hasani-Nejad, 2014). The genus is characterized by its bilabiate calyx, unlobed lips, scutellum in the upper lip of calyx, and nutlets (Harley et al., 2004).

Juzepczuk (1954) reported 148 species from Russia and treated them under three sections and 33 series. Later, Paton (1990) divided *Scutellaria* into two subgenera, subgen. *Scutellaria* (Neveski ex Juz.) Juz., consisting of five sections and subgen. *Apelthanthus* (Neveski ex Juz.) Juz., consisting of two sections. In accordance with his treatment, *S. krasevii* is included in the *Scutellaria* section of the subgenus *Scutellaria*.

Twelve taxa of *Scutellaria* have been reported in Mongolia (Grubov, 1955, 1982; Gubanov, 1996, 1999; Darijma and Kamelin 2002). During a recent field visit to the Bulgan

province, we collected a species of *Scutellaria* and it is identified it as *Scutellaria krasevii* Kom. & I. Schischk. ex Juz. with an intensive morphological investigation and survey of relevant literature and type specimen. *Scutellaria krasevii* is morphologically similar to *S. galericulata*. However, the former can be easily differentiated from the later by the presence a pubescent stem, triangular-cordate leaf, deep crenate margin, pubescent corolla, and mostly compound papillate-glandular nutlet (Table 1).

The present study provides taxonomic descriptions, a key to the genus *Scutellaria* in Mongolia, habit photographs, and scanning electron photomicrographs of the nutlet surface structure (Figs. 1, 2), based on plant materials collected from Mongolia.

Taxonomic Treatment

Scutellaria krasevii Kom. & I. Schischk. ex Juz. Bot. Mater.

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Table 1. Diagnostic characters between *Scutellaria krasevii* and *S. galericulata*.

Morphological characters	<i>S. krasevii</i> Kom. & I. Schischk. ex Juz.	<i>S. galericulata</i> L.
Stem	Densely reclinate pubescent	Glabrous or angles sparsely pubescent
Leaf blade	Triangular-cordate, rather thick	Oblong-lanceolate, membranous to papery
Leaf margin	Heteromorous deeply crenate	Regular obtusely crenate
Corolla	Densely pubescent outside	Glandular hairy outside
Nutlet morphology	Mostly compound papillate-glandular, 1.5×1.22 mm	Mostly single papillate-glandular, 1.6×1.24 mm

Fig. 1. Photographs of *Scutellaria krasevii* Kom. & I. Schischk. ex Juz. **A.** Habit. **B.** Flowering branch. **C.** Side view of the inflorescence. **D.** Flower. **E.** Mature calyx with scutellum in fruiting. **F.** Stem. **G.** Leaf (adaxial surface). **H.** Leaf (abaxial surface). **I.** Fruiting branch.

Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 14: 357–358, 1951; Juzepczuk S. V., Flora of the USSR, 20: 92, 1954.—
TYPE: Russia. East Far, Regio Primorsk, Vladivostok,

Spasskyi region, Gaivoron village, 23 Jul 1927, *I. Schischkin*, 163 (lectotype: LE, not seen; syntype: LE; isosyntype: TK).

Herbs perennial, rhizome repent. Stems (15) 20–35 (40) cm

Fig. 2. Nutlet images of *Scutellaria krasevii* and *Scutellaria galericulata*. **A–C.** *Scutellaria krasevii*. **D–F.** *Scutellaria galericulata*.

tall; erect or sub erect, branched; densely crisp pubescent; continuously leafy and sometimes basally leaf dried. Petoile 2–3.5 mm; densely crisp pubescent. Leaves (1) 2–4 (4.5) cm long, (0.4) 0.5–1.7 (2) cm wide; bright green; triangular-cordate, base cordate, apex acute, margin heteromorous deeply crenate, 4–9 dentate on each margin; adaxially sparsely reclinate hispidus hairy; abaxially pubescent, densely on veins. Inflorescence one-sided, non-bracts. Flowers axillary (2) 5–15 (17) pairs on apical part of stem. Pedicel (1) 1.5–2 (2.5) mm, densely retrorse pubescent. Calyx 2–4 mm, to 3.5–5 mm; larger and upper lip lost in fruiting; densely short hispidus hairy. Corolla violet-blue; densely pubescent outside; (1) 1.5–1.8 (1.9) cm long; upper lip much shorter than the lower (Fig. 1). Nutlet yellow-orange, subovoid; nutlet surface rough, glabrous, mostly compound papillate with sessile glands (Fig. 2A–C). Flowering June–August, fruiting July–September.

Distribution: Russia: Far East; Mongolia: Khangai forest mountain region.

Ecology and habitat: 50–60 individuals were found growing on a 100 m² area of waterside pebbles beside the river in association with *Equisetum pratense* Ehrh., *Plantago major* L., *Geranium pratense* L., *Epilobium palustre* L., *Thalictrum minus* L., *Chenopodium album* L., *Artemisia mongolica* (Fisch. ex Besser) Fisch. ex Nakai, *Mentha arvensis* L., *Inula britannica* L., *Agrimonia pilosa* Ledeb., *Sanguisorba officinalis* L. and *Stachys palustris* L.

Specimens examined: MONGOLIA. Bulgan province: Unit River, Unit bag, Khutag-Undur soum, 49°17'280"N, 102°58'492"E, elev. 987 m, 23 Aug 2015, B. Badamtsetseg,

2015-686 (BTM2016.1.223); 24 Jun 2016, B. Badamtsetseg 2016-736 (BTM2019.2.1); 4 Jul 2017, B. Badamtsetseg 2017-706A (BTM2019.2.20).

Key for the genus *Scutellaria* in Mongolia

1. One-sided inflorescence; flowers subtended by leaves or leaf like bracts
 2. Caudex; terminal racemes; bracts reduced leaf-like
 3. Caudex fleshy, to 2 cm in diameter; corolla blue or blue-purple *S. baicalensis*
 3. Caudex non-fleshy, 2.5–4 mm in diameter; corolla white or yellow-white *S. viscidula*
2. Rhizomatous; axillary; non-bracts
 4. Leaves ovate, oblong ovate or triangular ovate, margin crenate to serrate, abaxially non-glandular hairy
 5. Stem glabrous or angles sparsely pubescent; leaves oblong-lanceolate, membranous to papery, regularly obtusely crenate; corolla glandular hairy outside *S. galericulata*
 5. Stem densely reclinate pubescent; leaves triangular-cordate, rather thick, heteromorous deeply crenate; corolla densely pubescent outside *S. krasevii*
 4. Leaves triangular, lanceolate to triangular ovate, margin shallowly few (1–3) dentate or entire, abaxially glandular hairy
 6. Flowers smaller, to 5 mm long, pedicel drooping when flowering *S. dependens*

6. Flowers bigger, to 2–2.5 cm, pedicel not drooping when flowering
7. Leaf blade base broad-cuneate, margin unequally shallowly toothed, somewhat rigid, abaxially punctate pitted *S. scordiifolia*
7. Leaf blade base little cordatus, margin entire sometimes toothed at base, small granular glandular on allover *S. regeliana* var. *ikonnikovii*
1. Four-sided inflorescence; flowers subtended by non leaf like bracts
8. Bracts ovate to elliptic, flat, non-keeled (non-ribbed), membranous or herbaceous; flowers yellow or yellow-white
9. Plant sparsely pubescent, short hispidus or glandular hairs; leaves shallowly serrate
10. Leaves with 4–7 teeth on each side, adaxially pilose, abaxial surface densely glandular-punctate, pilose at veins *S. supina*
10. Leaves with 1–4 teeth on each side or sometimes entire, both surfaces covered with thickened hairs and stipitate glandules *S. paulsenii*
9. Plant wholly pubescent, covered by woolly hairs; leaves pinnately lobed, incised-serrate *S. sieversii*
8. Bracts ovate to broadly ovate, scaphoid, keeled (ribbed), coriaceous; flowers blue or blue-purple
11. Leaf apex narrowly acute, base cuneate; corolla blue-purple; nutlets glabrous *S. tuvensis*
11. Leaf apex obtuse, base retusus to broadly cordate; corolla rose-purple; nutlets glabrous or pubescent
12. Leaves pilose; nutlets pale gray, covered white long hairs *S. grandiflora*
12. Leaves slightly pubescent; nutlets black, glabrous, surface rough *S. grandiflora* subsp. *gymnosperma*

Notes: Gubanov (1996, 1999) recorded 11 *Scutellaria* taxa for the flora of Mongolia. Later, *Scutellaria dependens* Maxim. was added to this list by Darijma and Kamelin (2002). The present study reports *Scutellaria krassae* as the 13th taxon in Mongolia. It is very interesting that the Russian Far East is the original distribution of this species, but it is also found in Mongolia, which is more than 2,300 km away from this region. This extended distribution record might help in prioritizing the conservation of this species in future.

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Conflict of Interest

The authors declare that there are no conflicts of interest.

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