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Three new taxa of *Potentilla* (*Rosaceae*) from Caucasus and Mongolia

Три новых таксона *Potentilla* (*Rosaceae*) с Кавказа и из Монголии

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Abstract. Three new taxa of the genus *Potentilla* L. are described. *P.* × *boreo-caucasica* nothosp. nova is a hybrid from the North Caucasus. *P. ekaterinae* sp. nova is a new species from the mountains of Southern Mongolia, closely related to *P. ikonnikovii* Juz. The last two species endemic to Central and South Mongolia are referred to an isolated section *Ikonnikovia* sect. nova which is described here.

Keywords: *Potentilla*, new species, new hybrid, new section, North Caucasus, South Mongolia, endemics.

Аннотация. Из рода *Potentilla* L. описываются три новых таксона. *P.* × *boreo-caucasica* nothosp. nova — гибрид с Северного Кавказа. *P. ekaterinae* sp. nova — новый вид, близкородственный *P. ikonnikovii* Juz., с гор Южной Монголии. Два последних вида являются эндемичными для Центральной и Южной Монголии и относятся к описываемой здесь обособленной секции *Ikonnikovia* sect. nova.

Ключевые слова: *Potentilla*, новый вид, новый гибрид, новая секция, Северный Кавказ, Южная Монголия, эндемики.

The revision of the specimens of the genus *Potentilla* L. deposited in the Herbarium of Komarov Botanical Institute RAS (LE) revealed two interesting and previously unknown taxa at the rank of species, one of them together with *P. ikonnikovii* Juz. comprising a new section. In addition to the material from LE, specimens of the Herbaria E, HAL, MW, OSBU, PE and UBA are investigated.

The descriptions of the new taxa are provided below.

Potentilla × boreo-caucasica Kechaykin, nothosp. nova (*P. incana* G. Gaertn., B. Mey. et Scherb. × *P. humifusa* Willd. ex D. F. K. Schltdl.) (sect. *Fasciculato-pilosae* Kamelin).

Perennial plant. Stems 2–5, up to 10–15 cm, branched above the middle. Basal leaves digitate with 5–7 leaflets. Leaflets 1–3 cm long, oblong-obovate with 2–5 teeth on each side, green on upper surface, ash-gray on lower one, the both surfaces with numerous stellate hairs. Sepals ovate-lanceolate, usually 3–4 mm long; epicalyx segments lanceolate, shorter than sepals. Stamens ca. 20. Styles subterminal, shorter than achenes.

Affinity. Differs from *P. humifusa* by leaflets with 2–5 terminal teeth on each side (not 5–8), lower surface ash-gray (not green), numerous stellate hairs on leaflets (not only simple hairs). Differs from *P. incana* by palmately compound leaves with 5–7 (not 3–5) leaflets.

Holotype (Fig. 1): «Maschuka; acc. 1837, Hoefft» (LE: LE01025699).

Paratypes: «Herbarium J. Klinge. Fundort: Kauk., Maschuka. 5 VI 1826, leg. Höfft» (LE); «Maj. am Maschuka. Caucasus. Hohenacker, № 4079» (LE).

Distribution. The species is restricted to the western part of the Stavropol Territory (collected on Mashuk Mt.).

Etymology. The epithet originates from the area of the species distribution (North Caucasus).

Potentilla × *boreo-caucasica* is one of the few taxa of the section *Fasciculato-pilosae* having palmately compound leaves with 5–7 leaflets. The section also includes *P. pusilla* Host, Central European and Mediterranean species, which is apparently a hybrid between *P. incana* and *P. heptaphylla* L. (Kamelin, 2001), and *P.* × *gabarae* Kołodziejek, a hybrid between *P. leucopolitana* P. J. Müll. and *P. incana*, widespread in Poland (Kołodziejek, 2009). The diagnostic features distinguishing *P.* × *boreo-caucasica* from closely related species are given in the Table.

Potentilla ekaterinae Kamelin ex Kechaykin, sp. nova (sect. *Ikonnikoviae* Kechaykin).

Perennial plant forming dense sods. Stems 1–2, up to 5 cm tall. Leaves ternate. Lateral leaflets with 2–3 teeth not entire. Terminal leaflet usually with 2 remote pairs of lobes. Petioles and pedicels not articulate, stip-

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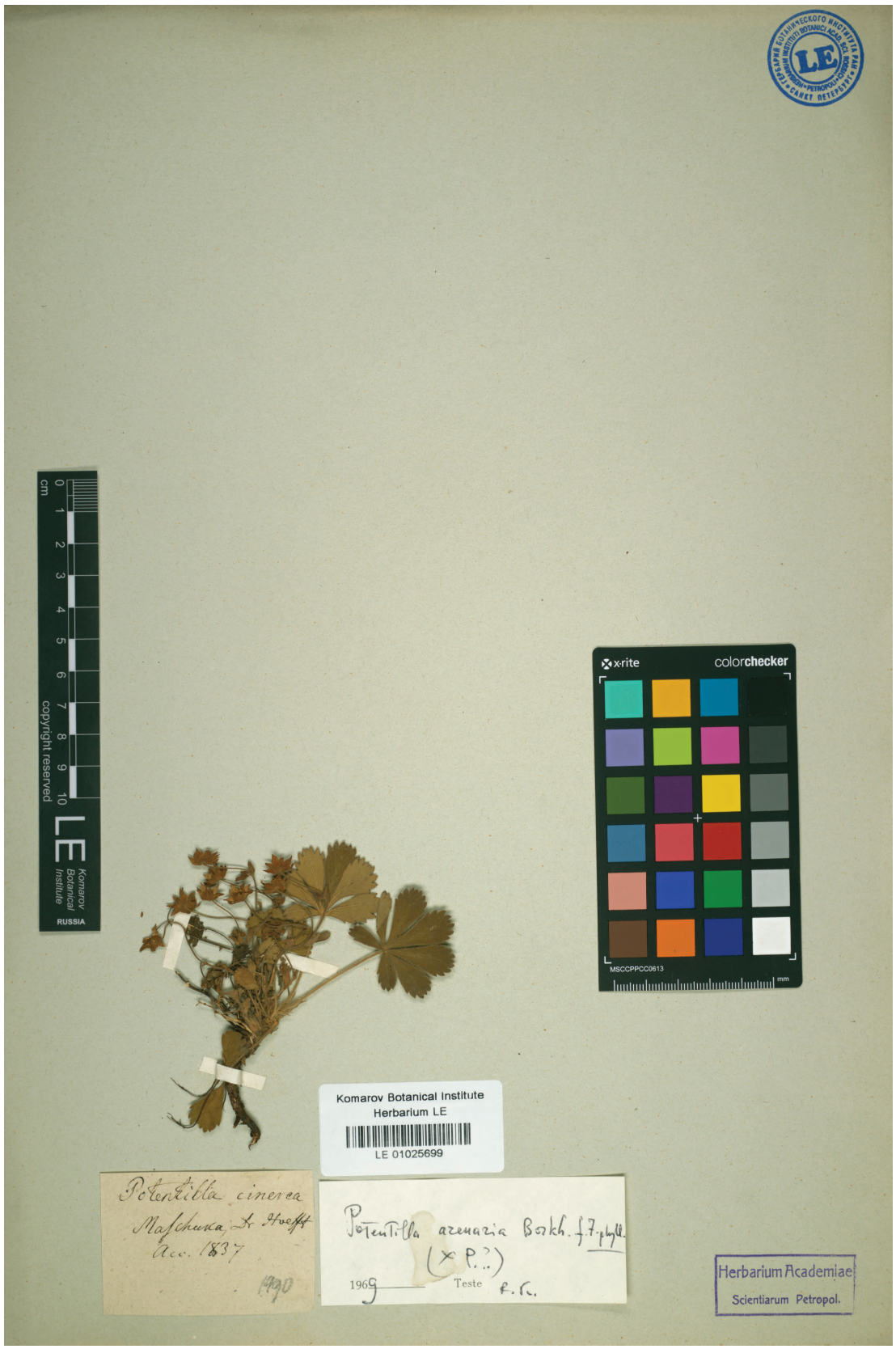


Fig. 1. Holotype of *Potentilla* × *boreo-caucasica* (LE01025699).

Table. Diagnostic characters of *Potentilla* × *boreo-caucasica* and related taxa

Character	Number of leaflets	Number of teeth on each leaflet side	Leaflet length (cm)	Stellate hairs	Stem height (cm)
P. humifusa	5–7	5–8	2–5	absent	5–15
P. heptaphylla	5–7	3–5	1–3	absent	10–25
P. pusilla	5–7	2–5	1–2	present	5–10
P. × *boreo-caucasica*	5–7	2–5	1–3	present	5–15
P. × *gabarae*	5–7	4–6	1.8–2.5	present	14–16
P. incana	3–5	2–5	1–2	present	3–10

ular auricles lateral, leaflets with teeth or lobes more than 0.6 mm long. Leaflets green beneath, with straight or slightly curved hairs, not densely hairy, glandular. Leaflets up to half way to the midrib or deeper lobed. Leaflet teeth or segments ± obtuse. Calyx pubescent with short, soft hairs and numerous small glands. Sepals 3–4 mm long. Stamens ± 20, achenes not callose. Styles subterminal, shorter than achenes.

Affinity. Differs from the related *P. ikonnikovii* Juz. by small cushion-forming habit, typically up to 5 cm tall (not up to 15 cm), ternate leaves (not pinnate), leaflets up to 5 mm long (not 15 mm).

Holotype (Fig. 2): Южно-Гобийский аймак, в 40 км к С от пос. Гурван-Тэс, гора Нэмэгэту-Ула, h = 2632 м, влажные трещины скал по сев. склону, 29 VII 1972, Н. П. Гуричева, Е. И. Рачковская, № 2557 [South Gobi aimag, 40 km N of Gurvan-Tes settlement, Nemegetu-Ula Mt., h = 2632 m, wet cracks of the rocks along N slope, 29 VII 1972, N. P. Guricheva, E. I. Rachkovskaya, № 2557] (LE: LE01031030).

Distribution. The species is restricted to the western part of Gurvan Saikhan Uul Range in the highlands of Nemegt Uul Mts.

Etymology. The species is named in honor of its collector, Ekaterina Ivanovna Rachkovskaya, a well-known geobotanist and specialist on the steppes and deserts of Asia.

R. V. Kamelin was apparently the first who distinguished this interesting and rare plant and gave it the name «*Potentilla ekaterinae* sp. n.» (R. Kamelin, in sched.). He also indicated the affinity and some diagnostic features of this taxon on the label.

Potentilla ekaterinae and its close relative *P. ikonnikovii* make a distinct group which I consider at the sectional rank.

Potentilla L. sect. **Ikonnikovia** Kechaykin, sect. nova.

Small plants (typically up to 15 cm tall) forming sods or cushions, covered with short soft hairs and numerous small glandules. Leaves pinnately compound with two pairs of leaflets or ternate. Leaflets with 1–2(3) teeth on each side. Inflorescence 1–2(3–4)-flowered. Upper belt of the mountains of Central and Southern Mongolia.

Type: *Potentilla ikonnikovii* Juz.

In addition, all the specimens of *P. ikonnikovii* Juz. known to me are cited below, since it may be of use in further studies of this rare taxon.

Mongolia centralis, Гобийский Алтай, г. Баин Цаган, в тени у скал по склону горы [*Gobi-Altai, Bain Tsagan Mt.,* in the shade near rocks along the mountain slope], 9 VIII 1931, N. et V. Ikonnikov-Galitzky, № 3980 (holotype, LE); *там же,* в расщелинах скал по склону горы [*ibidem,* rock crevices along the mountain slope], 4 VIII 1931, N. et V. Ikonnikov-Galitzky, № 3800 (paratype, LE); *там же,* тенистое ущелье в пади Цубулюр [*ibidem,* shady gorge in Tsubulyur creek valley], 5 VIII 1931, N. et V. Ikonnikov-Galitzky, № 3889 (paratype, LE); *там же,* в расщелинах скал [*ibidem,* rock crevices], 19 IX 1931, N. et V. Ikonnikov-Galitzky, № 4579 (paratype, LE); Mongolia centralis, Гобийский Алтай, г. Дзун Сайхан, в расщелинах скал [Mongolia centralis, Gobi-Altai, Dzun Saihan Mt., rock crevices], 20 VIII 1931, N. et V. Ikonnikov-Galitzky, № 4185 (paratype, LE); верхний пояс падей хребта Ихе-Богдо [upper belt of the creek valley of Ikhe-Bogdo Range], 29 VI 1926, Е. В. Козлова [E. V. Kozlova], № 74 (paratype, LE); Eastern Gobi-Altai, Gobi Gurvan, 43°29′16″ N, 104°03′40″ E, ca. 2300 m, 15 VIII 2001, Hurka (OSBU!); West Gobi-Altai, 43°50′53″ N, 103°10′14″ E, ca. 1940 m, 17 VIII 2001, Hurka (OSBU!); Гобийский Алтай, Баян-Хонгорский аймак, г. Ихэ-Богдо, юж. макросклон, на скалах, h = 2900 м [Gobi-Altai, Bayan-Hongorsky aimag, Ikhe-Bogdo Range, S macroslope, on rocks, h = 2900 m], 5 VIII 1973, Е. А. Исаченко, Е. И. Рачковская [E. A. Isachenko, E. I. Rachkovskaya], № 2978 (LE); хр. Ноин-Богдо, близ вершины высшей г. Ноин-Богдо, 2000–2100 м над ур. м., в ущельях на гальке [Noin-Bogdo Range, near the summit of the highest mountain of Noin-Bogda Range, 2000–2100 m a. s. l., in gorges on pebbles], 7 X 1925, С. Глаголев [S. Glagolev], № 126 (LE); Гоби-Алтай, хр. Арца-Богдо, юж. склон под главной вершиной, 2447 м [Gobi-Altai, Arts-Bogdo Range, S slope below the main peak, 2447 m], 17 VII 1970, В. И. Грубов, Н. Улзийхутаг, Г. Цэрэнбалжид [V. I. Grubov, N. Ulzijkhutag, G. Tserenbalzhid], № 153 (LE); *Гоби-Алтай, хр. Дзун-Сайхан, ущелье Ёлын-ама,* у верхнего конца [*Gobi-Altai, Dzun-Saihan Range, Elyn-ama gorge,* near its upper end], 21 VII 1970, В. И. Грубов, Н. Улзийхутаг, Г. Цэрэнбалжид [V. I. Grubov, N. Ulzijkhutag, G. Tserenbalzhid],

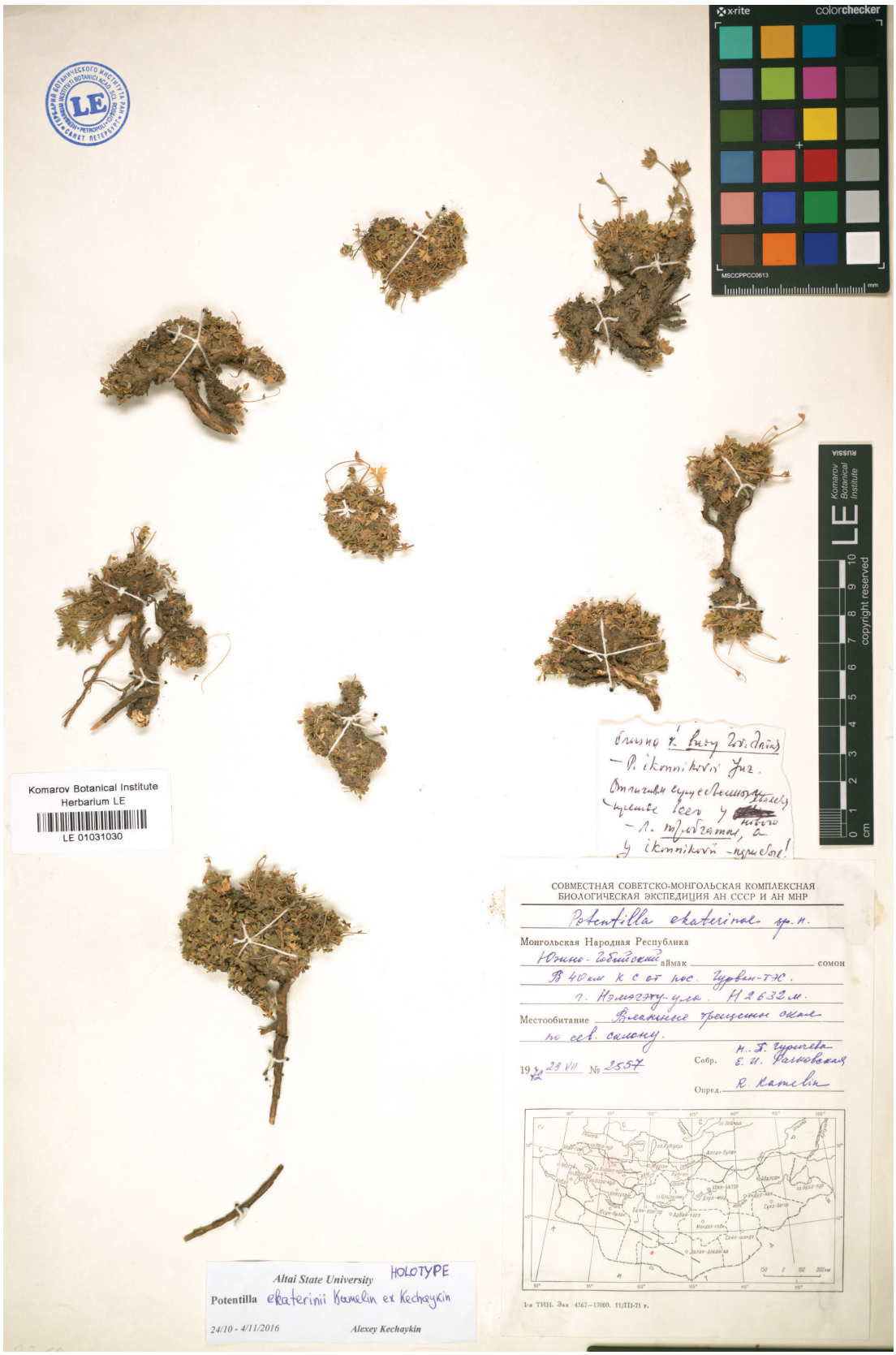


Fig. 2. Holotype of *Potentilla ekaterinae* (LE01031030).

№ 202 (LE); *там же,* узкая правая боковая падь, склон сев. экспозиции, на скалах у подножья пади [*ibidem,* narrow right side creek valley, slope of N aspect, rocks at the foot of the creek valley], 22 VII 1970, В. И. Грубов, Н. Улзийхутаг, Г. Цэрэнбалжид [V. I. Grubov, N. Ulzijkhutag, G. Tserenbalzhid], № 257 (LE, UBA); Баян-Хонгорский аймак, шлейфы сев. склонов г. Ихэ-Богд около пади Улятай, h = 2100 м [Bayan-Khongor aimag, trails of N slopes of Ikhe-Bogdo Mt., near Ulyatai creek valley, h = 2100 m], 1 VII 1972, Д. Банзрагч и др. [D. Banzragch et al.], № 3549 (LE); Баян-Хонгорский аймак, Богдо ула сомон, хр. Ихэ-Богдо, сев. склон, 12 IX 1943, А. А. Юнатов, № 13826 [Bayan-Khongor aimag, Bogdo ula somon, Ikhe-Bogdo Range, N slope, 12 IX 1943, A. A. Yunatov, № 13826] (LE); Умнеговь аймак, Булган сомон, хр. Барун-Сайхан, падь Гегетийн-ама у Хабцгайд-бригады [Umnegov aimag, Bulgan somon, Barun-Saikhan Range, Gegetiin-ama creek valley, near Khabtshaid-brigade], 25 VI 1970, Ч. Санчир [Ch. Sanchir] (LE); Южно-Гобийский аймак, Баин-Далай сомон, хр. Баин-Цаган (Гобийский Алтай) [South Gobi aimag, Bain-Dalai somon, Bain-Tsagan Range (Gobi Altai)], VII–VIII 1933, Хурлат, Симукова [Khurlat, Simukova], № 18669 (LE); Baga Bogdo, Altai Mts., Outer Mongolia, steep canyon walls and rocky places on ridges 6000–8000 ft., 1925, R. W. Chaney, № 204 (LE); Южно-Гобийский аймак, 50 км к ЗЮЗ от сомона Тост, хр. Тост-Ула, в трещинах скал, h = 2300 м [South Gobi aimag, 50 km WSW of Tost somon, Tost-Ula Range, in rock cracks, h = 2300 m], 5 VIII 1976, Е. И. Рачковская, Домба [E. I. Rachkovskaya, Domba], № 6712 (LE, MW); отроги хр. Ихе-Богдо, ущелье Битютен-ама [spurs of Ikhe-Bogdo Range, Bityuten-ama gorge], 30 V 1930, Е. В. Козлова [E. V. Kozlova], № 34 (LE); Баян-Хонгорский аймак, Богдо-Ула сомон, Гобийский Алтай, хр. Ихэ-Богдо, падь Битютэн амо [Bayan-Khongor aimag, Bogdo-Ula somon, Gobi Altai, Ikhe-Bogdo Range, Bityuten-amo creek valley], 12 VIII 1927, М. Симукова [M. Simukova], № 15.629 (LE); Южно-Гобийский аймак, Ноин сомон, хр. Тосту-Нуру; главная вершина — Шарга-моритэ, 2300–2565 м, на вершине и по сев.-зап. склону [South Gobi aimag, Noin somon, Tostu-Nuru Range, main peak — Sharga-morite, 2300–2565 m, on summit and along NW slope], 15 VII 1948, В. И. Грубов [V. I. Grubov], № 5363 (LE); *Убур-Хангайский аймак, хр. Арц-Богдо,* сев. макросклон [*Ubur-Khangai aimag, Arts-Bogdo Range,* N macroslope], 5 VII 1973, Е. А. Исаченко, Е. И. Рачковская [E. A. Isachenko, E. I. Rachkovskaya], № 2618 (LE); *там же,* массив гор, сложенный известняками, каменистый зап. склон горы, h = 2000 м [*ibidem,* mountain group composed of limestones, rocky W mountain slope, h = 2000 m], 4 VII 1973, Е. А. Исаченко, Е. И. Рачковская [E. A. Isachenko, E. I. Rachkovskaya], № 2608 (LE); Гобийский Алтай, хр. Арц-Богдо, 30 км на запад от п. Богдо Увэрхангайского аймака, степь по сев.-зап. склонам гор [Gobi Altai, Arts-Bogdo Range, 30 km W of Bogdo settlement, Uvurkhangai aimag, steppe on NW mountain slopes], 12 VIII 1981, И. А. Губанов [I. A. Gubanov], № 6139 (MW); Южно-Гобийский аймак. хр. Западный Гурван-Сайхан, ущелье Яман-Ус, в трещинах скал на вершине горы, 2200 м над ур. м. [South Gobi aimag, Western Gurvan-Saikhan Range, Yaman-Us gorge, in rock cracks, on summit, 2200 m a. s. l.], 30 VIII 1982, И. А. Губанов [I. A. Gubanov], № 4981 (MW); Южно-Гобийский аймак, Булуган сомон, на сырых утесах и на скалах верхней части гор Дзунсайхан [South Gobi aimag, Bulugan somon, wet cliffs and rocks of the upper part of Dzun Saikhan Mts.], 7 VII 1971, Ч. Санчир [Ch. Sanchir] (UBA); Südchangaj-Aimag, N-Abfall des Arc-Bogd (südwestl. Chobd) Felsritzen, 29 V 1962, Hanelt, Davazamc, № 2118 (PE); Südgobi-Aimag, Dund-Sajchan, Jamoat-Massiv, an Felsen, 2400 m, 24 VI 1962, Davazamc, Hanelt, № 1107 (PE); Mongolia australis, ad pedem borealem montium Baga-Bogd-ul (versus merid. a pago Barun Bajan-ulan), 45° N, 101°25′ E, alt. ca. 1300–1600 m s. m., 19 VIII 1966, J. Soják, V. Vasak (E, photo!); Mongolia australis, Altai Gobicus, in declivibus montium Baga-Bogd-ul (Baga-Bogdo), 45°55′ N, 101°35′ E, alt. ca. 2500 m s. m., 20 VIII 1966, J. Soják, V. Vasak (E, photo!); Gobi Altai, Buruunsaikhan, auf dem Felsen, 9 VII 2002, R. Undrakh (HAL); Südliche Mongolei, Omnogov Ajmag, Dzun Sajchan, 104°08′ E, 43°05′ N, 2700 m, 5 VII 1988, E. Jäger (HAL); Südliche Mongolei, Bajanchongor Ajmak, Gobi Altai, Ich Bogd, Chustyn chötöl (Bergsteppenlager) zwischen Chöwin ech und Gegen oboo, Duch, 8 VII 1979, W. Hilbig, D. Bumschaa (HAL); Südliche Mongolei, Bajanchongor Ajmak, Gobi Altai, Ich Bogd, Nordabdachung, Abstieg von Cöschötijn ech (alp. Lager) zum Tale Gun zalga, 10 VII 1979, W. Hilbig, D. Bumschaa (HAL).

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