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Е.А. Королюк**GALATELLA BECTAUATENSE (ASTERACEAE), A NEW SPECIES
FROM CENTRAL KAZAKHSTAN****GALATELLA BECTAUATENSE (ASTERACEAE) – НОВЫЙ ВИД
ИЗ ЦЕНТРАЛЬНОГО КАЗАХСТАНА**

Summary. In this paper we describe and illustrate *Galatella bectauatense* as a new species from Central Kazakhstan, morphologically similar to *G. fastigiiformis*.

Key words: *Galatella bectauatense*, *G. fastigiiformis*, *G. saxatilis*, granitoids, new species, Central Kazakhstan.

Аннотация. В статье описывается и иллюстрируется новый вид – *Galatella bectauatense* из Центрального Казахстана, морфологически близкий к *G. fastigiiformis*.

Ключевые слова: *Galatella bectauatense*, *G. fastigiiformis*, *G. saxatilis*, гранитоиды, новый вид, Центральный Казахстан.

Introduction. The Bektauata Mountain is situated in the south of Kazakh Uplands, 70 km north of Balkhash. Z.V. Karamysheva and E.I. Rachkovskaya (1973) referred this territory to Central Kazakh subprovince, Near-Balkhash geobotanical district. It represents vast riverine and interhummock plains with a complex of light chestnut and alkali soils formed on them. The zonal vegetation is represented by communities of *Artemisia-Stipa* steppes. The Bektauata Mountain is composed of granitoids of Paleozoic origin (fig. 1). The mountains are dissected with deep ravines, there are springs from the northern side that are characteristic for granite masses. This favours colonization and preservation of many mesophytic species. Location of the Bektauata Mountain at the border of steppe and semi-desert zones, its relative proximity to the mountains of Altai and Dzungaria determine flora peculiarities (Kupriyanov, Khrustalyova, 2010).

Seclusion of Bektauata granite mass has conditioned high endemism. N.L. Semiotrocheva described new species *Linaria bectauatensis* Semiotr., *L. dmitrievae* Semiotr. (Semiotrocheva, 1965). Regular botanical investigations in the area of the Bektauata Mountain and some other granitoid masses resulted in discovery of a new species of the genus *Galatella* Cass.

The genus *Galatella* comprises 35–45 species common for South and Middle Europe and for the most part of Asia. V.I. Terekhova (1965) reports 15 species for Kazakhstania flora. The only small-leaved species from Middle Asia (narrow endemic), *G. saxatilis* (Popov ex Novopokr.) Novopokr., was described by I.V. Novopokrovsky based on the specimens collected by M.G. Popov, and diagnostically it is most close to the species we describe. We think it is necessary to describe a new species and not to classify relevant gatherings as *G. saxatilis*. First, *G. saxatilis* differs (diagnostically) from other *Galatella* species by its life form. This plant is considered to be a semi-shrub. This is the only *Galatella* species with such life form. Secondly, we could not find the specimens with such characteristics in any herbarium where the materials of both Novopokrovsky and Popov are deposited (AA, TK, LE, TASH, TAD, RW, NS, NSK, KW). Besides, N.N. Tsvelev (1959) mentioned that the type specimen of this species has not been found yet. Until now, we have found neither the type material nor any other collection with author's note which could be considered as original material of *G. saxatilis*.

***Galatella bectauatense* Kupr. & Korolyuk, sp. nov., Fig. 2–5.**

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Fig. 1. Photo of the Bektauata Mountain, by A.N. Kupriyanov.

Type: «KAZAKHSTAN. Karaganda region, Aktogaisky region, Bektauata Mountain, fissures in granite cliffs. 47°26'796"N, 74°53'452"E. 20 VIII 2010, A.N. Kupriyanov, O.A. Kupriyanov & Y.U. Manakov № Kaz02817» (KUZ) (fig. 2).

Isotypes: № Kaz02815 (KUZ); № Kaz 02816 (KUZ); № Kaz02818 (NS).

Perennial herb 35–45 (60) cm tall. Stems solitary or few, covered with short papillary hairs, thin tomentum and sparse glandular hairs; erect, branched from base, with few branches at the top ending with one or rarely two anthodes (fig. 3, 4).

Leaves lanceolate, linear-lanceolate, sessile, up to 2.5 cm long and up to 3 mm wide, sharply reducing in size in inflorescence. Lower leaves slightly narrower at the base, upper leaves almost amplexicaul, short cuspidate. Lower and young leaves with three nerves, lateral nerves of leaves in the middle portion of stem are visible only at their base. Both sides of leaves covered with mat dotted glands, papillary hairs and matted tomentose pubescence.

Anthodes in loose corymbose inflorescence 1.2–2.0 cm diam., involucre widely obconical, herbaceous, greenish, pubescent; outer leaflets of involucre covered with thin tomentum on dorsal side, inner leaflets almost glabrous with adpressed hairs, narrowly membranous-ciliate along edges (fig. 5).

Ray flowers (6–8) pinky-violet, sterile, sometimes with rudimentary style; disk flowers (20–24) yellow, incised to third, style appendages bilobate, almost as long as style branches.

Achenes 3.0–3.5 mm, oblong to lanceolate, densely pubescent, pappus hardly exceeds disk florets and is composed of large amount of brownish serrated flexuose bristles.

Affinity. *Galatella bectauatense* is morphologically similar to *G. fastigiiformis* Novopokr., but differs from the latter species mainly in its conspicuous xeromorphic habit, a small number of heads,

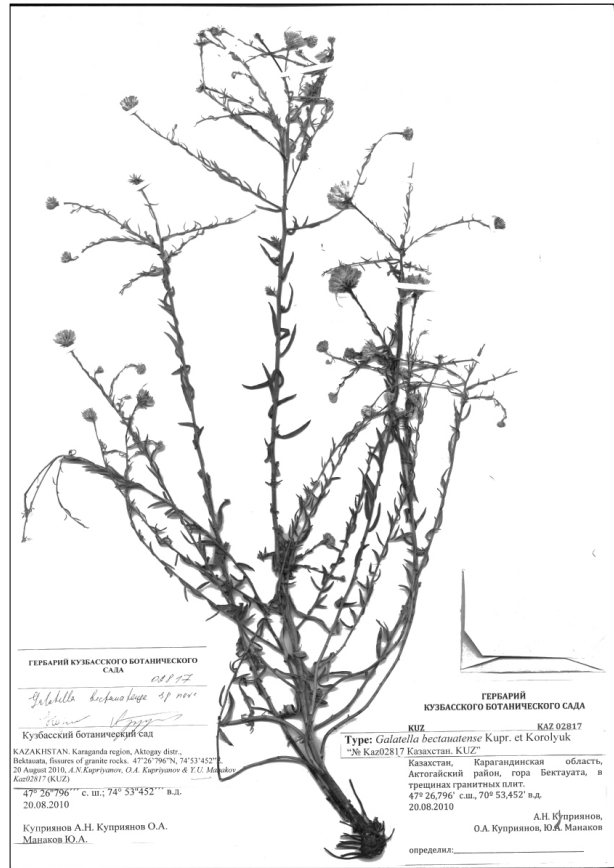


Fig. 2. *Galatella bectauatense* (the type specimen, photo by E.A. Korolyuk).

smaller leaves up to 2.5 cm (not to 6 cm), strongly reducing in size in the inflorescence up to triangle-lanceolate; stems branched almost from the base; divaricate upper inflorescence shoots; lower amount of disk florets.

Distribution and habitat. Distribution area of the species covers transitional zone between the steppe zone and northern deserts (fig. 6). The species is stenotopic since all locations are confined to fissures in granite rocks.

Многолетнее травянистое растение 35–45 (60) см. Побеги одиночные или в небольшом числе, покрытые короткими сосочковидными волосками, тонким паутинистым войлочком и редкими железистыми волосками, прямостоячие, от основания ветвистые, на верхушке растопырено разветвленные, с немногочисленными веточками, заканчивающимися одной, реже двумя корзинками.

Листья ланцетные, линейно-ланцетные, сидячие, до 2,5 см дл. и до 3 мм шир., резко уменьшающиеся в соцветии, нижние к основанию слегка суженные, верхние почти стеблеобъемлющие, коротко заостренные, нижние и молодые с тремя жилками (боковые жилки у средних стеблевых листьев заметны только у основания листа), с обеих сторон покрыты ту-



Fig. 3. Drawing of *Galatella bectauatense*, by A. Kupriyanov.

склыми точечными железками, сосочковидными волосками и спутанным войлочным опушением.

Корзинки в рыхлом щитковидном соцветии 1,2–2,0 см в диам., обертки широко-обратноконические, травянистые, зеленоватые, опушенные; внешние листочки обертки на спинке покрыты тонким войлочком, внутренние – почти голые, с редкими прижатыми волосками, по краю узко-перепончато-реснитчатые.

Язычковые цветки (в количестве 6–8) розово-фиолетовые, стерильные, иногда с рудиментарным пестиком; цветки диска (20–24) желтые, на 1/3 надрезанные, придатки столбика двуплостные, почти равны длине ветвей столбика.

Семянки 3,0–3,5 мм, густо опушенные, хохолок едва превышает цветки диска и состоит из большого количества буроватых зазубренных извилистых щетинок.

От близкого вида *G. fastigiiformis* Novorok. отличается более мелкими листьями (до 2,5 см дл. против 6 см дл.), сильно уменьшающимися в соцветии до треугольно-ланцетных, ветвлением побегов почти от основания, растопыренными верхними цветоносными побегами, меньшим количеством цветков диска.

Тип: «Казахстан. Карагандинская обл. Актогайский р-н, гора Бектауата, трещины гранитных скал. 47°26'796"с.ш., 74°53'452"в.д. 20



Fig. 4. Photo of *Galatella bectauatense*, by E.A. Korolyuk.

VIII 2010. Kupriyanov A.N., Kupriyanov O.A., Манаков Ю.А. № Kaz02817». (KUZ).

Additional specimens examined: Field works of 2012 allowed to expand the distribution area of *Galatella bectauatense* in the territory of Kazakh Uplands: «Kazakhstan, Karaganda Oblast, Shetsky region, Shounak Mountains, near the summit of Shauynkeldy, granite outcrops. 47°04' N, 72°42' E, 18 VII 2011. Kupriyanov A.N., Kupriyanov O.A., Manakov Yu.A.» (KUZ); «Kazakhstan, Karaganda Oblast, Shetsky region, Saryshi settlement vicinities, Ayrtau Mountains, granite outcrops. 47°59' N, 72°52' E. 18 VII 2011. Kupriyanov A.N., Artyomova O.» (KUZ); «Kazakhstan, Karaganda Oblast, Aktogaisky region, Bektauata Mountain, fissures in granite cliffs. 47°45' N, 74°89' E, Korolyuk E.A., Kupriyanov O.A. 01 VIII 2013» (NS); «Kazakhstan, Karaganda Oblast, near the Dzidely riverbed. Dry ravine of spring water stream. 03 VIII 1935. № 338 B. Mironov, V. Pazy. 3rd complex Betpakdala expedition» (LE). The latter specimen was identified by its collectors (B. Mironov and V. Pazy) as *Aster dahuricus* (DC.) Benth. [= *G. dahurica* DC.]. This is a



Fig. 5. Photo of a corymbose inflorescence of *Galatella bectauatense*, by E.A. Korolyuk.

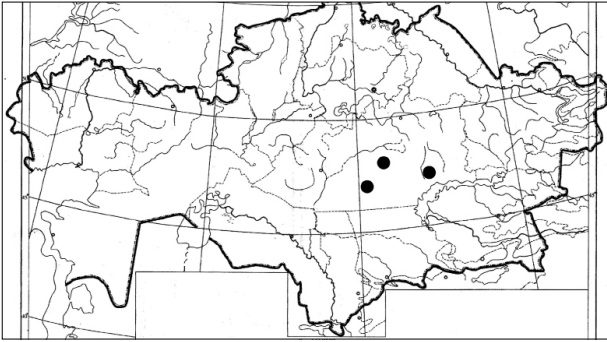


Fig. 6. Distribution map for *Galatella bectauatense*.

Siberian-Mongolian species with a large hemispheric involucre and numerous, rather big leaves. The discussed specimen differs clearly by a complex of features that are characteristic for *G. bectauatense*.

Etymology: The species name reflects its geographic distribution and refers to the locus classicus, Bektauata Mountain.

Phenology: Flowering and fruiting from August to September.

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