

NEW TAXA

Cyperaceae

***Kobresia simpliciuscula* (Wahlbg.) Mack. var. *sochondinensis* Galanin var. nom. prov.**

Circumpolar. Dry barren moss-lichen tundra.

Plants 10–15 cm high, caespitose, with short rhizomes and dense bunches of culms, tightly compacted in tufts. Bunches of culms are situated in rows on the branches of rhizome, thickened at the base, external ones pedatiform. Culms glabrous, with persisting sheaths at the base of the plant, pallid-brown. All sheaths have alive or dead leaves. Leaves 0.5–2 mm wide, caniculate or folded, green or grayish-green, shorter than stems. Inflorescence oblong-ovoid, branched (lociniate), branches are ended by spikes, which include one staminate and one pistillate flower. Stygmata per style 3. Achenes brownish, rounded-trigonous in cross-section, ca. 3 mm long. Our plants have distinctive features: culms rounded in cross-section, leaves filiform or capillary, thin, form rather dense tufts. Spike scales light-brown.

Khentei Dahuria: Sokhondo State Reserve: world watershed, Shergen-Daban River Sources, birch shrub moss-lichen tundra, 29.06.1982, A.V. Galanin, I.S. Efimova.

Flora of Central Siberia (1979) does not quote this species for Dahuria; it is registered in North Transbaikalia and Baikal Area. V.I. Grubov (1982) cites the species in Mongolian section of Khentei Range.

***Scirpis asiaticus* Beetle subsp. *ononicus* Galanin subsp. nom. prov.**

Endemic of Onon Dahuria. Wet floodplain meadows, marshes.

Plants up to 80 cm high, with decumbent rhizomes. Stems glabrous, with 5 stem leaves, can curve closely to the ground and root by its apical parts. Sheaths at the base of plants persistent, pale, brownish. Leaves grayish-green, broad, 8–12 mm wide, with closed sheaths. Sheaths of the uppermost stem leaves up to 10 cm long. The lowermost leaves are shorter than culms. General inflorescence anthela, has bracts of 2nd–3d orders. Floral leaves 2–3; up to 8–10 cm long and 5–8 mm wide; 8–10 beams of the first order, 7–8 beams of the second order. Spikes small, ovoid, are not contracted into the heads, pedicels glabrous, 5–10 mm long. Spike scales with one vein, brownish, with broad membranous margins, much longer than fruit. Perianth seta 2 lengths of fruit, twisted, glabrous, brownish. Stigma per style 3. Fruit small, ovoid-trigonous, 1 mm long, with short beak.

Distinctive features of our subspecies: small height of plant, longer sheaths of stem leaves, spikes are not contracted into the head-like inflorescence, spikes smaller than in typical species. Spike scales without keel, fruit beak is shorter.

Nercha Dahuria: Nercha River 10 km from the mouth, wet riparian meadow, 15.07.2004, A.V. Galanin, A.V. Belikovich.

Onon Dahuria: Onon River 5 km upstream Mangut Village, wet meadow along the pond, 30.07.2001, A.V. Galanin, A.V. Belikovich; **Mongolia:** Onon River 17 km NE from Dadal, wet floodplain marsh, 16.08.2005, A.V. Galanin, A.V. Belikovich.

The species has not been found in Dahuria before. A.E. Kozhevnikov (1988) quotes *S. asiaticus* as a species met in the southern Primorskii Krai, The Himalaya, and the Japan-China Region.

***Scirpus microcarpus* C. Presl subsp. *dahurica* Galanin subsp. nom. prov.**

Dahur variety of American-East Asian boreal species. Silt ponds and channels in floodplain, wet marshes, lakeshores.

Plants 50–60 cm with decumbent rhizomes (underground stems). Stems glabrous, sheaths at the base of plants persistent, gray or pallid-brown. The lower leaves shorter than stems; 6–8(10) mm wide, flat. Stem leaves 3–4(5), the uppermost leaves with closed sheaths 4–5 cm long, leaf blade 20–25 cm long, 6–8 mm wide. Inflorescence complex anthela 8–15(20) cm long: 10–15 beams of the first order, with various length (3–10 cm), they bring the anthelas of the second order. The latter one has 8–12 beams of the second order, up to 2.5–3 cm long. They bring anthelas of the third order: 5–8 beams ca. 1–2 cm long. Sometimes anthelas of the fourth order present. Spikes have peduncles 1–10 mm long. Our plants have spikes not contracted in the head. Perianth leaves 3–4 in number, the lowermost one up to 20 cm long and 12 mm wide. Spikes 2–3 mm long, ovoid. Spike scales longer than perigynia, gray-green with brown

keel. Perianth seta as long as fruit, or slightly longer, white, lacerate thanks to spineletes directed downward. Anthers ca. 1 mm long. Stygma per style 3. Athens 0.9–1.2 mm long, 0.6–0.8 mm wide, have a beak up to 0.1 mm long. Scales with conspicuous veins.

Onon Dahuria: Onin River 5 km E from Mangut Village, near Mangut Cave, willow thickets along the creek, 6.08.2002, A.V. Galanin, A.V. Belikovich; **Mongolia:** area of Dadal, Baldzha River floodplain, silt channel, 9.08.2005 A.V. Galanin, A.V. Belikovich.

Flora of Central Siberia (1979) and V.I. Grubov (1982) do not quote *S. microcarpus* at all; A.E. Kozhevnikov (1988) points it out only for Kamchatka.

***Scirpus mongolica* Galanin sp. nov. prov. – Камыш монгольский**

Probably endemic for Dahuria. Wet meadows and marshes, often along brackish lakeshores.

Plants up to 70 cm high, with long rhizomes (underground stems), aerial stems single and compacted in bunches. Stems 5–8 mm diam. at the base, glabrous. Leaves in the lower section of the stem have reduced blades pressed to the stem, 3–5(6) cm long, with closed sheaths 8–10 cm long. Inflorescence with few spikes, referred as a strongly reduced terminal anthela, 2–4 cm long. Spikes born on glabrous pedicels one by one; pedicels 5–7 mm long. Floral leaf shorter than the whole inflorescence, erect, directed upwards. Spikes brown, scales broad, bristle-tipped. Perigynia obovoid with beak ca. 1 mm long. Perianth seta 5(6) in number, as long as fruit, almost glabrous, pallid-brown. Stygma per style 3. Stamens 3.

Onon Dahuria: Onon River Valley in the area of Tyrin Village, Pogranichnoye Lake (brackish), reed thickets along swamped lakeshore, 17.07.2002, A.V. Galanin, A.V. Belikovich; Kyra Village area, steppe cattle, drained lake, 23.08.2003, A.V. Galanin, A.V. Belikovich.

***Carex belikoviczii* Galanin**

Endemic of Central Asia. Rocky alpine meadows.

Perennial herbs; 10–12 cm high; densely caespitose; form compact tufts. Leaves up to 3 mm wide, shorter than flowering stems, leaf apices acute. Sheaths persisting; forming a conspicuous build up at the base of the plant, brown, not cleft into fibres. Death last year leaves remnants persistent. Stems thin, scabrous. Inflorescence 2–4 cm long. Spikes diecious, lower ones (1–2) pistillate, pedicels up to 1.5 cm long, completely hidden in the floral leaf sheaths. Floral leaf blade brownish, membranous, not conspicuous, shorter than its spike. Perigynia ovoid, pubescent, 2–3 mm long. Floral scales broad, as long as perigynium or slightly longer, brownish like perigynium, margins white-membranous. Spike single, slightly taller than pistillate flowers, somewhat remote, pallid-brown.

Gobi, Mongolia: Gobi Altai, Gurvan-Saikhan-Nuruu Range, dry rocky ridge, 21.06.2007, A.V. Galanin, A.V. Belikovich.

The species can be probably found in southern Dahuria in the areas with exposed rocks.

***Carex bigelovii* Torrey ex Schwein subsp. *ensifolia* (Gorodkov) Holub. var. *kyriensis* Galanin**

Endemic of Khentei Range. Steppe-prairie, dry forest.

Caespitose plants with decumbent rhizomes, 25–35 cm high. Sheaths persisting; forming a conspicuous build up at the base of the plant, scales dusky-brown, brown. Blades grayish-green, rigid, 2–3 mm wide, gradually acuminate in the apical section, as long as culms or slightly shorter than culms. Stems triangular in cross-section, scabrous. Inflorescence made of spaced pale spikes; the uppermost 1–3 spikes staminate, the lowermost 1–2 ones pistillate, dense, 15–20 mm long, 3.5–4.5 mm wide, sessile. The uppermost staminate spikes light-brown, 1–2.5 cm x 3–4.5 mm. Floral leaf as long as the lowermost spike, conspicuously shorter than the whole inflorescence, sheathless. Scales of pistillate flowers light-brown, narrow-lanceolate, much narrower than perigynia, midvein with broad green stripe, veins conspicuous. Perigynia 1.8–2.8 mm long, lenticular, broadly elliptic, glabrous, nerveless, with very short beak, with the smallest rare spinelets in the apical part and along margins.

There is probability that our plants can be described as a new species. The closest species is *C. tegulata* Levl. et Vaniot, registered only in Korea and in the southernmost tip of Primorskii Krai (Kozhevnikov, 1988).

Onon Dahuria: area of Kyra Village, Khatun Valley, south slope, 17.06.1982, I.S. Efimova.

***Carex capillaris* L. subsp. *latifolia* Galanin subsp. nov. prov.**

Dahur variety of circumpolar boreal-nemoral species. Wet floodplain meadows.

Tufted plants without decumbent shoots. Leaf sheath dark-grey, cleft into long and thin filaments. Blades green, flat, long, 2–3 mm wide. Stems glabrous, almost rounded in cross-section, thin, filamentous, up to 20–60 cm long. Inflorescence 10–25 cm long, made of 3–4(5) strongly spaced pistillate spikes. Spikes nodding, pedicels long and capilliform. The uppermost staminate spike narrow, pale, straw-colored or brownish, sits on the level of the uppermost pistillate spike. Pistillate spikes few-flowered. Perigynia greenish-brown, 3mm long, lanceolate, with long glabrous (or

slightly scabrous) beak. Beak 1–1.8 mm long, with white membranous margins, entire, oblique or becoming slightly bidentate. Scales $\frac{1}{2}$ length of perigynia, obtuse, with broad white membranous margins.

Our subspecies does not form dense tufts.

Onon Dahuria: Middle Agutza River, larch forest in the valley, forest edge, 17.07.1982, Z.A. Vasilchenko, N. Shevyreva.

Yablon Dahuria: Sokhondo State Reserve, Burecha River near ranger station, wet marsh on the right bank, 14.08.1982, Z. A. Vasilchenko.

Flora of Central Siberia (1979) and *Flora of Siberia* (1990) indicate *Carex capillaris* for Buryat Dahuria and Yablon Dahuria. V.I. Grubov (1982) did not include the species in Mongolia's flora.

***Carex ensifolia* (Turcz. ex Gorodk.) V. Krecz. subsp. *sochondinensis* Galanin subsp. nom. prov.**

Probably endemic of Khentei Range. Riparian willow and shrub birch thickets in the upper forest belt.

Plants perennial herbs 20–25 cm high, forming clusters and tufts. Rhizomes decumbent, roots thick, flexible, cable-like. Aerial stems intensely scabrous, $\frac{1}{3}$ with leaves, sheaths of stem leaves persisting, rather long and closed. Blades 2–3(4) mm wide, light-green, pointed, revolute, with reflexed margins, as long as stems. Inflorescence 3–5 cm long, made up of 4 pistillate spikes, 1.5–2.5 cm long, 5–6 mm wide. The lowermost spike has a short pedicle. Floral leaf of the lowermost spike sheathless, taller than its spike, but shorter than the whole inflorescence. Scales at the base of stems present, brown. Perigynia tawny-brownish, ca. 2 mm long, abruptly fused to the short, glabrous, oblique beak. Stigmas per style 2. Scales black, obtuse, as long as perigynia or broader and longer in the early anthesis.

Our plants differ from typical *C. ensifolia* by that that staminate flowers in inflorescence often absent, staminate flowers sit in pistillate spikes.

Khentei Dahuria: Sokhondo State Reserve: Upper Enda River, shrub birch thickets in the floodplain, upper forest belt, 28.06.1981, Z.A. Vasilchenko; Narya Lake area, *Pinus sibirica*-*Larix dahurica* dwarf-shrub forest, wet place, 3.07.1982, A.V. Galanin, I.S. Efimova; Upper Bukukun area, Zagadochnyi Creek, 22.06.1984, A.V. Galanin.

***Carex grubovii* Galanin sp. nom. prov.**

Endemic of Gobi Region. Riparian meadows among sands in semidesert.

Plants with rhizomes, decumbent underground stems. Aerial stems 3–5(6) cm high. Leaves bluish, caniculate, 2–2.5 mm wide, scabrous along margins with teeth toward the apex, flower culms shorter than leaves. Leaf sheaths at the base of culms brown or chestnut-coloured, not cleft. Flowering stems under the inflorescence glabrous, leafed all the length. Aerial stems go from the rhizomes by clusters. Inflorescence dense, spicate, 1.5–2 cm long and 0.8–1 cm wide, made up of 6–8 contracted brown spikes; inflorescence axis is not seen. Spikes androgynous, sessile, 8–10 mm long, go from the inflorescence axis on the miter 45–30°. Scales broad, ovoid, without dense white margin, longer than perigynia. Perigynia tomentose, elliptic, whitish, with very short bidentate beak, pedicles short, hardly seen, 1–2 mm long (unripe!).

Gobi, Mongolia: Gobi Altai, Khongoryn-Els Sands, 20 km N from Servey Village, sandy river bank, marsh meadow, common species, 22.06.07, A.V. Galanin, A.V. Belikovich.

The species can be found in the southern section of Mongolian Dahuria.

***Carex leiorhyncha* C.A. Mey. var. *glabra* Galanin var. nom. prov.**

East Asian, nemoral. Wet marshes, floodplain meadows, along roads.

Plants up to 40 cm high, with short rhizomes, form rather tight and dense tufts. Stems glabrous, with light-brown sheaths not cleft into fibers at the base. Flowering stems taller than the leaves, or about as high as the leaves. Leaves flat, 2–5 mm wide, gradually acuminate, adaxial blade surface with the smallest red-brown spots. Whole inflorescence (3)5–8(10) cm long, 9–13 mm wide, multiflowered (up to 25–30 spikes). Spikes closely clustered. Floral leaf of the lowermost spike up to 10–15(30) mm high, setiferous or with narrow blade. Spikes androgynous, 5–8 mm long, 4–5 mm wide, mature perigynia bristle. The lowermost spikes sometimes with bracts. Spike scales shorter than the mature perigynia, lanceolate, rusty-coloured or pinky-brown, with broad green margins and shiny edges, apices of scales with short (up to 0.5 mm long) aristae. Anthers 1.3–1.6 mm long. Stigmas per style 2. Perigynia 3–3.5 mm long, 1–1.5 mm wide, flat-convex, yellowish-green, purple-spotted in the upper section, with numerous veins and entire margins, gradually fused to the glabrous, feebly bidentate beak. Fruit 1–1.2 mm long.

Our plants have glabrous stems; the uppermost spikes in inflorescence often all pistillate.

Hailar Dahuria: Unda River in the area of Shelopugino Village, floodplain near the bridge, wet meadow, 17.07.2004, A.V. Galanin, A.V. Belikovich.

Yablon Dahuria: Alkhanai National Park: Ubzhogoye R., mixed forb forest on the slope, 20.07.2005, A.V. Galanin, A.V. Belikovich; Upper Ilya R., on the road, 17.07.2005, A.V. Galanin, A.V. Belikovich; area of Ara-Ilya Ranger Station, tufted meadow in the floodplain of Ara-Ilya, 8.07.2007, L.M. Dolgalyeva.

Flora of Central Siberia (1979) indicates *C. leioryncha* for Hailar, Nercha and Onon Dahuria, but we have not found plants which could be identified as the typical species. V.I. Grubov (1982) does not quote the species for Mongolia. The species has Manchur range type: it can be found in the eastern part of Dahuria being here a relic of more humid climate stages.

***Carex jurtzevii* Galanin sp. nom. prov.**

Endemic of Khentei, alpine. Snowbed meadows in alpine belt.

Rhizomatous plants with spaced, slightly scabrous aerial erect shoots 15–20 cm high. Sheaths persisting; not forming a conspicuous build up at the base of the plant; pallid-brown. Some remnants of the last year leaves are cleft into fibers. Blades 3–4 cm wide, somewhat rigid, bluish. General inflorescence dense head-like, made up of 3–4 spikes. The uppermost spike gynocandrous, 15–20 cm long, 5 cm wide, with staminate flowers in the upper section and pistillate flowers in the lower section. The lowermost spikes pistillate, 5–10 x 5–6 mm. Scales of pistillate flowers dusky-purple, rounded, membranous along the margins, about as long as the perigynia, or shorter than the perigynia. Perigynia elliptic, or oblong, with conspicuous veins, pale in the lower sections, dark purple at the apex, abruptly fused to the short and glabrous beak. Stigmas per style 2(3)? Floral leaf of the lowermost pistillate spike scale-like, dark-purple, sometimes with thin, subulate tendril, or bristle, 6–8 mm long.

Khentei Dahuria: Khentei Range, Perevalnyi Ridge, sources of Baldzhikanka River, snowbed meadow in subalpine belt, 31.07.2002, A.V. Galanin, A.V. Belikovich.; **Sokhondo State Reserve:** Sokhondo Mt., Tsagan-Ula ridge, sparse sedge-dryas tundra on the mountain terrace, 26.06.1984, A.V. Galanin; the same area, Bukukun kar slope, sedge tundra, 28.06.1982, A.V. Galanin, I.S. Efimova; the same place, moist dryas tundra, 28.06.1982, A.V. Galanin, I.S. Efimova.

***Carex limosa* L. var. *sochondinensis* Galanin var. nom. prov.**

Our plants differ from typical individuals of the species by light-brown sheaths. Typical individuals of the species must have dark-purple sheaths.

Khentei Dahuria: **Sokhondo State Reserve:** Bukukunskoye Lake shore, wet swamps and marshes, 21.07.1978, V. Prokopovich, N. Kurbatova; the same area, world watershed, swamped creek bank, 30.06.1982, Z.A. Vasilchenko.

***Carex nedolushkovii* Galanin sp. nom. prov.**

Endemic of Khentei Range. Alpine. Snowbed meadows in subalpine and upper forest belts.

Plant up to 20(25) cm high; rhizome is not conspicuous; forms small clusters and tufts. Stems glabrous, with conspicuous build up of light dead leaves at the base. Leaves 3–4(5) cm wide, gradually acuminate, as high as the stems at anthesis. Inflorescence is made up of (1)2–3 staminate spikes and 2(3) pistillate ones. Staminate spikes in the upper section of stem are clustered together, rusty-coloured, or brown, sometimes almost black, 5–10 mm long, 3–5 mm wide. Stamens long, 4–5 mm. Scales of staminate spikes rusty-coloured, or brown, with white membranous margins, ovoid-lanceolate, somewhat obtuse. Pistillate spikes on rather long thin pedicles 2–3 cm long, their scales brown, lanceolate, somewhat obtuse, as long as perigynia or longer. At the anthesis perigynia are absolutely covered by scales. Floral leaves of the lowermost pistillate spikes have short blade, 3–5(6) mm long, and sheath 2–3 cm long. Perigynium lanceolate, gradually fused into rather long entire beak, bearded along margins.

Khentei Dahuria: **Sokhondo State Reserve:** Upper Bukukun Valley, wet forb willow thickets in the floodplain with icelings, 5.06.1979, N. Kurbatova.

***Carex schmidtii* Meinsh. subsp. *composita* Galanin subsp. nom. prov.**

Endemic of Khentei-Chikoi Upland. Boreal-mountainous. Wet meadows and wet tundra.

Plants 35–40 cm high, caespitose, forming tussocks. Leaves grayish-green, 3 mm wide, as long as culms or slightly shorter. Many leaves of last seasons form a conspicuous build up at the base of a plant. Differs from typical *C. schmidtii* by that that (a) the uppermost pistillate spike in inflorescence has staminate flowers in the apex (gynocandrical spike), (b) oftentimes, staminate spike has pistillate flowers in the lower section, sometimes the whole lower half of the uppermost spike made of pistillate flowers. Stems almost glabrous or slightly scabrous. Floral leaf of the lowermost pistillate flower a little shorter than the whole inflorescence, but taller than its spike. Staminate spikes 2–3(4), among them 1–2 lower ones always with pistillate flowers. Scales brown or rusty-coloured, with pale stripe midvein and narrow filmy margins, obtuse, as long as perigynia or slightly shorter. Perigynia ovate, 2–2.5 mm long, 1.5 mm wide, greenish-brown, nerveless, with short glabrous, oblique beak 0.1 mm long, abruptly fused to a bristle.

Onon Dahuria: Kyra Village area, floodplain, wet shore of small lake, 16.07.1984, A.V. Galanin; Altan-Kyra Cattle, wet sedge marsh, 1.08.1984, A.V. Galanin, N.S. Proskurina; Bukukun Village area, willow-birch thickets in the Bukukun River floodplain, 6.07.1978, N.Kurbatova, Z.A. Vasilchenko; the same place, forested swamp, 24.06.1979, N. Kurbatova.

Khentei Dahuria: **Sokhondo State Reserve:** Sokhondo Mt., wet tundra, 25.06.1984, A.V. Galanin.

Yablon Dahuria: **Alkhanai National Park:** Upper Ilya River, wet meadow in the floodplain, 17.07.2005, A.V. Galanin, A.V. Belikovich.

Liliaceae Juss.

***Allium gobicus* Galanin sp. nom. prov.**

Endem of Gobi Desert. Dry steppe and desert.

Plants form clusters, compact tufts. Scape 5–8 cm, falcated, ascendant. Bulb scales and scape base white or slightly pinkish. Leaves flat, 1–1.5 mm wide, curved, equaling to slightly shorter than scape. Umbel includes 8–10 flowers. Flowers campanulate, 4–4.5 mm long, pinkish or white. Filaments shorter than perianth segments, broadened at base. Pedicels 1.5 x as long as flowers.

Kerulen Dauria: Mongolia, 200 km S from Ulan-Bataar, dry creek bottom, desertlike Caragana-Achnatherum steppe, 18.06.2007, A.V. Galanin, A.V. Belikovich.

Gobi, Mongolia: Gurvan-Saikhan-Nuruu Range, dry stony steppe on the ridge, 21.06.2007, A.V. Galanin, A.V. Belikovich.

***Allium odorum* L. subsp. anomala Galanin subsp. nom. prov.**

Probably, endem of Dauria, characteristic for arid areas.

Scape 15–25 cm. Bulb small, 5–7 x 10 mm, covered by gray tunic - reticulately cleft gray short scales. Roots thin. Leaves 3–4, go from the down part of scape, curved or curled. Leaves 1–2 mm wide, flat, equaling to longer than scape. Umbel hemispheric, pedicels unequal, smooth, 1.5–2 x as long as perianth segments. Spathe 5–6 x 6–7 mm, white-membranous. Flowers campanulate. Petals white with brownish or yellow veins, lanceolate, apex acute. Filaments equal or slightly shorter than perianth segments, narrowly connate at base, untoothed.

Onon Dauria: N 50°49'48,9", E 114°52'57,9", h=678 m, Aginskaya Steppe Wildlife Refuge, 15 km E from Nozhyi Lake, Nur-Mogoitui Lake shore, rocks, feather-grass steppe, 31.07.2008, E.N. Roenko, I.V. Kozyr; 20 km SW from Ortui Village, Shuluta Lake, fallow land near the farm, 18.07.2007, E.N. Roenko.

East Dauria: N 49°50'38", E 117°2'45,6", h=745 m, Zabaikalsk-Borzya Highway, 5 km W from Bilyutui Village, gentle slope, sandy soil without stones, herb-grass steppe, 6.08.2008, E.N. Roenko, I.V. Kozyr.

***Allium toreensis* Galanin sp. nom. prov.**

Endem of Dauria, characteristic for arid areas. Onion steppe in the Torei Lakes Cattle.

Herbs with thick rhizomes. Scape to 20–35 cm, up to 2 mm in diam., smooth. Clusters have many vegetative scapes with filamentous curled long leaves. Bulb oblong, cylindrical, 2–3 cm дл., covered with a tunic formed by grayish-brown, reticulately cleft scales. Roots numerous, fleshy. Leaves at base of generative scapes by 1–2(3), filamentous, smooth. Umbel hemisphere, pedicels 1.5–2 x as long as perianth segments, smooth, thin, curved. Spathe at base of umbel small, papery, 3–4 mm long. Perianth segments 5–6(7) mm long, broadened in the upper part, white-pinky, slightly violet. Filaments connate at base, 1–2-toothed in upper part of widening.

East Dauria: Torei Lakes, feather-grass steppe in sandy hill, 7.08.2003, A.V. Galanin; Zun–Torei Lake, west shore, Daur State Refuge area, onion steppe, 7.08.2003, A.V. Galanin; 26 km S from Borzya, steppe on the hillside, 26.07.2005, A.V. Galanin, A.V. Belikovich; 100 km S from Borzya, Krasnyi Velikan Village vicinities, dried up salty lake bottom, 24.07.2005, A.V. Galanin, A.V. Belikovich.

***Lilium cernuum* L. subsp. belikoviczii Galanin subsp. nom. prov**

Endem of Dauria, characteristic for arid areas. Prairie, steppes.

Stem to 40 cm, rounded, smooth or scabrous. Bulb white, ovoid, dense, 2–3.5 x 0.8–3 cm, scales fleshy, with weak strangulation on proximal 1/3. Leaves scattered, alternate, sessile, linear, 8–10 cm x 4 mm, curved apically falcatedly declinate. Leaf margin smooth or with rare flattened papillae. Cluster of hairs basally is absent. Flowers nodding 1–3(8) in a short raceme. Tepals orange, with dark purple spots up to 4 cm diameter. Bracts solitary, linear-lanceolate. Perianth segments 3.5–4.5 x 1.5–2 cm, oblong-lanceolate or obovoid. Ovary 4–8 cm. Style ca. 2 cm. Anthers linear, purple, 0.9–1.3 cm. Capsule globose to obovoid.

Our subspecies has narrower and shorter leaves, 4–5 cm x 3–4 mm. Flowers are smaller, up to 3 cm diameter. Further studies are needed to clarify whether this taxon should be regarded as an independent species.

Hailar Dauria: Gazimurskii Zerentui River, steppe-prairie on the slope, 22.07.2004, A. V. Galanin.

Onon Dauria: Onon–Baldzha Range, Mountain Steppe Wildlife Refuge, Sukhaya Valley, meadow steppe, 13.08.2003, A.V. Galanin, A.V. Belikovich.

North-East China (Jilin, Liaoning), Korea. The species is not pointed out neither in Dauria in *Flora of Central Siberia* (1979) nor in Mongolia (Grubov, 1982).

NEW SPECIES

IRIDACEAE

***Iris pseudothoroldii* Galanin sp. nov. prov.**

Plant forms rather dense ring-shaped clumps. Rhizome thick; roots шнуровидные, контрактильные. Leaves dense, coriaceous, narrow ensiform, longer than stem (or the plant acaulous), obtuse and shortly acuminate. Fibers of dead leaves remnants in clump curly crimped. Волокна остатков отмерших листьев в дернине курчаво извитые. Sheath with two leaves and one flower. Flowers violet or pale-yellow, fragrant. Покрывало двулистное и одноцветковое. Цветки фиолетовые или палево-желтые, ароматные. Трубка околоцветника Perianth pipe longer than ovary. "Curly scales" at the base of stem are the feature of this species.

Type: Onon Dauria, 24 km south from Bukukun Village, near Mongolia-Russia Border, floodplain poplar forest, old pebble bar, 16.08.00, A.V. Galanin, A.V. Belikovich.

Paratype: Onon Dauria, Mongolia, area of Binder Village, Onon River Valley, floodplain poplar forest with meadows and shrubs, 10.08.05, A.V. Galanin; Khentei Dauria, Upper Bukukun former tin mine, meadow along the Zagadochnyi Creek, sparse, probably alien, 19.07.01, A.V. Galanin, A.V. Belikovich.

POACEAE

***Bromus altaica* Peschkova subsp. *dahurica* Galanin subsp. nov. prov.**

Plants rhizomatous. Culms up to 1.5 m long, solitary, thick and strong. Rhachilla internodes intensely pubescent. Leaf-blades up to 13 mm wide; leaf-blade surface glabrous, both sides sparsely hairy. Ligules of upper culms 1–2 mm long. Glumes lanceolate with a scabrous vein, not eciliate, with white-chartaceous margins. Fertile lemmas 3-veined; 2 lengths of glumes, glabrous, only with small spinulets along veins, with white glumaceous margins. Awn very short, up to 1 mm long.

Type: Onon Dauria, 20 km east from Mangut Village, right bank of Onon River, Mangut Cave, scree below the rock, meadow, 6.08.03, A.V. Galanin, A.V. Belikovich.

Paratype: Onon Dauria, Onon-Baldzha Range, Naryn Brook, Gornaya Steppe Wildlife Refuge, floodplain meadow, 19.07.02, A.V. Galanin, A.V. Belikovich.

***Calamagrostis chenteensis* Galanin sp. nov. prov.**

Rhizomatous plants; culms thin, 40–50 cm long. Leaf-blades narrow, 1–2 mm wide, contortuplicate or plain. Upper stem leaf goes from the middle of culm or a little upper, leaf-sheath 2 lengths of the leaf. Leaf blade both sides with spinelets, but without hairs. Ligules of culm leaves 1 mm long, culm-nodes and internodes glabrous. Panicle very dense, spiciform, 4–5 cm long, 7–8 mm wide. Florets short, scabrous. Glumes lanceolate, with glabrous upper surface, spinulets along veins. Fertile lemmas fibrous, with bearded callus; long fuzz 1 length of glume. Awn erect, arising from the middle of lemma or a little below it, almost one length of lemma.

Differs from allied species *C. calarica* Tzvel. by longer fuzz of callus and by that that this fuzz goes not from the lower section of the lemma. Besides, glumes are not obtuse, but shortly acuminate. Differs from *C. holmii* Lange by larger glumes; these glumes are not shortly acuminate, but long acuminate as well as not white-membranaceous.

Type: Khentei Dauria, Perevalnii Range, alpine belt, subalpine *Pinus sibirica*-*Larix dahurica* forest, Expedition Brook, 31.07.02, A.V. Galanin, A.V. Belikovich.

Paratype: Khentei Dauria, Perevalnii Range, alpine belt, forb-dwarf-shrub lichen tundra, 30.07.02, A.V. Galanin, A.V. Belikovich.

***Calamagrostis dahuricus* Galanin sp. nov. prov.**

Culms 40–50 cm long; thin, glabrous, clumped loosely or solitary, with fibrous dead butt sheaths. Leaf-blades narrow, 1–2 mm wide, contortuplicate or plain. Leaf-blade surface on both sides scabrous, membranous. Ligules at the basis of leaves 1–1.5 mm long. Panicle branches shortcut, scabrous, bearing small goldish spikelets, 2–3 mm

long. Glume wide-lanceolate, 1-veined, with 1 keel, scabrous, puberulous, 1–1.2 length of adjacent fertile lemma. Principal lemma with awn arising from lower 1/3 of lemma, with fuzz on callus and in the sinus. Awns well noticeable, geniculate. Fertile lemma 3-veined, slightly brownish, hairy on the surface.

Differs from allied taxon *C. purpurea* subsp. *tenuis* (V. Vasil.) Tzvel. by shorter fuzz of callus and shorter hairs of rhachilla, smaller fertile lemmas hairy on the surface, which are not white-chartaceous, but coriaceous and slightly colored.

Type: Onon Dahuria, Tyrin Village nearests, Tyrin Lakes, wet marsh, 8.08.02, A.V. Galanin, A.V. Belikovich.

Paratype: Onon Dahuria, Kyra Village area, Byrtza River floodplain meadow, 4.08.02, A.V. Galanin, A.V. Belikovich.

***Cleistogenes paradoxa* Galanin sp. nov. prov**

Perennial caespitose plants; culms 40–50 cm long. Culms embraced at base by vigorous, high, up to 4 cm long, light-brown dead sheaths. Leaf-blades narrow, bluish, contortuplicate, basal, erect up to length of generative culms. Stem leaves 4–5(6) cm long, narrow, sit on the culm by one, erect, glabrous. Ligules 1–2 mm long, split. Leaf-sheaths split almost up to the basis, but closed. Panicles short, compacted, 3–3.5 cm long and 2 cm wide, with 8–10(12) spikelets. Spikelets whitish, 7–8 mm long. Glumes unequal, wide, smooth, glabrous, white-chartaceous, length of lemmas. Lemma slightly keeled, widely membranous at margins, with small sparse spinelets along keels and on the surface. Lateral veins on the lemmas hardly visible. Lemma margins ciliate.

Differs from *C. songorica* (Roshev.) Ohvi by not declinate, not twisted leaves, as well as by glabrous florets and glabrous spikelets.

Type: Onon Dahuria, Onon-Baldga Range, Gornaya Steppe Wildlife Refuge, Sukhaya Pad site, stony steppe on southern slope, 13.08.03, A.V. Galanin.

Paratype: Onon Dahuria, Onon-Baldga Range, Gornaya Steppe Wildlife Refuge, Naryn Brook, stony steppe, 20.07.02, A.V. Galanin, A.V. Belikovich.

***Leymotrigia agropyroides* Galanin sp. nov. prov.**

Differs from *Leymotrigia belicovichii* Galanin by wider and longer glumes. Glume's chartaceous margin wider. Leaf-blade upper surface without hairs, scabrous at margins and along veins due to small spineletes. Glumes 5-veined; veins along all length of glume, well noticeable. Fertile lemmas chartaceous at margins, 5-veined; veins well noticeable.

Type: Onon Dahuria, Onon River 5 km upper Mangut Village, wet marsh on the shore, 30.07.01, A.V. Galanin, A.V. Belikovich.

Paratype: Onon Dahuria, Onon River 5 km upper Mangut Village, apple-Padus avia forest on the floodplain terrace, 30.07.01, A.V. Galanin, A.V. Belikovich.

***Leymotrigia belicovichii* Galanin sp. nov. prov.**

Plants over 1 m long; leaf blades plain or contortuplicate, upper surface intensely covered by long hairs. Spike up to 20 cm long, 8–9 mm wide. Spikelets sit by 1–2 on the ledges of rhachilla's nodes. Rhachilla applanate, lacerate along margins. Glumes narrowly lanceolate, 1–3-veined, chartaceous at margins, without hairs, central vein with spineletes in upper part. Glumes 2/3 length of lemmas, without hairs, glabrous, 3-veined in upper section; glume apex mucronate, frequently with short spinule.

Type: Nercha Dahuria, Nercha River 10 km from the mouth, steppe on the high terrace, 16.07.04, A.V. Galanin.

Paratype: Onon Dahuria, Altan-Kyra Cattle, *Filifolium sibirica* steppe, 9.07.01, A.V. Galanin.

***Festuca rubra* L. subsp. *sochondinensis* Galanin subsp. nov. prov.**

Plant forms small clumps, culm reproduction mixed. Generative culms 50–70 cm long. Upper node is below the middle of culm. Leaf-blade sheaths almost absolutely closed. Stem leaves conduplicate, 1–1.5 mm wide and 4–6 cm long. Basal leaves conduplicate or plain, 2–3 mm wide, glabrous, smooth, with distinct central vein. Panicles 4–6 cm long, green or slightly violet. Glumes lanceolate, 3-veined, gradually tapered, muticous, scabrous on keel, slightly white-membranaceous at margins. Fertile lemmas 5-veined, muticous, 1–1.1 length of glumes. Lemma surface scaberulous at keel, with intense white long hairs in the lower section of margin vein. Spikelets comprising 7–8(9) fertile florets. Anthers 1.4 mm long.

Type: Khentei Dahuria, Perevalnii Range between Baldzha and Ashinga Basins, altitude 2100 m, Pibus sibirica-Larix dahurica open forest, 31.07.02, A.V. Galanin, A.V. Belikovich.

***Koeleria mukdenensis* Domin. subsp. *chenteensis* Galanin subsp. nov. prov.**

Clumped loosely. Culms glabrous; 25–35 cm long; with 0.3–0.5 of their length invested by sheath. Vegetative culms with 3–4(5) leaves. Leaf-blades glabrous, scaberulous. Spikelets whitish, 4–5 cm long, 6–7 mm wide. Glumes 4–5 mm long, lanceolate, acute, puberulous, more intensely on keel, sometimes with spinelets. Lemmas 3–4 mm long. Dead leaf-sheaths long, longer in 2–3 times than ones of all the rest our species of *Koeleria*, fall to fibres. This form probably appeared as a result of introgressive absorption of *Koeleria altaica* (Domin) Kryl. *Koeleria mukdenensis* slightly differs from *Koeleria cristata*. These forms most likely are subspecies of one species. *Koeleria mukdenensis* – mesoxerophyte, *Koeleria cristata* – xerophyte, a *Koeleria chenteensis* – mesophyte.

Type: Khentei Dauria, Sokhondo Biosphere Reserve, Enda River near the range station, meadow steppe in the floodplain, 7.07.07, E.N. Roenko.

Paratype: Onon Dauria, Sokhondo Biosphere Reserve, Agutza River near the range station, upper section of west slope, *Pinus sylvestris* open forest, 19.07.08, E.N. Roenko, I. V. Kozyr.

***Koeleria tenuissima* Galanin sp. nov. prov.**

Clumped loosely, culms thin (up to 1 mm diameter), up to 50 cm long. Butt invested by dark brown dead leaf-sheaths. Leaf-blades narrow, filiform, 1–1.5 mm wide. Stem leaves short, 1 mm wide, their sheaths disrupted and only closed. Panicles up to 4 cm long and 2–3 mm wide. Glumes 2–3 mm wide, broadly lanceolate, with apex extension 1 mm long; scabrous midrib and along margins. Fertile lemmas prominently longer than glumes, abruptly scabrid midvein. Rhachilla pilose. Differs from boreal species *Koeleria cristata* subsp. *seminuda* (Trautv.) Tzvelev, which is pointed out in *Flora of Siberia* for the northern Baikal Region and Lena River Basin, by absent pubescence.

The species has probably hybridogenous origin (*Koeleria cristata* subsp. *mongolica* x *Calamagrostis* sp.).

Type: Khentei Dauria, Kirkun River near Sypuchka Mt., Vedernichikhina creek valley, aspen forest on the southern slope, 14.08.00, A.V. Galanin, A.V. Belikovich.

***Poa alchanaica* Galanin sp. nov. prov.**

Clumps small; culms up to 60–70 cm long. Culms, with both generative and vegetative off-shoots, in rather thick clump. Culms overall intensely scabrous, thickish, 2–3 mm in diameter. Upper nod is situated in the lower section of culm and not covered by sheaths of lower leaves. Leaves 2–3 mm wide, very scabrous due to frequent spinelets midrib and along margins. Ligules of upper leaves 2–3 mm long. Panicles rather short, 4–8 cm long and 2–3 cm wide, slightly tall-spreading. Florets scabrous, ascending, the longest floret over 1/3 of panicle's length. Spikelets green, some ones slightly goldish, 3–4 mm long. Glumes lanceolate, 2–3 mm long, glabrous, 3-veined. Lower glume a little shorter than upper one. Fertile lemmas broadly lanceolate, puberulous midvein or almost glabrous; lemma apex membranous. Callus of fertile lemma has a lax fuzz of flexuose hairs. Sometimes this fuzz is absent..

Differs from affined species (*P. krylovii* and *P. attenuata* s.l.) by thicker, rough and intensely scabrous culms and leaves. The species' leaves are plain, not contortuplicate. Panicles are not compressed.

Type: Yablon Dauria, Alkhanai National Park, Ilya River Sources near Upper Niksanda mouth, birch-larch forest, 16.07.05, A.V. Galanin, A.V. Belikovich.

Paratype: Yablon Dauria, Alkhanai National Park, Ilya River Sources near Upper Niksanda mouth, opening in birch-larch forest, 16.07.05, A.V. Galanin, A.V. Belikovich.

***Poa attenuata* Trin. subsp. *gobica* Galanin subsp. nov. prov.**

Differs from the typical subspecies by that that fertile lemmas is shortly pilose between veins for 2/3 its length, much more than for *P. botryoides*.

Type: Buryat Dauria, 15 km west from Novoselenginsk Village, left bank of Selenga River, stepped meadow on the floodplain terrace, 4.07.07, A.V. Galanin, A.V. Belikovich.

Kerulen Dauria: Mongolia, Ulanbataar surroundings, Bogdhan Ula Reserve, stepped stony slope, 17.06.07, A.V. Galanin, A.V. Belikovich.

Paratype: South Gobi, Gurvan-Saikhan-Nuruu Range, alpine stepped meadow on the ridge, 21.06.07,

A.V. Galanin, A.V. Belikovich.

***Poa nemoralis* L. subsp. *hylaeva* Galanin subsp. nov. prov.**

Clumped loosely; culms thin and glabrous, 40–60 cm long. Upper nod is situated not in the middle of culm, but significantly lower: in the low 1/3–1/4 of length. Leaf-blade plain, narrow, 1–2(3) mm wide; leaves are not longer but a little shorter than their sheaths. Ligules of upper leaves very short, up to 1 mm long. Panicles with poorly scabrous branches, lax. Spikelets very small, 1.5–2(3) mm long. Rhachilla glabrous or slightly puberulous. Fertile lemmas poorly puberulous only midrib, glabrous or hardly puberulous along marginal veins. Callus fuzz often absent or poorly developed.

Major part of collections of this species in South Siberia are most likely identified as *P. nemoralis* s. str. by mistake.

Type: Onon Dahuria, Sokhondo Biosphere Reserve, Agutza River Basin, Buninda Brook, opening in floodplain forest, not unusual, 5.07.84, A.V. Galanin.

Paratype: Khentei Dahuria, Kirkun River 2 km down Enda River mouth, floodplain larch forest with *Padus avium*, 21.07.01, A.V. Galanin.

***Poa pratensis* L. subsp. *hilaeva* Galanin subsp. nov. prov.**

Plants 30–60 cm long, rhizomatous. Culms 2-noded, glabrous, thin, solitary. Upper node is situated in the middle section of culm. Panicle (4)5–6 cm long with declinate glabrous florets 1–2(3) cm long. Spikelets 3–5 mm long, glumes broadly lanceolate, 3-veined, green, 3–4 mm long, glabrous. Lemma broadly lanceolate, poorly pilose, midvein in lower part of lemma with short hairs. Culms bear 2 short plain, or conduplicate, or convolute leaves 3–5 cm long. Differs from *P. pratensis* L. s. str. by thinner culms and lower size of panicles. Lemma with weaker pubescence midrib, callus with less developed hairs. Culms and florets absolutely glabrous.

Type: Onon Dahuria, Sokhondo Biosphere Reserve, Agutza River Basin, Buninda Camp, birch-larch forb forest, 22.07.08, E.N. Roenko, I.V. Kozyr.

Paratype: Yablon Dahuria, Alkhanai National Park, Ilya River near Ara-Ilya Range Station, floodplain birch-willow forest, 7.07.06, L.M. Dolgalyeva.

***Puccinellia distans* (Jacq.) Parl. subsp. *tyriensis* Galanin subsp. nov. prov.**

Perennial, forms small clumps. Culms 20–40 cm long, up to 2 mm in diameter, erect, and not disarticulating as ones of of *Puccinellia distans* s. str. Leaf-blade 2–4 mm wide, rough, plain or convolute. Basal leaves short. Leaf sheaths not extended, not spread along culms. Spikelets 4–5 mm long, green, with 6 flowers. Glumes ovate, not ciliate along margins, one glume significantly shorter than another one; lemma 2–4 length of shorter glume. Lemma 2 mm long, inversely ovate, green, obtuse, smooth and glabrous at margins. Lemma apex obtuse, goldish, membranous. Palea setaceous at margins. Anthers about 1 mm long.

Type: Onon Dahuria, Tyrin Village nearests, Onon River valley at the Russia-Mongolia Border, brackish Pogradichnoye Lake, wet marsh, 17.07.02, A.V. Galanin, A.V. Belikovich.

***Puccinellia kalininae* Bubnova subsp. *dahurica* Galanin subsp. nov. prov.**

Perennial plant, forms small clumps. Culms 20–40 cm long, slightly geniculate in the lower part or erect, bluish-green. Basal leaves few in number; they are short and narrow, 4–6 cm long and 1 mm wide. Stem leaves long, reach panicle, convolute. Ligule up to 1 mm long. Floret scabrous, upward directed. Panicle 5–7 cm long and 1–2(3) cm wide. Spikelets 3–4(5)-flowered, green. Glumes abruptly unequal, Lemma 2–3 length of glume. Glume margin of our plants is not ciliolate, florets poorly scabrous.

Type: East Dahuria, between Zun-Torei Lake and town of Borzya, salt lake, brackish marsh, 8.08.03, A.V. Galanin.

***Puccinellia tenuiflora* (Griseb.) Scribner et Merr. subsp. *diflora* Galanin subsp. nov. prov.**

Perennial herb, loosely clumped. Culms 40–80 cm long, 1–2 mm in diameter, erect, or geniculately ascending in lower nodes. Leaf sheaths at first green, then stramineous, glabrous, not swollen, open for most of their length. Basal leaves few in number. Leaf-blade of stem leaves narrow, 1–2 mm wide, convolute, glabrous adaxially, spicular. Ligule about 1 mm long, pellucid, rounded, adaxially with the smallest spikelets. Panicles 11–18 cm long, at first compressed, contracted, then effuse, spreading. Panicle branches 6–11 cm long, thin, scabrous, go from rhachilla by 3–6. Spikelets 2.5–4 mm long, whitish-golden, comprising 1–2(3) fertile florets. Glumes persistent, dissimilar,

without hairs in sinus, lanceolate, slightly obtuse. Glume margins with the smallest cilia. Lower glume 0.6--0.9 mm long, upper glume 0.8--1.3 mm long. Lemma 1.6--2 mm long, obovate, rounded-ovate, glabrous. Lemma keels without spinelets. Lemma margins ciliolate. Palea sometimes with isolated spinelets adaxially. Palea keels smooth. Anthers 1--1.2 mm long.

Type: Onon Dauria, Tyrin Village nearests, Onon River valley at the Russia-Mongolia Border, brackish Pogranichnoye Lake, wet marsh, 17.07.02, A.V. Galanin, A.V. Belikovich.

Paratype: South Gobi, Mongolia, Khongoryn Els sand-dunes, along Khongoryn River, on the shore, 22.06.07, A.V. Galanin.

***Puccinellia torejaensis* Galanin sp. nov. prov.**

Perennial plant, forms clumps. Culms 30--40 cm long, erect, or geniculately ascending from the lower node. Basal leaves very few in number; they are thin and short. Leaf-blade of basal leaves 1--1.5 mm wide and 3--4 cm long. Vegetative culms with numerous leaves, in one clump with generative culms; vegetative culms up to 20 cm long. Leaf-blade of stem leaves strongly scabrous, 1--1.5 mm wide and 3-5(7) cm long. Ligule 1--2 mm long, glabrous. Panicle 7--15 cm long and 5-8 cm wide, pyramidal. Panicle branches abruptly deflexed отклоненными, thin, slightly flexuose and slightly scabrous. Spikelets very small, 1--2 mm long, with 1--2(3) fertile florets. Glume ovate-lanceolate. Lemma 2--3 length of glume. Fertile lemma 2 mm long, lanceolate, in lower part violet, glabrous, smooth. Lemma apex obtuse, goldish. Anthers 1 mm long. Plants vary in habitus, but spikelets in this case are the same, few-flowered: that makes the main difference from other species of *Puccinellia*.

Type: Onon Dauria, Tyrin Village nearests, Onon River valley at the Russia-Mongolia Border, brackish Pogranichnoye Lake, wet marsh, 17.07.02, A.V. Galanin, A.V. Belikovich.

Paratype: West Dauria, between Zun-Torey Lake and town of Borzya, salt lake, brackish marsh on the shore, 8.08.03, A.V. Galanin.

***Trisetum sibiricum* Rupr subsp. *glabrum* Galanin subsp. nov. prov.**

This form differs from typical subspecies by the following features: leaf-blade surface not pilose, but glabrous and intensively scabrous; fertile lemmas are densely covered by the smallest spinelets adaxially; leaf-blades more broad -- up to 12 mm wide; culm thicker: its diameter up to 3--3.5 mm not counting sheath.

Type: Onon Dauria, Ust-Bukukun common near the Bukukun River mouth, floodplain willow thickets, 15.08.00, A.V. Galanin, A.V. Belikovich.

Paratype: Onon Dauria, Sokhondo Biosphere Reserve, Agutza River Basin near Buninda Cabin, constant sample plot 30, shrubs along the Buninda brook, 17.08.01, A.V. Galanin, A.V. Belikovich.

