Contribution to the flora of Asian and European countries: new national and regional vascular plant records, 2

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**Abstract:** The paper presents new records for 20 vascular plant species from eight Asian and two European countries. Five taxa (*Artemisia campestris*, *Artemisia tanacetifolia*, *Delphinium sajanense*, *Diarrhön vasculosum var. undulatum*, *Epilobium adenocaulon*) are reported from Kazakhstan, four (*Deyexia yanyuansensis*, *Poa arnoldii*, *Stipa gracilis*, *Stipa macroglossa* subsp. *kazachstanica*) from China, three (*Nepeta pamirrensis*, *Silene bucharica*, *Scrophularia pamiro-alaica*) from Uzbekistan, two (*Epilobium nervosum*, *Stellaria zolotukhini*) from Mongolia, one (*Coronopus didymus*) from Tajikistan, one (*Orobanche rumseiana*) from China, and one (*Stipa gracilis* and *Scirpus georgianus*) from Poland. The taxa presented should be regarded as alien to the studied areas, whereas the other 16 are native elements for the flora of the countries. For each species, synonyms, general distribution, habitat preferences, taxonomy with remarks on recognition and differentiation of the species from the most similar occurring in a given country, as well as a list of localities recorded (often far from the previously known areas) are presented. In the case of *Orobanche rumseiana*, a new variety *O. rumseiana var. sarda* R. Piwowarczyk and A. Pujadas is described and illustrated.

**Keywords:** alien species; Asia; chorology; Europe; native species; taxonomy

**Introduction**

This paper is a continuation of the previous work dedicated to new national and regional vascular plant records (Nobis, Nowak, Nobis, Paszko et al. 2014). Although, it might seem that a good knowledge on general distribution of vascular plants, has been attained on the Eurasian flora, there are still many regions of Eurasia where new plant species are discovered. Often, these records are located far from the previously known areas of a given species, and at the same time, more or less distinctly enlarge the range of its distribution (e.g. Ebel 2008; Nobis, Nobis and Kozak 2009; Nobis and Nowak 2011a; Seregin 2012; Molnár, Popiela, and Lukács 2013; Qureshi and Raana 2014; Wagensommer, Fröhlich, and Fröhlich 2014; Nobis, Nowak, Nobis, Paszko et al. 2014). During field exploration across the vast area of 10 European and Asian countries, as well as during taxonomic revisions of herbarium material of different groups of vascular plants, the authors found some species that are new to the floras of particular countries or their significant regions (provinces or republics). The purpose of this paper is to report new records of 20 vascular plants from 10 Asian and European countries, namely Azerbaijan, China, Kazakhstan, Kyrgyzstan, Italy, Mongolia, Poland, Russia, Tajikistan and Uzbekistan. These records are significant in terms of phytogeography of vascular plants. Four of the taxa presented should be regarded as alien to the studied areas, whereas the others are native elements for these countries. The taxa are presented alphabetically in two groups, in Asian and in European countries.

**New records for Asian countries**

*Agrostis rupestris* All. (*Poaceae*)

**Contributor – Beata Paszko**

**Distribution and habitat**

Until now *Agrostis rupestris* has only been recorded from the mountains of Central and South Europe (Tutin...
2010), and North Africa (Maire 1941). During revision of Caucasian collections of the genus in LE, *A. rupestris* was noted in collections from the Southern Caucasus, Zangezur Mountains in Azerbaijan. This range defines the border between Armenia’s southern province of Syunik and Azerbaijan’s Nakhichevan Autonomous Republic. The species was not recorded in the Caucasian Flora Conspectus (Tzvelev 2006) and its distribution in the Caucasus region requires further study. *Agrostis rupestris* occurs mainly in alpine grasslands.

**Taxonomic notes**

*Agrostis rupestris* is a member of the genus *Agrostis*, which comprises a few closely related groups of taxonomically difficult species (Paszko and Pendry 2013b; Paszko and Soreng 2013). *Agrostis rupestris* from the Zangezur Mts (Gavrilov & Doluchanov s.n., LE!) had previously been misidentified as *Agrostis lazica* Balansa. The latter species differs from *A. rupestris* by having longer paleas (0.65–1 vs. 0–0.35 mm), shorter anthers (0.55–0.75 vs. 1–1.2 mm) and a higher ratio of palea length to lemma length (0.43–0.67 vs. 0–0.17) (Paszko, unpublished results). In the European mountains, *A. rupestris* can be confused with *Agrostis alpina* Scop., both are typical mountain species. *Agrostis rupestris* differs from *A. alpina* by smaller spikelets (1.8–3.4 mm vs. 2.8–6.3 mm in *A. alpina*), smooth panicle branches (aculeolate in *A. alpina*) and its callus glabrous or with hairs not longer than 0.1 mm (c.0.3 mm in *A. alpina*) (Frey 1997; Tutin 2010).

Examined specimens (new records)

AZERBAIJAN: Transcaucasia [Southern Caucasus, Russian Zakavkazye], distr. Nachitshevan [Nakhchivan], in jugo Zangezar [S Zangezur Mts], in Monte Salvarty [Mt Salvarty], 3000 m, 13 Aug 1927, I. Gavrilov & A. Doluchanov s.n. (LE!).

**Artemisia campestris** L. (Asteraceae)

**Contributor** – Andrei N. Kupriyanov

**Distribution and habitat**

The species is widely distributed in Europe (except south and east), and as an alien plant in North America (Leonova 1994). *Artemisia campestris* does not reach eastwards to the Ural Mts (Ovesnov 2007; Kulikov 2010). Filatova (1966) and Abdulina (1999) reported from Kazakhstan a related species *Artemisia marshalliana* Spreng., and did not mention *A. campestris* s. str. in any way. A typical form of *A. campestris* collected by Yu. Kotukhov in the Saur range, confirms the occurrence of this species in Kazakhstan. It is the new native species to the flora of the country. *Artemisia campestris* prefers generally open habitats (meadow, pine forests, forest glades and edges), and grows mainly on dry soils, sometimes as a ruderal plant.

**Taxonomic notes**

The genus *Artemisia* L. sect. *Campestres* Korobkov includes a complex of three closely related species with wide distribution in Eurasia: *A. commutata* Bess. (sparingly haired plant, with the roundish corymb formed a lax panicle), *A. campestris* (plant without lignification of stems and having shoots covered with short, semipressed hairs) and *A. marshalliana* (a dwarf semi-shrub with remarkable lignification of stems, shoots densely covered with hairs, corymb congested spike-like and formed in general narrow panicle). The main features of the latter species is the lignification of stems and stable hair covering, which remains till the period of blossoming, or it can be found at young plants but disappearing by the blossoming period. The morphology of leaves cannot be considered as a taxonomically important character because it varies considerably: two and three times featherly-divided leaves on thin linear or linear-lanceolate segments can be found within the same population at each species.

According to Stankov and Taliev (1949), in most of European Russia (except for the south) only *A. campestris* occurs; to the east, from Ural to West Siberia and Kazakhstan, *A. campestris* and *A. marshalliana* can be found. Poljakov (1961) considered *A. campestris* to be distributed through all forest-steppe zones of western Siberia, and it even gets into Kazakhstan in Balkhash region. However, the author treated *A. campestris* in a wide sense, and distinguished the following varieties within this species: var. *marshalliana* (Spreng.) Poljak., var. *sericophylla* (Rupr.) Poljak., var. *sosnowskyi* (Novopokr.) Poljak., var. *araratica* (Novopokr.) Poljak. *Artemisia marshalliana* was considered at specific rank by other Russian taxonomists (Krasnenikov 1949; Filatova 1966; Leonova 1994). Surprisingly, some modern Siberian botanists (Krasnoborov 1997; Zuev 2005) did not recognize *A. marshalliana* as a separate species, and treated it as a synonym of *A. campestris*. Therefore, recent information on the distribution of *A. campestris* in western Siberia and Kazakhstan presented in the *Flora of Siberia* refers to *A. marshalliana*, because Krasnoborov (1997) considered the latter name a synonym of *A. campestris*. The previous taxon is widely distributed in the southern part of the West Siberian plain.

Examined specimens (new records)

KAZAKHSTAN: East-Kazakhstan province, Saur range, valley of Karakungur river, near confluence with Kendarlyk river, on pebble, 12 Aug 1991, Yu. Kotukhov (KUZ!, KAZ 03348 – 03353).
**Artemisia tanacetifolia L.** (Asteraceae)

*Contributor – Andrei N. Kupriyanov*

**Distribution and habitat**

The main area of occurrence of *Artemisia tanacetifolia* comprises Central and Eastern Siberia with several locations also in Western Siberia (Krasnobotrova 2000), Ural – Perm Krai (Ovsenok 2007), Eastern Europe – lower reaches of North Dvina, and North America – Alaska (Poljakov 1961). The species grows in the light-coniferous and small-leaved deciduous forests and their edges as well as in mountain low-grass meadows. This is a new native species to the flora of Kazakhstan.

**Taxonomic notes**

*Artemisia tanacetifolia* belongs to an ancient and extremely polymorphic group of wormwoods (Krasheninnikov 1946), relating to the section *Artemisia*, subsection *Laciniata* (Kitamura) Korobkov. Besides *A. tanacetifolia*, other morphologically close species occur in southern regions of Siberia. These are: *A. laciniata* Willd., *A. latifolia* Ledeb and *A. macrobotrys* Ledeb. The main characters of *A. tanacetifolia* are large twice plumose dissected leaves directed at an acute angle to an axis; leaf segments with short teeth, leaves densely covered with hairs on lower surface and more scattered on upper surface (Amelchenko 2006). A related species *A. macrobotrys* has narrower and shorter blade of a leaf with shorter and rare teeth on its segments. For *A. laciniata*, narrow leaf segments (in some populations almost linear) are directed almost perpendicularly to an axis or at an angle more than 90° and leaves are poorly covered with hairs. Finally, *A. latifolia* has naked (hairless) leaves.

**Examined specimens (new records)**

KAZAKHSTAN: East-Kazakhstan province, Azutau range, natural boundary Batpakdulak, steppe meadow. 21 Jul 1983. *Yu. Kotukhov* (KUZ!).

**Coronopus didymus (L.) Smith** (Brassicaceae)

*Contributors – Arkadiusz Nowak, Marcin Nobis, Sylwia Nowak*

**Distribution and habitat**

*Coronopus didymus* is another new, alien species recently recorded in Vose town and its vicinities (South Tajikistanian geobotanical region), occurring in ruderal habitats and cultivated fields with *Trifolium aestivum* and *Petroselinum crispum* plantations. The species contributes to Asperugo-Cannabietum ruderalis (wheat crops) and *Convolvulo arvensis-Cyperetum rotundii* (parsley root-crops) (Nowak and Nowak 2013; Nowak S, Nowak, Nobis, and Nobis 2013).

**Taxonomic notes**

*Coronopus didymus* is the only species of the genus in the flora of Tajikistan. However, it can be confused with taxa of the genus *Lepidium* represented in the flora of the country by 11 species (Yunusov 1978).

**Examined specimens (new records)**

TAJKISTAN: Ruderal places (roadsides) in the eastern part of Vose town near Kulab, altitude 470 m, 37°48′17″ N, 69°38′45″ E, 1 Jun 2011, M. Nobis, A. Nowak (KRA!); cereal and root crops c.5 km south to Vose in southwest Tajikistan, altitude 470 m, 37°47′57.8″ N, 69°39′20.2″ E, 1 Jun 2011, A. Nowak, M. Nobis (OPUN!).

**Delphinium sajanense Jurtz.** (Ranunculaceae)

*Contributor – Aleksandr L. Ebel*

**Distribution and habitat**

To date *Delphinium sajanense* has been recorded from Sajan Mts in southern Siberia (Russia) as well as from mountains of northern Mongolia (Malyschev 1968; Friesen 1993; Gubanov 1996). Additionally, in the TK herbarium, there are some collections from western parts of Mongolia (Mongolian Altai), with probably the oldest one being: West Mongolia, Terekty river valley, stony dry slopes, 17 Jul 1906, V. Sapozhnikov. *Delphinium sajanense* is a new native species to the flora of Kazakhstan. It was collected only in the eastern part of the country, in the Saur-Tarbagatai Mts. It is likely that it occurs also in China (northwest Xinjiang), in Chinese Altay and the Chinese part of the Saur range. The species is a high-mountain petrophyte growing on rocks and stony slopes as well as on stream-sides in high mountains.

**Taxonomic notes**

The species belongs to an Asian *Delphinium cheilanthum* Fisch. ex DC complex. *Delphinium cheilanthum* is widely distributed in Russia (from south Siberia to Far East), in
Mongolia and also in some Chinese provinces (Grubov 1982; Gubanov 1996; Wencai and Warnock 2001). The southern and western range limits of the taxon are unclear. Some previous reports from Kazakhstan (Gamayunova 1961; Abdulina 1999) belong to *D. sajanense* (at least most samples from Saur range) and probably also to *D. barlykense* Lomon. & Knan. (specimens collected in Dzungarian Alatau). The latter species was described (Friesen 1990, 1993; Gubanov 1996) and in the Russian Altai Mts (Ebel 2008). Probably the taxon has a hybrid origin (most likely *D. cheilanthum × D. sajanense*). The most striking characters of *D. sajanense* include: dwarf habit (stems mainly up to 40 cm compared with usually more than 50 cm in *D. cheilanthum*) sometimes with several generative stems, a presence of specific type of trichomes: a typical “head-like” glandule trichomes with admixture of protruding glandule trichomes (having broad base and apiculate tips) which cover axis of inflorescence, pedicels and sepals.

**Examined specimens (new records)**

**KAZAKHSTAN:** [East-Kazakhstan province]. Saur, the Taz pass, 21 Jul 1914. *B. Shishkin & V. Genina* (TK!); Mustau, upper part of Ulkun-Ulasty river, 28 Jul 1914. *V. Sapožnikov* (TK!).

**Deyeuxia yanyuanensis** (J.L. Yang) L. Liu (Poaceae)

*Calamagrostis yanyuanensis* J.L. Yang

**Contributors** – Beata Paszko, Wen-Li Chen

**Distribution and habitat**

*Deyeuxia yanyuanensis* is a poorly known and very rare species till now known only from two localities (Baiwu and Meiyu) in the Yanyuan County, southern Sichuan Province, China (Lu, Chen and Phillips 2006). The type collection in the vicinity of Meiyu Town was gathered by Sichuan *Vegetation* Expedition (no. 12537, holotype CDBI!, isotype PE!) (Yang 1983). The second gathering in the vicinity of Baiwu Town was collected by the SW China Expedition of CAS (no. 726, PE no. 1538082!). The species grows at 2600 m in sparse pine forests and on the grass slopes by the rivers.

In September 1981, *D. yanyuanensis* was collected by Tian in the Ninglang County in northern Yunnan, China. For the first time the taxon has been found outside Sichuan, where it was originally described, extending the known distribution of this species in Southwest China. *Deyeuxia yanyuanensis* is regarded as endemic to the South Hengduan Mountain region.

**Taxonomic notes**

*Deyeuxia yanyuanensis* is a member of taxonomically difficult *Deyeuxia–Calamagrostis* complex, which is currently being intensive study (e.g. Paszko and Nobis 2010; Paszko and Ma 2011; Paszko 2014a,b; Paszko and Chen 2013; Paszko and Soreng 2013; Paszko and Pendry 2013a). *Deyeuxia yanyuanensis* is a very distinct species, which together with *D. diffusa* Keng and *D. flaccida* (P. C. Keng) Keng ex S. L. Lu are characterized by awnless lemma. The taxon differs from *D. diffusa* and *D. flaccida* by short callus hairs (c.0.6 mm vs. 1.1–2.85 mm in *D. diffusa* and 2.55–2.75 mm in *D. flaccida*), lower ratio of callus hairs to lemma length (ratio c.0.2 vs. 0.6–1.1 in *D. diffusa* and 0.7–0.8 in *D. flaccida*), longer rachilla length (1.5–2.4 mm vs. 0.15–1.25 mm in *D. diffusa* and 0.5–0.7 mm in *D. flaccida*), longer palea length (1.9–2.6 mm vs. 1–1.9 mm in *D. diffusa* and 1.4–1.5 mm in *D. flaccida*), and longer anthers (1.8–1.9 mm vs. 0.4–0.9 mm in *D. diffusa* and 0.55–0.6 mm in *D. flaccida*) (Paszko and Soreng 2013; Paszko unpublished results).

**Examined specimens (new record)**

**CHINA:** Yunnan. Ninglang County, without precise locality, 15 Sept 1981, Tian 108 (PE00487403!)

**Diarthron vesiculosum var. undulatum** M. Nobis, A. Nobis, A. Nowak & S. Nowak (Thymelaeaceae)

**Contributors** – Marcin Nobis, Arkadiusz Nowak

**Distribution and habitat**

To date *Diarthron vesiculosum var. undulatum* has been known only from southwestern Tian-Shan in Tajikistan (Nobis, Nowak, Paszko et al. 2014). During revision of herbarium material deposited in LE, we found specimens of the taxon collected in the western Tian-Shan Mts located in the area of Kazakhstan. The taxon can be found in steppes, screes, and rock ledges and crevices in the lower mountain elevations.

**Taxonomic notes**

*Diarthron vesiculosum var. undulatum* differs from nominal variety in the shape of wings on the calyx. In *D. vesiculosum* (Fisch. & Mey. ex Kar. & Kir.) C.A. Mey. var. *vesiculosum* they are straight, whereas in the second variety they are flexuous, with deeply U-shaped curves (Nobis, Nowak, Nobis, Paszko et al. 2014).

**Examined specimens (new record)**

**KAZAKHSTAN:** Syr-daryjskaya Oblast. Chimbenskii uezd, okr. ot Sary-Agel, 1 Jul 1925, *A. Jarmolenko* 194 (LE!).

**Epilobium adenocaulon** Hausskn. (Onagraceae)

**Contributor** – Aleksandr L. Ebel
Distribution and habitat

*Epilobium adenocaulon* originates from North America. Currently, the species is widely distributed in Europe as well as in the Asian part of Russia – southern regions of Siberia (Hultén and Fries 1986; Vlassova 1996; Skvortsov 2005). It grows within a wide range of disturbed places (e.g. roadsides, waste, arable lands) and sometimes invades natural and semi-natural habitats (e.g. forests, stream sides, bogs). Being an anemochorous species, *E. adenocaulon* tends to rapidly settle new places, and is considered to be an invasive plant in some Eurasian countries.

Probably the first collection of *E. adenocaulon* from West Siberia is dated 1948: “Tomsk Province, Asinovsky district, surrounding of Nizhnie Sokoly settlement, light forest, 26–30 Jul 1948, K. Verjugina et al.” (TK!). It was determined as *E. roseum* Schrad., but was re-determined by contributor as *E. adenocaulon*. During the second half of the twentieth century and first decade of the twenty-first century, this species spread widely in Siberia – from Kurgan Province eastwards to Baikal Region, and from Altay Region northwards to Khanty-Mansi autonomous district. *Epilobium adenocaulon* is a new, alien species to the flora of Kazakhstan.

Taxonomic notes

The genus *Epilobium* is represented in the flora of Kazakhstan by 15 species (Abdulina 1999). *Epilobium adenocaulon* belongs to a taxonomically difficult complex of American species related to *E. ciliatum* Raf. Some authors considered *E. adenocaulon* as a synonym of *E. ciliatum*, whereas others prefer to treat it as a distinct species. According to the Flora Nordica (Snogerup 2010), *E. ciliatum* has white corolla (usually becoming light-pink after drying) instead of dark-pink or violet in *E. adenocaulon*. Russian taxonomists considered specimens with white flowers as *E. pseudorubescens* Skvorts. (Skvortsov 1995, 2005; Tzvelev 2007; Seregin 2012; Ebel 2013). Because the samples collected from Kazakhstan have a violet corolla, therefore they have to be determined as *E. adenocaulon*.

Examined specimens (new record)

**KAZAKHSTAN**: East-Kazakhstan province, territory administrated by Ridder town, surrounding of Poperechnoe settlement, fir forest (dominated by *Abies sibirica*), along road, 3 Jul 1981, Yu. Kotukhov (TK!).

**Epilobium nervosum** Boiss. et Buhse (Onagraceae)

*Epilobium roseum* Schreb. subsp. *subsessile* (Boiss.) Raven

**Contributor** – Aleksandr L. Ebel

Distribution and habitat

*Epilobium nervosum* is a species distributed in central and eastern Europe, in Mediterranean region, Caucasus, and scattered eastward into Asia: Asian part of Russia (southern part of West Siberia), Kazakhstan, and some countries of Central Asia (mainly in mountain regions). It grows on stream-sides, sometimes on wet meadows, and rarely on disturbed wet places (including road ditches). This is a new native species to the flora of Mongolia, recently found in the country.

Examined specimens (new record)

**MONGOLIA**: Khovd aimak [province], Altay somon [district], middle part of Bodonchin-gol river basin, on spring side, 4 Sep 2001, N. Rudaya, A. Ebel (TK!).

**Nepeta pamirensis** Franch. (Lamiaceae)

**Contributor** – Orzimat T. Turginov

Distribution and habitat

In Central Asia the range of the species comprises Alai Mts, Peter I Mts and Pamirs (Tsukervanik 1987). New locations of the species have been found in the territory of Uzbekistan, far from previously known localities situated in Tajikistan (Langar River valley). It is a new, native species in the flora of Uzbekistan.
Taxonomic notes
In the flora of Central Asia the genus *Nepeta* L. is represented by 42 species (Tsukervanik 1987), of which 18 species are noted in Uzbekistan, *Nepeta pamirensis* is similar to *N. kokanica* Regel. Morphological differences between these two taxa are well characterized by Pojarkova (1954).

Examined specimens (new record)
UZBEKISTAN: Pamir Alai Mts, south-western Hissar, mountain Tschulbair near Khodzha-Barku, altitude 3600 m. 30 Aug 1930, Botschantsev, Vvedensky, Tsukervanik 738 (TASH!).

*Poa arnoldii* Melderis (Poaceae)
*Poa albertii* subsp. *arnoldii* (Melderis) Olonova, *P. mustangensis* Rajbhandari
Contributor – Marina V. Olonova

Distribution and habitat
*Poa arnoldii* was described from Nepal, and up to 2006 it was known only from Himalaya (Rajbhandari 1991). *Poa arnoldii* was described from Nepal, and up to 2006 it was recorded in Chinese provinces Xizang (Tibet), Gansu and Qinghai (Zhu et al. 2006). The species grows at elevations between (1750–) 2100 and 3700 m, on the open moist gravelly slopes and screes, edges of moraines and rocks in periglacial zone.

*Poa arnoldii* of the Poaceae

Examined specimens (new record)

RUSSIA: Republic Tyva, Bai-Taiginskiy region, left source of Tikhaya river, 19–22 Jul 1975, A.S. Revushkin, T.V. Zhigaltsova, A.G. Fein. V.V. Khlopov (TK!); Stanoyvoye High Plateau, Udokan ridge, head of the left tributary of Jelo river, on the moist sand in the bottom of kar, altitude 2020 m, 19 Aug 1966. N. Vodopjanova (TK!).

*Silene bucharica* Popov (Caryophyllaceae)
Contributor – Orzimat T. Turginov

Distribution and habitat
*Silene bucharica* has been recorded at three localities from Katunskiy ridge in Altai Mts. (Altai Republic), and two from Eastern Sayan (Revjakina 1996). One gathering is known from Xinjiang province in China (Zhu et al. 2006). The species grows at elevations between (1750–) 2100 and 3700 m, on the open moist gravelly slopes and screes, edges of moraines and rocks in periglacial zone.

This species belongs to the southern Siberian aggregate *Poa smirnovii* Roshev., which comprises three related species: *P. polozhiae*, *P. smirnovii* and *P. mariae* Reverd. *Poa polozhiae* forms a loose tuft, like *P. smirnovii* s.str., but differs from both species of aggregate in proliferate (viviparous) spikelets. Revjakina (1996) indicated the lemmas, glabrous between veins, as the main discriminate character of this species, but this character is not reliable and distinctly varies within populations of the most related species. Nevertheless, lemmas of *P. polozhiae* seem to be glabrous between veins more frequently than is observed in *P. smirnovii* and *P. mariae*. Hence, the majority of examined specimens, which were treated as *P. smirnovii* f. *vivipara* Malyshev. should be recognized as *P. polozhiae* as well.

Examined specimens (new records)
CHINA: Xinjiang province, S slope of Tian-Shan mountains, alpine vegetation on the rocky slope, 43°05’ N, 86°49’ E, altitude 3652 m, 24 Aug 2009. M. Olonova, S.M. Duán 09-177 (TK!); Xinjiang province, northern slope of Tian-Shan mountains, source of Urumqi river, near upper post of Tian-Shan glaciological station, moist scree in periglacial area, altitude 3600 m, 10 Jun 2013, M. Olonova, N. Olonov (TK!).

*Poa polozhiae* Revjakina (Poaceae)
*Poa smirnovii* f. *vivipara* Malyshev., *P. smirnovii* subsp. *polozhiae* (Revjakina) Olonova
Contributor – Marina V. Olonova

Examined specimens (new records)

RUSSIA: Republic Tyva, Bai-Taiginskiy region, left source of Tikhaya river, 19–22 Jul 1975, A.S. Revushkin, T.V. Zhigaltsova, A.G. Fein. V.V. Khlopov (TK!); Stanoyvoye High Plateau, Udokan ridge, head of the left tributary of Jelo river, on the moist sand in the bottom of kar, altitude 2020 m, 19 Aug 1966. N. Vodopjanova (TK!).

*Silene bucharica* Popov (Caryophyllaceae)
Contributor – Orzimat T. Turginov

Examined specimens (new records)

RUSSIA: Republic Tyva, Bai-Taiginskiy region, left source of Tikhaya river, 19–22 Jul 1975, A.S. Revushkin, T.V. Zhigaltsova, A.G. Fein. V.V. Khlopov (TK!); Stanoyvoye High Plateau, Udokan ridge, head of the left tributary of Jelo river, on the moist sand in the bottom of kar, altitude 2020 m, 19 Aug 1966. N. Vodopjanova (TK!).
The genus Silene L. is represented by 29 species in the flora of Uzbekistan (Vvedensky 1953). Silene bucharica belongs to the section Sclerocalycinae Boiss and the group of species with densely white-tomentose calyx teeth. In the Hissar part of Tajikistan this is the only species with such pubescent calyx teeth. Another species, such as S. obtusidentata B. Fedtsch, an endemic to Mogoltau Mts (southwestern Tian-Shan; Ovchinnikov 1968) and S. kudrjaschevi Schischk. an endemic to the southwest Hissar Mts (Uzbekistan, Kashkadarya, Aktag mountains, Kara-dzhumalyak) differs from S. bucharica in glabrous cups and smaller carpophores.

Examined specimens (new records)
UZBEKISTAN: Pamir Alai Mts, southwestern Hissar range, Baisun tau, basin of Machaydarya, near Machay village, 8 May 2013, M.T. Turginov; Pamir Alai Mts, southwestern Hissar range, Baisun tau, basin of Machaydarya, near Machay village, 8 May 2013, O.T. Turginov (TASH!); Pamir Alai Mts, southwestern Hissar range, Dekhkanabad district, Aktau, 27 Apr 2013, K.Sh. Tojibaev (TASH!); Pamir Alai Mts, Hissar range, basin of Tupalang, near Zevar village, 17 Apr 1987, F.O. Khassanov, I.I. Maltsev, Yuldashev (TASH!).

Scrophularia pamiro-alaica Gorschk.
(Scrophulariaceae)
Contributor – Orzimat T. Turginov

Distribution and habitat
To date Scrophularia pamiro-alaica has been known only from Tajikistan (Vinogradova and Schermatov 1987). Recently, specimens of the taxon were collected from western Hissar range, being at the same time a new native species in the flora of Uzbekistan.

Examined specimens (new records)
UZBEKISTAN: Pamir Alai Mts, southwestern Hissar range, Baisun tau, Hodja Gurgur-ata mountain, 38°42’93” N, 67°28’28” E; altitude 2775 m; 20 Jun 2013, O.T. Turginov (TASH!).

Stellaria zolotukhini A.L. Ebel (Caryophyllaceae)
Stellaria glandulifera N. Zolot., non Klotzsch; Stellaria pseudoglandulifera N.V. Vlassova, nom. superfl. Contributor – Aleksandr L. Ebel

Distribution and habitat
Stellaria zolotukhini is a species considered to be an endemic to South Siberia. It occurs in Russian Altay, Tyva, Khakassia, and the most southern part of Krasnoyarsk Province (Vlassova 1993). The species has not been recorded from Kazakhstan (Abdulina 1999) and Mongolia (Gubanov 1996). It is a mountain species growing in light forests and their edges, in shrubs, on dry meadows, dry slopes, stony places, river banks or pebbles. In general, it prefers more open and drier habitat than related forest species such as Stellaria glandulifera N.V. Vlassova, although other authors (e.g. Tzvelev 2000; Peshkova 2005; Belkin 2011) classify it at species rank. This taxon differs from S. bungeana by character of trichome covering (plant densely covered with only glandular trichomes without long simple ones), leaf shape (all blades rather short, and blades of lower leaves having peduncles are cordate at base), and smaller flowers.

According to Tzvelev (2000) the taxon belong to the genus Hylebia (Koch) Fourn., which includes four ‘broad-leaved’ species of Stellaria s. lato. The rank of Hylebia – proper genus or subgenus of Stellaria L. – is a subject of discussion. According to recent molecular data (Greenberg and Donoghue 2011), S. nemorum L. [=Hylebia nemorum (L.) Fourn.] and S. bungeana [=H. bungeana (Fenzl.) Tzvel.] are very close to other “broad-leaved” species of Caryophyllaceae from different
genera, namely to *S. media* (L.) Vill. [=*Alside media* L.] and *Myosoton aquaticum* (L.) Moench. On the other hand, *S. holostea* L., a type species of *Stellaria*, in accordance with the same molecular data, is characterized by a quite isolated position among other “narrow-leaved” species of *Stellaria* (Greenberg and Donoghue 2011). Therefore it is preferable to consider the genus *Stellaria* in a traditional wide sense.

Examed specimens (new records)

MONGOLIA: NW Mongolia, Ulankom district, valley of Kharkhira river, bank of irrigation canal, 26 Jun 1916, *M. Neiburg* (TK!); northwest Mongolia, Khan-Koko range, valley of Sangin river, larch forest, 6–8 Jun 1917, *A. Burdukov* (TK!).

**Stipa gracilis** Roshev. (Poaceae)

**Contributors** – Marcin Nobis, Polina D. Gudkova, Arkadiusz Nowak

**Distribution and habitat**

*Stipa gracilis* is regarded as a Middle Asian endemic species, known to date only from Tian-Shan Mts in Kazakhstan and Kyrgyzstan as well as from Alai Mts in Kyrgyzstan and Pamir Mts in Tajikistan (Nobis and Nowak 2011a; Nobis, Nowak, and Nobis 2013). It grows in rocky crevices and ledges on steep rocky walls especially within the rocky gorges of river valleys (*Campanuletalia incanaescens* order, Noawk A. et al. 2014), within an altitudinal range between 700 and 2900 m. *Stipa gracilis* is a new native species to the flora of China, not listed by Wu and Phillips (2006). It was found in western China, near the Kyrgyzstan borders. A few new localities of this rare species recently found in Kyrgyzstan was also listed below.

**Taxonomic notes**

The genus *Stipa* comprises c.70 species in Middle Asia (Tzvelev 1976; Nobis 2010, 2012, 2013, 2014). *Stipa macroglossa* subsp. *kazachstanica* is most similar to *S. macroglossa* s. lato in FRU, MW, LE, MHU, KRA herbaria as well as during field research. The species was found in many places in the Tian-Shan Mts, in high mountain steppes at elevations between 1700 and 2800 m. Populations of the species differ in size, from several tufts to hundreds of tufts per locality. Additional localities of the taxon from China and Kazakhstan, found during herbarium revision were also listed below.

**Examined specimens (new records)**

CHINA: South Tian-Shan Mts, 10 km southeast of Bai-kurt, by the road, between Turygat and Kashgar, 21 Jun 1959, *A.A. Yunatov, I.F. Yuan* (MHA!); KYRGYZSTAN: Alai Mts, south of Kodzo Aryk, on calcareous rocks in Abshir Sai River valley, 40°09’02” N, 72°21’49” E, 7 Jun 2013, *M. Nobis, A. Nowak* (KRA!); Tian-Shan Mts, south of Dzhangi-Dzhol, on calcareous rocks in unnamed stream (right tributary of Karasu River valley), 41°30’ N, 72°11’ E, 8 Jun 2013, *M. Nobis, A. Nowak* (KRA!).

**Stipa macroglossa** P.A. Smirn. subsp. *kazachstanica* (Kotuch.) M. Nobis (Poaceae)

**Contributor** – Marcin Nobis

**Distribution and habitat**

*Stipa macroglossa* subsp. *kazachstanica* is an endemic taxon to the Central Asia. To date it is known from Kazakhstan, Mongolia and China (Kotukhov 1994; Nobis 2013; Nobis, Klichowska, Nowak et al. 2014; Nobis, Nowak, Nobis, Paszko et al. 2014). It is a new, native species to the flora of Kyrgyzstan, which was found during revision of herbarium materials of *S. macroglossa* s. lato in FRU, MW, LE, MHU, KRA herbaria as well as during field research. The species was found in many places in the Tian-Shan Mts, in high mountain steppes at elevations between 1700 and 2800 m. Populations of the species differ in size, from several tufts to hundreds of tufts per locality. Additional localities of the taxon from China and Kazakhstan, found during herbarium revision were also listed below.

**Taxonomic notes**

The genus *Stipa* comprises c.70 species in Middle Asia (Tzvelev 1976; Nobis 2010, 2012, 2013, 2014). *Stipa macroglossa* subsp. *kazachstanica* is similar to *S. macroglossa* subsp. *macroglossa* (Nobis 2013; Nobis, Klichowska, Nowak et al. 2014; Nobis, Nowak, Nobis, Paszko et al. 2014). However, *S. macroglossa* subsp. *kazachstanica* differs from the latter taxon by having somewhat shorter antecium, slightly shorter seta, and adaxial surface of blades of the vegetative shoots, which are covered by very short hairs up to 0.1 mm long only vs. covered by a mixture of short and long hairs 0.15–0.35 mm long. *Stipa macroglossa* subsp. *kazachstanica* is also similar to *S. turkestanica* group, especially *S. turkestanica* Hack. subsp. *trichoides* (P.A. Smirn.) Tzvel. However, it is easily distinguishable by longer setae which are 7–11 vs. 3–4 times longer than column (the lower part of the awn), and relatively longer ligules of the vegetative shoots (up to 10 vs. up to 3.7 mm long). *Stipa macroglossa* subsp. *kazachstanica* is also somewhat similar to *S. kirghisorum*; however, in comparison to that species, it differs e.g. by having much longer ligules of the vegetative shoots (up to 4.5 vs. up to 2.5 mm long) and much shorter column (the lower segment of the awn, 15–35 vs. 40–70 mm long).

**Examined specimens (new records)**

KYRGYZSTAN: Central Tian-Shan, near Issyk-Kul Lake, Tschoktal, altitude 2000 m, 14 Jun 1931, *P. Smirnow*
New records for European countries

**Oenothera deflexa** Gates (Onagraceae)

**Contributors** – Marcin Nobis, Agnieszka Nobis

**Distribution and habitat**

The taxon probably originated from North America. In Europe it occurs in several countries, like Sweden, Germany, Austria, Belgium, the Netherlands and Switzerland (Rostański et al. 2010). In Poland **Oenothera deflexa** was found for the first time in 2004 (specimens were determined by Prof. Krzysztof Rostański), and the population is still present at the locality. Abundance of the populations in particular years vary from several to a dozen specimens. **Oenothera deflexa** is another new, alien species recently reported from Poland, established in anthropogenic habitats (e.g. Nobis, Nobis, and Nowak 2006; Nobis, Nobis, and Kozak 2009; Nobis, Nowak, Nobis, Paszko et al. 2014).

**Taxonomic notes**

The genus **Oenothera** L. is represented by over 30 species and established hybrids in the flora of Poland (Rostański et al. 2010). Of these, only **O. ammophila** Focke, **O. biennis** L. and **O. rubricaulis** Kleb. are regarded as native taxa in Poland; all remaining species are treated as alien (Rostański and Tokarska-Guzik 1998). The taxon is somewhat similar to **O. jueterbogensis** Hudziok, but it differs mainly in colour and shape of leaves (Rostański et al. 2010). Evening primroses can easily hybridize between one another. As a result, a new taxon arose through hybridization of two native species [e.g. **O. casimiri** Rostański (=**O. biennis** × **O. rubricaulis**)], of an alien species with native one [e.g. **O. fallax** Renner (=**O. biennis** × **O. glazoviana** Michelii), **O. braunii** Doell (=**O. biennis** × **O. parviflora** L.), or **O. wienii** Renner (=**O. rubricaulis** × **O. depressa** Greene)] and, what is more interesting, of two alien species, which probably do not contact one another in their natural distribution range [e.g. **O. coronifera** Renner (=**O. glazoviana** × **O. parviflora**) or **O. dravertii** Renner (=**O. depressa** × **O. suevoleans** Desf. ex Pers.)]. Rostański et al. 2010]. That is why occurrence of a new species in given territory is worthy of note.

**Examined specimens (new records)**

POLAND: Budki Skaryszewskie, c.200 m east of the main road and fuel station, small sand pit and dry sandy grasslands, 20 Jul 2004, **M. Nobis** (KRA!).

**Orobanche rumseiana** A. Pujadas & P. Fraga (Orobanchaceae)

**Contributors** – Renata Piwowarczyk, Antonio J. Pujadas-Salvá

**Distribution and habitat**

To date, **Orobanche rumseiana** has only been recorded from Mallorca and Menorca, Balearic Islands (Spain). Then, it was regarded as a stenochorous endemic of the coastal ecosystems, on rocky areas with shrubby vegetation, and parasitic on *Rosmarinus officinalis* L. (Pujadas-Salvá, Fraga, and Argumímbau 2012). **Orobanche rumseiana** is a new native species to the flora of Italy. The species was found in the eastern part of Sardinia, in the province of Nuoro, near Dorgali, northeastern edge of the Gennargentu National Park. The species grows on rocky roadsides and the edge of the parking place, 1.2 km from the sea-coast. The population consists of a dozen individuals.
Taxonomic notes

Morphological traits of *O. rumseiana*, and the fact that it is a parasite of *Rosmarinus officinalis*, relate it to *O. rosmarina* Beck, *O. mariana* A. Pujadas (Pujadas-Salvà 2007) and *O. pseudorosmarina* A. Pujadas & Muñoz Garm. (Pujadas-Salvà and Muñoz Garmendia 2010). Morphological characters distinguishing *O. rumseiana* from other related taxa are presented and discussed by Pujadas-Salvà, Fraga and Arguimbau (2012).

The Sardinian specimens of *O. rumseiana* slightly differ from the typical specimens of the taxon, e.g. by having stamen filaments glabrous at the base vs. hairy in the type; ovary with sparse glandular hair at the apex vs. glabrous in the type; style with sparse glandular hairs (hairs c.0.1 mm) vs. glabrous. From these reasons, we decided to describe these specimens as a new variety.

**Orobanche rumseiana var. sarda** R. Piwowarczyk & A. Pujadas var. nov.

*Diagnosis.* The taxon differs from the type by its staminal filaments glabrous at the base, ovary apex and style are sparse glandular hairy.
species was found in Skawina near Kraków (southern Poland), where it grows in the ditch by the road (on the edge of a wet meadow).

**Taxonomic notes**

Only two species of genus *Scirpus* (*S. sylvaticus* L. and *S. radicans* Schkuhr) are recorded in Poland. However, having clearly different inflorescence, they could not be confused with *S. georgianus*. *Scirpus sylvaticus* has spikelets in fascicles of 2–5(–9) and *S. radicans* has them usually solitary (DeFilippis 1980). In *S. georgianus* spikelets are organized in dense clusters of 4–35 (largest cluster with 16 or more) (Whittemore and Schuyler 2002). *Scirpus georgianus* could be confused with other closely related American taxa such as *S. atrovirens* Willd. and *S. hattorianus* Makino. Of these two, only *S. atrovirens* was reported from Europe, e.g. from northeastern France (DeFilippis 1980) and northwestern Italy (Pignatti 1982; Conti et al. 2005). Despite large morphological similarities, the above-mentioned species could be identified by several features. In *S. georgianus* perianth bristles are absent or rudimentary, while *S. atrovirens* have five or six persistent perianth bristles, 0.9–1.2 times as long as the achene and *S. hattorianus* have bristles 0.6–0.8 times as long as achene, superficially intermediate between the two aforementioned species. Spikelets of *S. atrovirens* are also slightly longer (2–5(–8) mm) than in *S. georgianus* (2–4 mm) and *S. hattorianus* (2–3.5 mm). Scales in *S. georgianus* are elliptic, 1–1.8 mm, in *S. atrovirens* elliptic or broadly elliptic, 1.2–2.1 mm and in *S. hattorianus* also elliptic or broadly elliptic, 1–1.4(–2) mm. Furthermore *S. georgianus* and *S. atrovirens* differs from *S. hattorianus* by having less black pigmentation in the scales, so that the heads appear brownish or dark brownish but never blackish.

**Examined specimens (new records)**

POLAND: Małopolska prov., near Przemyślowsa Street in northeastern part of Skawina town (near Kraków), in the wet ditch in the meadows (Molinietalia), 8 September 2012, A. Nobis, M. Nobis (KRA!).

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