Contribution to the flora of Asian and European countries: new national and regional vascular plant records, 4

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Abstract: The paper presents new records for 20 vascular plant species from 13 Eurasian countries. Four taxa (Calamagrostis sichuanensis, Klaeea dissecta, Ptilagrostis milleri and Stipa klimesii) are reported from China, four (Aconogonon valerii, Carex siderosticta, Poa tanfiljewii and Potamogeton × subobtusus) from Russia, three (Amorpha fruticosa, Carduus acanthoides and Plantago minuta) from Tajikistan, two (Achillea sergievskiana and Delphinium barlykense) from Kazakhstan, one (Calamagrostis effusiflora) from Bhutan and India, one (Campanula volgensis) from Mongolia, one (Orobanche coerulescens) from Georgia, two (Dysphania geoffreyi and Ptilagrostis milleri) from Nepal, one (Stipa × alaica) from Afghanistan, one (Stipa × manrakica) from Kyrgyzstan, one (Ranunculus × gluecki) from Poland and one (Sporobolus cryptandrus) from Italy. Four of the taxa presented (Amorpha fruticosa, Carduus acanthoides, Carex siderosticta and Sporobolus cryptandrus) are regarded as alien to the studied areas, whereas the remaining 16 are native elements to 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 taxa occurring in a given country, as well as a list of recorded localities (often far from the previously known areas) are presented. Based on the spikelet morphology, we have proposed in Ptilagrostis a new section Barksowthia. M. Nobis, A. Nobis & A. Nowak, which comprises two species Ptilagrostis yadogensis and Ptilagrostis milleri, with distinctly unequal glumes, lemmas and paleas.

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

Introduction

The paper is the continuation of the previous works dedicated to new national and regional vascular plant records (Nobis, Ebel et al. 2014; Nobis, Nowak, Nobis et al. 2014; Nobis, Nowak et al. 2015). Although, it might seem that the distribution of vascular plants in Eurasia is sufficiently recognized, there are still many regions where new plant species are encountered. During field exploration across the vast area of European and Asian countries as well as during taxonomic revisions of herbaria materials of different groups of vascular plants, the authors found some species that are new to the floras of particular countries or to significant regions (provinces or republics). The aim of this paper is to report new records for 20 vascular plant species from 13 Eurasian countries, namely Afghanistan, Bhutan, China, Georgia, India, Italy, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Poland, Russia and Tajikistan. Four of the taxa presented here are regarded as alien to the studied areas, whereas the other 16 are native elements to the flora of the countries.

New records for Asian countries

Achillea sergievskiana Schaulo & Schmakov (Asteraceae)

Contributors – Andrey N. Kupriyanov, Yury A. Kotukhov, Aleksandr L. Ebel
Distribution and habitat

Achillea sergievskiana occurs mainly in the subalpine and alpine belts of Altai and West Sayan Mountains. It grows in alpine mats and meadows, on riverbanks and moraines. Until now, it was reported only from Russia and Mongolia (Shaulo and Shmakov 2002). Recently Achillea sergievskiana was found in the Karkhanaiai part of the Altai Mountains and in Dzungarian Alatau. It is a new native species for the flora of the country.

Taxonomic notes

Achillea sergievskiana was originally identified as Achillea millefolium L. var. setacea (Waldst. & Kit.) W. D. Koch f. alpina Kryl. Later, Sergievskaya (1946) recognized this taxon as Achillea asiatica var. alpina Serg. Because the name A. alpina L. was used for east Asian–north American species, Shaulo and Shmakov (2002) proposed a new name A. sergievskiana and treated it as a legitimate species.

Achillea sergievskiana is primarily a high-mountain species close to low-mountain meadow and steppe species A. asiatica Serg. and differs from the latter by narrower leaves densely covered by trichomes, bright pink ray florets, blackish-brown (not light brown) margins of phyllaries, as well as by shorter stems (usually up to 20 cm only).

Examined specimens (new records)

KAZAKHSTAN: [EAST-KAZAKHSTAN REGION] Southern Altai, riverhead of Bukhtarma, dwarf birch tundra, altitude (alt.) 2400 m, 18 July 1990, Yu. Kotukhov (KUZ); Almaty Region, Dzungarian Alatau, riverhead of Sarymsakty, alpine meadow, alt. 2600 m, 25 August 2014. A. Kupriyanov (KUZ - acronyms according to Thiers 2015).

Aconogonon valerii (A. Skvorts.) Sojak

Polygonaceae

Genus Aconogonon (Meissn.) Reichenb. (=Polygonum L. sect. Aconogonon Meissn.) comprises 20 to 35 species of perennial herbaceous plants distributed mainly in Asia; only a few species are native to Europe and North America (e.g. Tzvelev 1996; Hinds and Freeman 2005). Aconogonon valerii is similar to Eurasian species Aconogonon alpinum (All.) Schur, but differs from the latter by dense and long (1–3 mm) trichomes on stem internodes and sheaths (at least on the lower ones), and also by yellowish-white or greenish-white flowers. In contrast, A. alpinum has glabrous internodes (sometimes the lower ones with short trichomes c. 0.5 mm) and white flowers. Additionally, the leaves of A. valerii have very short petioles (< 0.5 mm long) and blades with plain margins, whereas leaf petioles of A. alpinum are 0.5–1.5 mm long and blade margins are more or less undulate. Individuals of A. valerii are often tall (up to 1.5 m) and branched. Hence, they can be confused with another Asiatic species, Aconogonon divaricatum (L.) Nakai ex Mori. Nevertheless, the latter taxon has glabrous stem, narrower leaf blades, and longer fruits (1.5–2 times as long as perianth).

Examined specimens (new records)

RUSSIA: [REPUBLIC OF BURYATIA], Steppe along Kyachtsky tract, Verkhneudinsk, 5 June 1913, G. Poplavskaya 493 (LE); [TRANS-BAIKAL REGION] Basin of Onon river., Adun-chelon Mts, Zavodskaya deep valley, among stones, 31 May 1911, V. Smirnov (LE); [TRANS-BAIKAL REGION] Basin of Onon river, Adun-chelon Mts, Beylesutai deep valley, on sites with steppe vegetation, 2 June 1911, V. Smirnov (LE); [CHITINSK REGION] Nerchinski-Zavodskoj district, near Ivanovsk settl., stepped meadows on gentle slopes, 31 July 1934, L. Sergievskaya (TK, as Polygonum undulatum); [TRANSBAICALIA] Chitinsk region, Chitinskij district, Chita River Valley, near Burgen village, birch forest, 31 July 1938, L. Sergievskaya (TK, as Polygonum divaricatum); [CHITINSK REGION] Gaimiro-Zavodskoj district, near Aktaguchi village, 18 June 1951, L. Sergievskaya (TK, as Polygonum angustifolium); [CHITINSK REGION] Nerchinskij zavod, 27 June 1953, G. Peschkova, B. Khaptogaev (NSK, as Polygonum alpinum).

Distribution and habitat

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Recently Achillea sergievskiana was found in the Karkhanai part of the Altai Mountains and in Dzungarian Alatau. It is a new native species for the flora of the country.
**Amorpha fruticosa L. (Fabaceae)**

*Contributors – Arkadiusz Nowak, Marcin Nobis*

**Distribution and habitat**

*Amorpha fruticosa* is a species native to North America. However, as an ornamental plant it has been cultivated worldwide and is regarded as a noxious weed in Australia, southern Europe, southern and eastern Asia, Africa and Canada (GRIN 2015; Goncharov 1978; Australia, southern Europe, southern and eastern Asia, worldwide and is regarded as a noxious weed in (Weber 2003; eFlora 2015). It is a plant with relatively narrow ecological amplitude. Within both its native and its secondary range, it prefers river banks or island habitats and grows on river gravel deposits forming a dense thicket or contributing to riverside shrubby or woody vegetation (Weber 2003).

In the former Soviet Union the species was reported generally from the Caucasus and European and Middle Asian parts of the country. The species has been introduced as a decorative plant (Komarov and Shishkin 1945). *Amorpha fruticosa* is another established new species found recently in Tajikistan (Nobis and Nowak 2011; Nobis 2011; Nobis, Nowak, and Nobis 2013; Nowak et al. 2013; Nobis, Ebel et al. 2014; Nobis, Nowak, Nobis et al. 2014). However, it was noted earlier in this country as an alien species cultivated in gardens (Goncharov 1978). The population of the species occurs on gravel deposits of the Kafirmignon River near to Chimtpeppa village (approx. 15 km from Dushanbe). The population consists of dozens of individuals growing in shrubby vegetation with domination of Tamarix ramosissima Ledeb. accompanied by Imperata cylindrica (L.) Beauv., Calamagrostis pseudophragmites (Hall. f.) Koel., Salix capussii Franch. and Glycyrrhiza glabra L.

Examined specimens (new record)

**TAJIKISTAN:** Gravel-bed of Kafirmignon River, to the SW from Chimtpeppa, (Southtajikistanian Region), 38°27′04.5′′ N, 68°42′30.3″E, alt. 700 m, 1 July 2014, A. Nowak (OPUN).

**Calamagrostis effusiflora (Rendle) P.C. Kuo & S.L. Lu ex J.L. Yang (Poaceae)**

*Contributor – Beata Paszko*

**Distribution and habitat**

*Calamagrostis effusiflora* was described by Rendle (in Forbes and Hemsley 1904, 392) from Sichuan (China) based on Rockhill’s collection housed at Kew herbarium. Previously, this species was known only from China, where it was recorded in Gansu, Guizhou, Henan, Ningxia, Shaanxi, Sichuan, Yunnan and Zhejiang (Lu, Chen, and Phillips 2006). During revision of Himalayan collections of the genus at BM and E, *C. effusiflora* was noted for the first time for western Bhutan (in the vicinity of Chapcha in the botanical district of Thimpu; see the map on inside of covers of the *Flora of Bhutan*, Noltie 2000) and western Arunachal Pradesh (in the vicinity of Senge Dzong in the Se La Range), northeastern India. Both collections were previously misidentified as *Calamagrostis nagarum* (Bor) G. Singh (Noltie 2000) or *Calamagrostis elatior* (Griseb.) A. Camus. *Calamagrostis effusiflora* grows in China in wet places, especially along riverbanks at elevations of 600–2900 m (Lu, Chen, and Phillips 2006). In Bhutan as well as in northeast India it was collected at medium elevations (Bhutan – 2400 m, Arunachal Pradesh – between 2400 and 2750 m). In the vicinity of Senge Dzong (northeast India) it grows in open forests with Quercus griffithii Hook.f. & Thomson ex Miq., Pinus wallichiana A.B. Jacks., and Rhododendron arboreum Sm. (Kingdon-Ward 1936).

**Taxonomic notes**

*Calamagrostis Adans. (including Deyeuxia Clarion ex Beauv.), of which the species are distributed globally, is polyphyletic. Sequence data from the nuclear ribosomal regions (internal and external transcribed spacer) revealed that Eurasian species of *Deyeuxia* and *Calamagrostis* are closely related and are part of the Agrostidinae lineage. Therefore, they should be treated as synonyms (Saarelä et al. 2010, 2014; J. Saarelä, unpubl.). In the present work a more broadly defined concept of the genus *Calamagrostis* is applied, in accordance with the molecular evidence.

*Calamagrostis effusiflora* is closely related to *Calamagrostis arundinacea* (L.) Roth (= D. pyramidalis (Host) Veldkamp), a highly polymorphic complex in China (Lu, Chen, and Phillips 2006). Generally, *C. effusiflora* is characterized by smaller spikelets and large, laxy branching, spreading panicles. *Calamagrostis effusiflora* differs from *C. arundinacea* in having longer panicles (15–47 cm versus 10–28 cm long), longer lowest panicle branches (7–18 cm versus 3–6 cm long), lemmas equal or subequal to lower glumes (0.85–1) versus lemmas considerably shorter than lower glumes (0.65–0.85), shorter lower glumes (2.6–4.8 mm versus 4.3–7.2 mm long), shorter lemmas (1.7–4.2 mm versus 3.5–5.7 mm long), shorter paleas (2.1–3.8 mm versus 2.8–5.2 mm long), shorter lemma awns (2.8–6.8 mm versus 5.3–10 mm long) and shorter anthers (1.3–2.3 mm versus 1.9–3.5 mm long). Both species are similar in the position of the awn on the lemma back and have relatively short leaf ligules up to 6 mm long.

Examined specimens (new records)

**BHUTAN:** [THIMPU DISTR.; POLITICAL DISTR. OF CHUKHA], 4 km north of Chapcha on the Thimpu road, damp, shady roadside cliffs, (27°12′N, 89°31′E; H.J. Noltie, Royal Botanic Garden Edinburgh, pers. comm. from...
Noltie’s field book), alt. 2400 m, 24 September 1998, Noltie, Pradhan, Sherub & Wangdi 315 (E00132511).

INDIA: [ARUNACHAL PRADESH], Assam, [Se La Range], Senge Dzong, a tall clump grass in thickets on the hillside, alt. 8000–9000 ft [2438–2743 m], 27 August 1938, F. Kingdon-Ward 14168 (BM, E).

*Calamagrostis sichuanensis* J.L. Yang (Poaceae)

*Deyeuxia sichuanensis* (J.L. Yang) S.M. Phillips & W.L. Chen

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

**Distribution and habitat**

*Calamagrostis sichuanensis* was collected and described by Yang (1983) based on a collection from Wenchuan County in Central Sichuan, China (holotype: SAU, isotype: CDBI0152884!). This species is only found in China, where it was recorded from Sichuan and Gansu provinces (Lu, Chen, and Phillips 2006). An on-going revision of *Calamagrostis* (including *Deyeuxia*) for the Flora of Pan-Himalayas showed that *C. sichuanensis* is confined to southwestern China. We have not found any specimens of this species from Gansu, leaving its occurrence there in doubt. *Calamagrostis sichuanensis* occurs in Sichuan, in its western (Dawu, Sertar) and northwestern parts (Barkam, Hongyuan, Songpan, Wenchuan, Xiaojia and Zamtang). Specimens have been found that document its first record in eastern Xizang, where it is recorded from the Markam County. It was collected on the steep canyon slopes of Ningjing Shan (Markam Shan). The first collections of *C. sichuanensis* were made in Sichuan by the Swedish botanist Karl August Harald (Harry) Smith (Hermer 1988). He collected it in two Sichuan counties, in 1922 in the Songpan County (Chun-che, *H. Smith* 4123, PE, S, UPS) and in 1934 in the Dawu County (between Ngata and Taofu (Dawu), *H. Smith* 12013, PE, S). Thirteen known localities of *C. sichuanensis* are in areas of the Hengduan Mountains of the Eastern Himalayas. The species seems to be endemic to the Hengduan Mountain Region. It has a similar distribution pattern to *Calamagrostis yanyuanensis* J.L. Yang (Nobis, Ebel, et al. 2014).

*Calamagrostis sichuanensis* grows in margins of forests (*Abies* sp., *Larix* sp.) and *Rhododendron* thickets, on rocky slopes, and riversides at elevations of 2800–3800 m (Lu, Chen, and Phillips 2006). In eastern Xizang it was collected at about 3500 m on limestone on the lower canyon slopes growing with *Quercus monimotricha* Hand.-Mazz., *Quercus aquifolioides* Rehder & E.H.Wilson and *Lonicera tanguatica* Maxim.

**Taxonomic notes**

*Calamagrostis sichuanensis* is a distinct species characterized by callus hairs as long as the lemma;lemmas awned from near middle; awns straight, c. 1.2 mm long and not exserted from spikelets; and anthers c. 1 mm long (Yang 1983; Lu, Chen, and Phillips 2006).

**Examined specimens (new record)**

CHINA: [XIZANG], Markam Co., Ningjing Shan, Markham range, between Mekong and Yangtze Rivers grainages, east of Markam (Markham) c. 20 km toward Batang (Sichuan), c. 740 km east of Lhasa, alt. 3500 m, 29°45′N, 98°50′E, limestone, steep south exp., lower canyon slopes, with *Quercus monimotricha*, *Quercus aquifolioides*, *Lonicera tanguatica*, *Betula*, *Ribes*, *Berberis*, *Rhododendron*, *Poa*, *Trikeraia*, *Melica*, *Calamagrostis*, 14 August 1997, R.J. Soreng, P.M. Peterson & H. Sun 5639 (PE, US).

*Campanula wolgensis* P.A. Smirn. (Campanulaceae)

*Campanula stevenii* subsp. *wolgensis* (P.A. Smirn.) Fed.

**Contributor** – Aleksandr L. Ebel

**Distribution and habitat**

The area of *Campanula wolgensis* extends from the Volga Hills to the Altai Mountains and the easternmost part of the northern Tien Shan Mountains (Smirnov 1947; Terekhova 1965; Lavrenko, Karamysheva, and Nikulina 1991). The species occurs in Russia (including the southeast of the European part of Russia, South Ural and the southern part of West Siberia) and in several regions of Kazakhstan (Krylov 1949; Fedorov 1957, 1978; Terekhova 1965). Its distribution is connected with the forest-steppe zone, mainly in the Zavolzhye-Kazakhstan steppe province (Lavrenko, Karamysheva, and Nikulina 1991), where it grows in steppes, steppe meadows and in birch forest outliers. In the eastern and southern part of its distribution area (from the Altai Mountains to Kungei Ala-Tau in north Tien-Shan), it usually grows in mountain steppes and in high-mountain low-herb steppe meadows, sometimes achieving rather high altitudes (e.g. up to 2000 m above sea level in Chuya river basin and on plateau Ukok in Russian Altai).

*Campanula wolgensis* is a new native species for Mongolia not recorded in this country before (Gubanov 1996; Urgamal et al. 2014).

**Taxonomic notes**

*Campanula wolgensis* belongs to a complex of related taxa sometimes integrated under the name *Campanula stevenii* M. Bieb. s.l. (e.g. Victorov 2002). At least two taxa of this complex, namely *Campanula stevenii* s.str. and *Campanula beauverdiana* Fomin (= *C. stevenii* subsp. *beauverdiana* (Fomin) Rech. f. & Schiman-Czeika) occur in the Caucasus and adjacent territories of South-West Asia (Fedorov 1957; Victorov 2002; Oganesian 2008). *Campanula stevenii* and *C. wolgensis* are similar to each other in having plain narrow calyx
lobes (usually not more than 1 mm wide) pointed at the top and glabrous throughout. Nevertheless, *C. wolgensis* differs significantly from *C. stevenii* by quite short and wide oboconic calyx tube while flowering (versus narrow cylindrical tube in *C. stevenii*). Another Eurasian species, *Campanula altaica* Ledeb. (=*C. stevenii* subsp. *altaica* (Ledeb.) Fed.), has on average larger flowers (2–3 cm long) than *C. wolgensis* (1–2 cm long) and concave, considerably wider sepals (2–3 mm wide at base) bent on their top and bearing there a tuft of short trichomes. There are also two Asian species belonging to this complex. *Campanula stevenii* has been reported from China (Hong, Lammers, and Klein 2011) and *Campanula alberti* Trautv. [= *C. stevenii* subsp. *alberti* (Trautv.) Victorov] an endemic to Tien-Shan, is a petrophilous plant with large rhizome forming many one-flowered shoots with very narrow leaves. Another taxon, mainly Siberian high-mountainous *Campanula turczaninovii* Fed. (= *C. stevenii* subsp. *turczaninovii* (Fed.) Victorov) is similar to *C. altaica* in the length of corolla, which however is narrowly funnel-shaped and not deeply divided into ciliolated lobes.

**Examined specimens (new records)**

MONGOLIA: [WEST MONGOLIA], Tsagan-gol river, mouth of Prokhodnaya river, meadows and dry moraines, 25 June 1905, V. Sapozhnikov (TK, as *Campanula stevenii*); West Mongolia, Upper Kobdo lake, riverhead of Sagistey, alpine meadow, 30 June 1906, V. Sapozhnikov (TK, as *Campanula stevenii*); Mongolian Altai, near lake Daingol, dry slopes, 12 July 1908, V. Sapozhnikov (TK, as *Campanula stevenii*); Mongolian Altai, Bayan-Ulgii aimak, north-west slope of the “Top 3321”, 48°43.5′N/88°05′E, 28 July 2001, R.V. Kamelin, A.I. Shmakov, V.I. Dorofeev et al. (ALTB, as *Campanula altaica*).

**Carduus acanthoides** L. (Asteraceae)

**Contributors** – Marcin Nobis, Arkadiusz Nowak

**Distribution and habitat**

The species is widespread in southern Europe and in Asia Minor. In the territory of the former USSR it occurs from the European part and the Caucasus to Western Siberia (Tamanshyan 1963). As an alien plant, it is noted also in northwestern Russia (Tzvelev 2000), Perm Territory (Ovesnov 2007), Chelyabinsk Region (Kilikov 2010), Far East Russia (Barkalov 1992), China (Shi and Greuter 2011), Kazakhstan (Ebel et al. 2015) and Kyrgyzstan (Lazkov et al. 2011).

*Carduus acanthoides* is a new, alien species to the flora of Tajikistan. It fairly frequently grows in anthropogenic habitats and is recorded mostly on roadides and footpaths in villages. The species is most frequent in Tajikistan, but was missed in the floristic studies to date.

**Taxonomic notes**

The genus *Carduus* comprised seven species in the flora of Tajikistan (Rasulova and Sharipova 1991). Three additional taxa listed in the flora of Tajikistan, namely *Carduus songoricus* Tamamsch., *Carduus coloratus* Tamamsch. and *Carduus schischkinii* Tamamsch are recently regarded as conspecific with *Carduus nutans* L. (Czerpanov 1995; Lazkov and Sultanova 2011).

*Carduus acanthoides* is light green or bluish green plant with concolorous and hardly cobwebby leaves, major leaves and wing with 3–6 mm-long pungent spines.

**Examined specimens (new record)**

TAJKISTAN: Gusar village, roadside, 39°27′37.48″N/67°50′53.88″E, alt. 1087 m, 2 June 2015, M. Nobis & A. Nowak (KRA); Garm, roadside, alt. 1355 m, 5 June 2015, obs. M. Nobis & A. Nowak.

**Carex siderosticta** Hance (Cyperaceae)

**Contributors** – Nikolay N. Lashchinskiy, Aleksandr L. Ebel

**Distribution and habitat**

*Carex siderosticta* is a species native to eastern Asia being under the influence of a monsoon climate, namely Japan, Korea, eastern China and the southern part of the Russian Far East (Egorova 1999; Dai et al. 2010). It grows under the canopy of needle-leaved and broad-leaved mixed forests and at forest margins in moist shady habitats. In the mid-1970s it was introduced as part of an exposition about the Russian Far East in seminatural forest situated on the territory that formally belonged to the Central Siberian Botanical Garden (Novosibirsk). Since that time, it has spread along small trails into the nearest forests. Recently there are at least four small populations at a distance of a few hundred metres from the initial spot as well as from each other. All clones were formed as a result of vegetative growth, but due to the small distance from each other, pollen exchange among populations cannot be excluded. Plants bloom and have fruits every year, but until now there is no evidence for seed germination.

*Carex siderosticta* is a new, alien species in the flora of Siberia. It could become a potentially invasive plant especially in the anthropogenically disturbed forests near big cities in South Siberia. Thanks to the shade tolerance and active spreading, the species could be very successful in its competition with the native forest species.

**Taxonomic notes**

*Carex siderosticta* belongs to the section *Siderostictae* Franch. ex Ohwi (subgenus *Carex*), and differs considerably from all Siberian species of the genus...
Delphinium barlykense Lomon. & Knan. (Ranunculaceae)
Contributors – Aleksandr L. Ebel, Yuri A. Kotukhov

Distribution and habitat
Delphinium barlykense was described from Tyva (Lomonosova and Khamminchun 1985). Later, the taxon was recorded in Mongolia (Gubanov 1996) and in the Russian Altai Mts (Ebel 2008). It is a mountain species growing on rocks, stony slopes as well as on stony and gravelly stream sides in mountains. Delphinium barlykense is a new native species for the flora of Kazakhstan. It was collected in the eastern part of the country, namely in the Dzungarian Altai and Altai, Saur-Tarbagatai Mountains. It probably occurs also in China (northwest Xingjian), in Chinese parts of the above-mentioned mountain systems.

Taxonomic notes
Delphinium barlykense belongs to the Delphinium cheilanthum complex. Delphinium cheilanthum is a widely distributed species in Asian Russia, Mongolia and in some Chinese provinces (Gubanov 1996; Wencai and Warnock 2001). The southern and western range limit of D. cheilanthum is still unclear. Specimens from Kazakhstan, previously identified as D. cheilanthum (Gamayunova 1961; Abdulina 1999), turned out to be Delphinium sajanense Yurtz. (Nobis, Ebel et al. 2014) and D. barlykense.

Delphinium barlykense is probably of hybrid origin (D. cheilanthum × D. sajanense). It has relatively high and glabrous stems as well as a lax inflorescence, which are typical of D. cheilanthum, whereas the presence of glandular trichomes on leaves, pedicels and sepals place it close to D. sajanense.

Examined specimens (new record)
 RUSSIA: Novosibirsk city, Sovetsky district, southeastern outskirts of the Akademgorodok, 54°50’16” N/83°07’58”E, alt. 202 m, pine–birch forest with well-developed herbaceous layer, 1 September 2014, N.N. Lashchinskii, A.L. Ebel (TK).

Dysphania barlykense Sukhor. (Chenopodiaceae–Amaranthaceae)
Contributors – Alexander P. Sukhorukov, Maria Kushunina

Distribution and habitat
Dysphania barlykense was described very recently (Sukhorukov, Zhang, and Kushunina 2015) and is known from east Himalaya and southwest Tibet (Bhutan and China). It grows in various plant communities in grassy hill slopes, river valleys or disturbed sites at altitudes of 2500–4200 m above sea level.

A new record for the flora of Nepal and Central Himalaya was revealed during revision of herbarium specimens at the BM.

Taxonomic notes
The genus Dysphania is the core genus of the tribe Dysphanieae (Pax) Pax with labile taxonomic position within Caryophyllaceae (Pax 1928) or Chenopodiaceae [as a part of Chenopodium sensu lato (e.g. Scott 1978)]. The results of both molecular and carpological investigations confirm its placement within the Chenopodiaceae–Amaranthaceae alliance (Kaderet et al. 2003; Sukhorukov and Zhang 2013). However, the representatives of the tribe Dysphanieae are different from other Chenopodioidae in fruit characters [subspherical fruits with very thin pericarp, thin seed-coat testa with no deposition of the tannin-like substances (Sukhorukov et al. 2015)].

The core genus Dysphania comprises about 50 taxa distributed worldwide. At present, the Himalayas and Tibet are considered as the territories with the greatest taxonomic diversity of the genus, and eight native species were reinstated or described in the last decade (Sukhorukov 2012; Sukhorukov et al., 2015). Dysphania members in Eurasia are especially difficult to identify because of the similarity of their morphology. Recently, the most taxonomically valuable traits were discovered to be: surface of perianth and pericarp, seed diameter.
Dysphania geoffreyi is distinguished from other Eurasian and African species of the genus by diverse indumentum types on the perianth (densely arranged simple and bi- or tri-furcate stout hairs, subsessile glands and scattered glandular hairs) and smallest seeds (of 0.5–0.6 mm across).

**Examined specimens (new record)**

NEPAL: Tegar (north of Mustang), 13,500 ft, 6 August 1954, Stainton, Sykes & Williams 2248 (BM).

*Klasea dissecta* (Ledeb.) L. Martins (Asteraceae)

*Serratula dissecta* Ledeb.; *Serratula angulata* Kar. & Kir.

**Contributors** – Aleksandr L. Ebel, Andrey N. Kupriyanov

**Distribution and habitat**

*Klasea dissecta* was described from Kazakhstan and is considered to be an endemic of this country (Terekhova 1966). It is widely distributed in central (Kazakh Upland) and eastern Kazakhstan (from Dzungarian Alatau in the south to Zaissan Depression and southern Altai in the north). It grows in deserts and dry steppes, usually on places with a high content of calcium or on egresses of tertiary clays (Terekhova 1966; Karamysheva and Rachkovskaya 1973). Recently it was described from northwest Xinjiang in China (Martins 2006; Zhu and Martins 2011) but no specific location was published.

As a result of the revision of herbarium materials belonging to *Jurinea* Cass. in TK, we discovered two sheets with *K. dissecta* collected by Sapozhnikov during his travels to West Mongolia and adjacent territories at the beginning of the twentieth century. Analysis of Sapozhnikov’s routes described by him in details (Sapozhnikov 1911) shows that these plants were probably restricted there to the regions adjacent to Kazakhstan.

**Taxonomic notes**

*Klasea* was traditionally treated as a section in *Serratula* L., but is now widely accepted at the generic level (Martins 2006). *Klasea dissecta* belongs to sect. *Klasea*, which comprises c. 10 species distributed in the temperate zone in Asia, southern Europe and northwestern Africa; however, most taxa within the genus occur in Asia (Martins 2006). *Klasea dissecta* differs from the other central Asian species of the section by having acuminate middle phyllaries with straight apical spine 2.5–5 mm long, and glandular leaf blade with minute sessile glands.

**Examined specimens (new records)**

CHINA: [XINJIANG], West Mongolia, Ulkun-Ulastic river, Mai-kapchagay, steppe, 16 July 1908, V. Sapozhnikov (TK, as Jurinea polyclonos); West Mongolia, western foot of Saur, steppe along Tasta-bulak river, 19 July 1905, V. Sapozhnikov (TK, as Jurinea polyclonos).

**Orobanche coerulescens** Stephan (Orobanchaceae)

**Contributors** – Renata Piwowarczyk, Dagmara Kwolek

**Distribution and habitat**

*Orobanche coerulescens* is an Eurasian species. Its range extends from eastern Germany through Eastern Europe and central Asia to Japan (Pusch 2009). Its main habitats are the *Artemisia* steppes, rocky grasslands and sandy areas of Eurasia. This broomrape parasiizes mainly *Artemisia* spp. The species is currently recognized as extinct in many stations at the western limit of its distribution range; however, some new stations of the species have also recently been found (Piwowarczyk and Przemyski 2009; Piwowarczyk 2012).

From the Caucasus, *Orobanche coerulescens* was known only from Dagestan (Novopokrovskij and Tzvelev 1958). Recently, a new locality of this species has been found in the Lesser Caucasus in Georgia. It is a new native taxon to the flora of this country.

**Taxonomic notes**

In the flora of Georgia there are 33 holoparasites of the family Orobanchaceae: 28 species of *Orobanche* s.l., two of *Cistanche* Hoffmannsegg & Link and three of *Dipelypaeia* Nicolson (Gagnidze 2005). The distribution of species from the genus *Orobanche* in this region is still not sufficiently known. Many of the reports require verification and field research in the Caucasus (Rätzle and Uhlisch 2004; Piwowarczyk 2015).

**Orobanche coerulescens** was included in the section *Orobanche* (grex *Coerulescentes* Beck; Beck von Mannagetta 1930) or, according to the new classification, in the section *Inflatae* (Beck) Tzvelev, subsection *Coerulescentes* (Beck) Teryokhin (Teryokhin et al. 1993). This subsection comprises species requiring further research, poorly known, with unclear and disputed taxonomic position, often endemic, occurring mainly in eastern Asia. Among them, *O. coerulescens* has the widest range (Beck von Mannagetta 1930; Novopokrovskij and Tzvelev 1958; Teryokhin et al. 1993; Piwowarczyk, Madeja and Nobis 2015).

*Orobanche coerulescens* is quite easy to distinguish from related species from the Caucasus, because of the characteristic thick stem, numerous small, geniculately...
bent blue flowers, without bracteoles and strongly hairy stem and flowers. About six lower taxa, mainly based on the colour and length of the corolla or construction of the calyx, have been described within the species (Beck von Mannagetta 1930). Individuals with white-yellow flowers and stem have been recognized as *P. korschinskyi* (Novopokrovskij) Y. C. Ma. This taxon was raised to the rank of species *Orobanche korschinskyi* Novopokrovskij, but it is possibly only a colour variant of *O. coerulescens* (Novopokrovskij and Tzvelev 1958).

**Examed specimens (new record)**

**GEORGIA: [SOUTH GEORGIA], Lesser Caucasus, Samtske-Javakheti district, between Rustavi and Idumala, north of the road, xerothermic rocky grasslands, on slopes of the river Mikvari, on the south and southwestern exposure, 1060 m, parasitizes Artemisia, 3 June 2014, R. Płowarczyk (KTC).**

**Plantago minuta Pall. (Plantaginaceae)**

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

**Distribution and habitat**

*Plantago minuta* is known from the lower section of the Volga River, Caucasus, northern parts of Middle Asia, western China and Mongolia (Shishkin 1958). In Tajikistan, the species has not been reported; however, it was mentioned as probably occurring in the northern part of the country (Chukavina 1986). The closest location was known from the Turkestan Range in Kyrgyzstan (Chukavina 1986). According to literature data, *P. minuta* prefers halophyte river deposit habitats, sometimes gravel screes and sandy areas, rarely boggy places.

During the floristic research conducted in western Tajikistan in 2014, the species was found on the gravel-bed on the right side of the Zaravshan River valley near Gusar village. It was found within shrubby vegetation of *Ledeb. with a considerable share of other species of the Nerio – Tamaricetea class like Halimodendron halodendron* (Pall.) Voss, *Imperata cylindrica* (L.) Beauv, *Elaegnus orientalis* L. or *Trachomitum scabrum* (Russan.) Pobed.

**Examined specimens (new record)**

**TAJIKISTAN. Gusar village, gravel-bed of Zeravshan River, 39°28′08.2″N, 67°49′54.6″E, alt. 1065 m, 24 June 2014, A. Nowak (OPUN!).**

**Poa tanfiljewii Roshev. (Poaceae)**

**Contributors – Marina V. Oلونова**

**Distribution and habitat**

*Poa tanfiljewii* was described from fluvial sediments along the stream sides as well as from the rocks in Timansk tundra, the lower reach of the Pechora river in the European part of Russian Arctic (Roshevitz 1934). It was known as endemic to that area and the Polar Urals, but Tzvelev (1976) recorded it in the mountains of Southern Siberia: Altai, Angaro-Sayan and Dahuria. Recently, the species was found on the gravel banks along the brooks in the eastern part of Yt-Koel lake (plateau Putorana, Asian Arctic) where it has never been recorded before (Tzvelev 1976; Sekretaryova 2004; Pospelova and Pospelov 2007).

**Taxonomic notes**

*Poa tanfiljewii* belongs to section *Stenopoa* Dum, which is one of the most difficult taxonomically. Many species of this section hybridize easily and form complicated aggregates with obscure borders. Initially, Tzvelev (1964) considered *P. tanfiljewii* as very close to *Poa nemoralis* L. Later, the author treated it as a subspecies of *Poa palustris* L. (Tzvelev 1972) and finely, again as a species (Tzvelev, 1974, 1976). In fact, *P. tanfiljewii* is morphologically very similar to *P. palustris* and *P. nemoralis*. It seems to arise from hybridization between *P. palustris* and *Poa glauca* Vahl, with a contribution of *P. nemoralis*. The studies of northern and southern populations of similar bluegrasses with glabrous calix have shown that southern ones are of local origin. They were described as *P. krylovii* Reverd. (Reverdatto, 1936) and do not resemble *P. glauca* at all, whereas the spikelets of a typical specimen of *P. tanfiljewii* are very similar to the *P. glauca* ones. Both populations, northern (*P. tanfiljewii*) and southern (*P. krylovii*) seem to be of different origin. In conclusion, only the samples found on Putorana Plateau, can be treated as *P. tanfiljewii*.

**Examined specimens (new records)**

**RUSSIA: [PLATEAU PUTORANA], eastern part of Yt-Koel lake, rocks near the mouth of brook, 27 July 2014. M. Oлонова, I. Volkov, I. Volkova (TK); along the brook, on the gravel, 31 July 2014, M. Oлонова, I. Volkov, I. Volkova (TK); lower course of Horonen river, on the rocks, 1 September 2014, M. Oлонова, I. Volkov, I. Volkova (TK).**

**Potamogeton × subobtusus** Hagstr. (Potamogetonaceae)

**Contributors – Alexander A. Bobrov, Joanna Zalewska-Galosz**

**Distribution and habitat**

*Potamogeton × subobtusus* is a hybrid between the widespread boreal species *Potamogeton alpinus* Balb. and the temperate *Potamogeton nodosus* Foir. The parental species have different ecological preferences and only exceptionally grow together, therefore, *P. × subobtusus* belongs to the rarest pondweed taxa. The
record reported here is the first for Russia and the third worldwide. Until now, \( P. \times subobtusus \) has only been known from North America (USA, the New York state) and Central Europe (Poland, Zalewska-Gałosz, Ronikier and Kaplan 2009). In the new locality, in Karelia (northwest of European Russia), \( P. \times subobtusus \) co-occurs with \( P. alpinus \) whereas the second parental species has never been recorded in that area. Indeed, the current range of \( P. nodosus \) covers southern parts of Eurasia, below 55°N (Hagström 1916). The newly discovered population of \( P. \times subobtusus \) has therefore a relict character with evidence of the northern occurrence of \( P. nodosus \) in warmer postglacial climatic optima.

In the River Olonka, \( P. \times subobtusus \) was found in one stand covering 20 m². It is very possible that the hybrid was more widespread along the river; however, its distribution has not been studied in detail. The hybrid grew in flowing water aside from the main flow, at a current velocity of 0.1–0.2 m/s and at a depth of 0.3–0.5 m, on a solid substrate with pebbles and boulders. Water sampled from the locality had very low mineralization (19 mg/l), neutral pH (pH 7) and was transparent but with brownish ting (colority 200 degrees). The water was clean (oligo-β-mezosaprobic), quite oxygen-rich (85%), with a low content of organic matter (oligo-mezotrophic). \( Potamogeton \times subobtusus \) co-occurred in the stand with submersed forms of Glyceria fluviatilis (L.) R. Br., Nuphar lutea (L.) Smith and parental \( Potamogeton alpinus \). Submersed morphotype of Schoenoplectus lacustris (L.) Palla and river mosses Dichelyma falcatum (Hedw.) Myr., Fontinalis antipyretica L. ex Hedw., Hygrohypnella ochracea (Turn. ex Wils.) Ignatov et Ignatova and Leptodictyum riparium (Hedw.) Warnst. were also found at the locality.

**Taxonomic notes**

\( Potamogeton \times subobtusus \) was described by J.O. Hagström (1916) based on E. Tuckerman material from the state of New York, USA. The correct taxonomic interpretation and lectotypification of the hybrid were made by Zalewska-Gałosz, Ronikier and Kaplan (2009).

In general, \( P. \times subobtusus \) resembles \( P. nodosus \), but in contrast to this species, it develops sessile and persistent submersed leaves. Taxonomic differences between \( P. \times subobtusus \) and the other morphologically similar hybrids known from northern Europe are outlined by Bobrov and Chemeris (2006), Zalewska-Gałosz, Ronikier, Kaplan (2009), Kaplan and Uotila (2011), Zalewska-Gałosz and Ronikier (2012) and Bobrov, Zalewska-Gałosz and Chemeris (2013).

Although some morphological characters can be helpful in the identification of \( P. \times subobtusus \), this hybrid belongs to \( Potamogeton \) taxa that are difficult to identify solely based on morphological grounds. In cases where morphological identification is inconclusive, any new record of a \( Potamogeton \) hybrid should be supported by anatomical study (if informative, see Wiegleb 1990; Zalewska-Gałosz 2011) and molecular evidence (Kaplan and Fehrer 2007; Zalewska-Gałosz and Ronikier 2011). Identification of \( Potamogeton \times subobtusus \) from the new locality was molecularly supported and the molecular evidence will be published soon.

The new record of \( P. \times subobtusus \) complements the knowledge on \( Potamogeton \) diversity in rivers of northern European Russia where in total 12 \( Potamogeton \) species (excluding \( Stuckenia \)) and 12 interspecific hybrids have been recorded to date (Bobrov and Chemeris 2009; Bobrov, Zalewska-Gałosz and Chemeris 2013).

**Examined specimens (new record)**

RUSSIA: [REPUBLIC OF KARELIA], Olonets district, village Kamennyi ruchei, cottage settlement, the river Olonka, rapid, 61°03’06″N, 33°05’50″E, 10 July 2012, A.A. Bobrov, A.V. Sharapov (IBIW).

**Ptilagrostis milleri** (Noltie) M. Nobis & A. Nobis (Poaceae)

**Stipa milleri Noltie**

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

**Distribution and habitat**

To date, \( Ptilagrostis milleri \) was known from Bhutan, India and Nepal (Noltie 2000; Nobis and Nobis 2013). During revision of herbarium materials, specimens of that species, previously determined as \( Ptilagrostis concinna \) Roshev. and collected from Xizang province in China as well as in northern Nepal were identified. The species occurs there in high mountain steppes, in subalpine shrubs and on rocky shelves and crevices, at elevations from 3500 to 4200 m. \( Ptilagrostis milleri \) is a new native species to the flora of China, whereas in Nepal it was found for the second time (Nobis and Nobis 2013).

**Taxonomic notes**

Having unequal glumes, lemmas and paleas, \( Ptilagrostis milleri \) is most likely to be confused with \( Ptilagrostis yadongensis \) P.C. Keng & J.S. Tang, which occurs in Xizang in China (Wu and Phillips 2006). However, \( P. milleri \) differs from \( P. yadongensis \) in scabrous versus glabrous leaves, clearly shorter anthers (0.9–1.2 versus 1.9–2.5 mm long) and somewhat longer hairs on setae (Wu and Phillips 2006; Noltie 1999; Nobis and Nobis 2013).

Based on the character of glumes, lemmas and paleas, the genus \( Ptilagrostis \) can be divided into two sections, sect. \( Ptilagrostis \) and sect. \( Barkworthia \) sect nova (see below).
Section Barkworthia comprises only two species (P. yadongensis and P. milleri), which have distinctly unequal glumes as well as unequal lemmas and paleas. Whereas the section Pilagrostis comprises all other species from the genus with subequal glumes as well as subequal lemmas and paleas.

Pilagrostis sect. Barkworthia M. Nobis, A. Nobis & A. Nowak sect. nov.

Diagnosis. From the sect. Pilagrostis it differs by having species with clearly unequal glumes (the lower 1.0–3.5 mm longer than the upper) as well as clearly unequal lemmas and paleas (lemma 0.5–1.5 mm longer than palea).

Typus: Pilagrostis yadongensis P. C. Keng & J. S. Tang

Etymology. The name of the section honours the eminent botanist Professor Mary Barkworth, for her contribution to the knowledge of feather grasses.

Examined specimens (new records)

CHINA: [XIZANG], South Tibet, Tibetan Himalaya, Everest East, Kama Chu, Pethang Ringmo – Up. Kanchung G. (Camp. Ev6-7), 27°59'N, 87°6'E, 4770 m, alp. dry Kobresia pygmaea-Stipa turf, cushions and open morine scree, gneiss, 13 October 1989, B. Dickoré 6361 (MSB);
NEPAL: Upper Langtang, Cobresia nepalensis with Gramineae, south-facing slope, alt. 4600 m, 30 September 1986, G. & S. Miehe 13090 (KAS).

Stipa × alaica Pazij (Poaceae)

Stipa kopetdaghensis Czopan

Contributor: Marcin Nobis

Distribution and habitat

Stipa × alaica is a Middle Asiatic mountain taxon, known from Kyrgyzstan: Tian-Shan Mountains (Talass and Kirgizian Mountains), and from Tajikistan: Pamir Alai Mountains (Alai, western Pamir and Zeravshan Mountains). This is a new taxon to the flora of Afghanistan; however, a specimen of that taxon was mentioned by Freitag (1985) as representing probably S. alaica.

Stipa klimesii M. Nobis (Poaceae)

Contributors: Marcin Nobis, Agnieszka Nobis, Arkadiusz Nowak

Distribution and habitat

Stipa klimesii is known only from Jammu and Kashmir State in northern India (western Himalayas). The species occurs in high mountain steppes and alpine mats, between 4200 and 5100 m above sea level (Nobis, Nobis, Nowak and Nowak 2014). During revision of herbarium materials, specimens of that species, previously determined as Stipa roborowskyi Roshev. and collected from Xizang province in China, were identified. The species occurs there in high mountains steppes, subalpine shrubs and on rocky shelves and crevices, at elevations from 3500 to 4200 m. Stipa klimesii is a new native species to the flora of China.

Taxonomic notes

Stipa klimesii is morphologically most similar to S. roborowskyi. The two species differ from each other mainly in the character of ligules of vegetative shoots, which in S. klimesii are always longer [(2–)3.5–7.5(–9) versus 0.5–1.5(–2) mm]. Additionally, S. klimesii has a longer anthecium [(7–)8.3–9.5(–10.5) versus (6.0–)6.5–7.5(–7.7) mm] and longer hairs on seta [(1–)1.3–2(–2.3) versus (0.3–)0.5–1(–1.4) mm] (Nobis, Nobis, Nowak and Nowak, 2014; Nobis, Nowak, and Gudkova 2015). Stipa klimesii is also similar to Stipa purpurea Griseb. These two species differ in the shape of their panicle, which in S. klimesii is contracted with more or less straight branches, and in S. purpurea is lax with flexuous branches.

Based on variation in the pubescence of the sheaths of culm leaves, two varieties within S. klimesii can be distinguished: var. klimesii with glabrous sheaths of culm leaves, and var. pubescens M. Nobis with shortly pubescent sheaths of culm leaves (Nobis, Nobis, Nowak and Nowak, 2014). The revised specimens from China belong to both of the above-mentioned varieties.

Examined specimens (new records)

AFGHANISTAN: Prov. Kabul: Umgebung von Kabul, 3 June 1971, O.H. Volk 71/242 (MSB 5996).

Stipa klimesii var. klimesii: [XIZANG, S TIBET], Mekong – Salween divide, Salwine tributary, Bamda – Nujiang, northeast of pass (Camp 3), 30°10'N, 97°17'E, 4520 m, subalp. limstones, scree, dry turf, treeline area (Picea), 5 June 1994, B. Dickoré 8929 (MSB 152882); [XIZANG, S TIBET], Tibetan Himalaya north of Bhutan, 2 km northwest of Lhozak, 28°22'N, 90°46'E, 4000 m,
montane steppe / draft scrub, dry slopes, siliceous schist, 7 July 1994, B. Dickoré 9424 (MSB 152899); [XIZANG, S TIBET], Tibetan Himalaya, Upper Arun Vy., Everest E, west above Kharta, 28°7′N, 87°20′E, 4050 m, subalp. shrub (Juniperus, Cotoneaster, Artemisia), granite moraine, gneiss outcrops (AEV1), 6 October 1989, B. Dickoré 6013 (MSB 152900); [XIZANG, S TIBET], Tibetan Himalaya, Upper Arun Vy., Everest E, west above Kharta, 28°7′N, 87°20′E, 3930 m, upper montane dwarf scrub (Cotoneaster, Juniperus, Artemisia), granite moraine, gneiss outcrops, 6 October 1989, B. Dickoré 5999 (MSB 152901); [XIZANG, S TIBET], Tibetan Himalaya, Upper Arun Vy./Lower Rongbuk, Xegar – Kharta, NE of Mt Everest, 28°20′N, 87°13′E, 4150 m, subalp. steppe (Artemisia) and crevices of north-facing quartzite rocks (Corallodiscus kingianus), 5 October 1989, B. Dickoré 5946 (MSB 152902); [XIZANG, S TIBET], Tibetan Himalaya north of Bhutan, Kuru Chu, Lhozak – Lakhang Dzong, 15 km N Lakhang, 28°9′N, 90°5′E, 3550 m, mont. dry overgrazed dwarf scrub (Artemisia, Cotoneaster, Caragana), 21 July 1994, B. Dickoré 9448 (MSB 152898);

**Stipa × manrakica** Kotuch. (Poaceae)

*Stipa saurica* Kotuch.

**Contributors:** Marcin Nobis, Arkadiusz Nowak, Vítězslav Plášek

**Distribution and habitat**

*Stipa × manrakica* is known only from Manrak and Saur Mountains in the eastern Kazakhstan (Kotukhov 2002; Nobis 2010, 2013). During field studies in Kyrgyzstan, the taxon was found at two localities in the eastern part of the country. This is a new taxon to the flora of Kyrgyzstan.

**Taxonomic notes**

*Stipa × manrakica* originated from the hybridization between *Stipa caucasica* Schmalh. and *Stipa macroglossa* P. A. Smirn. subsp. kazachstanica (Kotuch.) M. Nobis (Nobis 2013). Individuals of that taxon were found within populations of its parental species. The taxon is most similar to *S. × alaica* (Nobis 2013); however, *S. × manrakica* differs from the latter in the adaxial surface of vegetative shoots, which are covered by shorter hairs, and in having slightly longer awns, longer seta and wider blades of vegetative shoots (Nobis 2013). *Stipa × manrakica* is also similar to *Stipa × talassica*, however, *S. × manrakica* has a shorter awn and shorter hairs on the adaxial surface of leaves, without any admixture of long hairs (Nobis 2013).

**Examined specimens (new records)**

**Kyrgyzstan:** [Eastern part of Kyrgyzstan], c. 15 km east of Keng-Suu, steppe grassland, 42°44′07″N, 78°54′38″E, slope 20°, exp. southeast, 1950 m, 8 July 2015, M. Nobis & A. Nowak (KRA); between Kamenka and Chon-Yryuty, steppe grassland on mountain slope, 42°44′27″N, 77°49′15″E, slope 15°, exp. west southwest, 1650 m, 13 June 2013, M. Nobis, A. Nowak & V. Plášek (KRA).

**New records for European countries**

**Ranunculus × gluckii** A. Félix ex C.D.K. Cook (Ranunculaceae)

**Contributors:** Joanna Zalewska-Galoš, Artur Pliszko, Alexander A. Bobrov

**Distribution and habitat**

*Ranunculus × gluckii* A. Félix ex C.D.K. Cook is a very rare hybrid between *Ranunculus circinatus* Sibth. and *Ranunculus trichophyllus* Chaix, known from Austria, France, Germany, Great Britain and Hungary (Cook 1966; Vollrath and Kohler 1972). The hybrid was also reported from a few localities in the Upper Volga basin in Russia (Volkova, Abramova, and Bobrov 2014; Movergoz et al. 2014).

Based on herbarium data *R. × gluckii* may occur both in running and standing waters. Published information about habitat conditions of this hybrid is only fragmentary. In Germany, *R. × gluckii* was reported from a fish pond where it grew abundantly together with both parents and others *Batrachium/Ranunculus* hybrids (Vollrath and Kohler 1972). In the Upper Volga basin the hybrid occurred in disturbed habitats, e.g. river stretches near bridges and roads, bays of reservoir etc. (Bobrov 1999; Volkova, Abramova, and Bobrov 2014; Movergoz et al. 2014). The new locality of *R. × gluckii* was discovered in northeastern Poland, in the lower course of the Jarka River, between Marlinowo and Bronisz. The small, clonal colony of the hybrid was found in a slow-flowing, eutrophic lowland river, on a substrate consisting of silt and sand. The hybrid stand was noticed among *Ranunculus trichophyllus* Chaix, *Nuphar lutea* (L.) Sibth et Sm., *Potamogeton alpinus* Bal., *Sagittaria sagittifolia* L., *Sparganium emersum* Rehmann, and *Vernonia anagallis-aquatica* L. Most of these species are typical to nutrient-rich river communities of the alliance *Ranunculion fluviantis* (Hatton-Ellis and Grieve 2003).

**Taxonomic notes**

Taxa belonging to *Ranunculus* sect. *Batrachium* are regarded as the most difficult aquatic plants to identify. Poorly distinguishable morphological characters are an interactive result of extreme phenotypic plasticity, well-developed polyploidy, hybridization and breeding...
systems where various types of sexual reproduction are combined (Cook 1966; Zalewska-Gałosz, Jopek, and Ilnicki 2015).

*Ranunculus circinatus × R. trichophyllus* depending on taxonomic approach is known as *R. × gluckii* A. Félix ex C. D. K. Cook or *Bratichium × felixii* Soó; however, its nomenclature is unclear and demands further clarification. It is a homophyllous, submersed macrophyte. Its morphological features can vary from those resembling *R. circinatus* to those similar to *R. trichophyllus*. Individuals from the Polish locality were only vegetative and morphologically uniform. All leaves resembled *R. trichophyllus*. Its capillary segments lay in different planes; however, their shape was close to circular and the middle lobe of the leaves was only slightly shorter than the lateral lobes. In many localities, the hybrid grows together with the parental species. In such cases, distinguishing between hybrid individuals and parental plants is straightforward through simple morphological comparison. Sometimes, *R. × gluckii* occurs independently, and then, it can be confused with *R. circinatus* or *R. trichophyllus*, depending on the particular morphological features expressed. When morphological features are not conclusive, molecular identification is desirable. Identification of individuals from the reported new locality was molecularly confirmed. A comprehensive study on nomenclature, morphology, biology and molecular identification of *R. circinatus × R. trichophyllus* is in progress (J. Zalewska-Gałosz, A.A. Bobrov, M. Jopek and E.A. Movergoz, unpubl. results).

Examined specimens (new record)

POLAND: [NORTH-EASTERN POLAND] the river Jarka near the road bridge between Marlinowo and Bronisze, 54°15'52.7"N, 22°27'10.9"E, 30 July 2010, A. Pliszko (KRA).

*Sporobolus cryptandrus* (Torr.) A. Gray (Poaceae)

Contributor – Filip Verlooove

Distribution and habitat

*Sporobolus cryptandrus* is a widespread species in North America, extending from Canada to Mexico. It grows in sandy soils and dry river beds, on rocky slopes and calcareous ridges, and along roadides, in woodlands and in desert grasslands (Peterson, Hatch, and Weakley 2003). Although native, it is considered as an invasive and weedy species in some regions (Holm et al. 1979; Darbyshire 2003). Outside its native distribution range it is known from a single locality in New Zealand (Edgar and Connor 2000) as well as from Europe, where it has been associated, among others, with the wool and oil seed processing industries, for instance in Austria, the British Isles, Germany, Hungary, the Netherlands and Switzerland (Holub and Jehlík 1987; Ryves, Clement, and Foster 1996). Although it remains an ephemeral alien in many cases it managed to naturalize locally. In Slovakia (Bratislava) it has been known since the 1970s; this apparently represents the first naturalized population in Europe (Holub and Jehlík 1987). In the 1990s, it was detected along the River Don close to Volgograd in Russia (Aleksseev, Pavlov, and Sagalaev 1996) where it is now considered an invasive species (Sagalaev 2012). Since then it has been found growing in several localities in southern France (departments Gard, Herault and Vaucluse; see Tison, Jauzein, and Michaud 2014) and, in 2014, it was also recorded for the first time in Catalonia in northeastern Spain (comm. J. Font, November 2014).

In October 2012 *S. cryptandrus* was discovered in Monticelli d’Ongina (Isola Serafini) in Italy. About 40–50 individuals were found growing in several populations. By 2014, the species had much extended and now occurs locally in dense, nearly monospecific stands. The species inhabits more or less open, sandy deposits of fluvial origin that are only exceptionally flooded by the River Po. The plant cover is characterized by a rich psammophilous flora that is dominated by American therophytes such as *Euphorbia glyptosperma* Engelm. and *Sporobolus vaginiflorus* (Torr. ex Gray) Alph. Wood., but also by native *Artemisia campestris* L. *Sporobolus cryptandrus* is observed in both the open, sandy area as well as on the edge of the adjacent bushland. The area is highly affected by human disturbance, due mostly to the transit of motor vehicles and illegal dumping. However, the exact vector of introduction of the taxon remains unknown.

*Sporobolus cryptandrus* is obviously well-established in Monticelli d’Ongina and a future expansion to nearby suitable habitats is likely. It has not been recorded before from Italy.

Taxonomic notes

The plants from Monticelli d’Ongina were initially ascribed to the less widespread *Sporobolus domingensis* (Trin.) Kunth (Romani, Banfi, and Galasso 2014). The latter is a similar species that is found in the southeastern United States, extending to the Antilles and the Yucatan Peninsula in Mexico (Peterson, Hatch, and Weakley 2003). *Sporobolus cryptandrus* is distinguished from *S. domingensis* by its wider, more open inflorescence (2–14 cm wide versus contracted or even spike-like and 1–5 cm wide) with primary branches without spikelets on the lower 1/8–1/4 (versus spikelet-bearing to the base) and by sheath apices with a conspicuous tuft of white hairs c. 4 mm long (these hairs absent or shorter in *S. domingensis*).

Examined specimens (new records)

ITALY: [EMILIA-ROMAGNA. Prov. Piacenza], Monticelli d’Ongina, Isola Serafini, porzione meridionale (UTM: 32T 0571686.4994228)(CFCE: 0925-1), pratelli xerici
radi su depositi sabbiosi fluviali, 40 m, no exp., 2 October 2012, E. Romani s.n. (MSNM); Monticelli d’Ongina, Isola Serafìni (S-side), +/- open sandy area, close to river Po, rather frequent, much expanding, 14 September 2014, F. Verloove (BR, MSNM).

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The interests of all the authors lie in taxonomy, chorology and ecology of plants.

Marcin Nobis. Contribution: the idea and project coordination, field and/or laboratory research, preparing the manuscript.

All others authors. Contribution: field and/or laboratory research and preparing selected parts of the manuscript.

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