



Findings to the flora of Russia and adjacent countries: New national and regional vascular plant records, 3

Alla V. Verkhozina^{1*}, Roman Yu. Biryukov², Elena S. Bogdanova³, Victoria V. Bondareva³, Dmitry V. Chernykh^{2,4}, Nikolay V. Dorofeev¹, Vladimir I. Dorofeyev³, Alexandr L. Ebel^{6,7}, Petr G. Efimov⁵, Andrey N. Efremov⁸, Andrey S. Erst^{6,7}, Alexander V. Fateryga⁹, Natalia S. Gamova^{10,11}, Valerii A. Glazunov¹², Polina D. Gudkova^{4,6}, Inom J. Juramurodov^{13,14,15}, Olga A. Kapitonova^{16,17}, Alexey A. Kechaykin⁴, Anatoliy A. Khapugin^{18,19}, Petr A. Kosachev²⁰, Ludmila I. Krupkina⁵, Mariia A. Kulagina²¹, Igor V. Kuzmin¹⁸, Lian Lian^{15,22}, Guljamila A. Koychubekova²³, Georgy A. Lazkov²³, Alexander N. Lufarov²⁴, Olga A. Mochalova²⁵, Ramazan A. Murtazaliev^{26,27}, Viktor N. Nesterov³, Svetlana A. Nikolaenko¹², Lyubov A. Novikova²⁸, Svetlana V. Ovchinnikova⁷, Nataliya V. Plikina²⁹, Sergey V. Saksonov¹, Stepan A. Senator³⁰, Tatyana B. Silaeva³¹, Guzyalya F. Suleymanova³², Hang Sun¹⁴, Dmitry V. Tarasov¹, Komiljon Sh. Tojibaev¹³, Vladimir M. Vasjukov³, Wei Wang^{15,22}, Evgenii G. Zibzeev⁷, Dmitry V. Zolotov^{2,33}, Elena Yu. Zykova⁷ & Denis A. Krivenko¹

¹ Siberian Institute of Plant Physiology and Biochemistry SB RAS, Irkutsk, Russia

² Institute for Water and Environmental Problems SB RAS, Barnaul, Russia

³ Institute of Ecology of the Volga River Basin – Branch of Samara Federal Research Scientific Center RAS, Togliatti, Russia

⁴ Altai State University, Barnaul, Russia

⁵ Komarov Botanical Institute RAS, St. Petersburg, Russia

⁶ National Research Tomsk State University, Tomsk, Russia

⁷ Central Siberian Botanical Garden SB RAS, Novosibirsk, Russia

⁸ Ulyanovsk State Pedagogical University, Ulyanovsk, Russia

⁹ Vyazemsky Karadag Scientific Station – Nature Reserve – Branch of Kovalevsky Institute of Biology of the Southern Seas RAS, Feodosiya, Russia

¹⁰ Lomonosov Moscow State University, Moscow, Russia

¹¹ Baikalsky State Nature Biosphere Reserve, Tankhoy, Republic of Buryatiya, Russia

¹² Tyumen Scientific Centre SB RAS, Russia

¹³ Institute of Botany, Academy Sciences of Uzbekistan, Tashkent, Uzbekistan

¹⁴ Kunming Institute of Botany, Chinese Academy of Sciences, Kunming, China

¹⁵ University of Chinese Academy of Sciences, Beijing, China

¹⁶ Tobolsk complex scientific station UB RAS, Tobolsk, Russia

¹⁷ Papanin Institute for Biology of Inland Waters RAS, Borok, Russia

¹⁸ Tyumen State University, Tyumen, Russia

¹⁹ Mordovia State Nature Reserve and National Park “Smolny”, Saransk, Russia

²⁰ South-Siberian Botanical Garden, Altai state University, Barnaul, Russia

²¹ National University of Pharmacy, Department of Botany, Kharkiv, Ukraine

²² Institute of Botany, Chinese Academy of Sciences, Beijing, China

²³ Institute for Biology & Soil Science, National Academy of Sciences, Bishkek, Kyrgyzstan

²⁴ Sechenov First Moscow State Medical University, Moscow, Russia

²⁵ Institute of Biological Problems of the North FEB RAS, Magadan, Russia

²⁶ Precaspian Institute of Biological Resources DFRC RAS, Makhachkala, Russia

²⁷ Dagestan State Medical University, Makhachkala, Russia

²⁸ Penza State University, Penza, Russia

²⁹ Omsk State Pedagogical University, Omsk, Russia

³⁰ Tsitsyn Main Botanical Garden RAS, Moscow, Russia

³¹ Ogarev Mordovia State University, Saransk, Russia

³² Saratov State University, Saratov, Russia

ABSTRACT

With this paper we continue a new annual series, the main purpose of which is to make significant floristic findings from Russia and neighboring countries more visible in Russia and abroad. In total, this paper presents new records for 38 vascular plant species from 7 Eurasian countries, obtained during field explorations, as well as during taxonomic revisions of herbarium materials.

For the first time, new locality of *Rochelia bungei* is recorded for Europe and West Kazakhstan Region of Kazakhstan, *Arnebia obovata* for China and Kazakhstan, *A. olgae* for China, *Ballota nigra* for Kazakhstan and the Asian part of Russia, *Potentilla chalchorum*, *P. tschimganica* and *P. doujonneana* for Kyrgyzstan, *Lappula heteracantha* for Tajikistan, *Hedysarum talassicum* for Uzbekistan, *Linaria grjunerae*, *Silene cserei* for Siberia, *Dianthus × courtisii*, *Genista tinctoria*, *Verbascum phoeniceum* for Eastern Siberia, *Drosera × obovata*, *Pseudopodospermum strictum*, *Trollius austrosibiricus* for the Altai Republic, *Diarthron linifolium* for the Republic of Buryatia, *Dactylorhiza iberica*, *Epipactis condensata* for the Republic of Dagestan, *Platycladus orientalis* for the Kabardino-Balkarian Republic, *Diphysastrum × zeilleri* for the Republic of Mordovia, *Typha latifolia* for the Magadan Region, *Senecio viscosus* for the Novosibirsk Region, *Solanum physalifolium* for the Omsk Region, *Echinops exaltatus* for the Middle Volga, *Lavandula angustifolia* for the Samara Region, *Galium affrenum* for the Saratov Region, *Bidens frondosa*, *Elatine triandra*, *Eleocharis klingei*, *Jacobaea grandidentata*, *Rhinanthus songaricus* and *Vicia megalotropis* for the Tyumen Region, *Bumis cochlearioides*, *Thalictrum ussuriense* for the Inner Mongolia Autonomous Region of China, *Isoetes echinospora* for the Yamal-Nenets Autonomous Area, *Potentilla × bishkekensis* for Issyk-Kul and Osh Regions of Kyrgyzstan.

Keywords: floristic findings, taxonomy, Russia, Kazakhstan, Mongolia, China, Kyrgyzstan, Tajikistan, Uzbekistan

РЕЗЮМЕ

Верхозина А.В., Бирюков Р.Ю., Богданова Е.С., Бондарева В.В., Черных Д.В., Дорофеев Н.В., Дорофеев В.И., Эбель А.А., Ефимов П.Г., Ефремов А.Н., Эрст А.С., Фатерьяга А.В., Гамова Н.С., Глазун В.А., Гудкова П.Д., Журамуродов И.Ж., Капитонова О.А., Кечайкин А.А., Хапугин А.А., Косачев П.А., Крупкина Л.И., Кулагина М.А., Кузьмин И.В., Лян Л., Койчубекова Г.А., Лазков Г.А., Луфаров А.Н., Мочалова О.А., Муртазалиев Р.А., Нестеров В.Н., Николаенко С.А., Новикова Л.А., Овчинникова С.В., Пликина Н.В., Саксонов С.В., Сенатор С.А., Силаева Т.Б., Сулейманова Г.Ф., Сун Х., Тарасов Д.В., Тоджибаев К.Ш., Васюков В.М., Ванг В., Зибзеев Е.Г., Золотов Д.В., Зыкова Е.Ю., Кривенко Д.А. Находки во флоре России и сопредельных стран: новые национальные и региональные локалитеты сосудистых растений, 3. Впервые для Европы и пограничной Западно-Казахстанской области Казахстана приводится *Rochelia bungei*, для Казахстана и Азиатской части России – *Ballota nigra*, для Казахстана – *Arnebia obovata*, для Кыргызстана – *Potentilla chalchorum*, *P. tschimganica* и первое конкретное местонахождение *P. doujonneana*, для Китая – *Arnebia obovata*, *A. olgae*, для Таджикистана – *Lappula heteracantha*, для Узбекистана – *Hedysarum talassicum*, для Сибири – *Linaria grjunerae*, *Silene cserei*, для Восточной Сибири – *Dianthus × courtisii*, *Genista tinctoria*, *Verbascum phoeniceum*, для Республики Алтай – *Drosera × obovata*, *Pseudopodospermum strictum*, *Trollius austrosibiricus*, для Республики Буря-

³³ Khvalynsky National Park, Khvalynsk, Russia

† Deceased

* Corresponding author, allaverh@list.ru

Manuscript received: 22.03.2021

Review completed: 29.01.2021

Accepted for publication: 05.05.2021

Published online: 09.05.2021

The following citation format is recommended: Ebel, A.L. & E.Yu. Zykova 2021. *Ballota nigra* L. (Lamiaceae). In: Findings to the flora of Russia and adjacent countries: New national and regional vascular plant records, 3 (A.V. Verkhovina, ed.). *Botanica Pacifica* 10(1):00–00.

тин – *Diarthron linifolium*, для Республики Дагестан – *Dactylorhiza iberica*, *Epipactis condensata*, для Кабардино-Балкарской Республики – *Platycladus orientalis*, для Республики Мордовия – *Diphasiastrum* × *zeileri*, для Магаданской области – *Typha latifolia*, для Новосибирской области – *Senecio viscosus*, для Омской области – *Solanum physalifolium*, для Среднего Поволжья – *Echinops exaltatus*, для Самарской области – *Lavandula angustifolia*, для Саратовской области – *Galium affrenum*, для Тюменской области – *Bidens frondosa*, *Elatine triandra*, *Eleocharis klingei*, *Jacobaea grandidentata*, *Rhinanthus songaricus* и *Vicia megalotropis*, для Внутренней Монголии – *Bunias cochlearioides*, *Tbalictrum ussuriense*, для Ямало-Ненецкого автономного округа – *Isoetes echinospora*, для Иссyk-Кульской и Ошской области Киргизстана – *Potentilla* × *bishkekensis*. Для каждого вида представлены сведения об общем распространении, занимаемых местообитаниях, таксономии с указанием отличий от близких видов и местонахождения.

Мы приглашаем авторов участвовать в дальнейшем развитии этого раздела. Пожелая присылать материалы ответственным редактору раздела Алле Васильевне Верховиной (allaverh@list.ru).

Ключевые слова: флористические находки, таксономия, Россия, Казахстан, Кыргызстан, Китай, Монголия, Таджикистан, Узбекистан

The label data of the examined specimens was also published as a dataset in GBIF: <https://www.gbif.org/dataset/b2bd4dd4-aa79-403a-b7fa-274c1f8f0383>

Arnebia obovata Bunge (Boraginaceae)

Contributor: Svetlana V. Ovchinnikova

Distribution and habitat: *A. obovata* was described by A.A. Bunge from Sarafschan (Tajikistan) by collection of A. Lehmann. Later its was found in Pamiro-Alai and West Tien Shan from the territory of Kyrgyzstan and Uzbekistan (Popov 1953, Abdullaeva et al. 1986), and was not found from the territory of Kazakhstan and China. *A. obovata* grows on the outcrops of variegated rocks in the lower and middle belts of the mountains, at altitude 1200–2200 m a.s.l.

Taxonomic notes. The genus *Arnebia* Forssk. (with *Macrotomia* DC. ex Meissn. and *Ulugbekia* Zakirov) comprises 25 species of annual to perennial, erect to decumbent hispid herbs with di-morpho-heterostyle purple, pink or yellow corolla, with distribution in desert of Northern Africa and in the mountains of the West, Middle, Central Asia and Himalayas (Popov 1953, Riedl 1967, 1972, Kazmi 1971, Abdullaeva et al. 1986, Sadat 1989). It belongs to section *Cyananthae* Popov ex Riedl which included four perennial species with a blue or pink corolla, having a scaly hairy ring at the base of the tube, a shortly dissected column at the apex, with 2 spherical stigmas or whole with 2-lobed stigma, eremocarps are straight, oblong or triangular-ovate, with a sharp straight tip, warty-tuberous (Riedl 1972). From related species *A. olgae* Regel it is distinguished by obovate form of leaf blade, a staining root, larger scattered tuberculate eremocarps, 3 mm long and triangular seeds (Khal-kuziev 1970). *A. fimbriata* Maxim. and *A. szechnyi* Kanitz from this section found on gravelly and rocky slopes and rocks in the Gobi Desert in Mongolia and China (Popov 1953, Grubov 1982, Zhu Ge-ling et al. 1995). Revision of herbarium collections LE and TASH showed that *A. obovata* is new species from the territory of Kazakhstan and China.

Examined specimens (new records). KAZAKHSTAN: South Kazakhstan, Karatau Mountains, [43°N 68°E], 23.05.1962, coll. E. Puchkova, 19 (TASH). CHINA: Kashgaria, Egin near the broken Chinese fortress, [39°41'N 77°37'E], 11.08.1913, coll. O.E. Knorring, 1070 (LE); Xinjiang province, Kashgaria, upper reaches of the river Kizil-Su, above Kashgar, on the rocks on the way from Sim-Khake to Aegina, [39°41'17"N 77°37'35"E], 1.07.1929, coll. M.G. Popov, 65 (LE); Xinjiang province, Kashgaria, upper reaches of the river Kizil-Su, above Kashgar, up to Nagra-Galda along the rocks and the channel, [39°41'17"N 77°37'35"E], 2.07.1929, coll. M.G. Popov, 37a (LE).

Arnebia olgae Regel (Boraginaceae)

Contributor: Svetlana V. Ovchinnikova

Distribution and habitat. *A. olgae* was described by E. Regel from the Alai ridge (Uzbekistan) by collection

of O.A. Fedtschenko (type: Uzbekistan. Kokand Khanate, between Karakazyk and Shakhimardan, 11.07.1871, coll. O. Fedtschenko (lectotype LE 01064157, designated by Khalkuziev (1970) in Reports of the Academy of Sciences of the UzSSR 5: 66, as a “type”). Later its was found in Pamiro-Alai and West Tien Shan from the territory of Kyrgyzstan and Tajikistan (Khalkuziev 1970, Abdullaeva et al. 1986), and was not found from the territory of China. *A. olgae* grows on gypsum-bearing sandstones in the tau zone, at an altitude of 2000–2200 m a.s.l.

Taxonomic notes. *A. olgae* belongs to section *Cyananthae* Popov ex Riedl. Popov (1953) and most researchers did not recognize the species independence of this species and combined it with *A. obovata* (Zakirov 1961, Ajdarova et al. 1962, Chukavina 1984). From *A. obovata* it is distinguished by its lanceolate leaf blade, weakly pubescent with compressed and upward directed hairs, not staining root, smaller eremocarps, 2 mm long and bottle-shaped seeds. We consider it necessary to provide an updated diagnosis of this species.

A. olgae is perennial plant 15–20 cm high. The root is dark, not staining, woody. Stems weakly pubescent with compressed and upward directed hairs. Leaves basal rosette 6–8 cm long, 10–12 mm wide, lanceolate on long petioles, green, slightly pubescent with small, appressed hairs. Stem leaves are larger, up to 15 mm wide, oblong-lanceolate on short petioles. A loose inflorescence of two curls with numerous bracts. Bracts linear or lanceolate, 15–20 mm long. Calyx in color 7–10 mm long with linear, densely pubescent upward protruding hairs. Corolla violet-carmine, densely fluffy-hairy outside, with a thin long (14 mm) tube, 1.5 times the calyx, and with a slight saucer-shaped bend, the lobes of the bend are ovoid, 3 mm long, slightly velvety at the base of the throat. The flowers are dimorphic-heterostyle: more often with a short column of 8 mm long and with stamens attached by noticeable filaments, which never protrude from the corolla. Anthers are oblong-linear, 2 mm long, yellow, obtuse at both ends. Column shortly dissected at the apex, with 2 spherical stigmas. Eremocarps 2 mm long, gray, narrow, straight, oblong, with indistinct lateral outgrowths and a short, straight, sharp apex, on the back without lateral combs, on the ventral side with an obscure keel, profusely tuberculate. Bottle-shaped seeds up to 2 mm long.

Revision of indeterminate herbarium collections LE showed that *Arnebia olgae* is new species from the territory of China.

Examined specimens (new records). CHINA: Xinjiang Uygur Autonomous Region, Eastern Tien Shan, Kzyr intermontane basin, its southern framing with a hilly badland, Reamurian desert, by saira, [42°N 83°E], 1.04.1958, coll. A.A. Yunatov & Yuan Yi-fen, 732 (LE).

Ballota nigra* L. (Lamiaceae)*Contributors:** Aleksandr L. Ebel & Elena Yu. Zykova

Distribution and habitat. This species is native to the Mediterranean Region and West Asia (eastwards to Azerbaijan and Iran). *B. nigra* has a long history of herbal use, though is not widely employed at present because of its unpleasant flavor. As an archaicophyte, it has a European temperate distribution. *B. nigra* is also naturalized in some states of the USA, Argentina, south-east Australia, and New Zealand (GBIF Secretariat, 2019a, POWO 2019). This species is widely distributed in European part of Russia, mainly in the southern regions. In Asia it was reported as alien species from Kyrgyzstan (Lazkov 2003), and very recently was observed in the Chelyabinsk Region of Russia (Ueda 2021a,b). It grows in various anthropogenic habitats, often on disturbed nutrient-rich soils near habitations, rarely in thickets of bushes, on ravines and slopes of mountains and hills. *B. nigra* was also found in the city of Novosibirsk in 2009 and 2010 and in the city of Barnaul in 2014. Unfortunately, both times it was misidentified as *Clinopodium menthifolium* (Host) Stace and published under this name (Nobis et al. 2015, Ebel et al. 2015b). Additionally, *B. nigra* was observed at least twice in Kazakhstan (Almaty), but no herbarium specimens were collected there. Nevertheless, there are photos from this location uploaded to iNaturalist (Ueda 2021c,d) cited below.

Taxonomical notes. The genus *Ballota* L. belongs to tribe *Marrubieae* Vis. This genus includes about 30 species distributed in Eurasia and North Africa (mainly in the Mediterranean region), with one species (*B. africana* (L.) Benth.) being endemic to South Africa and Namibia. The current molecular phylogeny clearly demonstrates that this genus does not represent a monophyletic group as it is currently circumscribed. Most species of *Ballota* L. form a well-supported clade with genus *Marrubium* L., thus confirming a close relationship between these two genera (Scheen et al. 2010). *B. nigra* is the type species of the genus *Ballota*. It is perennial herb like most other species of this genus. Several subspecies are recognized within *B. nigra*, and most of them (except subsp. *nigra*) are located in the Mediterranean Region and adjacent territories (POWO 2019).

Examined specimens (new records). RUSSIA: Altai Territory, Barnaul, Molodezhnaya Street, in yards as weed, [53°20'48.37"N 83°46'11.93"E], 21.08.2014, coll. M.M. Silant'yeva & A.L. Ebel (ALTB, TK); Novosibirsk Region, Novosibirsk, Akademgorodok, Tereshkova street, along the road, [54°50'24.3"N 83°06'07.8"E], 21.08.2009, coll. E.Yu. Zykova (NS); Novosibirsk, Akademgorodok, weed in the courtyards of Morskoy Avenue, [54°50'18.06"N 83°06'07.42"E], 31.07.2010, coll. E.Yu. Zykova (NS).

iNaturalist website observations. KAZAKHSTAN: Almaty, Turksib District, Baum's Grove, clearing, 43°18'29.60"N 76°57'05.57"E, 05.07.2014, A.L. Ebel (Ueda 2021c); Almaty, Bostandyk District, near the bus stop "Boarding-school No 92", 43°12'54.36"N 76°53'17.34"E, R. Kastani, 30.06.2020 (Ueda 2021c).

Bidens frondosa* L. (Asteraceae)*Contributors:** Anatoliy A. Khapugin & Igor V. Kuzmin

Distribution and habitat. *B. frondosa* is a species native to Canada and the USA. It was introduced to Europe in 1762. In Russia and adjacent countries, there are three isolated clusters of *B. frondosa* distribution, including the Russian Far East (Primorye Territory), European Russia and the Black Sea Coast of Caucasus (Vinogradova et al. 2010). *B. frondosa* inhabits riverbanks and disturbed habitats, especially around the railway stations. Until now, in Siberia, there have been only two locations, namely a record in 2016 in the Omsk Region (Efremov et al. 2017), a record in 2018 in the Kemerovo Region (Sheremetova & Sheremetov 2019) and a record in 2020 in the Altai Territory (Ebel et al. 2020).

Surveying the Tura River floodplain in 2013, I.V. Kuzmin paid attention to the large *Bidens* plants growing near the pylon of the pedestrian bridge over the Tura River, on the left

bank of the river. However, these plants were only identified by A.A. Khapugin in 2018. Near this site, in 1917–2008, when the sheepskin-fur factory was working, raw materials for which could have served as a source of the *B. frondosa* invasion (through seeds). At this location, the bank of the Tura River served as a berth for ships engaged in both river navigation and cargo transportation. Therefore, we assume that this particular *B. frondosa* population could be the first one appeared in Siberia. The studied population covers a length of 500 m, where *B. frondosa* is represented in high abundance. In August 2019, the construction of the embankment began on this site. As a result, the coastal *Salix* thickets were cut down, and the area was covered in concrete. That is why, only small part of the original *B. frondosa* population remained covering the area of 100 m² at the border of the construction. Besides this, three solitary *B. frondosa* plants were found in 2020 2 km northward, upstream of the Tura River. We assume that *B. frondosa* spread to this site by amateur fishermen because they grew at some distance from each other.

B. frondosa is a new alien species to the flora of the Tyumen Region and a rare record in the whole of Siberia. This is the first report of the *B. frondosa*'s presence in the Tyumen Region, based on reliable herbarium specimens, which have citations of herbarium specimen labels of this alien species, and the complete history of *B. frondosa* observations in the Tyumen Region is present. Photos were uploaded to the site iNaturalist.org

Taxonomic notes. *B. frondosa* co-occurs with *B. tripartita* L. and *B. radiata* Thuill. The invasive plant reliably differs from the two other species by having leaves with petioles, a large habitus and the ability to grow until the snow cover is establish, while both other species are die back by this time.

Examined specimens (new records). RUSSIA: Southern Trans-Urals, Tyumen Region, Tyumen, around the northern pylon of the pedestrian bridge "Most Vlyublennykh", the northern low left bank of the Tura River, 57°09'52.1"N 65°31'24.4"E, alt. 55 m a.s.l., thickets of *Salix triandra* L., 27.08.2013, photos I.V. Kuzmin (Ueda 2021e), 28.08.2018, coll. I.V. Kuzmin & A.A. Khapugin s.n. (Tyumen State University); Tyumen, 60 m south of the intersection of Lugovaya and Beregovaya streets, low bank of Tura River, 57°09'45.5"N 65°32'04.7"E, alt. 54 m a.s.l., thickets of *Salix triandra*, 26.09.2019 (Ueda 2021f), coll. I.V. Kuzmin s.n., 14.10.2019, coll. I.V. Kuzmin s.n. (Ueda 2021g), 26.08.2020, coll. A.A. Khapugin s.n. (Ueda 2021h), (Tyumen State University), 29.09.2020, photos V.A. Glazunov (Ueda 2021i); Tyumen, Molodogvardeyev street, at the house 22, 57°07'59.9"N 65°31'08.9"E, alt. 70 m a.s.l., one small plant in a crack in the asphalt between the sidewalk and an old wooden house, 08.10.2019, coll. I.V. Kuzmin s.n. (Tyumen State University); Tyumen, right bank of the meander (bend) of the Tura River opposite the square "Zarechnyi Park", 450 m south-west of the Aquapark, low bank of the Tura River, 57°10'48.0"N 65°32'30.8"E, alt. 47 m a.s.l., thickets of *Salix triandra* and *Pbalaris arundinacea* L., 02.10.2020, coll. I.V. Kuzmin s.n. (Ueda 2021j) (Tyumen State University).

Bunias cochlearioides* Murray (Brassicaceae)*Contributors:** Vladimir I. Dorofeyev & Ludmila I. Krupkina

Distribution and habitat. This species was recorded in the flora of China from only 3 provinces (Cheo et al. 2001). In the adjacent regions of Russia, it is known from Transbaikalia and Altai. It is also known from the Circum-Caspian area of Russia and Kazakhstan, where it was first described. For Mongolia, it was noted by Vasilchenko (1939). The Kukunbujir-nor Valley is a fairly large geographic formation, covering both eastern Mongolia and part of China (northern Inner Mongolia). From west to east, it is divided by the Kerulen River. According to the materials collected over the course of G.N. Potanin's trip, the route of his expedition to the south passed through China to the west of Dalainor Lake, without crossing the present border of Mongolia (Obruchev 1916). The botanical-geographical region (BGR), judging by the description of the author of regionalization of Mongolia (Grubov 1982), for the Valley of Inner Mongolia of China, is the continuation of the East Mongolian BGR.

Examined specimens (new records). CHINA: Inner Mongolia, Kulun-bujir-nor Valley, Kerulen River, on clay-sandy soil of meadows, [48°39'00"N 116°49'34"E], 9.06.1899, coll. [G.N.] Potanin and [V.K.] Soldatov (UBA).

***Dactylorhiza iberica* (M. Bieb. ex Willd.) Soó (Orchidaceae)**

Contributors: Petr G. Efimov, Ramazan A. Murtazaliev & Alexander V. Fateryga

Distribution and habitat. This species was described from Transcaucasia (“Habitat in Iberia”); it is currently known from Greece, ?Bulgaria, Russia, Turkey, Cyprus, Syria, Lebanon, Palestine, ?Iraq, Iran, Georgia, Armenia, and Azerbaijan (Averyanov 1994, Delforge 2016, Eccarius 2016). In Russia, it is distributed in the Crimea and the North Caucasus (Efimov 2020). This is a rare species confined to open wet habitats: stream banks, wet meadows, grasslands along the edges of rivers; it forms locally abundant populations due to its ability to reproduce vegetatively (Vakhrameeva et al. 2008, Fateryga et al. 2019). The present contribution represents an analysis of the distribution of this species in Dagestan, from where it was unknown until 2019 (e.g., Averyanov 2006, Murtazaliev 2009) and then reported by Ivanov (2019) without details.

This species was not reported from Dagestan until recently despite the fact that high-quality collections of it exist dating from 1961, 1964, and 1987. All those collections were kept in the LE and MHA herbaria among the undetermined material, until we came across them in the course of the “Mapping Orchids of Russia” project (Efimov 2020). Vice versa, in the LENUD herbarium, which generally possesses rather rich collections from Dagestan, there was a portion of species kept under this name, but in fact they represented other taxa, viz. *Dactylorhiza savifera* (Brongn.) Soó, *D. salina* (Turcz. ex Lindl.) Soó, *Gymnadenia conopsea* (L.) R. Br., and possibly *Anacamptis laxiflora* (Lam.) R.M. Bateman, Pridgeon & M.W. Chase s. l. and *Dactylorhiza urvilleana* (Steud.) H. Baumann & Künkele. Several severely damaged or incomplete herbarium specimens from LENUD in fact may indeed represent *D. iberica*, but those determinations need strong verification. In 2013 and 2015, the species was again recorded in two different places, the latter being posted as photos on the Plantarium website (Teymurov 2016) on the basis of which Ivanov (2019) obviously published his record of *D. iberica* from Dagestan.

In literature, this species is also usually reported from the western part of the Russian Caucasus (Nevski 1935, Averyanov 2006, Ivanov 2005, 2019), this is most likely based on the solitary record from the vicinity of Kravtsovo Lake near Stavropol (Kolmakov 1928). We did not come across the corresponding herbarium specimens and with high probability consider this to be a case of an incorrect determination.

In the view of the recent findings of *D. iberica* in Dagestan, decline of this species cannot be ascertained, however due to the extreme rarity of this plant it should be included in the Red Data Book of Dagestan in the “Vulnerable” category (D1+2).

Taxonomic notes. *D. iberica* is a very distinct species in the genus *Dactylorhiza* Neck. ex Nevski. It and another very distinct species, i.e., *D. viridis* R.M. Bateman, Pridgeon & M.W. Chase, are basal in relation to all the remaining species of *Dactylorhiza* (Bateman & Rudall 2018). *D. iberica* is easily recognizable by several morphological features which are unique in the genus: the presence of stolons, fusiform to nearly fusiform tuberosities, the hood formed by 5 tepals (also shared by *D. viridis*), and numerous glandular trichomes on the adaxial side of the labellum. It is classified in a special monotypic section in all of the recent classifications of *Dactylorhiza* (Averyanov 1990, Delforge 2016, Eccarius 2016, etc.).

Examined specimens (new records). RUSSIA: Republic of Dagestan, Khunzakh District, between Khunzakh and Kharakhi, boggy meadow, [42°36'N 46°36'E], 26.07.1961, coll. N.N. Tzvelev, S.K. Cherepanov, G.N. Nepli & A.Ye. Bobrov, 4154 (LE1039180); Republic of Dagestan, Khunzakh, road to Botlikh, N slope, subalpine meadow, [42°33'N 46°42'E], 11.07.1964, coll. V. Surova (MHA); Republic of Dagestan, Khunzakh District, near Orota-Siukh (ca. 15 km from

Khunzakh), ca. 1600 m a.s.l., wet meadow, [42°36'N 46°34'E], 21.07.1987, coll. V.D. Bochkin, V.A. Sagalayev & M.V. Kostina (MHA); Republic of Dagestan, Khunzakh District (Plateau), vicinity of Gortkolo, NE slope, 1800 m a.s.l., in a marsh, [42°34'36.5"N 46°37'55.0"E] 26.07.2013, coll. R.A. Murtazaliev (DAG; Ueda 2021k); Republic of Dagestan, Khunzakh Plateau, Matlas Natural Landmark, marsh meadow in the subalpine belt, [42°36'N 46°36'E], 15.07.2015, coll. A.A. Teymurov (photo: Teymurov 2016).

***Dianthus × courtoisii* Rchb. (Caryophyllaceae)**

Contributors: Alla V. Verkhovina & Nikolay V. Dorofeev

Distribution and habitat. *D. × courtoisii* was described by Reichenbach from Belgium (Reichenbach 1832). It is also known in Ukraine (POŪO 2019). Moreover, there are scans of herbarium specimens of *D. × courtoisii* available, which were collected in Germany (Turpel & Walisch 2021), France (MNHN, Chagnoux 2021a), Switzerland (Orrell, Informatics Office 2021), and Finland (Kurtto 2021). In Russia, it was discovered for the first time in the territory of the modern Kostroma Region by Kossinsky in 1912 (Kossinsky 1913). However, the taxon has not been mentioned in the main floristic summary reports for Russia (including contemporary ones) (Krylov 1931a, Shishkin 1936, Baikov 1993, Kuzmina 2004). Czerepanov (1995) just mentioned “*D. × courtoisii* Reichenb. (*D. barbatus* L. × *D. superbus* L.)” without providing any comments. Perhaps, this is due to an extreme rarity of these findings in the 20th century: there are only four herbarium specimens known which were collected in 1912–1920 in the Kostroma and Tver Regions (Ebel et al. 2017).

However, since the beginning of the 21st century, the number of findings has increased and the species has been recorded in the Yaroslavl Region and, for the first time in Siberia, in the Tomsk Region (Ebel et al. 2017). There are also photographs available on Plantarium website received from the Perm Territory (Pavlov 2018) and the Kemerovo Region (Nosikov 2014). For Eastern Siberia, this species has been recorded for the first time.

It is believed that the reason of a sudden appearance of *D. × courtoisii* in many places on the territory of Russia at the turn of the 20th and 21st centuries is related to a huge increase in the number of garden plots outside of populated areas which appeared in 1980–1990 in little disturbed natural communities. Starting from this period, there’ve been conditions created for hybridization between the popular garden plant *D. barbatus* and the local species *D. superbus* in the forest zone of European Russia and Siberia (Ebel et al. 2017).

Taxonomical notes. An allozyme analysis proved the hybrid origin of *D. × courtoisii* (Ebel et al. 2017). It also showed that the plants of *D. × courtoisii* collected in Western Siberia in the vicinity of Tomsk are a group of a first-generation hybrids (F1) *D. superbus* × *D. barbatus*. However, in the opinion of the authors of the above mentioned publication, establishing equivalence between Russian hybrids and *D. × courtoisii* requires additional research, since Reichenbach (1832, p. 806) while describing *D. × courtoisii* indicates some features that do not quite correspond to the appearance of Russian hybrids: “bracts exceed a half of the length of calyx ... inflorescence is thick, corymbose-paniculate ... [when in] *D. barbatus* it is looser ... [when in] *D. superbus*, petals are like those of *D. barbatus* ...” (i. e., the plant looks more like *D. barbatus* than *D. superbus*). The Tomsk’s plants have petals whose shape, size, and dissection peculiarities which make them appear closer to *D. superbus*, their bracts equal approximately one third of a calyx; their inflorescence consists of 2–8 flowers and is more or less thick, with flowers in congestion by 2–3, sometimes detached. (i. e., that the plants from Russia diverge from *D. superbus*). Such differences, according to the authors of the publication, may be associated with a generally high polymorphism of the hybrids, but also with the fact that the pair of parental species in Belgium (locus classicus *D. × courtoisii*) was genetically more or less different from the pair of *D. barbatus* and *D. superbus* in Russia (Ebel et al. 2017). As for the Irkutsk plants, the ratio of calyx and bracts varies in a wide range, but the inflorescence is few-flowered.

D. × courtoisii resembles most to *D. fischeri* and differs from the latter, first of all, in its long-creeping rhizomes and having a deeper cut of its petals (Ebel et al. 2017). *D. fischeri* has large-toothed along the edges of the petals, when in *D. × courtoisii* they are incised into lanceolate lobules. In addition, in *D. × courtoisii*, the bracts are sharply narrowed and form a long styloid tip, while in *D. fischeri*, they are gradually narrowed to form a lanceolate end. Also, the capsules of *D. × courtoisii* are puny, often empty, because the seeds usually do not develop, while *D. fischeri* has capsules with plenty of seeds.

D. × courtoisii differs from *D. barbatus* in having quite a loose inflorescence with flowers on more developed pedicels and petals incised into lanceolate lobules along the edges.

D. superbus differs from all the above-mentioned species in having threadlike or linear lobes, into which petals are dissected up to a half or more of the length of the limb.

Examined specimens (new record). RUSSIA: Irkutsk Region, Slyudyansky District, vicinity of Pereyzd railway stopping point, grass-forb meadow near the Kultuk motorway roadside, 51°49'37.84"N 103°49'13.23"E, 27.06.2020, coll. A.V. Verkhovina & N.V. Dorofeev, 63787–63789 (IRK).

Diarthron linifolium Turcz. (Thymelaeaceae)

Contributor: Natalia S. Gamova

Distribution and habitat. This species (described from Northern Mongolia) is distributed in the southern part of Eastern Siberia and Russian Far East and East Asia (Mongolia, China, Japan). However, it was not found in Republic of Buryatia. *D. linifolium* prefers sandy and rocky places within the steppe and forest-steppe regions. *D. linifolium* is a new species and genus to the Republic of Buryatia.

Taxonomic notes. *D. linifolium* is an annual herb. It was described as the first species in genus *Diarthron*. Since then several species have been added to this genus, though recent researchers consider them to belong to *Stelleropsis* and *Dendrostellera* (Galicia-Herbada 2006). No other related species are distributed in nearby regions of Eastern Siberia.

Examined species (new records). RUSSIA: Republic of Buryatia, Mukhorshibir District, vicinity of Podlopatki village, 50°56'17.9"N 107°03'42.2"E, 555 m a.s.l., foot of rocky shrubby steppe slope near the former river-bed of Khilok River, 23.08.2018, coll. N.S. Gamova (MW).

Diphasiastrum × zeileri (Rouy) Holub ≡ *Lycopodium × zeileri* (Rouy) Greuter & Burdet (Lycopodiaceae)

Contributors: Vladimir M. Vasjukov, Tatyana B. Silaeva & Lyubov A. Novikova

Distribution and habitat. *D. zeileri* was described from France (Rouy 1913). It is distributed in the forest zone of North-Western (Fennoscandia), Central and Eastern Europe, Western Siberia and Eastern part North America (Ivanenko & Tzvelev 2004). Previously, this taxon was not noted in the Republic of Mordovia. It inhabits thinned pine (*Pinus sylvestris* L.) forests on sandy soils.

Taxonomic notes. *D. zeileri* is a hybridogenic species derived from hybridization of *D. complanatum* (L.) Holub and *D. tristachyum* (Pursh) Holub (Tzvelev 2000, 2005, Ivanenko & Tzvelev 2004). Its rhizome-like plagiotropic shoots are predominantly the underground type. However, they often emerge partially to the ground surface and where they are green. The underground part of the orthotropic shoot is vertical, pale-yellow, usually 3–12 cm long, with spatulate phylloids and filmy along the edges. Lateral branches of the orthotropic shoots are noticeably flattened, 1.5–2.5 mm wide. The branch systems can be from loosely grouped forming inverse-conical bundles to fan-shapely prostrated. The free plates of lateral phylloids are from sickle-curved toward the branch axis to narrow-triangular. The descending bases of the ventral phylloids are less pronounced than those of the dorsal phylloids. The base length of the free plates of the ventral phylloids is about 1/4 of the branch width, taking into account the free parts of the lateral

phylloids. The peduncles with strobili are formed on both lateral fertile branches and main axis of the orthotropic shoot. Strobili are arranged on the 2–6 long peduncles.

Examined specimens (new records). RUSSIA: Mordovian ASSR, Bolshie Berezniki District, 7 km south of the Simkino village, pine forest on the old dunes, [54°11'10.87"N 46°08'37.72"E], 22.06.1980, coll. V. Tikhomirov, K. Volchanskiy & A. Devyatov, sub. *Lycopodium complanatum* L. (MW0208454, Seregin 2021).

Drosera × obovata Mert. & W.D.J. Koch (Droseraceae)

Contributors: Dmitry V. Zolotov, Dmitry V. Chernykh, Roman Yu. Biryukov & Mariia A. Kulagina

Distribution and habitat. *D. × obovata* has the northern Holarctic areal that extends to the Circumboreal Region. The vast majority of findings are located in Northern and Central Europe, including the European part of Russia, and North America (Canada and the northern part of the USA) (GBIF Secretariat 2019b). The species is much less common in Siberia, especially in the south (Krylov 1931b, Yuzepchuk 1939, Peshkova 1994, Baikov 2012). Some findings were made in the Far East of Russia (Sakhalin and Kunashir Islands), in North Korea and Japan (GBIF Secretariat 2019b). Everywhere the species is confined to peat bogs (mainly sphagnum bogs). Since *D. × obovata* is a hybridogenous species, it is more often found in areas where habitats of both parental species *D. anglica* Huds. and *D. rotundifolia* L. occur. The latter is also observed in the localities cited by us, where the species was first found for the Republic of Altai (Khmeleva 2012) and the Altai Mountains as a whole (Krylov 1931b, Yuzepchuk 1939, Peshkova 1994, Baikov 2012, Ebel 2012). While *D. rotundifolia* prefers moss ridges and tussocks, *D. anglica* is common in hollows and can be partially immersed in water. *D. × obovata* occupies transitional locations.

Taxonomic notes. *D. × obovata* is differed from *D. anglica* by having shorter and wider (obovate) leaves that rapidly tapering to the petiole as well as by having underdeveloped seed capsule with often sterile seeds. *D. anglica* has longer leaves which have linear-wedge-shaped blade that gradually turns into a petiole, and the seed capsule is well developed. In contrast to *D. rotundifolia* with recumbent leaves, while *D. anglica* and *D. × obovata* have upright (erect) leaves (Krylov 1931b, Yuzepchuk 1939, Peshkova 1994).

Examined specimens (new record). RUSSIA: Altay Republic, Turochaksky District, Lake Teletskoye, village Artybash surroundings, upper reaches the Kuatang river, low-ridge-hollow transitional (mesotrophic) sphagnum peat bog, point No. 34, 51°48'50.22"N 87°19'6.20"E, 637 m a.s.l., 19.07.2006, coll. D.V. Zolotov, D.V. Chernykh & R.Yu. Biryukov (KUZ); Altay Republic, Turochaksky District, Lake Teletskoye, upper reaches of the Karasu river, southeastern shore of Lake Plandukel, sedge-sphagnum bog, point No. 14, 51°40'12.3"N 87°32'06.2"E, 23.07.2000, coll. D.V. Zolotov, D.V. Chernykh & R.Yu. & Biryukov (KUZ).

Echinops exaltatus Schrad. (Asteraceae)

Contributors: Sergey V. Saksonov, Vladimir M. Vasjukov & Stepan A. Senator

Distribution and habitat. *E. exaltatus* was described from specimens grown in the Göttingen botanical garden; the place of their origin is mistakenly indicated as Siberia ("in Siberia") (Bobrov 1962, Tscherneva 1994). Its native range is Central and Southern Europe. It is alien in the flora of Northern and Eastern Europe (except for the Carpathians), North America (POWO 2019). This alien species is reported here first time for the flora of the Samara Region and the Middle Volga Region.

Taxonomic notes. *E. exaltatus* belongs to the section *Terma* Endl. The stems are 50–150 cm long, furrow-ribbed, loose at the bottom, densely whitish-tomentose at the top; leaves are 20–30 mm long, up to 15 cm wide, pinnately parted, sparsely and short-bristly above, abaxial surface is white tomentose, sometimes grayish, without glands, stem leaves are alexical, with well-defined auricles; 16–18 anthodium

leaves are arranged in 3–4 rows, without glandular pubescence on the back, the inner leaves in the lower part are slightly fused with each other; tuft is cup-shaped, split on top; head shaped common inflorescences are 4–6 cm in diameter.

Examined specimens (new records). RUSSIA: Samara Region, Tolyatti, Arboretum of the Institute of Ecology of the Volga River Basin of the RAS, [53°28'31.54"N 49°21'25.75"E], 28.07.2020, coll. S.V. Saksonov & V.M. Vasyukov (LE, MW, PVB).

Elatine triandra Schkuhr (Elatinaceae)

Contributor: Olga A. Kapitonova

Distribution and habitat. *E. triandra* is a Holarctic boreo-temperate species. The natural range of the species covers Western and Eastern Europe, the Mediterranean, Middle Asia, Western Siberia, the south of Eastern Siberia, the Far East, and Southeast Asia; it was introduced in North and South America, Africa, Australia (Razifard et al. 2016). The species is very rare in Western Siberia. It is known from the Kemerovo Region (the middle flow of the Tom' River) (Vlasova 1996, Grebenyuk 2012), the Altai Republic (Northern Altai) (Krasnoborov 2012), the Khanty-Mansi Autonomous Area – Yugra (Malaya Sosva Nature Reserve and the floodplain of the Ob' River in the vicinity of the Polnovat village) (Vasina 2012, Glazunov & Nikolaenko 2018). We recorded this species for the first time for the territory of the Tyumen Region.

E. triandra grows in stagnant and slowly flowing water bodies to a depth of 1–1.5 m with a predominantly sandy bottom, on wet coastal sands, on silty and sandy alluvium (Grebenyuk 2012).

In the cited locality, the water in the waterbody was transparent to the bottom. The bottom of the reservoir is sandy with a small amount of silt. *E. triandra* grew in the *Callitriche hermaphroditica* L. community which included a small population of *Potamogeton trichoides* Cham. et Schlecht. The projective cover of *E. triandra* did not exceed 1–2%.

Taxonomic notes. *E. triandra* belongs to the section *Crypta* (Nutt.) Seub. These are small herbaceous annuals submerged in water. *E. triandra* has prostrate stems 2–18 cm long, usually branched, rooting at the nodes. Leaves are opposite, light green to green, blades are linear, broadly linear or oblong, (3)5–10(15) mm long, 1–2(3.5) mm wide, obtuse or acute at the apex; petioles very short, 0–3 mm long. Stipules are triangular or ovate-lanceolate, 0.7–1 mm long, margins are dentate. Flowers are solitary, axillary, sessile; sepals usually 3, petals 3, white or reddish, ovoid or elliptical, stamens 3, styles 3. Capsules are compressed-globose, three-locular, 1.2–1.7 mm in diameter. Seeds are oblong, 10–25 per locule, 0.5 mm long, slightly curved, brown, with a cellular surface (Vlasova 1996, Razifard et al. 2016).

Examined specimens (new records). RUSSIA: Tyumen Region, Tobolsk District, 4.5 km NE from the railway station "Tobolsk", 58°18'48"N 68°22'17"E, watered sand quarry, 640 m southeast of the railway, under water, depth 0.1–0.5 m, 06.08.2020; coll. O.A. Kapitonova (IBIW, LE, Herbarium of the Tobolsk complex scientific station UB RAS).

Eleocharis klinge (Meinsh.) B. Fedtsch. (Cyperaceae)

Contributor: Olga A. Kapitonova

Distribution and habitat. *E. klinge* is a Eurasian steppe species. It is distributed in Eastern Europe (Ukraine), Middle (Kazakhstan, Kyrgyzstan) and Central (Northern Mongolia) Asia (Egorova 2001). In Russia, the species was recorded in the south of the European part – on the Lower Volga and Lower Don (Egorova 1976, Alekseev 2006), in the Orenburg (Ryabinina & Knyazev 2009) and Chelyabinsk (Kulikov 2010) Regions, in the south of Middle and Eastern Siberia (Bubnova 1990) and the Russian Far East (Ovchinnikova 2012). Our find is the first report of the species in Western Siberia and the most northern point of the known distribution the species in Siberia (Bubnova 1990). *E. klinge* grows in damp and marshy saline meadows, on the shores and shallow wa-

ters of water bodies. We found plants on the swampy shore of a floodplain lake with secondary soil salinity. The salinity of water in temporary reservoirs on the shore of the lake was 0.7 ‰. In the cited locality, in addition to *E. klinge*, we recorded a number of halophilic species growing: *Salicornia perennans* Willd., *Spergularia salina* J. et C. Presl., *Tripolium panonicum* (Jacq.) Dobrocz., *Puccinellia distans* (Jacq.) Parl., *P. haupfiana* (V.I. Krecz.) Kitag., *Suaeda* sp.

Taxonomic notes. *E. klinge* belongs to the *Eleocharis* section (Egorova 2001). Plants have stems 20–40 cm in height with reddish-brown leafy sheaths in the lower part. One sterile scales are developed at the base of the spikelet. It covers the base of the spikelet entirely or by 2/3. The fruits are obovate, their surface is finely meshed. *E. klinge* differs from the closely related species *E. uniglumis* (Link) Schult. in a number of characters: a larger conical stylopodium 0.5–0.9 cm in length, a larger multi-flowered spikelet 1–2.5 cm in length, light-brown covering scales 4.5–5 mm in length with a wide white membranous margin, thickened stems of 1.5–2.5 mm in diameter.

Examined specimens (new records). RUSSIA: Tyumen Region, Tobolsk District, in 1.6 km W-SW from the village Savina, shore of Lake Ereka (oxbow of the Irtysh river), near a conserved well of mineral water, swampy coast, 58°12'02"N 68°10'42"E, 02.07.2020; coll. O.A. Kapitonova (IBIW, LE, Herbarium of the Tobolsk complex scientific station UB RAS).

Epipactis condensata Boiss. ex D.P. Young (Orchidaceae)

Contributors: Alexander V. Fateryga, Ramazan A. Murtazaliev & Petr G. Efimov

Distribution and habitat. This species is known from Greece (Samos Island), Russia, Turkey (the type locality is "Bounarbachi. Smyrna" in Izmir Province), Cyprus, Syria, Lebanon, Georgia, and Azerbaijan (Delforge 2016, Fateryga & Fateryga 2018). The only Russian region where the records of *E. condensata* were previously documented from is the Krasnodar Territory (Fateryga & Fateryga 2018, Popovich et al. 2020), although Efimov (2020) did not mention this species among the taxa restricted in their distribution to a single region. *E. condensata* is confined to various types of forest communities. In Russia, it is known to occur in pine, oak, hornbeam, and mixed forests and shrub communities (Popovich et al. 2020). The present report is the first publication of records of *E. condensata* from Dagestan.

Taxonomic notes. Three species in the genus *Epipactis* Zinn were previously reported from Dagestan by Murtazaliev (2009): *E. atrorubens* (Hoffm.) Besser, *E. belleborine* (L.) Crantz, and *E. palustris* (L.) Crantz; Fateryga & Fateryga (2018) added *E. persica* (Soó) Hausskn. ex Nannf. *E. atrorubens* was obviously reported by a mistake since it was absent from the Caucasus as a whole (Fateryga & Fateryga 2018, Efimov 2020). Thus, four species of *Epipactis* are currently known from Dagestan: *E. condensata*, *E. belleborine*, *E. palustris*, and *E. persica*. Further records of other species in this genus (e.g., *E. leptochila* (Godfery) Godfery) are still expected.

Although *E. condensata* was not included to the recent molecular phylogenetic study of the genus *Epipactis* (Sramkó et al. 2019), we suppose that it is a bona fide species (terminology by Sramkó et al. 2019) due to a distinctive morphology. *E. condensata* can be recognized among the species in the genus *Epipactis* occurring in Russia by the leaves which are approximately equal in length to the internodes, the ovaries which are pubescent as well as the rachis of the inflorescence, two separate bosses at the base of the epichile, and the viscidium which is present but inefficient (Fateryga & Fateryga 2018).

Plants with violet or purple leaf and stem suffusion occurring in shady habitats (so called *E. condensata* var. *kuenkeleana* (Akhalk., H. Baumann, R. Lorenz & Mosul.) Popovich) are often treated as a separate species, i.e., *E. kuenkeleana* (Akhalk., H. Baumann, R. Lorenz & Mosul.) P. Delforge, endemic to the Caucasus, as opposed to *E. condensata* s. str. distributed in Asia Minor and Cyprus (Delforge 2016). We decided that *E. condensata* and *E. kuenkeleana* were just two habitat-dependent forms and synonymized them (Fateryga & Fateryga 2018). *E. kartliana* Kreutz & Van Domm., des-

cribed later from Georgia (Kreutz 2019), appears to be also conspecific with *E. condensata*.

Examined specimens (new records). RUSSIA: Republic of Dagestan, Buynaksk District, Manasaul, forest, [42°45'N 47°02'E], 27.06.1968, coll. A. Radzhi (LENUD); Republic of Dagestan, Derbent District, Dzhalgan Mount (above the fortress), N slope, 450 m a.s.l., oak forest, 42°02'57.6"N 48°15'55.1"E, 10.06.2010, coll. R.A. Murtazaliev (DAG, Ueda 2021); Republic of Dagestan, Buynaksk District, vicinity of Termenlik Ski Base, above Manasaul, N slope, 1100 m a.s.l., oak-hornbeam forest, 42°44'58.9"N 46°59'55.7"E, 1.07.2018, coll. R.A. Murtazaliev (DAG, Ueda 2021 m).

***Galium affrenum* (Klokov) Ostapko** \equiv *Asperula affrena* Klokov (**Rubiaceae**)

Contributors: Vladimir M. Vasjukov, Guzyalya F. Suleymanova, Elena S. Bogdanova & Viktor N. Nesterov

Distribution and habitat. *G. affrenum* (sectio *Brevitubulos* Ostapko, series *Affrena* Ostapko) was described from Ukraine (Klokov 1961). Its distribution is not well studied, the taxon is known reliably in the South of Ukraine (Nikolaev Region) and of Donbass Territory (Donetsk Peoples Republic, Lugansk Peoples Republic) (Klokov 1961, Ostapko 2005). For the first time the species is reported for the Saratov Region and probably for Russia. It grows on steppe slopes and cretaceous outcrops.

Taxonomic notes. *G. affrenum* is a hybridogenic taxon derived from hybridization of *G. octonarum* (Klokov) Pobed. s. l. and *G. rubenicum* Willd. (Klokov 1961). The nothospecies is sometimes unreasonably combined with *G. rubenicum* (Czerepanov 1995) or *Asperula rumelica* Boiss. (POWO 2019). The perennial plant has several hairy, almost erect stems 50–85 cm tall. The lower and middle stem leaves are collected in whorls of 8–10, linear-bristle with curled edges, 3–40 mm in length and 0.5–0.8 mm in width, glabrous above, short-pilose below. Inflorescence is panicle, multiflorous, rather dense; pedicels are 0.2–1 mm long, glabrous; the corolla is pale lemon yellow or whitish, short-cone, 1.6–1.8 mm long and 2–2.5 mm in diameter, with a tube 2–2.3 times shorter than the laminae; ovaries and fruits are densely-pilose.

Examined specimens (new records). RUSSIA: Saratov Region, near the city of Khvalynsk, Belenkaya mountain, cetaceous outcrops, [52°29'36"N 48°05'38"E], 23.06.2020, coll. V.M. Vasjukov, G.F. Suleymanova, E.S. Bogdanova & V.N. Nesterov (LE, MW).

***Genista tinctoria* L. (Fabaceae)**

Contributor: Alla V. Verkhovzina & A.L. Ebel

Distribution and habitat. The native range of *G. tinctoria* covers Europe, including the European part of Russia, and Asia: Afghanistan, Azerbaijan, Iran, Kazakhstan, Lebanon-Syria, the Caucasus, Transcaucasia, Ural (Chelyabinsk and Sverdlovsk Regions) and Transurals (the Kurgan Region) (Jakovlev et al. 1996, Roskov et al. 2006, POWO 2019). The eastern border of the natural distribution of the species is in Transurals. The species has been introduced into Argentina, Iraq, Canada, United States, Australia (Roskov et al. 2006, POWO 2019). There are also iNaturalist observations available reported from Siberia, namely, from Novosibirsk (Shaulo 2000, Zykova 2009, Ueda 2021n), Omsk (Ueda 2021o), and Tomsk Regions (Ueda 2021p). For Eastern Siberia, the species has been recorded for the first time as an adventive species that has probably escaped from cultivation. However, the Komarov Botanical Institute RAS has a specimen received from the Ledebour's herbarium that was collected in the city of Irkutsk.

Taxonomic notes. *G. tinctoria* belongs to the *Genista* section (Gibbs 1966, Pardo et al. 2004). The species is highly variable. The synonymy shows multiple attempts to distinguish individual forms as separated species (Shishkin 1945, Gibbs 1966, Jakovlev et al. 1996). So, for the Siberia (the Kurgan Region), besides *G. tinctoria* there is also *G. sibirica* mentioned as a separate species, that comprises bare or slightly pubescent plants with more narrow leaves (0.3–

0.8(1) cm) and broader 3.5–5 mm beans (Kurbatskiy 1994). According to the diagnosis, *G. sibirica* resembles *G. tinctoria*, but it has bare, hardly striped, non-channeled or angled culms and more narrow and barer leaves (Linné 1771). However, in the typification of Linnaean specific and varietal names in the Leguminosae, P.E. Gibbs synonymised *G. sibirica* and *G. tinctoria* (Turland & Jarvis 1997).

Examined specimens (new record). RUSSIA: Irkutsk Region, Irkutsk, crossroads of Baikalskaya street and Piskunov street, motorway roadside, 52°16'09"N 104°18'29"E, 11.07.2020, coll. A.V. Verkhovzina, 64110, 64121–64125 (IRK).

***Hedysarum talassicum* E. Nikit. & B. Sultanova (Fabaceae)**

Contributors: Komiljon Sh. Tojibaev, Inom J. Juramurodov, & Hang Sun

Distribution and habitat. *H. talassicum* was described for the Talas Ala-Too (Kyrgyzstan) (Sultanova 1973). The species was reported in Kyrgyzstan (Sultanova 1973, Lazkov & Sultanova 2014). In “Flora of the USSR” (Fedchenko 1948), “Flora of the Kirghiz SSR” (Nikitina 1957) and “Flora of Kazakhstan” (Baytenov 1961), these plants from the Talas Ala-Too were falsely referred to *H. cephalotes*, and the plant is presented schematically in Table 58 and Figure 2 in “Flora in Kazakhstan” (1961), so that it is difficult to refer it to this or that species (Kovalevskaya 1981). According to the information provided by S.S. Kovalevskaya (1981), the distribution area of *H. talassicum* is located in the Talas Ala-Too, Susamir-tau, Kovak-tau, and Fergana ranges of the Tian Shan mountains.

The herbarium specimens from the National Herbarium of Uzbekistan, Tashkent, (TASH), the Institute of Biology's Herbarium, Bishkek, Kyrgyzstan (FRU), the Herbarium of the Komarov Botanical Institute, St. Petersburg, Russia (LE), the Herbarium of the Moscow State University (MW) were reviewed. As the result of our survey, no herbarium samples collected at the Susamir-tau, Kovak-tau, and Fergana ranges have been found. On the contrary, the herbarium specimens collected at the Santalash ridge (Kyrgyzstan, Ala-Buka district (12.08.1961, Ubukeyeva (FRU)) were present.

During field researches in 2019 in the mountainous regions of the South-West Tien Shan populations of *H. talassicum* were found on the slopes of Pskem ridges at the altitude of 2800–3100 m in the Barkrak river, which is one of the left inflows of the Oigaing river. It is the first record for the flora in Uzbekistan. Thus, we can conclude that the distribution area of the *H. talassicum* is at the Talas Ala-Too, Santalash and Pskem ridges. The species grow on small, sandy, rocky, and gravel slopes in the lower, middle and upper part of the mountains.

The geographical distribution of the species by favorable climatic and environmental conditions has been modeled with the MaxEnt v. 3.4.1 Software (Phillips et al. 2006, Phillips & Dudik 2008). The geographical model of favourable growth areas for *H. talassicum* in the current climatic conditions have been compiled. Six main bioclimatic factors (mean annual temperature (BIO1); isothermality (BIO1/BIO7) * 100 (BIO3); temperature seasonality (BIO4); mean temperature in the wettest period (BIO8); precipitation in the wettest period (BIO16); precipitation at the driest period (BIO17) were used to create a potential habitat areas of the species. In the resulting model (Fig. 1), favourable climatic conditions for species growth were set from 0 to 1 with 0 as the lowest probability, and 1 as the highest one. The percentage for randomised analysis was set to 25 and the results were cross-validated through 500 replications. The assessment of the resulting model showed that the AUC (Area Under Curve) study result was 0.998, and the test result was 0.996. The two resulting AUC values exceed 0.9, which is consistent with the model's predictive capability (Scheldeman & van Zonneveld 2010).

Taxonomic notes. *Hedysarum* L. is one of the major genera of Fabaceae Lindl. There are more than 160 species globally, most of them grow in Eurasia, Central and Southwest Asia, North Africa and North America (Liu et al. 2017a, 2017b). More than half of the species of the genus *Hedysarum* grow in Middle Asia. Conspectus Florae Asiae Media points out 72

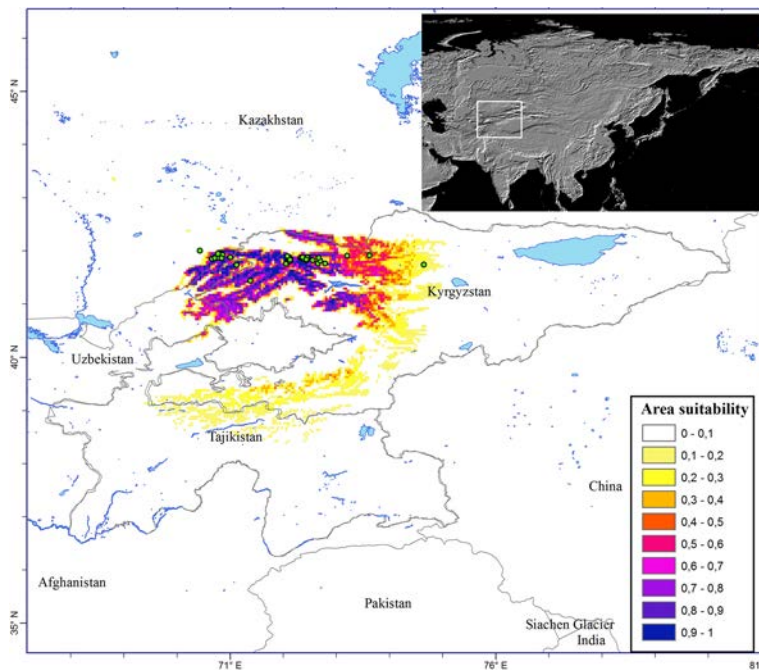


Figure 1 Predicted habitat range of *Hedysarum talassicum* E. Nikit. & B. Sultanova based on bioclimatic modeling in MaxEnt v 3.4.1. Dots reflect species occurrences

species (Kovalevskaya 1981). According to our estimations, at least 79 species of *Hedysarum* are known in Middle Asia, 47 of which are endemics of the Tien Shan and Pamir Alay mountains. 19 species of *Hedysarum* were recorded in the first edition of “Flora in Uzbekistan” (Korotkova 1955). In recent years, new findings have increased the number of records of the species up to 26 (Tojibaev et al. 2014, unpublished data). Many of them are local endemics from the Tien Shan and Pamir Alay mountains. Some authors consider *Hedysarum* as one of the polymorphic groups in local mountain flora of Uzbekistan (Sennikov et al. 2016).

One of the species that resembles to *H. talassicum*, is *H. minjanense* Rech. f., the main difference is in the color of the bracteole

(*H. minjanense* has a gray-brown bracteole). It differs from *H. minjanense* because of its ovate-oblong blades, half-horizontal pilose or densely pilose calyx, through a smaller size of corolla (the corolla of *H. minjanense* reaches 16 mm long), and a sparsely pilose peduncle.

H. talassicum by many characteristics is closer to *H. narynense* E. Nikit. than *H. minjanense*: bracteole is 4–8 mm long, for *H. narynense* it is 2.5–3.5 mm long, wings are about half as long or half shorter than the keel (the wings of *H. narynense* are more than half of the keel).

The data comparison for morphological features obtained in a new record (for *H. minjanense* and *H. narynense*) are presented. The morphological characteristics of *H. talassicum* and *H. narynense* are described based on the herbarium specimens from the TASH and the description of each species type (Nikitina 1957, Sultanova 1973).

Examined specimens (new records).

UZBEKISTAN: Western Tien Shan, Pskem ridge, the middle course of the river Oygaing, between Koks-su and Tundyk gorges, [42°7'16.95"N 70°53'6.90"E], 16.08.1954, coll. Pavlov 216 (MW); Oygaing river valley, the upper reaches of gorge Barkraksai, 3400 m a.s.l., [42°10'19.25"N 70°58'17.50"E], 21.08.1958, coll. Pavlov 88 (MW); Oygaing river valley, the upper reaches of gorge Barkraksai, 3100 m a.s.l., [42°10'24.91"N 70°57'23.58"E], 11.08.2019, coll. K.Sh. Tojibaev & I.J. Juramurodov 1108116–1108118, 1108149 (TASH)) (Fig. 2).

***Isoëtes echinospora* Durieu (Isoëtaceae)**

Contributors: Valerii A. Glazunov, Svetlana A. Nikolaenko & Stepan A. Senator

Distribution and habitat. *I. echinospora* is a boreal Euro-Siberian species, the main part of its range is located in Central and Eastern Europe, it is found in the Middle and Southern Urals, in Western and Eastern Siberia. It is included in the Red Book of the Russian Federation as a *I. setacea* Durieu. About the nomenclature confusion and priority in the name

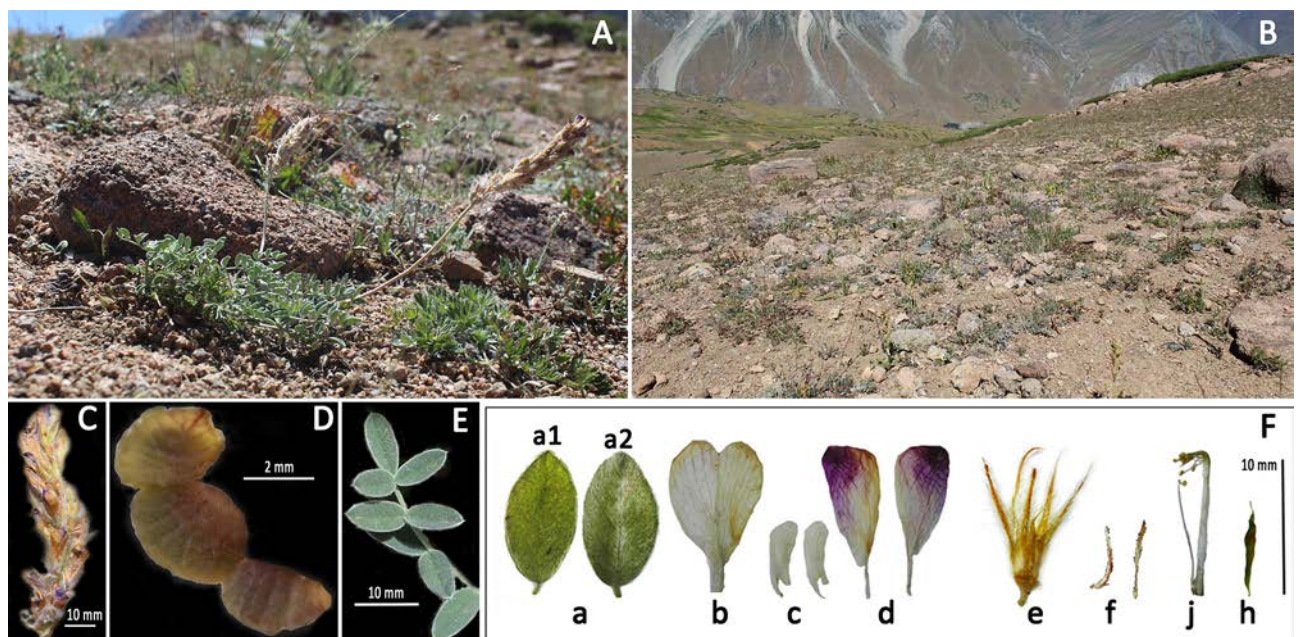


Figure 2 *Hedysarum talassicum* E. Nikit. & B. Sultanova: A – the plant in natural habitat; B – typical habitat; C – raceme; D – loment; E – leaf; F – morphological features (from Tojibaev, Juramurodov, № 1108149, TASH): a – leaflets (a1 – adaxial surface, a2 – abaxial surface); b – standard; c – wings; d – keels; e – calyx; f – bracteoles; j – androecium; h – ovary

of the species is written in W. Greuter & A. Troia (2015). Several localities are known in Khanty-Mansi Autonomous Area – Yugra (Glazunov & Nikolaenko 2019) and one is in the Tyumen Region (Glazunov 2018). In 2019, it was first found in the Yamal-Nenets Autonomous Area (Popova & Donetskov 2019).

Taxonomic notes. It is a perennial rooting aquatic heterospore plant 5–15 cm long. The stem is spherical, 0.5–1 cm in diameter. The sessile leaves are arranged spirally, often arcuate curved, narrow, with an extended base, light green, translucent in the light. At the base of fertile leaves on the inner side there are mega- and microsporangia. Megasporangia are oval, 4–5 mm long and 3–4 mm wide. Megaspores are whitish, about 0.3 mm in diameter, with a surface covered with thin brittle spines. It is found in oligotrophic lakes with clear fresh water on a sandy, less often muddy bottom, usually at a depth of 0.3 to 1.0 m.

Examined specimens (new records). RUSSIA: Yamal-Nenets Autonomous Area, Nadym District, 1 km South of the Novyi Urengoi town, 66°03'23.2"N 76°36'44.6"E, lake without a name, grows sparsely at a depth of 0.4–1.0 m, 07.08.2020, coll. V.A. Glazunov, S.A. Nikolaenko & S.A. Senator (PVB, TMN); Nadym District, right bank of the Bol'shoi Yarudei River, 6 km North of the Nori village, by the Norisada River, 66°12'23.9"N, 72°23'30.5"E, lake without a name, grows sparsely at a depth of 0.2–0.3 m, 09.08.2020, coll. V.A. Glazunov, S.A. Nikolaenko & S.A. Senator (TMN); Nadym District, left bank of the Levaya Khetta River, Verykort stow, 27 km North-East of the Priozerny village, 64°22'55.5"N 71°35'33.4"E, lake without a name, grows solely at a depth of 0.4–0.5 m, 10.08.2020, coll. V.A. Glazunov, S.A. Nikolaenko & S.A. Senator (TMN); Pur District, left bank of the Pur River, 11 km North-East of the Ngarka-Yambto lake, 65°28'20.1"N 77°48'58.2"E, lake without a name, grows sparsely at a depth of 0.3–0.9 m, 11.08.2020; coll. V.A. Glazunov, S.A. Nikolaenko & S.A. Senator (PVB, TMN).

Jacobaea grandidentata (Ledeb.) Vasjukov (Asteraceae)

Contributor: Igor V. Kuzmin

Distribution and habitat. *J. grandidentata* is a species native to South-East and East Europe to Western Siberia and Caucasus. According POWO database (2019) this species is distributed in Bulgaria, Central, South and East European Russia, Kazakhstan, Crimea, North Caucasus, Romania, Transcaucasia, Turkey, Ukraine, Western Siberia. Actually, in Western Siberia, this species occurs in its extreme southwest only. There were 12 locations of *J. grandidentata* in the Kurgan Region (Naumenko 2012), of which northernmost population is situated about the city of Kurgan (55°30'N). In the Kurgan Region, this plant inhabits steppified and alkaline meadows of river valleys, in floodplain shrub thickets and along the forest edges. *J. grandidentata* is considered to be rare and included into the Red Data Book of the Kurgan Region. In 2019, we studied invasion centers of alien plants in the city of Tyumen. One of them was a site where the large highway enters into Tyumen from the Kurgan Region (i.e. Chervishevskiy tract). A major road junction was built here. At the roadside and in the roadside ditch, we found the following co-inhabited species: *Tripolium pannonicum* (Jacq.) Dobrocz. (50 individuals), *Plantago cornuti* Gouan (two individuals) и *J. grandidentata* (one individual). These plants are characteristic for southern steppe regions with partially alkaline soils, which are not typical for a natural zone, where Tyumen is situated. However, we register sometimes such steppe plant species penetrated into Tyumen area. Of the mentioned plants, the locations of the first two species (together with some other ones, like *Lysimachia maritima* (L.) Galasso, Banfi & Soldano) have been previously found in Tyumen. However, the record of *J. grandidentata* is the first and unique location in Tyumen, being found in 200 km northward of the known limit of its range. This was a solitary plant. It was very large, well developed, 1 m in height and 1 m in diameter, with a large number of generative stems. In 2019, the plant was actively flowering and fruiting, having more than 200 inflorescences. The flowers were

actively pollinating by dipterans. The monitoring of this location in 2020 demonstrated the same results. Despite the active fruiting in 2019 and 2020, no one young plant was found in 500-m radius around the mother plant. This indicates unfavorable conditions of the Tyumen Region for seed reproduction of *J. grandidentata*.

J. grandidentata is a new alien species to the flora of the Tyumen Region and a rare record in the whole of Siberia. Photos were uploaded to the site iNaturalist.org.

Taxonomic notes. *J. grandidentata* (*Senecio grandidentatus* Ledeb.; *J. erucifolia* ssp. *arenaria* (Soó) B. Nord. & Greuter; *S. arenarius* M. Bieb.; *S. erucifolius* ssp. *arenarius* Soó; *S. erucifolius* ssp. *grandidentatus* (Ledeb.) B. Nord.; *S. erucifolius* ssp. *grandidentatus* (Ledeb.) V.E. Avet.) has leaves with a densely web-like pubescence of abaxial part of blades. This is the main difference of this species of the closest species *J. vulgaris* Gaertn. and *J. erucifolia* (L.) G. Gaertn., B. Mey. & Scherb. The last two species have leaves with glabrous abaxial parts of blades. These species are widely distributed in the Tyumen Region.

Examined specimens (new records). RUSSIA: Southern Trans-Urals, Tyumen Region, Tyumen, interchange (road junction) at the intersection of Chervishevskiy tract and Zakaluzhskaya Street, check with the even-numbered Chervishevskiy tract in the direction out of the town on a interchange in the direction of even-numbered Zakaluzhskaya Street, in 10 m to South-West pedestrian crossing, 57°07'08.3"N 65°31'11.7"E, alt. 88 m. a.s.l., between the roadside with *Calamagrostis epigejos* (L.) Roth and ruderal motley grass and thickets of *Salix cinerea* L. in a roadside ditch, 08.10.2019 (Ueda 2021q) and 26.09.2020 (Ueda 2021r), coll. I.V. Kuzmin s.n. (Tyumen State University).

Lappula heteracantha (Ledeb.) Gürke (Boraginaceae)

Contributor: Svetlana V. Ovchinnikova

Distribution and habitat. *L. heteracantha* was described by C.F. Ledebour from Astrakhan (Volga Region) by own collection and are found from the territory of Russia: Europe part, Western Siberia; Western Europe: Czechoslovakia, France, Hungary, Romania; Eastern Europe: Podolia, Crimea; South-West Asia: Caucasus, Turkey, Iran, Afghanistan; Central Asia: Mongolia, China (Popov 1953, Hlavacek 1958, Zhu Ge-ling et al. 1995, Ovchinnikova 1997, 2009, 2019, Gubanov 1999, Ovchinnikova et al. 2004). In Middle Asia species is known only from Northern Kazakhstan and the Alai Valley of Kyrgyzstan (Goloskokov 1964, Kupriyanov & Ovchinnikova 2017, Ovchinnikova & Ganybaeva 2019). *L. heteracantha* grows on sandy places and rocky outcrops in steppes, semi-deserts and on mountain slopes. Revision of herbarium collections TASH showed that *L. heteracantha* is new species from the territory of Tajikistan.

Taxonomic notes. The genus *Lappula* Moench comprises over 70 species of hispid small to medium-sized annual or perennial herbs with distribution in the northern Hemisphere and has several representatives in Africa and Australia (Ovchinnikova 2005). *L. heteracantha* belongs to series *Lappula* of section *Lappula* with subulate gynobase, ovate glochidiate nutlets with 1–3 rows of spinules. Eremocarps in cenobium of the species *L. heteracantha* are heteromorphic, of two types. In the upper part of the fertile twigs, 2 eremocarps have an inner row of long protruding spines that are not fused together and an outer incomplete row of short anchor spines; the other two eremocarps have a wide raised cupped wing at the edge of the disc; an incomplete row of short spines is located under the wing. Spiny eremocarps without wing are characted for related species *L. consanguinea* (Fisch. et C.A. Mey.) Gürke with homomorphic nutlets (Ovchinnikova 2005, Ovczinnikova 2009).

Examined specimens (new records). TAJIKISTAN: [Sughd Region, northern slope of the Gissar ridge, 39°04'28"N 68°22'06"E], basin of the river Zeravshan, on the shores of Lake Iskanderkul, 15.06.1915, coll. M.G. Popov 1100 (TASH).

***Lavandula angustifolia* Mill.** = *L. spica* L., nom. rej. (Lamiaceae)

Contributor: Victoria V. Bondareva

Distribution and habitat. The native range of *L. angustifolia* is South-Western Europe: North-Eastern Spain, South France and Italy (POWO 2019). It is rarely cultivated as an essential oil, honey and ornamental plant in the South of the Middle Volga region (Saksonov & Senator 2012, Rakov et al. 2014, Vasjukov & Saksonov 2020). This species is first listed for the flora of the Samara Region as a wild colonophyte plant (self – seeding and wintering in the open ground).

Taxonomic notes. In the genus *Lavandula* L. about 25 species distributed in Eurasia from the Canary Islands to India (Gladkova 1978). For the territory of European Russia (Crimea), only one species of *L. angustifolia* is listed as a cultivated plant. It is a subshrublet 20–100 cm high, with numerous branched shoots and linear-lanceolate leaves 2–6 cm long and 2–6 mm wide, the flowers are collected in false whorls of 6–10 at the end of the stems, forming an intermittent spike-shaped inflorescence, corolla are purple, about 1 cm long (Shishkin 1954, Gladkova 1978).

Examined specimens (new records). RUSSIA: Samara Region, Syzran District, Obratstovo village, 53°13'46.6"N 49°13'53.4"E, 13.09.2020, coll. V.V. Bondareva (PVB).

***Linaria grjunerae* Knjaz. (Plantaginaceae)**

Contributors: Petr A. Kosachev & Polina D. Gudkova

Distribution and habitat. *L. grjunerae* from the Middle Ural was described by Knyazev (2003). He distinguished two varieties within the species: 1. *L. grjunerae* var. *grjunerae*: the Sverdlovsk Region, the Tagil River, on the right bank of rock “Mount Plyashatiha” between the villages of Tagil and Morshinino. 07.30.2000, M.S. Knyazev (type LE, isotype SVER); 2. *L. grjunerae* var. *tuberculispermae* Knyaz.: the Sverdlovsk Region, the Iset River, on the right bank of limestone rocks between the villages of Beklenischevo and Smolino. 05.08.2000, M.S. Knyazev (type LE, isotype SVER). Additionally, the author gives the information about the distribution *L. grjunerae* var. *grjunerae* in the east macroslope of the Southern Urals, without mentioning a specific location. At the same time Knyazev notices that there are the herbarium specimens from the eastern part of Bashkiria, which probably belongs to the described type in the LE and the Institute of Biology of Ufa Scientific Center Academy of Sciences (Ufa) (Knyazev 2003). This species has not been reported from Siberia (Polozhii 2003) and the Republic of Tyva (Krasnoborov 2007). During taxonomic revision of Siberian *Linaria* at the Herbarium of the Central Siberian Botanical Garden (NS) a specimen of *L. grjunerae* collected in the Tyva Republic was found. This collection was previously misidentified as *L. acutiloba* Fisch. *L. grjunerae* is a mountain species inhabiting the talc-chlorite (the first location) and the limestone (the second location) slopes in the zone of the southern taiga. At a new location in the Republic of Tyva the plants were collected at an altitude of 1400 m on the chlorite schist rocks, which is similar to habitat on “Mountain Plyashatiha”.

Taxonomic notes. In Tyva, six species of *Linaria* section from two sub-sections grow: 1. Subsectio *Linaria*: *L. buriatica* Turcz. ex Ledeb., *L. melampyroides* Kuprian., *L. vulgaris* Mill., *L. acutiloba* Fisch.; 2. Subsectio *Laevae*: *L. altaica* Fisch. ex Kuprian., *L. debilis* Kuprian. In the area of growing *L. grjunerae* and adjacent areas inhabit 4 species: *L. vulgaris*, *L. acutiloba*, *L. altaica*, *L. debilis* (Krasnoborov 2007). Knyazev assumes the hybrid origin of *L. grjunerae*, considering parental species *L. vulgaris* and *L. debilis*. Habitus, acute lobes of sepals, leaf shape hybridogeneous species of which are similar to *L. vulgaris*; however, another complex of features, namely, smooth seeds, blue veins on the corolla tube, densely pubescent calyx and narrow glaucous of leaves indicates a kinship with *L. debilis*. New location is more than 2,000 km distanced from the two known habitats of the species. This disjunction in the distribution of the species may also indicate that the hybridization processes

took place a long time ago, probably at the beginning of the Holocene, when *L. debilis* spread far north (Knyazev 2003), and to the east, followed by isolation of relict populations and their active involvement into introgression process with widespread *L. vulgaris*.

Examined specimens (new records). RUSSIA: Tyva Republic, Western Sayan Mountains, the upper Kuzhe River (basin of the Khemchik River), 1400 m a.s.l., chlorite schist rock on the southern slope, [51°45'50.40"N 90°41'17.88"E], 10.08.1977, coll. I.M. Krasnoborov & V. Rozhitzina (sub nomine *L. acutiloba*) (NS).

***Platycladus orientalis* (L.) Franco** (≡ *Thuja orientalis* L., and many other homo- and heterotypic synonyms, see for example WCVP (2021)) (Cupressaceae)

Contributor: Denis A. Krivenko

Distribution and habitat. The natural (indigenous) range of *P. orientalis* is located in China and Korea. This is possibly the most widely introduced Cupressaceae conifer in Asia. In many areas inside and outside natural range it has escaped from cultivation and established spontaneous populations, including of Caucasus (Imkhanitskaya 2003, Farjon 2010). *P. orientalis* a species of open woodland and deciduous (oak, oak-birch, and oak-pine) forests. Within its natural range it is now almost invariably found in secondary vegetation or, nearest to its original habitat, in more or less degraded woodland and forest. As a pioneer species which is relatively longlived, it can dominate certain slopes for a long time if further disturbances remain absent (Farjon 2010).

Previously, this species was not known wild in Kabardino-Balkarian Republic (Shkhagapsoev 2015, Shkhagapsoev et al. 2018) although it was indicated for neighboring Karachay-Cherkess Republic (Zernov et al. 2015) and other regions of Caucasus (Imkhanitskaya 2003).

Taxonomic notes. *P. orientalis* is representative of a monotypic genus, closely related to the species of *Thuja* L. (*Th. koraiensis* Nakai, *Th. occidentalis* L., *Th. plicata* Donn ex D. Don, *Th. standishii* (Gordon) Carrière and *Microbiota decussata* Kom. (Morgan 1999, Farjon 2010). All *Thuja* species have strongly aromatic foliage when crushed, winged seeds, leaves paler green or markedly white underside. The foliage of *P. orientalis*, when crushed, is odorless, its seeds are wingless, and both sides of its foliage sprays are indistinguishable from each other in colour and texture. Finally, the cones of the *Thuja* species being somewhat similar in size and shape but those of *P. orientalis* almost three times larger with conspicuous recurved dorsal “horns” (the bract tips) on each fleshy swollen seed scale (Morgan 1999).

Examined specimens (new records). RUSSIA: Kabardino-Balkarian Republic, Chereksky District, Skalistyy ridge is the third forward ridge of the northern slope of Greater Caucasus ridge, Cherekskoe ravine, right bank of the Cherek Balkarskii River, near the Chirik-Kol Lake, 43°14'01"N 43°32'23"E, 830 m a.s.l., mossy damp sheer cliffs, 07.08.2019, coll. D.A. Krivenko 58901 (IRK).

***Potentilla × bishkekensis* Soják (Rosaceae)**

Contributors: Alexey A. Kechaykin, Georgy A. Lazkov & Gulfamilya A. Koychubekova

Distribution and habitat. The species was described based on a single collection from the northern part of the Kyrgyz Range in the Ala-Archa River valley (Soják 2003). This area belongs to the Chui Region, Kyrgyzstan. No other localities are currently known for *P. × bishkekensis*. The species grows on pebble and floodplain terraces of mountain rivers and meadow-steppe slopes of different exposure.

Taxonomic notes. According to Soják (2003), *P. × bishkekensis* is a rare hybrid species that resulted from crosses between *P. agrimonioides* M. Bieb. and *P. multifida* L. In its habitus, this species is similar to *P. multifida* and differs in leaflets sparsely pubescent beneath with visible small glands

and in numerous large yellowish glands on the sepals. *P. multijida* has hairs and shows no glands.

Examined specimens (new records). KYRGYZSTAN: Jetti-Oguz Region, syrty, "Akshiryak", Dzhangarta River valley, the right tributary of the Akshiryak River, opposite the confluence of the Sauk-Tur brook, meadow terrace, alpine feather grass steppe, [41°46'59.4"N 78°57'11"E], 14.08.1935, coll. S. Savic & G. Sabardina (FRU); Chon-Alai District, Alai Ridge, western slope of the Kashka-Suu tract, [39°54'32.7" N 72°43'47"E], 03.08.1948, coll. Kashchenko (FRU).

Potentilla chalchorum Soják (Rosaceae)

Contributors: Alexey A. Kechaykin, Georgy A. Lazkov & Guljamilya A. Koychubekova

Distribution and habitat. The species was described based on numerous collections from the south of Central Siberia, Dauria and Northern Mongolia (Soják 1970). Later, *P. chalchorum* distributed from the Krasnoyarsk Territory to the Amur Region in Russia (Soják 2007), from the Mongolian Altai to the northeast in Mongolia (Urgamal et al. 2014), and in the Gansu (GBIF Secretariat 2019c) and Hebei (Soják 2007) provinces in China. The species grows in different places from wet valley meadows to steppes and woodlands (typically larch and pine), sometimes forming numerous populations. *P. chalchorum* can also be found around tourist sites, near settlements, and it often occupies disturbed habitats.

Taxonomic notes. In some of the studies, Soják (2004, 2007, 2009) suggested that *P. chalchorum* is a hybrid that resulted from crosses between *P. longifolia* D.F.K. Schltdl. and *P. tergemina* Soják. The author attempted to experimentally prove the hybrid nature of this species to confirm this hypothesis. He artificially crossed the putative parental species and hybridized *P. longifolia* and *P. tergemina* to obtain the species similar to the natural species *P. chalchorum* (Soják 2012). The hybrids obtained by J. Soják were found to be identical to the species *P. chalchorum* from natural populations collected by him in southern Siberia and Mongolia. *P. tergemina* grows in Kyrgyzstan (Adylov 1976), but *P. longifolia* has not yet been found there. However, the latter species grows in Kazakhstan on the ridges of the Zailiyskiy Alatau, Kungey Alatau and Terskey Atatau that border Kyrgyzstan (Adylov 1976). *P. chalchorum* exhibits the traits of both parents, but it is closer in appearance to *P. conferta* Bunge, a widespread taxon in the flora of Kyrgyzstan (Lazkov & Sultanova 2011). These species differ in the following morphological characters. Leaf petioles of *P. chalchorum* are covered with 0.8–2 mm hairs, petals are distinctly longer than the calyx, achenes smooth, and several small glands can be found in sepal pubescence. Leaf petioles of *P. conferta* are covered with 2–3.5 mm hairs, petals do not exceed the calyx, achenes are glandular, numerous large glands, typically yellowish, can be found on the entire plant. It should be noted that the length of the *P. chalchorum* stems varies depending on environmental conditions (similar to many other *Potentilla* species), but the morphology of its leaf blades and the pubescence of the entire plant are constant characters.

Examined specimens (new records). KYRGYZSTAN: Naryn Region, At-Bashinsky District, At-Bashi, Tash-Rabat, [40°49'30.1"N 75°17'18.8"E], 10.08.1986, coll. R. Aydarova & Zadiyev (FRU); Naryn District, Ak-Kiya Village (left bank of the Naryn River), [41°25'37.7"N 76°06'03.2"E], 26.06.1965, coll. R. Aydarova & N.V. Gorbunova (FRU).

Potentilla doubjonneana Cambess. (Rosaceae)

Contributors: Alexey A. Kechaykin, Georgy A. Lazkov & Guljamilya A. Koychubekova

Distribution and habitat. The species was described from Kashmir and, according to Soják (2007), it is widespread in Afghanistan, Pakistan, and on the Pamir-Alai and Western Tien Shan Ridges. Isolated populations occur in the Caucasus in South Ossetia, Georgia and Dagestan. This alpine perennial plant prefers alpine meadows, stony and eroded areas. It is typically found in the areas 3000–4500 m a.s.l.

Soják noted that *P. doubjonneana* was collected in Kyrgyzstan 14 times, but the author and other botanists never cited its specific localities for this region. In addition, we did not find herbarium specimens identified as *P. doubjonneana* and marked by J. Soják or other botanists in LE and FRU herbaria.

Taxonomic notes. Among all *Potentilla* species growing in Central Asia, *P. doubjonneana* is closest to *P. gelida* C.A. Mey., *P. tephroleuca* Th. Wolf, and *P. turczaninowiana* Stschegl. All these species belong to the section *Aureae* (Lehm.) Juz., and the last three species also grow in Kyrgyzstan (Lazkov & Sultanova 2011, Kechaykin et al. 2020). One of the main features that distinguish *P. gelida* from *P. doubjonneana*, *P. tephroleuca*, and *P. turczaninowiana* is the arrangement of basal leaves on the caudex. *P. gelida* has two-ranked leaf arrangement, while other species exhibit multi-ranked spiral arrangement. *P. doubjonneana* differs from *P. turczaninowiana* in larger petals (6–9 mm long rather than 4–5.5 mm) and anthers (0.7–0.8 mm long rather than 0.3–0.5 mm). *P. doubjonneana* and *P. tephroleuca* differ from each other in leaflet pubescence. In *P. tephroleuca*, the leaflets (all or only in basal leaves) are covered with dense short hairs between veins. In *P. doubjonneana*, the leaflets are glabrous, with sporadic or sparse hairs between veins.

Examined specimens (new records). KYRGYZSTAN: [northern slope of Talas Ridge], Kalba River basin, Terme Tor slope, [42°16'37.1"N 72°30'36.8"E], 12.08.1954, coll. A. Moldoyarov (FRU).

Potentilla tschimganica Soják (Rosaceae)

Contributors: Alexey A. Kechaykin, Georgy A. Lazkov & Guljamilya A. Koychubekova

Distribution and habitat. The species was described based on collections from the slopes of the Bolshoi Chimgan Mountain (Soják 1987), no other localities are currently known. The mountain range located in the northeastern part of Uzbekistan in the Tashkent Region near the border with Kyrgyzstan belongs to the Chatkal Ridge System. A possible locality of *P. tschimganica* was indicated earlier for the flora of Kyrgyzstan (Kechaykin et al. 2020). This species grows among shrubs, on meadow and steppe slopes of western and southern exposures, sometimes along roads. The altitude limit indicated for *P. tschimganica* habitats varies from 1500 to 2800 m a.s.l.

Taxonomic notes. According to the original source, *P. tschimganica* was considered a stabilized hybrid species that resulted from crosses between *P. fedtschenkoana* Siegf. ex Th. Wolf and *P. pedata* Hornem. (Soják 1987). Both species are found in the flora of Kyrgyzstan (Lazkov & Sultanova 2011). We agree with I. Soják's opinion that *P. fedtschenkoana* and *P. pedata* can be parental species of *P. tschimganica*. Their populations often grow in close proximity in the Western Tien Shan. The pubescence of *P. tschimganica* is intermediate between *P. fedtschenkoana* and *P. pedata*. However, the appearance of *P. tschimganica* is closer to *P. inclinata* Vill., which grows in the central and western part of Kyrgyzstan (Lazkov & Sultanova 2011, Kechaykin et al. 2020). *P. tschimganica* differs from this species in the presence of numerous small glands on leaf petioles, relatively large leaflets (up to 9 cm long) with 7–9 teeth on both sides. In *P. inclinata*, glands are absent, and leaflets are typically 5–6-toothed and 3–5 cm long. In addition, the basal and lower stem palmately compound leaf blades of *P. tschimganica* typically have 7 leaflets (less often in combination with 5 leaflets). In *P. inclinata*, leaf blades typically have 5–6 leaflets (leaves with 7 leaflets are less common).

Examined specimens (new records). KYRGYZSTAN: Pskern Ridge, Kara-Korum River ravine, 2500 m a.s.l., [41°46'50"N 70°43'29.1"E], 22.06.2006, coll. G.A. Lazkov (FRU).

Pseudopodospermum strictum (Hornem.) Zaika, Sukhor. & N. Kilian = *Scorzonera stricta* Hornem. (Asteraceae)

Contributors: Stepan A. Senator, Evgenii G. Zibzeev & Vladimir M. Vasjukov

Distribution and habitat. *P. strictum* described from garden specimens, probably, originating from the Volga Region, it is distributed in the forest-steppe and steppe zones of Central

and Eastern Europe, the pre-Caucasus, southern Western Siberia and north-western Central Asia (Tzvelev 1989, Baikov 2012). *P. strictum* was not previously known for the Altai Republic (Lomonosova 1997, Krasnoborov 2012). It grows in steppes and steppes meadow.

Taxonomic notes. *P. strictum* is a more or less pubescent greenish plant with an upright single stem 20–50 cm long, at the top or below branching, leafy along the entire length, shoots at the base are covered with a cover from the sheaths of dead leaves, more or less destructive, but not split into filamentous fibers, with a tap root up to 2.5 cm in diameter; linear leaves 2–5 (7) mm wide; 3–10 heads on long peduncles; the flowers are yellow, the marginal ones are much longer than the pubescent antheridium; achenes are naked, sometimes with single hairs at the top, 9–14 mm long, at the base without a hollow pedicel.

Examined specimens (new records). RUSSIA: Altai Republic, Kosh-Agach District, left bank of the Chagan-Uzun River, 2.5 km south of the Chagan-Uzun village, 1734 m a.s.l., [50°04'50.4"N 88°21'34.1"E], 10.06.2016, coll. S.A. Senator, E.G. Zibzeev, N.I. Makunina, E.A. Basargin, N.V. Igai & I.Yu. Selyutina (PVB).

Rhinanthus songaricus (Sterneck) B. Fedtsch. (Orobanchaceae)

Contributor: Olga A. Kapitonova

Distribution and habitat. *R. songaricus* is a Ciscaucasian-Western Siberian-Middle Asian desert-steppe species. It grows in the south of the European part of Russia (Lower Volga) (Ivanina 1981a), in the southern Urals (Plaksina 2001), in the Chelyabinsk Region (Kulikov 2010), in Altai (Barnaul botanical-floristic region) (Polozhii et al. 2003), in the northern and eastern Kazakhstan (Baitulin & Kotuhov 2011). We indicate this species for the first time for the territory of the Tyumen Region. This species grows in saline meadows and salt marshes, in the valleys of rivers and lakes (Ivanina 1981a). In the cited locality, *R. songaricus* grew in a sedge-horsetail rich fen with sparse willow and birch layer. Its abundance was low.

Taxonomic notes. *R. songaricus* is described from Middle Asia ("Songaria"). The species belongs to the section *Cleistolomus* Chab. It is an herbaceous annual semi-parasitic plant. It differs from other species of the section by its numerous leaves and branches that are pressed or obliquely upwards directed. In addition, it is characterized by triangular-lanceolate, long-pointed bracts with sharp long teeth in the lower part, which are 1.5–2 times longer than the calyx. Corolla is 17–18 mm long, yellow, with a slightly curved tube (Ivanina 1981a).

Examined specimens (new records). RUSSIA: Tyumen Region, Vagaisky District, in 25.5 km SSE from the village Vershinskaya, 57°08'51"N 70°17'17"E, low-lying sedge-horsetail rich fen with birch and willows, 21.07.2020, coll. O.A. Kapitonova (LE, Herbarium of the Tobolsk complex scientific station UB RAS).

Rochelia bungei Trautv. (Boraginaceae)

Contributor: Svetlana V. Ovchinnikova

Distribution and habitat. *R. bungei* was described by R.E. Trautvetter from Kopetdag mountain, Kisil-Arvat (Turkmenistan) by collection of A.C. Becker. The species occupies a vast area, its is distributed in Iran, Afghanistan, Pakistan, Kashmir, China, Mongolia, in Republics of Middle Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan (Pavlov & Popov 1953, Riedl 1967, Kazmi 1971, Abdullaeva et al. 1986, Zhu Ge-ling et al. 1995, Gubanov 1996), and the species is also found in the Siberia (Altai) (Ovchinnikova 2012), and was not found from the territory of Europe. *R. bungei* grows at the fine-earth, stony-gravelly slopes, outcrops of variegated rocks, among ephemeral vegetation, from the plains to the middle belt of mountains, less often on fixed sands in depressions and crops, at an altitude 300–2300 m a.s.l.

Taxonomic notes. The genus *Rochelia* Rchb. comprises 22 species of annual ephemeral villous or hispid herbs with a small

corolla with scaly vaults, the presence of a prominent binder on the anthers, and a bilobed stigma, with a pseudo-monomeric dicentric coenobium, dense intergrowth of eremocarps with gynobasis, a special stellate-hairy surface of eremocarp. The fruits of the genus *Rochelia* differ from the typical coenobium in that only the adaxial carpel forms two non-falling eremes, and the fruit is separated from the mother plant, representing a diaspora, together with the calyx and peduncle (Smirnova 1986).

R. bungei belongs to section *Rochelia*. Narrow and inwardly curved sepals in species from the *Rochelia* section serve as hooks (replacing anchor spines) with which the diaspora clings to animal hair or human clothing. Apparently, therefore, almost all species are weeds, actively expanding their range, which distribute from desert of Northern Africa and the Mediterranean Region to the mountains of the West, Middle, Central Asia, Altai and Himalayas (Pavlov & Popov 1953, Riedl 1967, Kazmi 1971, Abdullaeva et al. 1986, Zhu Ge-ling et al. 1995, Khattamsaz 2002). From related species *R. leiocarpa* it is distinguished by stellate-hairy surface of eremocarp, just as eremocarps of species *R. leiocarpa* are smooth or wrinkled, shiny, without bumps on the surface. The closely related species *R. karsensis* Popov and *R. microcalycina* Bornm. are endemic to Turkey have a similar surface to eremocarps (Pavlov & Popov 1953).

Revision of herbarium collections LE showed that *Rochelia bungei* is new species from the territory of Europe and borderline Caspian botanical-geographical region of Kazakhstan.

Examined specimens (new records). RUSSIA: Volgograd Region, on the border with the Caspian region of Kazakhstan, lake Elton, in a spoon near the lake, about 4 km from the station Elton, [49°08'N 46°42'E], 21.05.1925, coll. M.M. Ilyin & Yu.S. Gngoriev 66 (LE). KAZAKHSTAN: Ural Province, lake Charhal (= Sharkal), in the lowland at the foot of Ak-Kulak mountain, a large number, [50°33'N 51°41'E], 18.05.1925, coll. S. Verushkin et al. 23 (LE).

Senecio viscosus L. (Asteraceae)

Contributors: Aleksandr L. Ebel & Elena Yu. Zykova

Distribution and habitat. Native area of *S. viscosus* covers Western and Central Europe, and the Caucasus; original habitats of the species are apparently sand hills and coastal dunes (Shishkin 1961, Meusel & Jager 1992). In the European part of Russia, this species within the natural range is found only in the Northwest (Tzvelev 2000). Resettlement of the species over Russia began in the XIX century (Vinogradova et al. 2010). To date, *S. viscosus* has been recorded in most of European Russia, except in the very south of the territory (Konechnaya 1994, Tzvelev 2000). In Asia the species has been recorded from Kazakhstan, where it was observed in two locations of Kokshetau Upland (Epiktetov 2020, Evdokimov 2019). The species was introduced to the Russian Far East (Barkalov 1992) and to North America (Barkley 2006). *S. viscosus* is a heliophilous plant growing in dry habitats on relatively poor soils, and it does not tolerate salinization. In the secondary area it grows mainly on railway embankments, near roads, less often near housing (Vinogradova et al. 2010).

In Siberia, the location of the species has been recorded since the 1980s. The first finds in the regions were noted in Altai (Ignatov & Ignatova 1982) and Krasnoyarsk Territories (Stepanov 1990), the Irkutsk Region and Buryatia (Zarubin et al. 1993, Ivanova & Azovsky 1998, Sutkin 2010, Chepinoga et al. 2018), Kurgan (Naumenko 2008), Tyumen (Vibe 1997), Kemerovo (Krasnoborov et al. 2002) regions, Khakassia (Skvortsov 2005, Ebel et al. 2017). For the Novosibirsk Region this species is recorded for the first time.

Taxonomic notes. *S. viscosus* is an annual 10–40 (50) cm high. Like some others species in sect. *Senecio* it has corymbs with ray flowers that are short, barely longer than phyllaries, with a flat or turned outward bend. In contrary to other representatives of this section, *S. viscosus* has sticky glandular pubescence. Achenes are fusiform, brown, with thin longitudinal ribs. For European populations of *S. viscosus*, naked achenes are indicated (Stace 1997, Hodalova

et al. 2004). However, plants with clearly pubescent achenes are rarely found in the European part of Russia. As a hypothesis requiring evidence, this can be explained by introgressive hybridization with local species of the sect. *Senecio*: *S. vulgaris* L. or *S. sylvaticus* L. (Vinogradova et al. 2010). In Europe, hybrids with *S. sylvaticus* L. (*S.* × *viscidulus* Scheele) are mostly sterile (Stace 1997).

Examined specimens (new record). RUSSIA: Novosibirsk Region, Novosibirsk, Soviet microdistrict, surroundings of the “Seyatel” station, 54°51'54.89"N 83°04'41.81"E, in the yards, outside the flower beds. 30.08.2019, coll. E.Yu. Zykova (NS).

Silene cserei Baumg. (Caryophyllaceae)

Contributor: Aleksandr L. Ebel

Distribution and habitat. The species is widespread in Southeastern Europe, Asia Minor and the Caucasus (Marhold 2011, Lazkov 2012). It was recorded as an alien plant in Finland (Marhold 2011) and other European countries (POWO 2019), in some places in European Russia (Tzvelev 2004) and in the Ural Mountains (Chelyabinsk Region), where it occurs on grassy dumps of gravel and also on disturbed stony slopes (Kulikov 2010). The species is also recorded as an alien plant in many states of the USA and provinces of Canada (Morton 2005). Recently it has been found as alien plant in two locations in Kazakhstan (Ebel et al. 2015a). *S. cserei* is an alien species new for the flora of Siberia. It grows in anthropogenic habitats on disturbed soils.

Taxonomic notes. This species of the genus *Silene* L. is an annual to biennial or rare short-lived perennial monocarpic belonging to section *Behenantha* Otth or subgenus *Behen* (Moench) Bunge which some authors are treated as a separate genus *Oberna* Adans. This group containing 20 to 25 species distributed in temperate and partly in cold and subtropical regions of Eurasia and North Africa (Tzvelev 2004). According to Tzvelev (2004), area of *Silene cserei* Baumg. s. str. (≡ *Oberna cserei* (Baumg.) Ikonn.) is located only in Transylvania, whereas close related species *Oberna schottiana* (Schur) Tzvel. (≡ *Silene schottiana* Schur) has more wide distribution. On the other hand, the name *Silene schottiana* is considered to be a synonym of *Silene vulgaris* (Moench) Garcke (≡ *Oberna behen* (L.) Ikonn.). The latter species is a perennial widely distributed in Eurasia. It has prominent reticulate veins on its rather large calyx, and the latter inflate while fruiting. *S. csereii* may be easily separated from *S. vulgaris* by the long, racemose primary branches of its inflorescence, the elliptic smaller calyx constricted at both ends, not inflated and tightly enclosing the capsule and lacking obvious venation, and the purple filaments.

Examined specimens (new records). RUSSIA: Republic of Khakassia, Ust-Abakan District, ca. 7 km NNE from the village Mokhov, roadside, 53°58'43.1"N 91°27'32.1"E, 11.07.2020, coll. A.L. Ebel & T.V. Ebel (TK).

Solanum physalifolium Rusby (Solanaceae)

Contributors: Andrey N. Efremov & Nataliya V. Plikina

Distribution and habitat. *S. physalifolium* is a species native to the Andes (Argentina, Bolivia, Peru and Chile). It is adventive and naturalized in North and Central America, Europe, South Africa, some regions of Asia (Russia, Japan), New Zealand and Australia (Särkinen et al. 2018 as *Solanum nitidibaccatum*, GBIF Secretariat 2019d, POWO 2019, PBI *Solanum* Project 2021, Nobis et al. 2020). The species has a limited distribution in the European part of Russia. Previously it was collected in Kursk, Moscow, Ryazan Regions, the Republic of Mordovia (Mayorov 2018), the Udmurt Republic (Melnikov 2011). In the Asian part of Russia *S. physalifolium* was found in 2016 in several habitats of the Tyumensky District of the Tyumen Region (Nobis et al. 2020). In 1949 it was collected in the Bodaibinsky District (Australian Tropical Herbarium 2021); in 2015 *S. physalifolium* was observed in the Usolsky district of the Irkutsk Region (Ueda 2021s).

In the Omsk Region *S. physalifolium* is determined for the first

time. It was found within the modern borders of Omsk, in a beet field and along the edge of an irrigation canal. Its cover reached 5%. The species could be found on the territory of the Agricultural Production Cooperative “Bolshevik” in the Poltavsky District of the Omsk Region, since the seeds purchased for the lawn making on the territory of St. Petersburg contained an admixture of seeds of *S. physalifolium* (I.V. Kuzmin, personal comments). The species grows in disturbed areas, on railways and highways embankments, in fields and ruderal habitats (Edmonds & Chweya 1997).

Taxonomic notes. The species is related to *Solanum nigrum* L., from which *S. physalifolium* differs broadly by having ovoid, dark green to purple- to brownish-green ripe berries, usually with distinct reticulum of veins (sclereids accompanying the vascular bundles are visible through the outer layers of the pericarp), usually translucent, sometimes opaque; lower half of mature fruit covered with appressed and enlarged calyces, whose sepals often reflex away from fully mature berries (Edmonds & Chweya 1997, Mayorov 2018, Knapp et al. 2020). Plants usually prostrate with many decumbent sprawling laterals arising from the base; moderately to densely pubescent with spreading glandular-headed hairs (Edmonds & Chweya 1997). Two varieties of *S. physalifolium* species are known as var. *physalifolium* with South American distribution and var. *nitidibaccatum*, which successfully spreads beyond the primary range (Edmonds 1986). Plants from the Omsk Region have dentate-crenate leaf edge, 4–8-flowered inflorescences, broadly triangular sepals, and broadly ovoid berries, that are corresponding to *S. physalifolium* var. *nitidibaccatum* (Bitter) Edmonds (Henderson 1974, Nobis et al. 2020). This variety was determined on the territory of Russia and European countries (Mayorov 2018, Särkinen et al. 2018, Nobis et al. 2020).

Examined specimens (new records). RUSSIA: Omsk Region, Omsk, Soviet Administrative District, Beregovoy microdistrict, beet field, edge of an irrigation canal, 55°09'22.4"N 73°14'40.0"E, 27.09.2020, coll. A. Efremov & N. Plikina (MW): 1.

Thalictrum ussuriense Lufarov (Ranunculaceae)

Contributor: Alexander N. Lufarov

Distribution and habitat. *Th. ussuriense* Lufarov is not listed in the reports on the flora of Inner Mongolia Province of China (Fu & Zhu 2001). This species was considered to grow only in the Russian Far East – Amur Region, Jewish Autonomous Region, Khabarovsk Territory, Primorye Territory, as well as in Northeastern China and the Korean Peninsula (Lufarov 1989, 1995, 2016). It grows in upland and floodplain meadows, forest edges and along roadsides (Lufarov 1995). The study of herbarium collections stored at the V.L. Komarov Botanical Institute (St. Petersburg) (LE) made it possible to identify the samples of *Th. ussuriense* for the first time in Inner Mongolia province (China).

Taxonomic notes. The samples of *Th. ussuriense* were identified as *Th. simplex* L. p. p. (Komarov 1903, Nevsky 1937, Voroshilov 1985), *Th. strictum* non Ledeb., auct. (Voroshilov 1966), *Th. simplex* subsp. *strictum* (Ledeb.) Worosch. comb. invalid. (Voroshilov 1982). Currently, the taxonomic distinction of *Th. ussuriense* is confirmed by its morphological, anatomical, ecological-geographical, phenological and biochemical features (Ponomarchuk & Ulanova 1972, Lufarov 1989, 1995, 2004, Gavrilenko & Novozhilova 2015). *Th. ussuriense* is distinguished from the closely related *Th. simplex* by the following features: aerial shoots up to 150–250 (300) cm tall (in *Th. simplex* the height of the shoots is 40–60 (80) cm); horizontal rhizomes, up to 150 cm long (in *Th. simplex* the rhizomes can be horizontal, ascending or vertical, 5–30 cm, sometimes up to 50 cm long), gray roots (in *Th. simplex* the roots are lemon-yellow), highly branched stems (the stems of *Th. simplex* are either not branched at all or with a few branches in the upper part), broad triangular leaves, triternate or tripinnate, deflected from the stem; the leaflets are obovate or orbicular-reniform, matte, 2–6 cm long, 1–5 cm wide (in *Th. simplex* the leaves are narrowly triangular, usually

biterminate or bipinnate, rarely tripinnate, compact; the leaflets are lanceolate, narrow obovate, with glossy upper side, 1.5–3, rarely up to 4 cm long, 0.5–2 cm wide); the inflorescence is a broad pyramidal branching panicle (the inflorescence of *Th. simplex* is a narrow pyramidal panicle with compressed branches), the stigma is ovate (in *Th. simplex* the stigma is sagittate or triangular).

Examined specimens (new records). CNINA: [Inner Mongolia Province], “in planities circa Kuku-hoton, [40°50'35"N 111°44'56"E], 1884, coll. G.N. Potanin” (LE); [Inner Mongolia Province], “in planities circa Kuku-hoton, Tschao-dshium-fun prope Kuku-hoton, [40°50'57"N 111°44'85"E], 18.07.1884, coll. G.N. Potanin” (LE).

Trollius austrosibiricus Erst & Lufarov (Ranunculaceae)

Contributors: Andrey S. Erst, Lian Lian & Wei Wang

Distribution and habitat. *T. austrosibiricus* is endemic to mountainous areas of the southern part of Western and Central Siberia: Tuva Republic, Kemerovo Region, Krasnoyarsk Territory, Khakassia Republic. This species grows in subalpine and forest zones, in moist valleys at 350–2600 m a.s.l. It occurs in forest glades and fringes, in mixed-grass and mixed-grass-cereal dry and swampy meadows, along the banks of rivers, streams and small ponds with fresh water (Erst et al. 2019).

Taxonomic notes. *T. austrosibiricus* is morphologically close to *T. chinensis* Bunge. It is well distinguished by simple rhizomes (rather than by the multi-headed basal part of the plant, as in *T. chinensis*), shorter aerial shoots, smaller flowers and shorter persistent styles. *T. chinensis* is an East Asian species occurring in Russia (Primorye and Khabarovsk Territories, Sakhalin Region), in the north and northeast of China and on the Korean peninsula (Siplivinsky 1972, Voroshilov 1982, Lufarov 2004). The indication of the distribution of *T. chinensis* in western Mongolia (Uvs Province, Harhiraa), Siberia (Krasnoyarsk Territory, Buryatia Republic) is based on an incorrect identification of specimens, some of which belong to *T. austrosibiricus* (Serebryanyi 2019). *T. austrosibiricus* is distinguished from *T. asiaticus* L. by having a smaller number of sepals, longer persistent styles and petals longer than sepals. *T. asiaticus* grows mainly in extra-tropical Asia (Western and Eastern Siberia, Mongolia, northeast Kazakhstan and China), as well as in the northeast of European Russia (Schipczinsky 1937, Siplivinsky 1972, Doroczewska 1974, Borodina-Grabovskaya 2001, Friesen 2003).

Examined specimens (new record). RUSSIA: Altai Republic, Kosh-Agachsky District, Upper Boguty Lake, 49°42'52.8"N 89°29'48.3"E, mountain steppe, 2475 m a.s.l., 08.08.2020, coll. A.S. Erst & T. Erst (NS)

Typha latifolia L. (Typhaceae)

Contributor: Olga A. Mochalova

Distribution and habitat. *T. latifolia* is widespread semi-aquatic species. It is found as a native species in Eurasia, North and South America, Africa, and an introduced and invasive species in Australia, New Zealand (GISD 2021). In Russia, it is found in the European part, Siberia and the Far East. In the northern part of the Russian Far East *T. latifolia* has been found in Central (Milkovo, Shchapino, Lazo, Esso in basin of Kamchatka River) and South Kamchatka (Paratunka) (Yakubov & Chernyagina 2004). In Yakutia (Eastern Siberia), broadleaf cattail has been found from Upper and Middle Lena valley (Vilyuisky and Aldan district of Yakutia) (Krasnoborov & Korotkova 1988). The new locality is situated ~ 950 km southeast from Kamchatka localities and 1050 km west from Yakutian localities. The new record in the Magadan Region is the most northeastern in Russia and it is of an invasive character.

We assumed 2 version of introduction for *T. latifolia* in the Magadan Region: by vehicles or by people returning from vacations. We found out that most likely it was brought from the Novosibirsk Region in 2004: “the broken bunch

(pistillate spikes) was thrown into a roadside ditch, not on the road”.

In the new locality, this species is found near 200 m from the parking with roadside café not far from the highway. The site is heavily polluted by road dust. Such areas thaw in spring 1–2 weeks earlier than natural habitats, which probably determined the success of the *Typha* population here. *T. latifolia* grows in the widening of the watercourse (70 × 40 m) with thickets of willows on the shore. In 2017, broadleaf cattail grew in the 3 small thickets at a depth of up to 0.6 m. The area of the largest group of them was about 30 m². In 2020, there were five sites with *T. latifolia*. The total projective cover of the community with broadleaf cattail was 70–80 %. The communities are dominated *Equisetum fluviatile* L. with *Eleocharis palustris* (L.) Roem. et Schult., in addition, the communities contain *Calamagrostis langsdorffii* (Link) Trin., *Eriophorum scheuchzeri* Hoppe, *Carex vesicata* Meinsh., *Ranunculus gmelinii* DC., *Potamogeton berchtoldii* Fieb. etc.

Taxonomic notes. *T. latifolia* is variable separate slightly taxon may be shed partly as mixtures of differ ploidy race, perhaps due to introgression hybridization. This species shares range with other related species, and hybrids. Reproduction is both by seed and vegetatively by rhizomes. *T. latifolia* rapidly colonizes exposed wet area, as it produces an extremely high number of wind water dispersed seeds. In the new Magadan locality, 30.06.2017 *T. latifolia* was represented by vegetative shoots 0.2–0.4 m height. At 8.09.2017 there were with as pistillate spikes, as staminate spikes partially showered. A week later (15.09.2017, coll. E.A. Dubinin) most pistillate spikes have already crumbled. At September erect shoots 1.0–1.3 m, 1.5–2 cm thick in base; leaf 1–1.5 cm wide. Pistillate spikes in fruit 9–15 cm, some of them were curved or underdeveloped. Some plants are in poor conditions. Due to the abundance of curved spikes and small size, we assumed it was a hybrid plants. Collected plants in 2020 were determined as *T. latifolia*.

Examined specimens (new records). RUSSIA: Magadan Region, Yagodninsky District, 376 km of the Kolyma highway (M 56), the vicinity of the village Laryukovaya, 62°14'32"N 151°46'14"E, sandy-peat pond near the road, 30.06.2017, coll. O.N. Vokhmina; *ibid.*, 08.09.2017, 18.08.2020, coll. O.A. Mochalova (MAG, IBIV).

Verbascum phoeniceum L. (Scrophulariaceae)

Contributors: Dmitry V. Tarasov & Petr A. Kosachev

Distribution and habitat. *V. phoeniceum* is a widespread species, the native range of which covers Southeast, South, Central, Western Europe, Iran, Kazakhstan, Kyrgyzstan, China, the Caucasus, Transcaucasia, the European part of Russia, Ural and Western Siberia (Tyumen, Kurgan, Novosibirsk Regions, Altai Territory, Altai Republic) (Polozhij 1997, Hong et al. 1998, Doronkin 2012, Mayorov 2014, Kosachev 2017, POWO 2019). The species was introduced in the Baltic States, the Netherlands, Belgium, Denmark, France, the United Kingdom and the USA (GBIF Secretariat 2019e, Nesom 2019, POWO 2019, CABI 2021). We are the first to provide it for Eastern Siberia as adventive species that probably have escaped cultivation.

Taxonomic notes. *V. phoeniceum* belongs to the section *Lychnitis* Griseb., uniting species with the same reniform anthers of all stamens, attached to the filament by their middle, with a capitate stigma, or less often spatulate, with five stamens per flower (Ivanina 1981b). In addition to *V. phoeniceum*, 3 more species of this section are found in Siberia: *V. lychnitis* L., *V. nigrum* L. and *V. marschallianum* Ivanina et Tzvelev (Doronkin 2012). *V. phoeniceum* differs from other Siberian species of the genus in flowers located on the axis of the inflorescence singly in combination with a purple, sometimes pink or white, corolla color (Kosachev 2010). The color of the corolla of the Irkutsk specimens is pink, without a yellow tinge.

Examined specimens (new record). RUSSIA: Irkutsk Region, Irkutsk, Leninsky District, old age, ruderal deposit, 52°20'28.09"N 104°10'26.90"E, 01.06.2020, coll. D.V. Tarasov, 58855–58856 (IRK).

Vicia megalotropis* Ledeb. (Fabaceae)*Contributor:** Olga A. Kapitonova

Distribution and habitat. *V. megalotropis* is distributed in Central Asia; its area covers the south of Western and Eastern Siberia, Kazakhstan, Mongolia, Northern and Southern China (Bojian & Turland 2010, Nikiforova 2012). The species is introduced in the Magadan region (Sinel'nikova 2010).

This species is not given for the territory of the Tyumen Region (Glazunov et al. 2017). Within Western Siberia, its growth is known in the Tobolsk floristic region (Nikiforova 1994). These data are based on the work of Krylov (1933), who pointed to the growth of the species in the Tobolsk Region, but at present these districts are administratively part of the Omsk Region. The species is listed as rarely found in the Altai Territory (Krasnoborov et al. 2003); its growth is known in the south of the Tomsk Region (Vyltsan 1994), in the Novosibirsk Region (Korolyova et al. 1973), and the Altai Republic (Pyak 2012). It is not listed for the Kurgan Region (Naumenko 2008). *V. megalotropis* grows on rocky and sandy slopes in meadow steppes, sparse dry birch forests and their edges, fallow lands, river banks (Krylov 1933, Bojian & Turland 2010, Pyak 2012). The plants were found by us in the cited location in an area disturbed by wild animals, along the edge of the animal path. The plants grew in small thickets on an area of 2–3 m².

Taxonomic notes. The taxon belongs to the section *Cassubicae* Radzhi (Nikiforova 2012). It differs from the species of its section by numerous low stems 40–70 (90) cm tall, lanceolate or lanceolate-linear leaflets gradually narrowed towards the apex with thin, inconspicuous veins running at an angle of 30° to the leaf apex, covered with soft hairs; peduncles, densely pubescent at the base and approximately equal to the length of the leaf, from the axil of which they emerge or slightly longer than it; purple-red flowers that turn brown when dried; an oblong flag, the plate of which is not bent from the boat and is equal to its length (Krylov 1933, Nikiforova 1994, Bojian & Turland 2010).

Examined specimens (new records). RUSSIA; Tyumen Region, Kazan District, 3 km SE from the village of Malye Yarki, 55°36'22"N 69°22'19"E, the edge of the slope of the right indigenous coast of the Ishim River, the edge of a birch forest, on the animal pathway, 10.06.2016; coll. O.A. Kapitonova (LE, Herbarium of the Tobolsk complex scientific station UB RAS)

ACKNOWLEDGEMENTS

The reported study was funded by RFBR (grants 19-05-00133, 19-04-00658, 20-04-00183, 20-04-00561), RFBR with the Tyumen Region grant 20-44-720006 for Tyumen State University, RFBR and NSFB 19-55-18001, RSF (grants 21-77-20042 on *Dianthus linifolium*, 19-74-10082 on Ranunculaceae in Altai Republic). Institutional research projects AAAA-A21-121011290024-5 of the Central Siberian Botanical Garden SB RAS, № 121032300023-7 of the Kovalevsky Institute of Biology of the Southern Seas of RAS, AAAA-A19-119011190112-5 of the Tobolsk complex scientific station UB RAS, AAAA-A18-118012690099-2 of the Papanin Institute for Biology of Inland Waters RAS, AAAA-A20-120021490040-3 of the Tyumen State University, AAAA-A18-118030190056-4, AAAA-A19-119031290052-1 of the Komarov Botanical Institute RAS, № 0306-2021-0007 of the IWEP SB RAS, AAAA-A17-117112040039-7, AAAA-A17-117112040040-3 of the Institute of Ecology of the Volga River Basin RAS, 121041600045-8 of Tyumen Scientific Centre SB RAS, 121032500090-7 of the Lomonosov Moscow State University, № 121031300014-8 of the Siberian Institute of Plant, and supported by the Russian Academic Excellence Project 5-100 to Sechenov University.

Special gratitude Jennifer Poore (University of Utah in Salt Lake City, Utah, USA) for linguistic editing.

The authors are grateful to the team of LE, MW, FRU, AA Herbarium Funds for providing us with the herbarium information about *Hedysarum talassicum*.

LITERATURE CITED

- Abdullaeva, M.N., Sh. Ganiev, K.Z. Zakirov, A.D. Li, M.M. Nabiev & S.A. Sarkissova 1986. Boraginaceae Juss. In: *Conspectus Florae Asiae Mediae, vol. 8* (M.M. Nabiev, ed.), pp. 84–167, Izdatel'stvo FAN Uzbekskoi SSR, Tashkent (in Russian). [Абдуллаева М.Н., Ганиев Ш., Закиров К.З., Ли А.Д., Набиев М.М., Саркисова С.А. 1986. Сем. Boraginaceae – Бурачниковые // Определитель растений Средней Азии. Критический конспект флоры / под ред. М.М. Набиева. Ташкент: Из-во ФАН Узбекской ССР. Т. 8. С. 84–167].
- Adylov, T.A. 1976. *Potentilla* L. In: *Key to plants of the Middle Asia, vol. 5* (M.G. Pachomova, ed.), pp. 171–191, Izdatel'stvo "FAN" UzSSR, Tashkent (in Russian). [Адылов Т.А. 1976. Род *Potentilla* L. – Лапчатка // Определитель растений Средней Азии / под ред. М.Г. Пахомовой. Ташкент: Изд-во "ФАН" УзССР. Т. 7. С. 171–191].
- Ajdarova, R.A., A.U. Ubukeeva, N.S. Filatova, V.S. Sharashova & L.I. Kashchenko 1962. Boraginaceae Juss. In: *Flora of the Kirghiz SSR, vol. 10* (A.I. Vvedenskii, ed.), pp. 20–139, Izdatel'stvo AN Kirghiz SSR, Frunze (in Russian). [Айдарова Р.А., Убукеева А.У., Филатова Н.С., Шарашова В.С., Кащенко Л.И. 1962. Сем. Бурачниковые – Boraginaceae. // Флора Киргизской ССР / под ред. А.И. Введенского. Фрунзе: Из-во АН Киргизской ССР. Т. 10. С. 20–139].
- Alekseev, Yu.E. 2006. *Eleocharis* R. Br. In: *Flora of the Lower Volga region, vol. 1*. (A.K. Skvortsov, ed.), pp. 274–278 KMK Press, Moscow (in Russian). [Алексеев Ю.Е. 2006. *Eleocharis* R.Br. // Флора Нижнего Поволжья / под ред. А.К. Скворцова. М.: Товарищество научных изданий КМК. Т. 1. С. 274–278].
- Australian Tropical Herbarium 2021. CNS AVH data. Occurrence dataset <https://doi.org/10.15468/xunb57> accessed via GBIF.org on 2021-01-10. <https://www.gbif.org/occurrence/2827210431>.
- Averyanov, L.V. 1990. A review of the genus *Dactylorhiza*. In: *Orchid biology: reviews and perspectives, vol. 5* (J. Arditti, ed.), pp. 159–206, Comstock Publishing, Ithaca.
- Averyanov, L.V. 1994. Review of the species of the family Orchidaceae in the Caucasus flora. *Botanicheskii Zhurnal* 79(10):108–127 (in Russian). [Аверьянов Л.В. 1994. Обзор видов семейства Orchidaceae флоры Кавказа // Ботанический журнал. Т. 79, № 10. С. 108–127].
- Averyanov, L.V. 2006. Orchidaceae Juss. In: *Caucasian flora conspectus, vol. 2* (A.L. Takhtajan, ed.), pp. 84–101, Izdatel'stvo Sankt-Peterburgskogo universiteta, St. Petersburg (in Russian). [Аверьянов Л.В. 2006. Orchidaceae Juss. // Конспект флоры Кавказа / под ред. А.Л. Тахтаджяна. СПб.: Изд-во СПбГУ. Т. 2. С. 84–101].
- Baikov, K.S. (ed.) 2012. *Conspectus of the flora of Asian Russia: vascular plants*. Izdatel'stvo SO RAN, Novosibirsk, 640 pp. (in Russian). [Конспект флоры азиатской России: сосудистые растения / под ред. К.С. Байкова. 2012. Новосибирск: Изд-во СО РАН. 640 с.].
- Baikov, K.S. 1993. *Dianthus* L. In: *Flora of Siberia: Portulacaceae–Ranunculaceae, vol. 6* (L.I. Malyshev & G.A. Peshkova, eds.), pp. 88–94, Nauka, Novosibirsk (in Russian). [Байков К.С. 1993. *Dianthus* L. // Флора Сибири: Portulacaceae – Ranunculaceae / под ред. Л.И. Малышева, Г.А. Пешковой. Новосибирск: Наука. Т. 6. С. 88–94].
- Baitulin, I.O. & Yu.A. Kotukhov 2011. *Flora of vascular plants of the Kazakhstan Altai*. RGP Institute of Botany and Phytointroduction MON RK, Almaty. 159 pp. (in Russian). [Байтулин И.О., Котухов Ю.А. 2011. Флора сосудистых

- растений Казахского Алтая. Алматы: Институт ботаники и фитонинтродукции МОН РК. 159 с.]
- Barkalov, V.Yu. 1992. *Senecio* L. In: *Vascular plants of the Soviet Far East, vol. 6* (S.S. Kharkevich, ed.), pp. 238–246, Nauka, St. Petersburg (in Russian). [Баркалов В.Ю. 1992. *Senecio* L. // Сосудистые растения советского Дальнего Востока / под ред. С.С. Харкевича. СПб.: Наука. Т. 6. С. 238–246].
- Barkley, Th.M. 2006. *Senecio* L. In: *Flora of North America North of Mexico, vol. 20* (Flora of North America Editorial Committee, ed.), pp. 544–570, Oxford University Press, New York & Oxford.
- Bateman, R.M. & P.J. Rudall 2018. Clarified relationship between *Dactylorhiza viridis* and *Dactylorhiza iberica* renders obsolete the former genus *Coeloglossum* (Orchidaceae: Orchidinae). *Kew Bulletin* 73:4.
- Baytenov, M.S. 1961. *Hedysarum* L. In: *Flora of Kazakhstan, vol. 5* (N.V. Pavlov, ed.), pp. 418–442, 494, Izdatel'stvo AN Kazakh SSR, Alma-Ata (in Russian). [Байтенов М.С. 1961. *Hedysarum* L. // Флора Казахстана / под ред. Н.В. Павлова. Алма-Ата: Изд-во АН КазахССР. Т. 5. С. 418–442, 494].
- Bobrov, E.G. 1962. *Echinops* L. In: *Flora of the USSR, vol. 27* (B.K. Shishkin & E.G. Bobrov, eds.), pp. 2–53, Izdatel'stvo AN SSSR, Moscow & Leningrad (in Russian). [Бобров Е.Г. 1962. *Echinops* L. // Флора СССР / под ред. Б.К. Шишкина и Е.Г. Боброва. М.; Л.: Изд-во АН СССР. Т. 27. С. 2–53].
- Bojian, B. & N.J. Turland 2010. *Vicia* L. In: *Flora of China: Fabaceae, vol. 10* (W. Zhengyi, P.H. Raven & H. Deyuan, eds.), pp. 560–572, Science Press & MBG Press, Beijing & St. Louis.
- Borodina-Grabovskaya, A.E. 2001. *Trollius* L. In: *Plantae Asiae Centralis, vol. 12*, pp. 17–21. SPb.: SPKHNFA (in Russian). [Бородина-Грабовская А.Е. 2001. Растения Центральной Азии. Т.12. С. 17–21].
- Bubnova, S.V. 1990. *Eleocharis* R. Br. In: *Flora of Siberia: Cyperaceae, vol. 3* (G.A. Peshkova & L.I. Malyshev, eds), pp. 25–31, Nauka, Novosibirsk (in Russian). [Бубнова С.В. 1990. *Eleocharis* R. Br. // Флора Сибири: Сугерасеа / под ред. Г.А. Пешковой, Л.И. Малышева. Новосибирск: Наука, Сиб. отд-ние. Т. 3. С. 25–31].
- CABI, 2021. *Verbascum phoeniceum*. In: *Invasive Species Compendium*. Wallingford, UK: CAB International. Available from: <https://www.cabi.org/isc/datasheet/117784>. Last accessed 24.02.2021.
- Cheo T.-Y., L. Lu, G. Yang, I. Al-Shehbaz & V. Dorofeev 2001. *Bunias* L. In: *Flora of China: Brassicaceae through Saxifragaceae, vol. 8* (Wu Z.Y. & P.H. Raven, eds.), pp. 58–59, Science Press & MBG Press, Beijing & St. Louis.
- Chepinoga, V.V., N.V. Stepanova, M.V. Protopopova, V.V. Pavlichenko, E.V. Gladkikh, G.A. Arbusova & A.M. Skornyakova 2018. Floristic findings on the Khamar-Daban Range (Southern Baikal, Eastern Siberia). *Izvestiya Irkutskogo gosudarstvennogo universiteta. Seriya Biologiya. Ekologiya* 25:41–53 (in Russian). [Чешинога В.В., Степанова Н.В., Протопопова М.В., Павличенко В.В., Гладких Е.В., Арбузова Г.А., Скорнякова А.М. 2018. Флористические находки на хребте Хамар-Дабан (Южное Прибайкалье, Восточная Сибирь) // Известия Иркутского государственного университета. Серия Биология. Экология. Т. 25. С. 41–53].
- Chukavina, A.P. 1984. *Arnebia* Forssk., *Rochelia* Rchb. In: *Flora of Tajik SSR, vol. 7*. (A.P. Chukavina, ed.), pp. 394–399, 467–473, Nauka, Leningrad (in Russian). [Чукавина А.П. 1984. Роды *Arnebia* Forssk., *Rochelia* Rchb. // Флора Таджикской ССР / под ред. А.П. Чукавиной. Л.: Наука. Т. 7. С. 394–399, 467–473].
- Czerepanov, S.K. 1995. *Vascular plants of Russia and Adjacent States (the former USSR)*. Cambridge University Press, New York, 516 pp.
- Delforge, P. 2016. *Orchidées d'Europe, d'Afrique du Nord et du Proche-Orient*. Quatrième édition. Delachaux et Nistlé, Paris, 544 pp.
- Doroczewska, A. 1974. *The genus Trollius L. A taxonomical study. (Monographiae botanicae)*. Panstwowe wydawnictwo naukowe, Warszawa, 184 pp.
- Doronkin, V.M. 2012. *Verbascum* L. In: *Checklist of the flora of Asian Russia: vascular plants* (K.S. Baikov, ed.), p. 392, Izdatel'stvo SO RAN, Novosibirsk (in Russian). [Доронкин В.М. 2012. *Verbascum* L. // Конспект флоры Азиатской России: сосудистые растения / под ред. К.С. Байкова. Новосибирск: Изд-во СО РАН. С. 392].
- Ebel, A.L. 2012. *Conspectus of flora of the northwestern part of the Altai-Sayan province*, Irbis Publishers, Kemerovo, 568 pp. (in Russian). [Эбель А.Л. 2012. Конспект флоры северо-западной части Алтае-Саянской провинции. Кемерово: КРЭОО "Ирбис". 568 с.].
- Ebel, A.L., A.N. Kupriyanov, I.A. Khrustaleva, A.I. Pyak, P.D. Gudkova & M. Nobis 2015a. New records to the vascular flora of Kazakhstan (Central Asia). *Polish Botanical Journal* 60(2):191–195.
- Ebel, A.L., E.Yu. Zyкова, A.V. Verkhovina, V.V. Chepinoga, S.G. Kazanovsky & S.I. Mikhailova 2015b. New and rare species in adventitious flora of Southern Siberia. *Systematic notes on the materials of P.N. Krylov Herbarium of Tomsk State University* 111:16–31 (in Russian). [Эбель А.Л., Зыкова Е.Ю., Верховина А.В., Чешинога В.В., Казановский С.Г., Михайлова С.И. 2015б. Новые и редкие виды в адвентивной флоре Южной Сибири // Систематические заметки по материалам Гербария Томского государственного университета. № 111. С. 16–31].
- Ebel, A.L., M.S. Kniyazev & E.G. Philippov 2017. The hybrid origin of *Dianthus × courtoisii* (Caryophyllaceae Juss.) is proved // *Turczaninowia* 20(4): 198–205 (in Russian). [Эбель А.Л., Князев М.С., Филиппов Е.Г. 2017. Гибридная природа *Dianthus × courtoisii* (Caryophyllaceae Juss.) доказана // *Turczaninowia*. Т. 20, №. 4. С. 198–205].
- Ebel, A.L., S.I. Mikhailova, T.O. Strelnikova, S.A. Sheremetova, N.N. Lashchinskiy & T.V. Ebel 2017. New and rare alien species for the Republic of Khakassia. *Turczaninowia* 20(1):52–67 (in Russian). [Эбель А.Л., Михайлова С.И., Стрельникова Т.О., Шереметова С.А., Лашчинский Н.Н., Эбель Т.В. 2017. Новые и редкие для Хакасии чужеродные виды растений // *Turczaninowia*. Т. 20, №. 1. С. 52–67].
- Ebel, A.L., T.V. Ebel, S.I. Mikhailova & S.A. Sheremetova 2020. Floristic findings in Western and Central Siberia. *Systematic notes on the materials of P.N. Krylov Herbarium of Tomsk State University* 122:11–21 (in Russian). [Эбель А.Л., Эбель Т.В., Михайлова С.И., Шереметова С.А. Флористические находки в Западной и Средней Сибири 2020. // Систематические заметки по материалам Гербария им. П.Н. Крылова Томского государственного университета. № 122. С. 11–21].
- Eccarius, W. 2016. *Die Orchideengattung Dactylorhiza*. Selbstverlag des Verfassers, Eisenach, 639 pp.
- Edmonds, J.M. & J.A. Chweya 1997. *Black nightshades. Solanum nigrum L. and related species. Promoting the conservation and use of underutilized and neglected crops, 15*. Institute of Plant Genetics and Crop Plant Research, Gatersleben/International Plant Genetic Resources Institute, Rome, Italy. 113 pp.
- Edmonds, J.M. 1986. Biosystematics of *Solanum sarrachoides* Sendtn. and *S. physalifolium* Rusby (*S. nitidibaccatum* Bitter). *Botanical Journal of the Linnean Society* 92:1–38.
- Efimov, P.G. 2020. Orchids of Russia: annotated checklist and geographic distribution. *Nature Conservation Research* 5(Suppl.1):1–18.
- Efremov, A.N., N.V. Plikina, B.F. Sviridenko & T.V. Sviridenko 2017. Floristic records in Omsk and Novosibirsk Regions. *Bulleten' Moskovskogo Obshchestva Ispytatelei Prirody. Otdel Biologicheskii* 122(3):75–77 (in Russian). [Ефремов А.Н., Пликина Н.В., Свириденко Б.Ф., Свириденко Т.В. Флористические находки в Омской и Ново-

- сибирской областях // Бюллетень МОИП. Отдел биологический. Т. 122, вып. 3. С. 75–77].
- Egorova, T.V. 1976. *Eleocharis* R. Br. In: *Flora of the European part of the USSR, vol. 2* (T.V. Egorova, ed.), pp. 107–118, Nauka, Leningrad (in Russian). [Егорова Т.В. 1976. *Eleocharis* R. Br. // Флора европейской части СССР / под ред. Т.В. Егоровой. Л.: Наука. Т. 2. С. 107–118].
- Egorova, T.V. 2001. Taxonomic review of the genus *Eleocharis* R. Br. (Cyperaceae) of the flora of Russia. *Novosti sistematiki vysshikh rastenii* 33:56–85 (in Russian). [Егорова Т.В. 2001. Таксономический обзор рода *Eleocharis* R. Br. (Cyperaceae) флоры России // Новости систематики высших растений. Т. 33. С. 56–85].
- Epiktetov, V. 2020. Image of *Senecio viscosus* L. *Plantarium: open on-line atlas and key to plants and lichens of Russia and neighbouring countries. 2007–2021*. Available from: <https://www.plantarium.ru/page/image/id/6148.html>. Last accessed 25.02.2021.
- Erst, A., A. Luferov, V. Troshkina, D. Shaulo, A. Kuznetsov, K. Xiang & W. Wang 2019. *Trollius austrosibiricus* (Ranunculaceae), a new species from South Siberia. *PhytoKeys* 115:83–92.
- Evdokimov, I. 2019. Image of *Senecio viscosus* L. *Plantarium: open on-line atlas and key to plants and lichens of Russia and neighbouring countries. 2007–2020*. Available from: <https://www.plantarium.ru/page/image/id/632237.html>. Last accessed 25.02.2021.
- Farjon, A. 2010. *A Handbook of the World's Conifers, 2 vols.* Brill Academic Publishers, Leiden, 1150 pp.
- Fateryga, A.V. & V.V. Fateryga 2018. The genus *Epipactis* Zinn (Orchidaceae) in the flora of Russia. *Turczaninowia* 21(4):19–34 (in Russian). [Фатерыга А.В., Фатерыга В.В. 2018. Род *Epipactis* Zinn (Orchidaceae) во флоре России // *Turczaninowia*. Т. 21, № 4. С. 19–34].
- Fateryga, A.V., P.G. Efimov & S.A. Svirin 2019. *Orchids of the Crimean Peninsula*. Arial, Simferopol, 224 pp. (in Russian). [Фатерыга А.В., Ефимов П.Г., Свиринов С.А. 2019. Орхидеи Крымского полуострова. Симферополь: Ариал. 224 с.].
- Fedchenko, V.A. 1948. *Hedysarum* L. In: *Flora of the USSR, vol. 13* (B.K. Shishkin & E.G. Bobrov eds), pp. 259–319, Izdatel'stvo AN SSSR, Moscow & Leningrad, (in Russian). [Федченко В.А. 1948. *Hedysarum* L. // Флора СССР / под ред. Б.К. Шенникова, Е.Г. Боброва. М.; Л.: Изд-во АН СССР. Т. 13. С. 259–319].
- Friesen, N.V. 2003 *Trollius* L. In: *Flora of Siberia: Ranunculaceae, vol. 6* (I.M. Krasnoborov, ed.), pp. 98–103. Science Publ., Inc., Enfield and Plymouth.
- Fu, D. & G. Zhu 2001. *Thalictrum* L. In: *Flora of China: Caryophyllaceae through Lardizabalaceae, vol. 6* (Wu Z., P.H. Raven, H. Deyuan, eds), pp. 282–302, Science Press & MBG Press, Beijing & St. Louis.
- Galicja-Herbada, D. 2006. Origin and diversification of *Thymelaea* (Thymelaeaceae): inferences from a phylogenetic study based on ITS (rDNA) sequences. *Plant Systematics and Evolution* 257(3–4):159–187.
- Gavrilenko, I.G. & E.V. Novozhilova 2015. Anatomical structure of the leaf petioles of species of the genus *Thalictrum* (Ranunculaceae) of Russian Far East. *Turczaninowia* 18(4): 67–73 (in Russian). [Гавриленко И.Г., Новожилова Е.В. 2015. Анатомическое строение черешков листьев видов рода *Thalictrum* (Ranunculaceae) Дальнего Востока // *Turczaninowia*. Т. 18, № 4. С. 67–73].
- GBIF Secretariat, 2019a. *Ballota nigra* L. In: *GBIF Backbone Taxonomy*. Checklist dataset available from <https://doi.org/10.15468/39omei> accessed via [gbif.org](https://www.gbif.org). Last accessed 01.04.2021.
- GBIF Secretariat, 2019b. *Drosera obovata* Mert. & Koch In: *GBIF Backbone Taxonomy*. Checklist dataset available from: <https://doi.org/10.15468/dl.28d8a9> accessed via [GBIF.org](https://www.gbif.org). Last accessed 01.04.2021.
- GBIF Secretariat, 2019c. *Potentilla chalciborum* Soják. In: *GBIF Backbone Taxonomy*. Checklist dataset available from: <https://doi.org/10.15468/39omei> accessed via [Gbfif.org](https://www.gbif.org). Last accessed 01.04.2021.
- GBIF Secretariat, 2019d. *Solanum physalifolium* var. *nitidibaccatum* (Bitter) J.M. Edmonds. In: *GBIF Backbone Taxonomy*. Checklist dataset available from <https://doi.org/10.15468/39omei> accessed via [GBIF.org](https://www.gbif.org) on 2021-01-10. Last accessed 01.04.2021.
- GBIF Secretariat, 2019e. *Verbascum phoeniceum* L. In: *GBIF Backbone Taxonomy*. Checklist dataset available from <https://doi.org/10.15468/39omei> accessed via [gbif.org](https://www.gbif.org). Last accessed 01.04.2021.
- Gibbs, P.E. 1966. Revision of the genus *Genista* L. *Notes from the Royal Botanic Garden, Edinburgh* 27:11–99.
- GISD (Global Invasive Species Database) 2021 Species profile: *Typha latifolia*. Available from <http://www.iucngisd.org/gisd/species.php?sc=895>. Last accessed 24-02-2021.
- Gladkova, V.N. 1978. *Lavandula* L. In: *Flora of the European part of the USSR, vol. 3* (A.A. Fedorov, ed.), p. 142, Nauka, Leningrad (in Russian). [Гладкова В.Н. 1978. *Lavandula* L. // Флора Европейской части СССР / под ред. А.А. Федорова. Л.: Наука. Т. 3. С. 142].
- Glazunov, V.A. & S.A. Nikolaenko 2019. New locations of *Isoetes* L. (Isoëtaceae, Lycopodiophyta) in Western Siberia. *Fitoraznoobrazie Vostochnoi Evropy* 13(3):290–294 (in Russian). [Глазунов В.А., Николаенко С.А. 2019. Новые местонахождения видов *Isoetes* L. (Isoëtaceae, Lycopodiophyta) в Западной Сибири // Фиторазнообразие Восточной Европы. Т. 13, № 3. С. 290–294].
- Glazunov, V.A. & S.A. Nikolaenko 2018. New data on the northern boundaries of the range of certain plant species in Western Siberia. In: *Botany in the modern world. Proceedings of the XIV Congress of the Russian Botanical Society and the conference "Botany in the modern world", vol. 1*. ALEF, Maikachkala, pp. 123–125 (in Russian). [Глазунов В.А., Николаенко С.А. 2018. Новые данные о северных границах распространения некоторых видов растений в Западной Сибири // Ботаника в современном мире. Труды XIV Съезда Русского ботанического общества и конференции "Ботаника в современном мире". Т. 1. Ботаническое образование. Махачкала: АЛЕФ. С. 123–125].
- Glazunov, V.A. 2018. Records of *Isoetes lacustris* and *Isoetes echinospora* (Isoëtaceae) in Western Siberia. *Botanicheskii zhurnal* 103(2): 246–248 (in Russian). [Глазунов В.А. 2018. Находки *Isoetes lacustris* и *Isoetes echinospora* (Isoëtaceae) в Западной Сибири // Ботанический журнал. Т. 103, № 2. С. 246–248].
- Glazunov, V.A., N.I. Naumenko & N.V. Khozyainova 2017. *Key to vascular plants of Tyumen Region*. RG Prospect, Tyumen. 744 pp. (in Russian). [Глазунов В.А., Науменко Н.И., Хозяинова Н.В. 2017. Определитель сосудистых растений Тюменской области. Тюмень: ООО "РГ "Проспект". 744 с.].
- Goloskokov, V.P. 1964. *Lappula* Moench. In: *Flora of Kazakhstan, vol. 7* (N.V. Pavlov, ed.), pp. 209–240, Izdatel'stvo AN Kazakh SSR, Alma-Ata (in Russian). [Голоскоков В.П. 1964. *Lappula* Moench. // Флора Казахстана / под ред. Н.В. Павлова. Алма-Ата: Из-во АН Казах ССР. Т. 7. С. 209–240].
- Grebenyuk, A.V. 2012. Family Elatinaceae Dumort. In: *Checklist of the flora of Asian Russia: vascular plants* (K.S. Baikov, ed.), pp. 121–122, Izdatel'stvo SO RAN, Novosibirsk (in Russian). [Гребенюк А.В. 2012. Семейство Elatinaceae Dumort. // Конспект флоры Азиатской России: Сосудистые растения / под ред. К.С. Байкова. Новосибирск: Изд-во СО РАН. С. 121–122].
- Greuter, W. & A. Troia 2015. Disentangling *Isoetes setacea* and removing threats to *Isoetes echinospora*. *Taxon* 64(4): 811–815.

- Grubov, V.I. 1982. *Key to the vascular plants of Mongolia (with an atlas)*. Nauka, Leningrad, 443 pp. (in Russian). [Грубов В.И. 1982. Определитель сосудистых растений Монголии. Л.: Наука. 443 с.]
- Gubanov, I.A. 1996. *Conspectus of the flora of Outer Mongolia (vascular plants)*. Valang, Moscow, 136 pp. (in Russian). [Губанов И.А. 1996. Конспект флоры Внешней Монголии (сосудистые растения). М.: Валанг. 136 с.]
- Gubanov, I.A. 1999. Additions and corrections to the "Conspectus of flora of Outer Mongolia (vascular plants)". *Turczaninowia* 2(3):19–23 (in Russian). [Губанов И.А. 1999. Дополнения и исправления к "Конспекту флоры Внешней Монголии (сосудистые растения)" // *Turczaninowia*. Т. 2, №. 3. С. 19–23].
- Henderson, R.J.F. 1974. *Solanum nigrum* L. (Solanaceae) and related species in Australia. *Contributions from the Queensland Herbarium* 16:1–78.
- Hlavacek, A. 1958. Prispěvek k rozšíření *Lappula heteracantha* (Ledeb.) O. Kuntze v Evropě. *Biologia* 13(5): 362–370.
- Hodalova, I., O. Tavoda & V. Grulich 2004. Rozšíření *Senecio sylvaticus* (Compositae) na Slovensku. *Bulletin Slovenskej botanickej spoločnosti – Slovenská* 26:111–116.
- Hong, D., H. Yang, C. Jin, M.A. Fischer, N.H. Holmgren & R.R. Mill. 1998. *Verbascum Linnaeus*. In: *Flora of China: Scrophulariaceae through Gesneriaceae, vol. 18* (Z.Y. Wu & P.H. Raven, eds.), pp. 1–6, Science Press, Missouri Botanical Garden Press, Beijing, St.-Louis.
- Ignatov, M.S. & E.A. Ignatova 1982. Adventist flora news of Barnaul and its environs (Altai Territory). *Botanicheskii Zhurnal* 67(10):1421–1424 (in Russian). [Игнатов М.С., Игнатова Е.А. 1982. Новости адвентивной флоры Барнаула и его окрестностей (Алтайский край) // Ботанический журнал. Т. 67, № 10. С. 1421–1424].
- Imkhanitskaya, N.N. 2003. Cupressaceae. In: *Caucasian flora conspectus, vol. 1* (A.L. Takhtajan, ed.), pp. 179–185, St. Petersburg University Press, St. Petersburg (in Russian). [Имханицкая Н.Н. 2003. Cupressaceae // Конспект флоры Кавказа / отв. ред. А.Л. Тахтаджян. СПб.: Изд-во С.-Петербург. ун-та. Т. 1. С. 179–185].
- Ivanenko, Yu.A. & N.N. Tzvelev 2004. On the genus *Diphysastrum* (Lycorodiaceae) in the Eastern Europe. *Botanicheskii Zhurnal* 89(1):100–113 (in Russian) [Иваненко Ю.А., Цвелёв Н.Н. 2004. О роде *Diphysastrum* (Lycorodiaceae) в Восточной Европе // Ботанический журнал. Т. 89, № 1. С. 100–113].
- Ivanina, L.I. 1981a. *Rhinanthus* L. In: *Flora of the European part of the USSR, vol. 5* (A.A. Fedorov, ed.), pp. 300–309, Nauka, Leningrad (in Russian). [Иванина Л.И. 1981. *Rhinanthus* L. // Флора европейской части СССР / под ред. А.А. Фёдорова. Л.: Наука. Т. 5. С. 300–309].
- Ivanina, L.I. 1981b. *Verbascum* L. In: *Flora of the European part of the USSR, vol. 5* (A.A. Fedorov, ed.), p. 218, Nauka, Leningrad (in Russian). [Иванина Л.И. 1981. *Verbascum* L. // Флора Европейской части СССР / под ред. А.А. Фёдорова. Л.: Наука. Т. 5. С. 218].
- Ivanov, A.L. 2005. *Conspectus of the flora of Stavropol Territory, the 3-rd edition*. Izdatel'stvo Stavropol'skogo universiteta, Stavropol, 175 pp. (in Russian). [Иванов А.Л. 2005. Конспект флоры Ставрополя, 3-е издание. Ставрополь: Изд-во СГУ. 175 с.]
- Ivanov, A.L. 2019. *Conspectus of the flora of Russian Caucasus (vascular plants)*. Izdatel'stvo Severo-Kavkazskogo universiteta, Stavropol, 306 pp. (in Russian). [Иванов А.Л. 2019. Конспект флоры Российского Кавказа (сосудистые растения). Ставрополь: Изд-во СКФУ. 306 с.]
- Ivanova, M.M. & M.G. Azovsky 1998. Floristic findings in Buryatia and the Irkutsk region. *Botanicheskii Zhurnal* 83(5): 119–124 (in Russian). [Иванова М.М., Азовский М.Г. 1998. Флористические находки в Бурятии и Иркутской области // Ботанический журнал. Т. 83, № 5. С. 119–124].
- Jakovlev, G.P., A.K. Sytin & Yu.R. Roskov 1996. *Legumes of Northern Eurasia*. Kew, 724 pp.
- Kazmi, S.M.A. 1971. A revision of the Boraginaceae of West Pakistan and Kashmir. *Journal of Arnold Arboretum* 52(1):110–118, 52(3):359–363, 52(4):486–502.
- Kechaykin, A.A., G.A. Lazkov, A.I. Shmakov & S.A. Usmanov 2020. Addition to the flora of Kyrgyzstan. *Botanica Pacifica* 9(1):131–138.
- Khalkuziev, P.KH. 1970. Materials for the flora of the Shakhimardan river. *Doklady akademii nauk UzSSR* 5:65–66 (in Russian). [Халкузиев П.Х. 1970. Материалы к флоре бассейна р. Шахимардан // Доклады Академии наук УзССР. № 5. Р. 65–66].
- Khatamsaz, M. 2002. *Rochelia*. In: *Flora of Iran, vol. 39*, pp. 284–303, Research Institute of Forest and Rangelands. Tehran (in Persian).
- Khmeleva, I.R. 2012. *Drosera* L. In: *Key to plants of the Republic of Altai* (I.M. Krasnoborov & I.A. Artemov, eds.), p. 238, Izdatel'stvo SO RAN, Novosibirsk (in Russian). [Хмелева И.Р. 2012. *Drosera* L. // Определитель растений Республики Алтай / под ред. И.М. Красноборова, И.А. Артемова. Новосибирск: Изд-во СО РАН, С. 238].
- Klokov, M.V. 1961. Rubiaceae Juss. In: *Flora of Ukrainian SSR, vol. 10* (M.I. Kotov, ed.), pp. 90–249, 455–474, Kyiv. (in Ukrainian with Latin descript). [Клоков М.В. 1961. Rubiaceae Juss. // Флора УРСР / под ред. М.И. Котова. Київ: АН УРСР. Т. 10. С. 90–249, 455–474].
- Knapp, S., F. Chiarini, J.J. Cantero & G.E. Barboza 2020. The Moreloid clade of *Solanum* L. (Solanaceae) in Argentina: nomenclatural changes, three new species and an updated key to all taxa. *PhytoKeys* 164:33–66.
- Knyazev, M.S. 2003. Critical notes on some species of the genus *Linaria* Mill. (Scrophulariaceae) in the Urals, Kazakhstan and Western Siberia *Novosti sistematiki vysshibkhnastenii* 35:156–169 (in Russian). [Князев М.С. 2003. Критические заметки о некоторых видах рода *Linaria* (Scrophulariaceae) на Урале, в Казахстане и Западной Сибири // Новости систематики высших растений. Т. 35. С. 156–169.
- Kolmakov, S.G. 1928. Nouveaute's pour la flore du gouvernement Stavropol. *Bulletin du Jardine Botanique Principal de l'USSR* 27(2):146–160 (in Russian with French summary). [Колмаков С.Г. 1928. Новые данные по флоре Ставропольской губернии (1917–1925) // Известия Главного ботанического сада СССР. Т. 27, № 2. С. 146–160].
- Komarov, V.L. 1903. Flora of Manchuria. *Trudy Imperatorskogo Sankt-Peterburgskogo botanicheskogo sada* 22(1):1–787 (in Russian). [Комаров В.Л. 1903. Флора Маньчжурии // Труды Императорского Санкт-Петербургского ботанического сада. Т. 22, вып. 1. С. 1–787].
- Konechnaya, G.Yu. 1994. *Senecio* L. In: *Flora of the European part of the USSR, vol. 7* (N.N. Tzvelev, ed.), pp. 52–63, Nauka, St. Petersburg (in Russian). [Конечная Г.Ю. 1994. *Senecio* L. // Флора Европейской части России / под ред. Н.Н. Цвелёва. СПб.: Наука. Т. 7. С. 52–63].
- Korolyova, A.S., I.M. Krasnoborov & E.F. Penkovskaya 1973. *Keys to plants of Novosibirsk Region* (A.V. Kuminova, ed.), Nauka, Novosibirsk, 368 pp. (in Russian). [Королева А.С., Красноборов И.М., Пенковская Е.Ф. 1973. Определитель растений Новосибирской области / под ред. А.В. Куминой. Новосибирск: Наука. 368 с.]
- Korotkova, E.E. 1955. *Hedysarum* L. *Flora of Uzbekistan, vol. 3* (A.I. Vvedensky, ed.), pp. 722–736, Izdatel'stvo AN UzSSR, Tashkent (in Russian). [Короткова Е.Е. 1955. *Hedysarum* L. // Флора Узбекистана / под ред. А.И. Введенского. Ташкент: Изд-во АН УзССР. С. 723–736].
- Kosachev, P.A. 2010. Synopsis of the families Scrophulariaceae Juss. and Pediculariaceae Juss. of Altai mountain country. *Turczaninowia* 13(1):19–102 (in Russian). [Косачёв П.А. 2010. Конспект сем. Scrophulariaceae Juss. и

- Pediculariaceae Juss. Алтайской горной страны // *Turczaninowia*. 2010. Т. 13, №1. С. 19–102].
- Kosachev, P.A. 2017. Check-list of Scrophulariaceae Juss. s. l. of North Asia. *Acta Biologica Sibirica* 3(4):31–76 (in Russian). [Косачёв П.А. 2017. Конспект сем. Scrophulariaceae Juss. s. l. Северной Азии // *Acta Biologica Sibirica*. Т. 3, № 4. С. 31–76].
- Kossinskiy, K. 1913. *Dianthus barbatus* L. × *D. superbus* L. = *Dianthus courtoisii* Rchb. in Kostroma district. *Bulletin du Jardin impérial botanique de St.-Petersbourg* 13(1–2):52–54 [in Russian]. [Косинский К. 1913. *Dianthus barbatus* L. × *D. superbus* L. = *Dianthus courtoisii* Rchb. В Костромской губернии // *Известия Императорского Санкт Петербургского ботанического сада*. Т. 13, вып. 1–2. С. 52–54].
- Kovalevskaya, S.S. 1981. *Hedysarum* L. In: *Conspectus Florae Asiae Mediae*, vol. 6 (Kamelin R.V., S.S. Kovalevskaya & M.M. Nabiev, eds), pp. 286–311, Izdatel'stvo "FAN" UzSSR, Tashkent (in Russian). [Ковалевская С.С. 1981. *Hedysarum* L. // *Определитель растений Средней Азии* / под ред. Р.В. Камелина, С.С. Ковалевской, М.М. Набиева. Ташкент: Изд-во "ФАН" УзССР. Т. 6. С. 286–311].
- Krasnoborov, I.M. 2007. *Linaria* Mill. In: *Key to plants of Tuva*, pp. 406–407, SO RAN, Novosibirsk (in Russian). [Красноборов И.М. 2007. *Linaria* Mill. // *Определитель растений Республики Тывы*. Новосибирск: СО РАН, С. 406–407].
- Krasnoborov, I.M., M.N. Lomonosova & D.N. Shaulo et al. 2003. *Keys to plants of the Altai Territory*. Izdatel'stvo SO RAN, filial "Geo", Novosibirsk, 634 pp. (in Russian). [Красноборов И.М., Ломоносова М.Н., Шауло Д.Н. и др. 2003. *Определитель растений Алтайского края*. Новосибирск: Изд-во СО РАН, филиал "Гео". 634 с.].
- Krasnoborov, I.M. 2012. *Elatine* L. In: *Key to plants of the Republic of Altai* (I.M. Krasnoborov & I.A. Artemov, eds), pp. 156–157, Izdatel'stvo SO RAN, Novosibirsk (in Russian). [Красноборов И.М. 2012. *Elatine* L. // *Определитель растений Республики Алтай* / под ред. И.М. Красноборова, И.А. Артемова. Новосибирск: Изд-во СО РАН, С. 156–157].
- Krasnoborov, I.M., A.I. Shmakov, D.A. German, I.N. Czubarov & P.A. Kosachev 2002. Novelty in the flora of the Kemerovo region, the Altai Republic and the Altai Territory. *Turczaninowia* 5(2):54–59 (in Russian). [Красноборов И.М., Шмаков А.И., Герман Д.А., Чубаров И.Н., Косачев П.А. 2002. Новинки во флоре Кемеровской области, Республики Алтай и Алтайского края // *Turczaninowia*. Т. 5, № 2. С. 54–59].
- Krasnoborov, I.M. & E.I. Korotkova 1988. Turphaceae. In: *Flora of Siberia: Lycopodiaceae – Hydrocharitaceae*, vol. 1 (I.M. Krasnoborov, ed.), pp. 86–88, 159. Nauka, Novosibirsk, (in Russian). [Красноборов И.М., Короткова Е.И. 1988. Турфасеа // *Флора Сибири: Лycopodiaceae – Hydrocharitaceae* / под ред. И.М. Красноборова. Новосибирск: Наука. Т. 1. С. 86–88, 159].
- Krasnoborov, I.M. 2012. *Scorzonera* L. In: *Key to plants of the Republic of Altai* (I.M. Krasnoborov & I.A. Artemov, eds), pp. 459–461, Izdatel'stvo SO RAN, Novosibirsk (in Russian). [Красноборов И.М. 2012. *Scorzonera* L. // *Определитель растений Республики Алтай* / под ред. И.М. Красноборова, И.А. Артемова. Новосибирск: Изд-во СО РАН, С. 459–461].
- Kreutz, C.A.J. 2019. Beitrag zu den Orchideen von Georgien. *Berichte Arbeitskreisen Heimische Orchideen* 36(1):62–161.
- Krylov, P.N. 1931a. *Dianthus* L. In: *Flora of Western Siberia. Aizgoaceae – Berberidaceae*, vol. 5, pp. 1097–1106, Izdatel'stvo Tomskogo otdeleniya Russkogo botanicheskogo obshchestva, Tomsk (in Russian). [Крылов П.Н. 1931. *Dianthus* L. // *Флора Западной Сибири*. Томск: Изд-во Томск. отд. Русск. бот. общ-ва. Т. 5. С. 1097–1106].
- Krylov, P.N. 1931b. *Drosera* L. In: *Flora of Western Siberia. Papaveraceae – Saxifragaceae*, vol. 6, pp. 1397–1399, Izdatel'stvo Tomskogo otdeleniya Russkogo botanicheskogo obshchestva, Tomsk (in Russian). [Крылов П.Н. 1931. *Drosera* L. // *Флора Западной Сибири*. Томск: Изд-во Томск. отд. Русск. бот. общ-ва. Т. 6. С. 1397–1399].
- Krylov, P.N. 1933. *Vicia* L. In: *Flora of Western Siberia. Rosaceae – Papilionaceae*, vol. 7, pp. 1445–1817+XIV. Izdatel'stvo Tomskogo otdeleniya Russkogo botanicheskogo obshchestva, Tomsk (in Russian). [Крылов П.Н. 1933. *Vicia* L. // *Флора Западной Сибири*. Rosaceae–Papilionaceae. Томск: Изд-во Томск. отд. Русск. бот. общ-ва. Т. 7. С. 1445–1817+XIV].
- Kulikov, P.V. 2010. *Key to the vascular plants of the Chelyabinsk Region*. UrO RAN, Ekaterinburg, 971 pp. (in Russian). [Куликов П.В. 2010. *Определитель сосудистых растений Челябинской области*. Екатеринбург: УрО РАН. 970 с.].
- Kupriyanov, A.N. & S.V. Ovchinnikova 2017. Review of the Heliotropiaceae Schrad. and Boraginaceae Juss. of Kazakh Uplands. *Botanicheskie issledovaniya Sibiri i Kazakhstana* 23: 30–42 (in Russian). [Куприянов А.Н., Овчинникова С.В. 2017. Обзор семейств Heliotropiaceae Schrad. и Boraginaceae Juss. Казахского мелкосопочника // *Ботанические исследования Сибири и Казахстана*. Вып. 23. С. 30–42].
- Kurbatskiy, V.I. 1994. *Genista* L. In: *Flora of Siberia*, vol. 9 (Polozhij A.V. & L.I. Malyshev, eds), p. 210, Nauka, Novosibirsk (in Russian). [Курбатский В.И. 1994. *Genista* L. // *Флора Сибири* / под ред. А.В. Положий, Л.И. Мальшева. Новосибирск: Наука. Т. 9. С. 210].
- Kurto, A. *Dianthus* × *courtoisii* Rchb. In: *The Finnish Biodiversity Information Facility (FinBIF)*. Available from: <https://laji.fi/en/taxon/MX.42357>. Last accessed 25.02.2021.
- Kuzmina, M.L. 2004. *Dianthus* L. In: *Flora of East Europe*, vol. 11 (N.N. Tzvelev, ed.), p. 273–297, KMK Press, Moscow & St. Petersburg (in Russian). [Кузьмина М.Л. 2004. *Dianthus* L. *Флора Восточной Европы* / под ред. Н.Н. Цвелева. М.; СПб.: Товарищество научных изданий КМК. Т. 11. С. 273–297].
- Lazkov, G.A. 2003. About new and rare species for the flora of Kyrgyzstan. *Novosti systematiki vysshibek rastenii* 35: 215–216 (in Russian). [Лазьков Г.А. 2003. О новых и редких видах для флоры Кыргызстана // *Новости систематики высших растений*. Т. 35. С. 215–216].
- Lazkov, G.A. 2012. *Silene* L. In: *Caucasian flora conspectus*, vol. 3(2) (A.L. Takhtajan, ed.), pp. 198–213. KMK Scientific Press, Saint Petersburg, Moscow (in Russian). [Лазьков Г.А. 2004. *Silene* L. // *Конспект флоры Кавказа* / под ред. А.А. Тахтаджяна. Санкт Петербург; Москва. Т. 3(2). С. 198–213].
- Lazkov, G.A. & B.A. Sultanova 2011. Checklist of vascular plants of Kyrgyzstan. *Norrlinna* 24:1–166 (in Russian). [Лазьков Г.А., Султанова Б.А. 2011. Кадастр флоры Кыргызстана: сосудистые растения // *Norrlinna*. Т. 16. С. 1–166].
- Lazkov, G.A. & B.A. Sultanova 2014. *Checklist of vascular plants of Kyrgyzstan*. Izdatel'stvo of National Academy of Sciences of the Kyrgyz Republic, Bishkek, 126 pp. (in Russian) [Лазьков Г.А., Султанова Б.А. 2014. Кадастр флоры Кыргызстана. Сосудистые растения. Бишкек: Изд-во Национальной академии наук Киргизской Республики. 126 с.].
- Linnaeus C. 1771. *Mantissa Plantarum Altera. Generum editionis VI et specierum editionis II*. Holmiae [Stockholm], [6] + 143–587 pp.
- Liu, P.L., J. Wen, L. Duan, E. Arslan, K. Ertudrul & Z.Y. Chang 2017a. *Hedysarum* L. (Fabaceae: Hedysareae) is not monophyletic-evidence from phylogenetic analyses based on five nuclear and five plastid sequences. *PLoS ONE* 12(1):e0170596.
- Liu, P.L., Y. Wei, J. Wen & Z.Y. Chang 2017b. Recognition of a new species of *Hedysarum* (Fabaceae, Hedysareae) from China based on morphological and molecular evidence. *Phytotaxa* 295(3):237–245.
- Liu, P.L., X.L.Chen, Y.U.A.N. Lu, Z.Y. Chang & M. Yue 2019. New species discovered from old collections, the

- case of *Hedysarum wangii* sp. nov. (Fabaceae, Hedysareae). *Phytotaxa* 413(1):27–38.
- Lomonosova, M.N. 1997. *Scorzonera* L. In: *Flora of Siberia: Asteraceae, vol. 13* (I.M. Krasnoborov, ed.), pp. 242–248. Nauka, Novosibirsk (in Russian). [Ломоносова М.Н. 1997. *Scorzonera* L. // Флора Сибири: Asteraceae / под ред. И.М. Красноборова. Новосибирск: Наука. Т. 13. С. 242–248].
- Luferov, A.N. 1989. A new species of the meadow-rue (*Thalictrum* L.) from the Far East. *Bulleten' Moskovskogo Obshchestva Ispytatelei Prirody. Otdel Biologicheskii* 94(5):103–109 (in Russian). [Луферов А.Н. 1989. Новый вид василистника (*Thalictrum* L.) с Дальнего Востока // Бюллетень МОИП. Отдел биологический. Т. 94, вып. 5. С. 103–109].
- Luferov, A.N. 1995. *Thalictrum* L. In: *Vascular plants of the Soviet Far East, vol. 7* (S.S. Kharkevich, ed.), pp. 133–145. Nauka, St. Petersburg (in Russian). [Луферов А.Н. 1995. *Thalictrum* L. // Сосудистые растения советского Дальнего Востока / под ред. С.С. Харкевича. СПб.: Наука. Т. 7. С. 133–145].
- Luferov, A.N. 2004. A taxonomic synopsis of Ranunculaceae of the Far East of Russia. *Turczaninowia* 7(1):5–84 (in Russian). [Луферов А.Н. 2004. Таксономический конспект лютиковых (Ranunculaceae) Дальнего Востока России // *Turczaninowia*. Т. 7, № 1. С. 5–84].
- Luferov, A.N. 2016. On the distribution of some species of Ranunculaceae in Northeast China. *Bulleten' Moskovskogo Obshchestva Ispytatelei Prirody. Otdel Biologicheskii* 121(6):85 (in English & Russian). [Луферов А.Н. 2016. О распространении некоторых видов Ranunculaceae на северо-востоке Китая // Бюллетень МОИП. Отдел биологический. Т. 121, вып. 6. С. 85].
- Marhold, K. 2011. Caryophyllaceae. In: *Euro+Med Plantbase – the information resource for Euro-Mediterranean plant diversity*. [18 January 2021]. Last accessed 01.04.2021.
- Mayorov, S.R. 2014. Scrophulariaceae Juss. In: *Maevskii P.F. Flora of the middle zone of the European part of Russia* (V.S. Novikov, V.N. Pavlov, D.D. Sokolov, A.K. Timonin, Yu.E. Alekseev & C.R. Mayorov, eds), pp. 397, КМК Scientific Press, Moscow (in Russian). [Майоров С.Р. 2014. Scrophulariaceae Juss. // Маевский П.Ф. Флора средней полосы европейской части России / под ред. В.С. Новикова, В.Н. Павлова, Д.Д. Соколова, А.К. Тимонина, Ю.Е. Алексеева, С.Р. Майорова. М.: Товарищество научных изданий КМК. С. 397].
- Mayorov, S.R. 2018. New alien plant species for central Russia. *Bulleten' Moskovskogo Obshchestva Ispytatelei Prirody. Otdel Biologicheskii* 123(1):65–70 (in Russian). [Майоров С.Р. 2018. Новые для центральной России чужеродные виды растений. // Бюллетень МОИП. Отдел биологический. Т. 123, вып. 1. С. 65–70].
- Melnikov, D. G. 2011. New floristic findings of native and adventive species in Udmurtia. *Vestnik Udmurtskogo universiteta. Seriya "Biologiya. Nauki o Zemle"* 3: 142–146 (in Russian). [Мельников Д. Г. Новые флористические находки аборигенных и адвентивных видов в Удмуртии // Вестник Удмуртского университета. Серия "Биология. Науки о Земле". 2011. № 3. С. 142–146].
- Meusel, H. & E.J. Jager 1992. *Vergleichende Chorologie der Zentraleuropaischen Flora*. Text, band III. Jena etc.: Gustav Fischer, 333 pp.
- MNHN, Chagnoux S. 2021. *Dianthus courtisii* Rehb. In: *Herbarium specimens of Université de Montpellier 2*, Institut de Botanique (MPU). Version 71.197. Herbarium of Université de Montpellier 2, Institut de Botanique. Occurrence dataset <https://doi.org/10.15468/gyvkrn> accessed via GBIF.org on 2021-02-25.
- Morgan, C.S. 1999. Plate 368. *Platycladus orientalis*. *Curtis's Botanical Magazine* 16(3):185–192.
- Morton, J.K. 2005. *Silene* L. In: *Flora of North America North of Mexico, vol. 5* (Editorial Committee, eds), pp. 166–214. Oxford University Press, New York, Oxford.
- Murtazaliev, R.A. 2009. *Conspectus of the flora of Dagestan, vol. 4* (Melanthiaceae–Acoraceae). Erokha, Makhachkala, 232 pp. (in Russian). [Муртазалиев Р.А. 2009. Конспект флоры Дагестана (Melanthiaceae–Acoraceae). Махачкала: Эпоха. Т. 4. 232 с.].
- Naumenko, N.I. 2008. *Flora and vegetation of Southern Zauralye*. Kurgan University Press, Kurgan, 512 pp. (in Russian). [Науменко Н.И. 2008. Флора и растительность южного Завраляя. Курган: Изд-во Курганского ун-та. 512 с.].
- Nesom, G.N. *Verbascum* L. 2019. In: *Flora of North America North of Mexico: Magnoliophyta: Tetrachondraceae to Orobanchaceae, vol. 17* (Flora of North America Editorial Committee, eds), pp. 343–346. Oxford University Press, New York, Oxford.
- Nevski, S.A. 1935. Orchidaceae Lindl. In: *Flora of the USSR, vol. 4* (V.L. Komarov, ed.), pp. 589–730. Izdatel'stvo AN SSSR, Leningrad (in Russian). [Невский С.А. 1935. Orchidaceae Lindl. // Флора СССР / под ред. В.Л. Комарова. Ленинград: Изд-во АН СССР. Т. 4. С. 589–730].
- Nevski, S.A. 1937. *Thalictrum* L. In: *Flora of the USSR, vol. 7* (B.K. Shishkin, ed.), pp. 510–528. Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian). [Невский С.А. 1937. *Thalictrum* L. // Флора СССР / под ред. Б.К. Шишкина. М.-Л.: Изд-во АН СССР. Т. 7. С. 510–528].
- Nikiforova, O.D. 1994. *Vicia* L. In: *Flora of Siberia: Fabaceae (Leguminosae), vol. 9* (Polozhij A.V. & L.I. Malyshev, eds), pp. 171–184, 255. Nauka, Novosibirsk (in Russian). [Никифорова О.Д. 1994. *Vicia* L. // Флора Сибири: Fabaceae (Leguminosae). Новосибирск: Наука. Т. 9 С. 171–184].
- Nikiforova, O.D. 2012. Fabaceae Lindl., or Leguminosae Juss. In: *Checklist of the flora of Asian Russia: vascular plants* (K.S. Baikov, ed.), pp. 229–261. Izdatel'stvo SO RAN, Novosibirsk, (in Russian). [Никифорова О.Д. 2012. Fabaceae Lindl., или Leguminosae Juss. // Конспект флоры Азиатской России: сосудистые растения / под ред. К.С. Байкова. Новосибирск: Изд-во СО РАН. С. 229–261].
- Nikitina, E.V. 1957. *Hedysarum* L. In: *Flora of the Kirghiz SSR, vol. 7* (A.I. Vvedensky, ed.), pp. 108–112. Izdatel'stvo AN Kirghiz SSR, Frunze (in Russian). [Никитина Е.В. 1957. *Hedysarum* L. // Флора Киргизской ССР / под ред. А.И. Введенского. Фрунзе: Академия наук Киргизской ССР. Т. 7. С. 108–112].
- Nobis, M., A. Nowak, A.L. Ebel, A. Nobis, S. Nowak, P.D. Gudkova, A.V. Verkhozina, A.S. Erst, G. Łazarski, M.V. Olonova, R. Piwowarczyk, A.A. Bobrov, I.A. Khrustaleva, V. Plášek, M.M. Silantyeva & J. Zalewska-Galosz 2015. Contribution to the flora of Asian and European countries: new national and regional vascular plant records, 3. *Acta Botanica Gallica* 162(2):103–115.
- Nobis, M., J. Marciniuk, P. Marciniuk, M. Wolanin, G. Király, A. Nowak, B. Paszko, E. Klichowska, G. Moreno-Moral, R. Piwowarczyk, O. Sánchez-Pedraja, A. Wróbel, I.N. Egorova, P.E. Jun, D.A. Krivenko, I.V. Kuzmin, G.A. Lazkov, G. Mei, A. Nobis, M.V. Olonova, R.J. Soreng, A. Stinca, V.M. Vasjukov & N.A. Vershinin. 2020. Contribution to the flora of Asian and European countries: new national and regional vascular plant records, 9. *Turkish Journal of Botany* 44:455–480.
- Nosikov E.V. 2014. Image of *Dianthus × courtisii* Reichenb. *Plantarium: open on-line atlas and key to plants and lichens of Russia and neighbouring countries*. 2007–2021. Available from: <https://www.plantarium.ru/page/image/id/251274.html>. Last accessed 25.02.2021.
- Obruchev, V.A. 1916. *Grigorií Nikolaevich Potanin. A brief sketch of his life and work*. Tipo-litografiya tovarishchestva I.N. Kushnerev i K°, Moscow. 23 pp. (in Russian) [Обручев В.А. 1916. Григорий Николаевич Потанин: крат-

- кий очерк его жизни и деятельности. Москва: Типо-литография товарищества И.Н. Кушнерев и К°. 23 с].
- Orrell T. 2021. *Informatics Office. NMNH Extant Specimen Records. Version 1.40*. National Museum of Natural History, Smithsonian Institution. Occurrence dataset <https://doi.org/10.15468/hnhrg3> accessed via GBIF.org on 2021-02-25.
- Ostapko, V.M. 2005. *Eidological, population and coenotic foundations of phytosociology in the south-east of Ukraine*. Donetsk. 408 pp. (in Russian) [Остапко В.М. 2005. Эйдологические, популяционные и ценотические основы фитосоциологии на юго-востоке Украины. Донецк: ООО "Лебедь". 408 с.].
- Ovchinnikova, S.V. 1997. *Lappula* Moench. In: *Flora of Siberia: Pyrolaceae–Lamiaceae (Labiatae), vol. 11* (L.I. Malyshev, ed.), pp. 131–142, Nauka, Novosibirsk (in Russian). [Овчинникова С.В. 1997. Род *Lappula* Moench. // Флора Сибири: Pyrolaceae–Lamiaceae (Labiatae) / под ред. Л.И. Малышева. Новосибирск: Наука. Т. 11. С. 131–142].
- Ovchinnikova, S.V. 2005. The system of the subtribe Echinosperrminae (tribe *Eritrichieae*, Boraginaceae). *Botanicheskii Zhurnal* 90(8):1153–1172 (in Russian). [Овчинникова С.В. 2005. Система подтрибы Echinosperrminae (триба *Eritrichieae*, Boraginaceae) // Ботанический журнал. Т. 90, № 8. С. 1153–1172].
- Ovchinnikova, S.V. 2012. Boraginaceae Juss. In: *Key to plants of the Republic of Altai* (I.M. Krasnoborov & I.A. Artemov, eds.), pp. 349–364, Izdatel'stvo SO RAN, Novosibirsk (in Russian). [Овчинникова С.В. 2012. Boraginaceae Juss. // Определитель растений Республики Алтай / под ред. И.М. Красноборова, И.А. Артемова. Новосибирск: Из-во СО РАН. С. 349–364].
- Ovchinnikova, S.V. 2012. *Eleocharis* R. Br. In: *Checklist of the flora of Asian Russia: vascular plants* (K.S. Baikov, ed.), pp. 507–510, Izdatel'stvo SO RAN, Novosibirsk (in Russian). [Овчинникова С.В. 2012. *Eleocharis* R. Br. // Конспект флоры Азиатской России: сосудистые растения / под ред. К.С. Байкова. Новосибирск: Изд-во СО РАН. С. 507–510].
- Ovchinnikova, S.V. 2019. Addition to the species composition of Boraginaceae of Outer Mongolia. *Turczaninowia* 22(3):97–110 (in Russian). [Овчинникова С.В. 2019. Дополнение к видовому составу бурачниковых (Boraginaceae) Внешней Монголии // *Turczaninowia*. Т. 22, вып. 3. С. 97–110].
- Ovchinnikova, S.V., A.I. Pjak & A.L. Ebel 2004. Novelty in the genus *Lappula* (Boraginaceae) of the Altai mountain system. *Turczaninowia* 7(2):5–13 (in Russian). [Овчинникова С.В., Пяк А.И., Эбель А.А. 2004. Новинки в роде *Lappula* (Boraginaceae) // *Turczaninowia*, Т. 7, вып. 2. С. 5–13].
- Ovczinnikova, S.V. 2009. The synopsis of the subtribe *Echinosperrminae* Ovczinnikova (Boraginaceae) in the flora of Eurasia. *Novosti sistematiki vysshikh rastenii* 41:209–272 (in Russian). [Овчинникова С.В. 2009. Конспект подтрибы *Echinosperrminae* Ovczinnikova (Boraginaceae) флоры Евразии // *Новости систематики высших растений*. Т. 41. С. 209–272].
- Ovchinnikova, S.V. & M.R. Ganybaeva 2019. Novelty of the Boraginaceae in the flora of Kyrgyz Republic. *Rastitel'nyi Mir Aziatskoi Rossii* 3(35):36–46 (in Russian). [Овчинникова С.В. Ганыбаева М.Р. 2019. Новинки семейства Boraginaceae во флоре Кыргызской Республики // *Растительный мир Азиатской России*. № 3(35). С. 36–46].
- Pardo, C., P. Cubas, & H. Tahiri. 2004. Molecular phylogeny and systematics of *Genista* (Leguminosae) and related genera based on nucleotide sequences of nrDNA (ITS region) and cpDNA (trnL-trnF intergenic spacer). *Plant Systematics and Evolution* 244: 93–119.
- Pavlov, I. 2018. Image of *Dianthus × courtoisii* Reichenb. *Plantarium: open on-line atlas and key to plants and lichens of Russia and neighbouring countries*. 2007–2021. Available from: <https://www.plantarium.ru/page/image/id/575574.html>. Last accessed 25.02.2021.
- Pavlov, N.V. & M.G. Popov 1953. *Rochelia* Rchb. In: *Flora of the USSR, vol. 19* (V.L. Komarov, ed.), pp. 548–564, Izdatel'stvo AN SSSR, Moscow & Leningrad (in Russian). [Павлов Н.В., Попов М.Г. 1953. *Rochelia* Rchb. // Флора СССР / под ред. В.Л. Комарова. М.; Л.: Изд-во АН СССР. Т. 19. С. 548–564].
- PBI *Solanum* Project. 2021. Solanaceae Source. Available from: <http://www.solanaceaesource.org/>. Last accessed 01.04.2021.
- Peshkova, G.A. 1994. *Drosera* L. In: *Flora of Siberia: Berberidaceae–Grossulariaceae, vol. 7* (L.I. Malyshev & G.A. Peshkova, eds.), pp. 151–152, Nauka, Novosibirsk (in Russian). [Пешкова Г.А. 1994. *Drosera* L. // Флора Сибири: Berberidaceae–Grossulariaceae / под ред. Л.И. Малышева, Г.А. Пешковой. Новосибирск: Наука. Т. 7. С. 151–152].
- Phillips, S.J. & M. Dudik 2008. Modelling of species distribution with Maxent: new extensions and a comprehensive evaluation. *Ecography* 31(2):161–175.
- Phillips, S.J., R.P. Anderson & R.E. Schapire 2006. Maximum entropy modeling of species geographic distributions. *Ecological Modelling* 190(3–4):231–259.
- Plaksina, N.I. 2001. *Checklist of the flora of the Volga-Urals region*. Izdatel'stvo "Samarskii universitet", Samara. 388 pp. (in Russian). [Плаксина Т.И. 2001. Конспект флоры Волго-Уральского региона. Самара: Издательство "Самарский университет". 388 с.].
- Polozhij, A.V., 1997. *Verbascum* L. In: *Flora of Siberia: Solanaceae–Lobeliaceae, vol. 11* (A.V. Polozhij, G.A. Peshkova ed.), p. 15, Nauka, Novosibirsk (in Russian). [Положий А.В. 1997. *Verbascum* L. // Флора Сибири: Solanaceae – Lobeliaceae / под ред. А.В. Положий, Г.А. Пешкова. Новосибирск: Наука. Т. 12. С. 15].
- Polozhii, A.V., V.I. Kurbatskii, S.N. Vydrina & V.M. Doron'kin 2003. Solanaceae – Lobeliaceae. In: *Flora of Siberia, vol. 14: Additions and corrections. Alphabetical indexes*, pp. 85–90, Nauka, Novosibirsk (in Russian). [Положий А.В., Курбатский В.И., Выдрин С.Н., Доронькин В.М. 2003. Solanaceae – Lobeliaceae // Флора Сибири. Дополнения и исправления. Алфавитные указатели. Новосибирск: Наука. Т. 14: С. 85–90].
- Ponomarchuk, G.I. & K.P. Ulanova 1977. To the study of Far-Eastern species of the genus *Thalictrum* L. In: *Natural flora of the Far East (Biology, Use, Protection)*, pp. 126–131, DNC AN SSSR, Vladivostok (in Russian). [Пономарчук Г.И., Уланова К.П. 1977. К изучению дальневосточных видов рода *Thalictrum* L. // Природная флора Дальнего Востока (биология, использование, охрана). Владивосток: ДНЦ АН СССР. С. 126–131].
- Popov, M.G. 1953. Boraginaceae Juss. In: *Flora of the USSR, vol. 19* (B.K. Shishkin, ed), pp. 97–691, 703–718, Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian). [Попов М.Г. 1953. Сем. Boraginaceae Juss. // Флора СССР / под ред. Б.К. Шишкина. М.; Л.: Изд-во АН СССР. Т. 19. С. 97–691, 703–718].
- Popova, K.B. & A.A. Donetsov 2019. A record of *Isoetes echinospora* Durieu (Isoetaceae) in Yamal-Nenets Autonomous Area. *Bulleten' Moskovskogo Obshchestva Ispytatelei Prirody. Otdel Biologicheskii* 124(6):65–66 (in Russian). [Попова К.Б., Донетсов А.А. 2019. Находка *Isoetes echinospora* Durieu (Isoetaceae) в Ямало-Ненецком автономном округе // Бюллетень МОИП. Отдел биологический. Т. 124. Вып. 6. С. 65–66].
- Popovich, A.V., E.A. Averyanova & L.A. Shagarov 2020. Orchids of the Black Sea coast of Krasnodarsk Territory (Russia): current state, new records, conservation. *Nature Conservation Research* 5(Suppl.1):46–68.
- POWO. 2019. *Plants of the World Online*. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet: <http://www.plantsoftheworldonline.org/>. Retrieved: 24.02.2020.

- Ряк, А.И. 2012. Fabaceae (Leguminosae). In: *Key to plants of Altai Republic* (I.M. Krasnoborov & I.A. Artemov, eds.), pp. 267–297, Izdatel'stvo SO RAN, Novosibirsk, (in Russian). [Ряк А. И. 2012. Бобовые – Fabaceae (Leguminosae) // Определитель растений Республики Алтай / под ред. И.М. Красноборова, И.А. Артемова. Новосибирск: Изд-во СО РАН, С. 267–297].
- Rakov, N.S., S.V. Saksonov, S.A. Senator & V.M. Vasjukov 2014. *Vascular plants of the Ulyanovsk Region. Flora of the Volga River basin, vol. 2*, Kassandra, Togliatti, 295 pp. (in Russian). [Раков Н.С., Саксонов С.В., Сенатор С.А., Васюков В.М. 2014. Сосудистые растения Ульяновской области / Флора Волжского бассейна. Тольятти: Кассандра. Т. 2. 295 с.]
- Razifard, H., G.C. Tucker & D.H. Les 2016. *Elatine* L. In: *Flora of North America North of Mexico: Magnoliophyta: Vitaceae to Garryaceae, vol. 12* (Flora of North America Editorial Committee, ed.), pp. 349–353, Oxford University Press, New York, Oxford.
- Reichenbach, H.G.L. 1832. Calycanthae. In: *Reichenbach, H.G.L. Flora germanica excursoria, B. 2*, pp. 436–873, Carolus Nobloch, Lipsiae.
- Riedl, H. 1967. *Rochelia* Rchb., *Arnebia* Forssk. In: *Flora Iranica, Lfg. 48* (K.H. Rechinger, ed.), pp. 89–95, 153–168, Akademische Druck – u. Verlagsanstalt, Graz.
- Riedl, H. 1972. Übersicht über ausdauernd und zweijährigen Arten der Gattung *Arnebia* Forssk. *Annalen des Naturhistorischen Museums in Wien* 75:209–222.
- Roskov, Y.R., F.A. Bisby, J.L. Zarucchi, B.D. Schrire & R.J. White (eds.) *ILDIS World Database of Legumes: draft checklist, version 10* [published June 2006, but CD shows November 2005 date]. ILDIS, Reading, UK, 2006 [CD-Rom: ISBN 0 7049 1248 1] (also available here at <https://ildis.org/LegumeWeb10.01.shtml>)
- Rouy, G. 1913. Ordre Lycopodiacees. In: *Flore de France; ou, Description des plantes qui croissent spontanément en France, en Corse et en Alsace-Lorraine, tome 14* (G. Rouy, ed.), pp. 485–492, Asnières, Paris.
- Ryabinina, Z.N. & M.S. Knyazev 2009. *Key to the vascular plants of the Orenburg region*. КМК Press, Moscow, 758 pp. (in Russian). [Рябинина З.Н., Князев М.С. 2009. Определитель сосудистых растений Оренбургской области. М.: Товарищество научных изданий КМК. 758 с.]
- Sadat, F. 1989. Revision ausgewählter kritischer Gattungen der Boraginaceen aus der Flora Afghanistans. *Mitteilungen der Botanischen Staatssammlung München* 28:1–210.
- Saksonov, S.V. & S.A. Senator 2012. *Guide the Samara flora (1851–2011). Flora of the Volga river basin, vol. 1*. Kassandra, Togliatti, 511 pp. (in Russian). [Саксонов С.В., Сенатор С.А. 2012. Путеводитель по Самарской флоре (1851–2011). Флора Волжского бассейна. Тольятти: Кассандра. Т. 1. 511 с.]
- Särkinen, T., P. Poczai, G.E. Barboza, van der G.M. Weerden, M. Baden & S. Knapp. 2018. A revision of the Old World Black Nighthshades (Morelloid clade of *Solanum* L., Solanaceae). *PhytoKeys* 106:1–223.
- Scheen, A.-C., M. Bendiksby, O. Ryding, C. Mathiesen, V.A. Albert & C. Lindqvist 2010. Molecular phylogenetics, character evolution and suprageneric classification of Lamiaceae (Lamiaceae). *Annals of the Missouri Botanical Garden* 97:191–219.
- Scheldeman, X. & M. Van Zonneveld 2010. *Training manual on spatial analysis of plant diversity and distribution*. Biodiversity International, Rome. 153 pp.
- Schipczinsky, N.V. 1937. *Trollius* L. In: *Flora of the USSR, vol. 7* (V.L. Komarov ed.), pp. 42–53, Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian). [Шипчинский Н.В. 1937. *Trollius* L. // Флора СССР / под ред. В.Л. Комаров М.; Л.: Изд-во АН СССР. Т. 7. С. 42–53].
- Sennikov, A.N. (ed.) 2016. *Flora of Uzbekistan, vol. 1*, Navruz Publishers, Tashkent. XXVIII + 173 pp. (in Russian) [Сенников, А.Н. (ред.) 2016. Флора Узбекистана. Ташкент: Издательство “Навруз”. Т. 1. XXVIII + 173 с.]
- Serebryanyi, M. 2019. Towards a taxonomic revision of the genus *Trollius* (Ranunculaceae) in the Asian part of Russia. I. *Trollius chinensis*: taxonomic and geographical reconsiderations. *Novitates Systematicae Plantarum Vascularium* 50: 101–114.
- Seregin, A.P. (ed.). 2021. Specimen MW0208454 from the collection "Moscow University Herbarium". In: *Depository of Live Systems (branch "Plants"): Electronic resource*. MSU, Moscow. Available from: <https://plant.depo.msu.ru/module/itempublic?d=P&openparams=%5Bopenid%3D11023078%5D>. Licensed under CC-BY 4.0. Last accessed 03.04.2021.
- Shaulo, D.N. 2000. *Genista* L. In: *Key to plants of the Novosibirsk Region*. (I.M. Krasnoborov, ed.), p. 233, Nauka, Novosibirsk (in Russian). [Шауло Д.Н. *Genista* L. // Определитель растений Новосибирской области / под ред. И.М. Красноборова. Новосибирск: Наука, 2000. С. 233].
- Sheremetova, S.A. & R.T. Sheremetov 2019. A new record of synanthropic species *Bidens frondosa* L. (Asteraceae) for Siberia. *Systematic notes on the materials of P.N. Krylov Herbarium of Tomsk State University* 119:44–50 (in Russian). [Шереметова С.А., Шереметов Р.Т. 2019. Новая находка синантропного вида *Bidens frondosa* L. (Аsteraceae) в Сибири // Систематические заметки по материалам Гербария Томского государственного университета. № 119. С. 44–50].
- Shishkin, B.K. 1936. *Dianthus* L. In: *Flora of the USSR, vol. 5* (V.L. Komarov ed.), pp. 803–861, Izdatel'stvo AN SSSR, Moscow, Leningrad, (in Russian). [Шишкин Б.К. 1936. *Dianthus* L. // Флора СССР / под ред. В.Л. Комарова. М.; Л.: Изд-во АН СССР. Т. 5. С. 803–861].
- Shishkin, B.K. 1945. *Genista* L. In: *Flora of the USSR, vol. 11* (V.L. Komarov, ed.), pp. 54–69, Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian). [Шишкин Б.К. 1945. *Genista* L. // Флора СССР / под ред. В.Л. Комарова. М.; Л.: Изд-во АН СССР. Т. 11. С. 54–69].
- Shishkin, B.K. 1954. *Lavandula* L. In: *Flora of the USSR, vol. 20* (B.K. Shishkin, ed.), pp. 226–227, Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian). [Шишкин Б.К. 1954. *Lavandula* L. // Флора СССР / под ред. Б.К. Шишкина. М.; Л.: Изд-во АН СССР. Т. 20. С. 226–227].
- Shishkin, B.K. 1961. *Senecio* L. In: *Flora of the USSR, vol. 26* (B.K. Shishkin & E.G. Bobrov, eds.), pp. 699–788, Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian). [Шишкин Б.К. 1961. *Senecio* L. // Флора СССР / под ред. В.К. Шишкина, Е.Г. Боброва. М.; Л.: Изд-во АН СССР. Т. 26. С. 699–788].
- Shkhagapsoev, S.Kh. 2015. *Vegetation cover of Kabardino-Balkaria*. ООО Тетраграф, Nalchik, 352 pp. (in Russian). [Шхагапсоев С.Х. 2015. Растительный покров Кабардино-Балкарии. Нальчик: ООО Тетраграф. 352 с.]
- Shkhagapsoev, S.Kh., V.A. Chadaeva & K.A. Shkhagapsoeva 2018. *Materials to the Black Book of the Kabardino-Balkarian Republic flora*. Izdatel'stvo M. i V. Kotlyarovykh, Nalchik, 140 pp. (in Russian). [Шхагапсоев С.Х., Чадаева В.А., Шхагапсоева К.А. 2018. Материалы для Черной книги флоры Кабардино-Балкарской Республики. Нальчик: Изд-во М. и В. Котляровых. 140 с.]
- Sinel'nikova, N.V. 2010. Fabaceae, or Leguminosae. In: *Flora and vegetation of the Magadan region (synopsis of vascular plants and an outline of vegetation)*, pp. 179–186, IBPS DVO RAN, Magadan (in Russian). [Синельникова Н.В. 2010. Fabaceae, или Leguminosae // Флора и растительность Магаданской области (конспект сосудистых растений и очерк растительности). Магадан: ИБПС ДВО РАН. С. 179–186].
- Siplivinsky, V.N. 1972. Genus *Trollius* L. in Asia boreali et orientali. *Novosti systematiki vysshikh rastenii* 9:163–182. (in Russian with Latin diagnoses). [Сипливинский В.Н.

1972. Род *Trollius* L. на севере и востоке Азии // Новости систематики высших растений. Т.9. С. 163–182].
- Skvortsov, V.E. 2005. New floristic records from Khakas Republic. *Bulleten' Moskovskogo Obshchestva Ispytatelei Prirody. Otdel Biologicheskii* 110(3):89–92 (in Russian). [Скворцов В.Э. 2005. Новые флористические находки в Республике Хакасия // Бюллетень МОИП. Отдел биологический. Т. 110, вып. 3. С. 89–92].
- Smirnova, S.A. 1986. The significance of carpological characters in the taxonomy of families Boraginaceae, Lamiaceae and Verbenaceae. *Bulleten' Moskovskogo Obshchestva Ispytatelei Prirody. Otdel Biologicheskii* 91(2):84–89 (in Russian). [Смирнова С.А. 1986. Значение карпологических признаков в систематике семейств бурачниковых, губоцветных и вербеновых // Бюллетень МОИП. Отдел биологический Т. 91, вып. 2. С. 84–89].
- Soják, J. 1970. *Potentilla mongolicae novae. Folia Geobotanica et Phytotaxonomica* 5(1):99–114.
- Soják, J. 1987. Notes on *Potentilla* (Rosaceae). III. Some new taxa from Asia. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 109(1):25–48.
- Soják, J. 2003. Some new taxa *Potentilla* (Rosaceae) from New Guinea, Asia and Canada (Notes on *Potentilla* XV). *Willdenowia* 33:409–423..
- Soják, J. 2004. *Potentilla* L. (Rosaceae) and related genera in the former USSR (identification key, checklist and figures). Notes on *Potentilla* XVI. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 125(3):253–340.
- Soják, J. 2007. *Potentilla* (Rosaceae) in China. Notes on *Potentilla* XIX. *Harvard Papers in Botany* 12:285–324.
- Soják, J. 2009. *Potentilla* L. (Rosaceae) in the former USSR; second part: comments Notes on *Potentilla* XXIV. *Feddes Repertorium* 120:185–217.
- Soják, J. 2012. Copies of seven species and twenty hybrids of *Potentilla* (Rosaceae) obtained through experimental hybridization (Notes on *Potentilla* XXVI). *Thaïszia* 22(1):33–48.
- Sramkó, G., O. Paun, M.K. Brandrud, L. Iaczkó, A. Molnár & R.M. Bateman 2019. Iterative allogamy–autogamy transitions drive actual and incipient speciation during the ongoing evolutionary radiation within the orchid genus *Epipactis* (Orchidaceae). *Annals of Botany* 124(3):481–497.
- Stace, C.A. 1997. *New flora of the British isles: second edition*. University Press, Cambridge, 918 pp.
- Stepanov, N.V. 1990. Floristic findings in the Krasnoyarsk Territory. *Botanicheskii Zhurnal* 75(5):725–729 (in Russian). [Степанов Н.В. 1990. Флористические находки в Красноярском крае // Ботанический журнал. Т. 75, № 5. С. 725–729].
- Sultanova, B.A. 1973. Addition to the flora of Kyrgyzstan. In: *Materials on the flora of Kyrgyzstan*, pp. 43–44, Izdatel'stvo "Ilim", Frunze (in Russian) [Султанова Б.А. 1973. Дополнение к флоре Киргизии // Материалы по флоре Киргизии, Фрунзе: Издательство "Илим". С. 43–44].
- Sutkin, A.V. 2010. Findings of alien vascular plant species in Buryat Republic. *Turczaninovia* 13(3):75–76 (in Russian). [Суткин А.В. 2010. Находки адвентивных видов сосудистых растений в Республике Бурятия // *Turczaninovia*. Т. 13, № 3. С. 75–76].
- Teymurov, A.A. 2016. Image of *Dactylorhiza iberica* (M. Bieb. ex Willd.) Soó. *Plantarium: open on-line atlas and key to plants and lichens of Russia and neighbouring countries. 2007–2021*. Available from: <https://www.plantarium.ru/page/image/id/464121.html>. Last accessed 14.10.2020.
- Tojibaev, K.Sh., N.Yu. Beshko, O.T. Turginov & D. Mirzalieva 2014. New records for Fabaceae in the flora of Uzbekistan. *Flora Mediterranea* 24:25–35.
- Tscherneva, O.V. 1994. *Echinops* L. In: *Flora of the European part of the USSR, vol. 7* (N.N. Tzvelev, ed.), pp. 207–210, Nauka, St. Petersburg (in Russian). [Чернева О.В. 1994. *Echinops* L. // Флора Европейской части СССР / под ред. Н.Н. Цвелева. СПб.: Наука. Т. 7. С. 207–210].
- Turland, N. & C. Jarvis (eds) 1997. Typification of Linnaean specific and varietal names in the Leguminosae (Fabaceae). *Taxon* 46(3):457–485.
- Turpel, A. & T. Walisch 2021. Collections and observation data National Museum of Natural History Luxembourg. *Musée national d'histoire naturelle Luxembourg*. Occurrence dataset <https://doi.org/10.15468/s2iu7d> accessed via GBIF.org on 2021-02-25.
- Tzvelev, N.N. 1989. *Scorzonera* L. In: *Flora of the European part USSR, vol. 8* (N.N. Tzvelev, ed.), pp. 37–46, Nauka, Leningrad (in Russian). [Цвелев Н.Н. 1989. *Scorzonera* L. // Флора Европейской части СССР / под ред. Н.Н. Цвелева. Л.: Наука. Т. 8. С. 37–46].
- Tzvelev, N.N. 2000. *Manual of the vascular plants of North-West Russia (Leningrad, Pskov and Novgorod provinces)*. Publ. SPHFA, St. Petersburg. 781 pp. (in Russian) [Цвелев Н.Н. 2000. Определитель сосудистых растений Северо-Западной России (Ленинградская, Псковская и Новгородская области). СПб.: Изд-во СПХФА. 781 с.].
- Tzvelev, N.N. 2004. *Oberna* Adans. In: *Flora Europae Orientalis, vol. 11* (N.N. Tzvelev, ed.), pp. 229–233. KMK Scientific Press, Moscow, Saint-Petersburg (in Russian). [Цвелев Н.Н. 2004. *Oberna* Adans. // Флора Восточной Европы / под ред. Н.Н. Цвелева. Москва, Санкт Петербург: Товарищество научных изданий КМК. Т. 11. С. 229–233].
- Tzvelev, N.N. 2005. Conspectus abbreviatus plantarum cryptogamarum vascularium Europae Orientalis. *Novosti systematiki vysshibk rastenii* 37:7–32 (in Russian). [Цвелев Н.Н. 2005. Краткий конспект сосудистых споровых растений Восточной Европы // Новости систематики высших растений. Т. 37. С. 7–32].
- Ueda, K. 2021. iNaturalist Research-grade Observations. *iNaturalist.org*. Occurrence dataset <https://doi.org/10.15468/ab355x> accessed via GBIF.org on 2021-03-31:
- Ueda, K. 2021a. <https://www.gbif.org/occurrence/2851101196>.
- Ueda, K. 2021b. <https://www.gbif.org/occurrence/2864580907>.
- Ueda, K. 2021c. <https://www.gbif.org/occurrence/3039160917>.
- Ueda, K. 2021d. <https://www.gbif.org/occurrence/3031835820>.
- Ueda, K. 2021e. <https://www.gbif.org/occurrence/3044952961>.
- Ueda, K. 2021f. <https://www.gbif.org/occurrence/3044782223>.
- Ueda, K. 2021g. <https://www.gbif.org/occurrence/3044772224>.
- Ueda, K. 2021h. <https://www.gbif.org/occurrence/2856495298>.
- Ueda, K. 2021i. <https://www.gbif.org/occurrence/2873717266>.
- Ueda, K. 2021j. <https://www.gbif.org/occurrence/3044809183>.
- Ueda, K. 2021k. <https://www.gbif.org/occurrence/2283080679>.
- Ueda, K. 2021l. <https://www.gbif.org/occurrence/2620089493>.
- Ueda, K. 2021m. <https://www.gbif.org/occurrence/2283173408>.
- Ueda, K. 2021n. <https://www.gbif.org/occurrence/2802637066>.
- Ueda, K. 2021o. <https://www.gbif.org/occurrence/2283225723>.
- Ueda, K. 2021p. <https://www.gbif.org/occurrence/3058796743>.
- Ueda, K. 2021q. <https://www.gbif.org/occurrence/3044683187>.
- Ueda, K. 2021r. <https://www.gbif.org/occurrence/3044733212>.
- Ueda, K. 2021s. <https://www.gbif.org/occurrence/2873857316>.
- Urgamal, M., B. Oyuntsetseg, D. Nyambayar & Ch. Dulamsuren 2014. *Conspectus of the vascular plants of Mongolia*. Admon Printing Press, Ulaanbaatar, 334 pp.
- Vakhrameeva, M.G., I.V. Tatarenko, T.I. Varlygina, G.K. Torosyan & M.N. Zagulskii 2008. *Orchids of Russia and adja-*

- cent countries (within the borders of the former USSR). A.R.G. Gantner Verlag, Ruggell, xiii+690 pp.
- Vasilchenko, I.T. 1939. *Bunias* L. In: *Flora of the USSR, vol. 8* (V.L. Komarov, ed.), pp. 235–236, Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian) [Васильченко И.Т. 1939. *Bunias* L. // Флора СССР / под ред. В.Л. Комарова. М.; Л.: Изд-во АН СССР. Т. 8. С. 235–236].
- Vasina, A.L. 2012. New floristic materials for the Red Book of the Khanty-Mansi Autonomous Area – Yugra. In: *Tobolsk Scientific – 2012: Proceedings of the IX All-Russian (with international participation) scientific and practical conference*. Tyumen Publishing House, Tyumen, 80–82 pp. (in Russian). [Васина А.Л. 2012. Новые флористические материалы для Красной книги Ханты-Мансийского автономного округа – Югры // Тобольск научный – 2012: Материалы IX Всероссийской (с международным участием) научно-практической конференции. Тюмень: ОАО "Тюменский издательский дом". С. 80–82].
- Vasyukov, V.M. & S.V. Saksonov 2020. *Check-list of the flora of Penza region. Flora of the Volga river basin, vol. 4*, Anna, Togliatti, 211 pp. (in Russian). [Васюков В.М., Саксонов С.В. 2020. Конспект флоры Пензенской области. Флора Волжского бассейна. Тольятти: Анна. Т. 4. 211 с.].
- Vibe, E.I. 1997. *Senecio* L. In: *Flora of Siberia: Asteraceae (Compositae), vol. 13* (I.M. Krasnoborov, ed.), pp. 163–169, Nauka, Novosibirsk (in Russian). [Вибе Е.И. 1997. *Senecio* L. // Флора Сибири: Asteraceae (Compositae) / под ред. И.М. Красноборова. Новосибирск: Наука. Т. 13. С. 163–169].
- Vinogradova, Yu.K., S.R. Mayorov & I.V. Khorun 2010. *Black book of the flora of Central Russia: alien plant species in Central Russian ecosystems*, GEOS, Moscow, 512 pp. (in Russian). [Виноградова Ю.К., Майоров С.Р., Хорун Л.В. 2010. Черная книга флоры Средней России. Чужеродные виды растений в экосистемах Средней России. М.: ГЕОС. 512 с.].
- Vlasova, N.V. 1996. *Elatine* L. *Flora of Siberia: Geraniaceae–Cornaceae, vol. 10* (G.A. Peshkova, ed.), pp. 75–77, Nauka, Novosibirsk (in Russian). [Власова Н.В. 1996. *Elatine* L. // Флора Сибири: Geraniaceae – Cornaceae / под ред. Г.А. Пешковой. Новосибирск: Наука. Т. 10. С. 75–77].
- Voroshilov, V.N. 1966. *Flora of the Soviet Far East (Synopsis with tables for determining species)*, Nauka, Moscow, 478 pp. (in Russian). [Ворошилов В.Н. 1966. Флора советского Дальнего Востока (Конспект с таблицами для определения видов). М.: Наука. 478 с.].
- Voroshilov, V.N. 1982. *Key to the plants of the Soviet Far East*. Nauka, Moscow, 672 pp. (in Russian). [Ворошилов В.Н. 1982. Определитель растений советского Дальнего Востока. М.: Наука. 672 с.].
- Voroshilov, V.N. 1985. List of vascular plants of the Soviet Far East. In: *Floristic studies in different regions of the USSR*, pp. 139–200, Nauka, Moscow (in Russian). [Ворошилов, В.Н. 1985. Список сосудистых растений советского Дальнего Востока // Флористические исследования в разных регионах СССР. М.: Наука. С. 139–200].
- Vyltsan, N.F. 1994. *Keys to plants of Tomsk region*. Izdatel'stvo Tomskogo universiteta, Tomsk, 301 pp. (in Russian). [Вылцан Н.Ф. 1994. Определитель растений Томской области. Томск: Изд-во Томского университета. 301 с.].
- WCVP. 2021. *World Checklist of Vascular Plants, version 2.0*. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet: <http://wcvp.science.kew.org/>. Retrieved 08.02.2021.
- Yakubov, V.V. & O.A. Chernyagina 2004. *Catalog of flora of Kamchatka (vascular plants)*. Kamchatpress, Petropavlovsk-Kamchatsky, 165 pp. (in Russian) [Якубов В.В., Чернягина О.А. 2004. Каталог флоры Камчатки (сосудистые растения). Петропавловск-Камчатский: Изд-во Камчатпресс, 165 с.].
- Yuzepchuk, S.V. 1939. *Drosera* L. In: *Flora of the USSR, vol. 9* (S.V. Yuzepchuk, ed.), pp. 2–6, Izdatel'stvo AN SSSR, Moscow, Leningrad (in Russian). [Юзепчук С.В. 1939. *Drosera* L. // Флора СССР / под ред. С.В. Юзепчука. М.; Л.: Изд-во АН СССР. Т. 9. С. 2–6].
- Zakirov, K.Z. 1961. Boraginaceae Juss. In: *Flora of Uzbekistan, vol. 5* (A.I. Vvedenskii, ed.), pp. 156–236, Izdatel'stvo AN UzSSR, Tashkent (in Russian). [Закиров К.З. 1961. Сем. Boraginaceae – Бурачниковые // Флора Узбекистана / под ред. А.И. Введенского. Ташкент: Из-во АН УзССР. Т. 5. С. 156–236].
- Zarubin, A.M., M.M. Ivanova, I.G. Lyakhova, V.A. Baritskaya & V.I. Ivetskaya 1993. Floristic findings in the Baikal region. *Botanicheskii Zhurnal* 78(8):93–101 (in Russian). [Зарубин А.М., Иванова М.М., Ляхова И.Г., Бариска В.А., Ивельская В.И. 1993. Флористические находки в Прибайкалье // Ботанический журнал. Т. 78, № 8. С. 93–101].
- Zernov, A.S., Yu.E. Alekseev & V.G. Onipchenko. 2015. *Key to the vascular plants of the Karachay-Cherkess Republic*. KMK Scientific Press, Moscow, 459 pp. (in Russian). [Зернов А.С., Алексеев Ю.Е., Онипченко В.Г. 2015. Определитель сосудистых растений Карачаево-Черкесской Республики. М: Товарищество научных изданий КМК. 459 с.].
- Zhu, G.L., H. Riedl & R. Kamelin 1995. Boraginaceae Juss. In: *Flora of China: (Gentianaceae through Boraginaceae), vol. 16* (Wu, Z.Y. & P.H. Raven, eds.), pp. 329–427, Science Press & MBG Press, Beijing & St. Louis.
- Zykova, E.Yu. 2019. Alien flora of the Novosibirsk Region. *Acta Biologica Sibirica* 5(4):127–140 (in Russian). [Зыкова Е.Ю. 2019. Адвентивная флора Новосибирской области // Acta Biologica Sibirica. Т. 5, № 4. С. 127–140].