



## New combinations and new names in vascular plants of Asian Russia

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### ABSTRACT

In this paper, we present nomenclatural novelties required in the course of the preparation of the second, revised version of the checklist of vascular plants of Asian Russia. The first version was published in 2012 (Baikov 2012). At the family level, we accepted the modern classification systems (APG IV for flowering plants, PPG I for lycophytes and ferns, and GPG for gymnosperms). At the genus level, we follow the generic concepts applied for particular taxonomic groups according to the Catalogue of Life (COL; <https://www.catalogueoflife.org/>), version COL.23.5. At the species level, we consistently apply the monotypic species concept (also known in Russia as Komarov's concept). In total, this paper presents one new nothogenus name ( $\times$  *Sibirotrisetokoeleria* Chepinoga **nom. nov.**, Poaceae) and 156 new names in the rank of species, in 28 families: Amaranthaceae Juss. (1 name), Amaryllidaceae J. St.-Hil. (1), Apiaceae Lindl. (2), Asteraceae Bercht. & J.Presl (12), Boraginaceae Juss. (4), Caryophyllaceae Juss. (11), Crassulaceae J. St.-Hill. (3), Cyperaceae Juss. (8), Ericaceae Juss. (2), Fabaceae Lindl. (16), Gentianaceae Juss. (1), Geraniaceae Juss. (1), Juncaceae Juss. (1), Lamiaceae Martinov (1), Menyanthaceae Dumort. (1), Orchidaceae Juss. (1), Orobanchaceae Vent. (1), Papaveraceae Juss. (4), Plantaginaceae Juss. (1), Poaceae Barnhart (49), Polygonaceae Juss. (4), Primulaceae Batsch. ex Borkh. (6), Ranunculaceae Juss. (4), Rosaceae Juss. (5), Salicaceae Mirb. (2), Saxifragaceae Juss. (11), Vitaceae Juss. (1), Zygophyllaceae R. Br. (2 names).

**Keywords:** botanical nomenclature, nomenclatural combinations, vascular plants, Asian Russia, *Sibirotrisetokoeleria*

### РЕЗЮМЕ

**Чешинога В.В., Серегин А.П., Баркалов В.Ю., Эбель А.А., Ефимов П.Г., Фризен Н.В., Гончаров А.А., Кечайкин А.А., Князев М.С., Коробков А.А., Королук Е.А., Косачев П.А., Луферов А.Н., Мельников Д.Г., Никифорова О.Д., Овчинникова С.В., Шеховцова И.Н., Трошкина В.И. Новые комбинации и названия сосудистых растений Азиатской России.** В этой статье мы представляем номенклатурные новинки, необходимость в которых возникла в ходе работы над новой версией концепта флоры сосудистых растений Азиатской России, опубликованного в 2012 году. На уровне семейств нами приняты современные системы классификации APG IV для цветковых растений, PPG I для плауновидных и папоротников и GPG для голосеменных. Объем родов принят по международной базе данных Catalogue of Life (COL; <https://www.catalogueoflife.org/>), версия COL.22.12. На уровне видов мы следуем моноитической концепции, также известной в России как «концепция Комарова». В статье публикуется одно новое название ноторода (*Sibirotrisetokoeleria* Chepinoga **nom. nov.**, Poaceae) и 156 новых названий и номенклатурных комбинаций в ранге вида, принадлежащих 28 семействам: Amaranthaceae Juss. (1 название), Amaryllidaceae J. St.-Hil. (1), Apiaceae Lindl. (2), Asteraceae Bercht. & J. Presl (12), Boraginaceae Juss. (4), Caryophyllaceae Juss. (11), Crassulaceae J. St.-Hill. (3), Cyperaceae Juss. (8), Ericaceae Juss. (2), Fabaceae Lindl. (16), Gentianaceae Juss. (1), Geraniaceae Juss. (1), Juncaceae Juss. (1), Lamiaceae Martinov (1), Menyanthaceae Dumort. (1), Orchidaceae Juss. (1), Orobanchaceae Vent. (1), Papaveraceae Juss. (4), Plantaginaceae Juss. (1), Poaceae Barnhart (49), Polygonaceae Juss. (4), Primulaceae Batsch. ex Borkh. (6), Ranunculaceae Juss. (4), Rosaceae Juss. (5), Salicaceae Mirb. (2), Saxifragaceae Juss. (11), Vitaceae Juss. (1), Zygophyllaceae R. Br. (2 названия).

**Ключевые слова:** ботаническая номенклатура, номенклатурные комбинации, сосудистые растения, Азиатская Россия, *Sibirotrisetokoeleria*

Currently, the main source on the diversity of vascular plants in Asian Russia is the "Checklist of Flora of Asian Russia: Vascular Plants" published in 2012 (Baikov 2012), where taxonomical information from two milestone floristic accounts, "Flora of Siberia" (Malyshev et al. 1987–2003, Malyshev 2000–2007), and "Vascular Plants of the Soviet Far East" (Kharkevich 1985–1996, Kozhevnikov & Probatova 2006), was combined. Harmonized taxonomy from two such large multivolume accounts was an important task and required tre-

mendous work. So, no wonder the taxonomy used in the checklist published in 2012, referring to the twenty- or thirty-year-old data, remained largely outdated. Since then, modern DNA-based classifications were elaborated and represented systematically at the genus level in APG IV (the Angiosperm Phylogeny Group classification) (Chase et al. 2016) for flowering plants, PPG I (the Pteridophyte Phylogeny Group classification) (Schuettpehl et al. 2016) for lycophytes and ferns, GPG (the Gymnosperm Phylogeny Group classification) (Christenhusz et al. 2011) for gymnosperms, as well as in many other classifications for separate taxonomic groups. Furthermore, authoritative web-based international platforms such as Catalogue of Life (Hoborn et al. 2021, COL 2023), Plants of the World Online (POWO 2023), World Flora Online (Borsch et al. 2020, WFO 2023) brought together, publicly represented and regularly updated taxonomic information for the lower taxonomic levels. Additionally, the realization of the international initiative “Mapping Asia Plants” by the Chinese Academy of Sciences as part of the Asian Biodiversity Conservation and Database Network (ABCDNet; Ma 2017, Xue et al. 2020, Xue et al. 2023, in press), has shown that the checklist by Baikov (2012) needs to be substantially updated. Here we present taxonomic novelties, appearing in the course of the preparation of a new updated version of this checklist, taking into account the opinions of Russian experts in the fields of taxonomy and Russian biodiversity.

The taxonomical/nomenclatural concept of the new checklist follows the following principles:

**Family-level.** We accepted the family circumscription from the classification systems mentioned above, i.e., APG IV (Chase et al. 2016), PPG I (Schuettpehl et al. 2016), and GPG (Christenhusz et al. 2011).

**Genus-level.** It is widely known, that one of the most difficult decisions concerns the choice of generic concepts, which is the main source of name changes (Danihelka et al. 2012). To avoid conflicts between contrasting points of view, we applied the generic concept following the COL (Catalogue of Life). New releases of COL are published monthly. Here, we fixed the version published 15.05.2023 (ver. COL23.5; URL: <https://www.checklistbank.org/dataset/9893/about>).

**Species-level.** If the generic concept can be accepted following a particular database, the species concept to a great extent is a question of regional expertise. Of course, in the case when a certain species was subjected to phylogenetic research and its taxonomic status was confirmed by authoritative molecular, morphological, and(or) other kinds of studies, its taxonomic status can be considered stable. Unfortunately, only a small fraction of vascular plant species from Asian Russia have been subjected to such comprehensive studies. Considering that different taxonomic sources of information adopt various species concepts, we consistently followed the monotypic species concept known in Russia as the “Komarov’s concept” (Komarov 1940, Juzepczuk 1958). The monotypic concept implies distinguishing species in a narrow sense without intraspecific subdivision.

The principles outlined above required some new nomenclatural changes presented in the current article. In

some cases, the comments are provided. Species distribution is given according to Brummitt (2001).

## AMARANTHACEAE Juss.

*Suaeda mongolica* (Lomon. & Freitag) Chepinoga, **comb. & stat. nov.** [= *Suaeda corniculata* (C.A. Mey) Bunge subsp. *mongolica* Lomon. & Freitag, Willdenowia 38(1):92 (2008)]. **Siberia:** TVA, KRA (Khakassia), IRK, BRY, CTA. **Mongolia, N China.**

## AMARYLLIACEAE J.St.-Hil.

*Allium czemalense* (N. Friesen) N. Friesen, **comb. & stat. nov.** [= *Allium vodopjanovae* N. Friesen subsp. *czemalense* N. Friesen, Fl. Sibir. (Arac.-Orchidac.) 4:77, 78 (1987)]. **Endemic to Siberia:** ALT.

## APIACEAE Lindl.

*Bupleurum porfirii* (Kamelin, Czubarov & Shmakov) Chepinoga, **comb. & stat. nov.** [= *Bupleurum aureum* Fisch ex Hoffm. subsp. *porfirii* Kamelin, Czubarov & Shmakov, Turczaninowia 7(3):57 (2004)]. **Endemic to Siberia:** ALT.

*Kreidion filicinum* (H. Wolff) Barkalov, **comb. nov.** [= *Peucedanum filicinum* H. Wolff, Repert. Spec. Nov. Regni Veg. 21:246 (1925); = *Conioselinum filicinum* (H. Wolff) H. Hara, J. Jap. Bot. 18:28 (1942)]. **Endemic to the Russian Far East:** KUR.

## ASTERACEAE Bercht. & J. Presl

*Antennaria pseudoisolepis* (V.V. Petrovsky) Barkalov, **comb. & stat. nov.** [= *Antennaria friesiana* (Trautv.) Ekman subsp. *pseudoisolepis* V.V. Petrovsky, Novosti Sist. Vyssh. Rast. 23:194 (1986)]. **Endemic to the Russian Far East:** MAG.

*Artemisia ebendorferi* (Korobkov) Kucherov & Daniëls ex Chepinoga, **comb. & stat. nov.** [= *Artemisia arctica* Less. subsp. *ebendorferi* Korobkov, Bot. Zhurn. (Moscow & Leningrad) 64(5):669 (1979); = *Artemisia ebendorferi* (Korobkov) Kucherov & Daniëls, Phytocoenologia 35(4):1035 (2005), nom. inval.]. **Endemic to Asian Russia. Siberia:** YAK. **Russian Far East:** KAM, MAG.

*Artemisia psilosantha* (Hultén) Korobkov, **comb. & stat. nov.** [= *Artemisia arctica* Less. subsp. *psilosantha* Hultén, Nytt. Mag. Bot. 3:73 (Fig. 2, H. 4, C; map. Fig. 8) (1954)]. **Russian Far East:** KUR, KAM. **Japan** (Honshu, Hokkaido, Rishiri Islands).

*Eurybia subintegerrima* (Trautv.) Koroljuk, **comb. & stat. nov.** [= *Aster sibiricus* L. var. *subintegerrimus* Trautv., Reise Sibir. (Middendorff) 1(2, 1-2):161 (1847); = *Aster subintegerrimus* (Trautv.) Ostenf., Nyt. Mag. Naturvidensk. 54:163 (1916); = *Aster sibiricus* subsp. *subintegerrimus* (Trautv.) A. Löve & D. Löve, Bot. Not. 128:521 (1975); = *Aster sibiricus* f. *subintegerrimus* (Trautv.) Zdor., Byull. Glavn. Bot. Sada 90: 36 (1973); = *Eurybia sibirica* (L.) G.L. Nesom var. *subintegerrima* (Trautv.) G.L. Nesom, Phytologia 77(3):262 (1994)]. **European Russia:** RUN. **Siberia:** WSB(N), KRA(N), YAK(N). **Russian Far East:** MAG. **Northern Europe** (Scandinavia).

*Leuzea chamarensis* (Peschkova) Chepinoga, **comb. nov.** [= *Rhaponticum chamarensis* Peschkova, Bot. Zhurn. (Moscow & Leningrad) 62:227 (1977); = *Stemmacantha chamarensis* (Peschkova) Czerep., Vasc. Pl. Russia & Adj. States: 100 (1995); = *Rhaponticum carthamoides* (Willd.) Iljin var. *chamarensis* (Peschkova) O.S. Zhirova, Fl. Sibir. 13:230 (1997 publ. 1998)]. **Endemic to Siberia:** IRK, BRY.

*Leuzea orientalis* (Serg.) Chepinoga, **comb. nov.** [= *Leuzea carthamoides* (Willd.) DC. subsp. *orientalis* Serg., Fl. Zapadnoi Sibiri 11:2943 (1949); = *Rhaponticum carthamoides* (Willd.) Iljin subsp. *orientale* (Serg.) Soskov, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 19:406 (1959); = *Stemmacantha orientalis* (Serg.) Czerep., Vasc. Pl. Russia & Adj. States: 101 (1995); = *Fornicium carthamoides* (Willd.) Kamelin subsp. *orientale* (Serg.) Kamelin, Mater. Istorii Fl. Azii: 139 (1998)]. **Endemic to Siberia:** WSB, KRA, TVA, IRK, BRY.

*Packera wrangelica* (Yurtzev, Korobkov & V.V. Petrovsky) Chepinoga, **comb. & stat. nov.** [= *Senecio hyperborealis* Greenm. subsp. *wrangelica* Yurtzev, Korobkov & V.V. Petrovsky, Arktichesk. Fl. SSSR 10:216 (1987); = *Tephroses hyperborealis* (Greenm.) Barkalov subsp. *wrangelica* (Yurtzev, Korobkov & V.V. Petrovsky) Barkalov, Sosud. Rast. Sovet. Dal'nego Vostoka 6:236 (1992); = *Tephroses hyperborealis* subsp. *wrangelica* (Yurtzev, Korobkov & V.V. Petrovsky) Czerep., Vasc. Pl. Russia & Adj. States (former USSR): 107 (1995), isonym; = *Packera hyperborealis* (Greenm.) A. Löve & D. Löve subsp. *wrangelica* (Yurtzev, Korobkov & V.V. Petrovsky) Yurtzev, Korobkov & V.V. Petrovsky, J. Bot. Res. Inst. Texas 2(1): 443 (2008)]. **Endemic to the Russian Far East:** MAG (Wrangel Island).

*Parasenecio robustus* (Tolm.) Kadota ex Chepinoga & A.L. Ebel, **comb. nov.** [= *Cacalia robusta* Tolm., Bot. Mater. Gerb. Bot. Inst.



Komarova Akad. Nauk SSSR 18:237 (1957);  $\equiv$  *Hasteola robusta* (Tolm.) Pojark., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 20:381 (1960);  $\equiv$  *Parasenecio robustus* (Tolm.) Kadota, in H. Ohashi et al., Wild Flow. Jap. rev. Ed. 5:306 (2017), comb. inval., sine basionym]. **Russian Far East:** SAK, KUR. **N Japan.**

**Note.** *Cacalia robusta* Tolm. is a species closely related to *C. hastata* L. (Tolmachev 1957, Barkalov 1992, 2009). Since the genus name *Cacalia* L. was rejected (Turland et al. 2018), all relatives of *C. hastata* were transferred to the genus *Parasenecio* excluding *C. robusta* Tolm., which was erroneously included in the genus *Hasteola* Raf. (COL, 2023; POWO, 2023). However, *Hasteola* contains only two species distributed in eastern North America (Pelser et al. 2007).

**Takhtajianantha curvata** (Popl.) Chepinoga, **comb. nov.** [ $\equiv$  *Scorzonera austriaca* Willd. var. *curvata* Popl., Trudy Bot. Muz. Imp. Akad. Nauk 15:38 (1916);  $\equiv$  *Scorzonera curvata* (Popl.) Lipsch., Fl. SSSR 29:72 (1964)]. **Siberia:** BRY, CTA. **Mongolia, NE China.**

**Note.** Recent phylogenetic and carpological analyses confirmed that *Scorzonera* is actually a polyphyletic assemblage (Mavrodiev et al. 2004, Winfield et al. 2006, Kilan et al. 2009, Zaika et al. 2020). According to the revised classification, *Scorzonera* s.l. was divided into seven genera (Zaika et al. 2020). Thus, the previously monotypic genus *Takhtajianantha* was extended by including *Scorzonera* sect. *Fibrillosa* Nakai (*Scorzonera austriaca* Willd., *S. ikonnikovii* Krasch & Lipsch., *S. subcaulis* (Regel) Lipsch.). Following the monotypic species concept followed here, three new combinations within the *Takhtajianantha austriaca* (Willd.) Zaika, Sukhor. & N. Kilian s.l. are required.

**Takhtajianantha glabra** (Rupr.) Chepinoga, **comb. nov.** [ $\equiv$  *Scorzonera glabra* Rupr., Beitr. Pflanzenk. Russ. Reiches 2:11 (1845);  $\equiv$  *Scorzonera austriaca* Willd. var. *glabra* Rupr. Fl. Bot.-Ural.: 38, 11 (1856);  $\equiv$  *Scorzonera austriaca* subsp. *glabra* (Rupr.) Lipsch. & Krasch., Fragm. Monogr. Gen. Scorzon. 1:121 (1935); = *Scorzonera ruprechtiana* Lipsch. & Krasch., Fragm. Monogr. Gen. Scorzon., 1:121 (1935)]. **European Russia:** RUN, RUE, RUC. **Siberia:** WSB (Ural), KRA(S), IRK, BRY, CTA, YAK(SW). **N Mongolia, NE China.**

**Takhtajianantha pratorum** (Krasch.) Chepinoga, **comb. nov.** [ $\equiv$  *Scorzonera austriaca* Willd. var. *pratorum* Krasch. Fragm. Monogr. Gen. Scorzon. 1:116 (1935);  $\equiv$  *Scorzonera pratorum* (Krasch.) Stanokov, Opred. Vyssh. Rast. Eyr. Chasti SSSR: 687 (1949)]. **European Russia:** RUS, RUE. **Siberia:** WSB(S). **Kazakhstan.**

**Tephrerosis succisifolia** (Kom.) Barkalov, **comb. nov.** [ $\equiv$  *Senecio succisifolius* Kom., Fl. Kamtschatka 3:167 (1930)]. **Endemic to the Russian Far East:** KAM.

## BORAGINACEAE Juss.

**Mertensia czukotica** (O.D. Nikif.) O.D. Nikif., **comb. & stat. nov.** [ $\equiv$  *Mertensia maritima* (L.) Gray subsp. *czukotica* O.D. Nikif., Novosti Sist. Vyssh. Rast. 42:195 (2011)]. **Russian Far East:** MAG (Chukotka, Wrangel Island). **North America** (Alaska).

**Myosotis collucata** (O.D. Nikif.) O.D. Nikif., **comb. & stat. nov.** [ $\equiv$  *Myosotis krylovii* Serg. subsp. *collucata* O.D. Nikif., Turczaninowia 13(1):108 (2010)]. **Endemic to Siberia:** ALT.

**Myosotis kolymensis** (O.D. Nikif.) O.D. Nikif., **comb. & stat. nov.** [ $\equiv$  *Myosotis asiatica* (Vesterg.) Schischk. & Serg. subsp. *kolymensis* O.D. Nikif., Fl. Sibir. (Pyrolac.-Lamiac.) 11:122 (1997)]. **Endemic to Siberia:** YAK(N).

**Myosotis pseudoimitata** (O.D. Nikif.) O.D. Nikif., **comb. & stat. nov.** [ $\equiv$  *Myosotis imitata* Ser. subsp. *pseudoimitata* O.D. Nikif., Turczaninowia 13(1):106 (2010)]. **Endemic to Siberia:** ALT.

## CARYOPHYLLACEAE Juss.

**Cerastium albimarginatum** (Vorosch.) Barkalov, **comb. & stat. nov.** [ $\equiv$  *Cerastium fischerianum* Ser. var. *albimarginatum* Vorosch., Byull. Glavn. Bot. Sada 83:34 (1972);  $\equiv$  *Cerastium fischerianum* subsp. *albimarginatum* (Vorosch.) Vorosch., Florist. Issl. Razn. Raionakh SSSR: 166 (1985)]. **Endemic to the Russian Far East:** PRM.

**Cherleria barkalovii** (N.S. Pavlova) Chepinoga, **comb. nov.** [ $\equiv$  *Minuartia barkalovii* N.S. Pavlova, Sosud. Rast. Sovet. Dal'nego Vostoka 8:39 (1996)]. **Russian Far East:** SAK, KUR (Iturup Island). **Japan.**

**Note.** Molecular studies conducted last two decades have shown the circumscription of *Minuartia* s.l. to be highly polyphyletic (Greenberg & Donoghue 2011, Dillenberger & Kadereit 2014a). For this reason, Dillenberger & Kadereit (2014a) divided *Minuartia* into 11 different genera, based on their analyses of cpDNA and nrDNA sequence data and morphology (More & Dillenberger 2017). Although the new combinations were made for most species of *Minuartia*, some taxa of limited distribution were missed. Herewith, we improve this situation. Thus, the genus *Cherleria* besides *C. sedoides* L., the type of the genus, should include all species formerly assigned to *Minuartia* sect. *Spectabiles* except ser. *Laricinae* and *Minuartia aizoides* Bornm. (Dillenberger &

Kadereit 2014a, Moore & Dillenberger 2017). *Minuartia barkalovii* N.S. Pavlova was described as an island segregate of *M. arctica*, distinguished by seed morphology and slightly flattened leaves (Pavlova 1996). Following the genus concept, we transfer *M. barkalovii* to the genus *Cherleria* as well.

**Dianthus schistosus** (Kuvaev) Chepinoga, **comb. & stat. nov.** [ $\equiv$  *Dianthus repens* Willd. subsp. *schistosus* Kuvaev, Fl. Subarkt. Gor. Evraz.: 144 (2006)]. **Endemic to the Russian Far East:** KAM, MAG.

**Mesostemma amblyosepalum** (Schrenk) Chepinoga, **comb. nov.** [ $\equiv$  *Stellaria amblyosepala* Schrenk, in Fisch. & C.A. Mey., Enum. Pl. Nov. 2:54 (1842)]. **Siberia:** ALT, TVA. **Kazakhstan, Mongolia, NW, N & NE China.**

**Note.** Phylogenetic study of the tribe *Alsineae* Lam. & DC has shown that *Stellaria dichotoma* L. is closely related to the genus *Mesostemma* Vved. and should be transferred to it (Arabi et al. 2022). However, *S. amblyosepala*, a species closely related to *S. dichotoma*, was not included in that phylogenetic study.

**Pseudocherleria koreana** (Nakai) Chepinoga, **comb. & stat. nov.** [ $\equiv$  *Alsine macrocarpa* Fenzl var. *koreana* Nakai, Bot. Mag. (Tokyo) 32: 36 (1918);  $\equiv$  *Arenaria macrocarpa* Prush var. *koreana* (Nakai) H. Hara, J. Jap. Bot. 57(6):178 (1982);  $\equiv$  *Minuartia macrocarpa* (Pursh) Ostenf. subsp. *koreana* (Nakai) N.S. Pavlova, Sosud. Rast. Sovet. Dal'nego Vostoka 8:37 (1996);  $\equiv$  *Pseudocherleria macrocarpa* (Pursh) Dillenb. & Kadereit var. *koreana* (Nakai) Dillenb. & Kadereit, Taxon 63(2):451 (2014)]. **Russian Far East:** AMU, KHA, PRM. **Korea.**

**Note.** The genus *Pseudocherleria* Dillenb. & Kadereit in Asian Russia is presented by *P. laricina* (L.) Dillenb. & Kadereit ( $\equiv$  *Spergula laricina* L.,  $\equiv$  *Minuartia laricina* (L.) Mattf.), the type of the genus (Dillenberger & Kadereit 2014b) and three closely related species from *P.* aggr. *macrocarpa*, i.e., *P. macrocarpa* (Pursh) Dillenb. & Kadereit ( $\equiv$  *M. macrocarpa* (Pursh) Ostenf.), *P. kurilensis* (Ikonn. & Barkalov) Dillenb. & Kadereit ( $\equiv$  *M. kurilensis* Ikonn. & Barkalov) and *Pseudocherleria koreana*.

**Sabulina tricostata** (A.P. Khokhr.) Chepinoga, **comb. nov.** [ $\equiv$  *Minuartia tricostata* A.P. Khokhr., Byull. Glavn. Bot. Sada 120:33 (1981)]. **Endemic to the Russian Far East:** MAG.

**Note.** More than half of the species (i.e., 12) of the previous *Minuartia* that occurred in Asian Russia were moved to the genus *Sabulina* Rchb. (Dillenberger & Kadereit 2014a). Six closely related species of *Sabulina* belong to the *S.* aggr. *verna* (L.) Rchb. Here, we publish the nomenclature combination for the local endemic from the south of Magadan Oblast.

**Silene nasarovii** Chepinoga, **nom. nov.** [ $\equiv$  *Melandrium gracile* Tolm., Trudy Bot. Muz. Akad. Nauk SSSR 24:261 (1932), non *Silene gracilis* DC. (1813);  $\equiv$  *Gastrolychnis gracilis* (Tolm.) Czerep., Sosud. Rast. SSSR: 161 (1981); = *Lychmis gracilis* Nasarov, Byull. Mosk. Obshch. Isp. Prir., Otd. Biol. 32(3-4):338 (1924), nom. nud.]. **Endemic to Siberia:** KRA(N), IRK(N), BRY(N), YAK.

**Note.** Since a high level of homoplasy in morphological characters of *Silene* was discovered (Oxelman & Lidén 1995, Oxelman & al. 2001, Greenberg & Donoghue 2011, Petri & Oxelman 2011), the taxonomy of the genus has changed dramatically. Currently, *Silene* is a large genus, comprising around 850 species (Jafari et al. 2020). It includes such genera as *Cucubalus* L., *Oberna* Adans., *Orites* Adans., *Melandrium* Röhl., *Gastrolychnis* Fenzl, *Elisanthe* (Fenzl) Rchb., *Sofianthe* Tzvelev, *Neoussuria* Tzvelev, etc. (Hernández-Ledesma et al. 2015). A few regional races of *Gastrolychnis* and *Elisanthe* that occurred in Asian Russia are to be transferred to *Silene* s.l.

**Silene peschkovae** Chepinoga, **nom. nov.** [ $\equiv$  *Elisanthe aprica* (Turcz. ex Fisch. & C.A. Mey.) Peschkova subsp. *daurica* Zuev, Fl. Sibir. (Portulacac.-Ranunculac.), 6:60 (1993), non *Silene daburica* Fisch. ex Sweet (1830)]. **Endemic to Siberia:** CTA(S).

**Note.** The proposed new name is given in honor of Galina Peschkova, the famous Siberian taxonomist who discovered the discussed Transbaikalian race of *S. aprica* Turcz. ex Fisch. & C.A. Mey. (Malyshev & Peschkova 1979:328).

**Silene vegetior** (Popov) Chepinoga, **comb. & stat. nov.** [ $\equiv$  *Silene jenseensis* Willd. var. *vegetior* Popov, Konspekt Fl. Pober. Baikal: 213 (1966);  $\equiv$  *Silene jenseensis* subsp. *popovii* Zuev, Byull. Moskovsk. Obshch. Isp. Prir., Otd. Biol. 95(1):99 (1990), non *Silene popovii* Schischk. (1936)]. **Endemic to Asian Russia. Siberia:** IRK, BRY, CTA, YAK. **Russian Far East:** AMU.

**Silene vegetum** (Popov) Chepinoga, **comb. nov.** [ $\equiv$  *Melandrium apetalum* Fenzl var. *vegetum* Popov, Konspekt Fl. Pober. Baikal: 213 (1966);  $\equiv$  *Gastrolychnis popovii* Peschkova, 1975, Novosti Sist. Vyssh. Rast. 12:278 (1975), non *Silene popovii* Schischk. (1936)]. **Endemic to Siberia:** IRK(N), BRY(N), CTA(N), YAK(S).

**Silene woroschilovii** Chepinoga, **nom. nov.** [ $\equiv$  *Cucubalus bacifer* L. var. *japonicus* Miq., Ann. Mus. Bot. Lugduno-Batavi 2:210 (1866), non *Silene japonica* Rohrb. (1870);  $\equiv$  *Cucubalus japonicus* (Miq.) Vorosch., Byull. Glavn. Bot. Sada 38:50 (1960);  $\equiv$  *Silene bacifera* Roth var. *japonica* (Miq.) H. Ohashi & H. Nakai, J. Jap. Bot. 71(5): 268 (1996)]. **Russian Far East:** PRM(S). **Korea, Japan.**

## CRASSULACEAE J. St.-Hil.

***Phedimus baicalensis*** (Peschkova) A.A. Gontcharov, **comb. & stat. nov.** [= *Sedum aizoon* L. subsp. *baicalense* Peschkova, Fl. Sibiri 7:161 (1994); = *Aizopsis baicalensis* (Peschkova) S.B. Gontch. & A.V. Grebenjuk, Konspekt Fl. Irkutsk. Obl. 147 (2008); = *Aizopsis aizoon* (L.) Grulich subsp. *baicalensis* S.B. Gontch., Konspekt Fl. Asiatsk. Rossii: 180 (2012); = *Sedum baicalense* (Peschkova) Stepanov, Vasc. Pl. Yenisey Sayan: 112 (2016)]. **Siberia:** KRA, IRK, BRY, CTA, N Mongolia.

***Phedimus kurilensis*** (Vorosch.) A.A. Gontcharov, **comb. nov.** [= *Sedum kurilense* Vorosh., Bull. Princ. Bot. Gard. Acad. Sci. SSSR 60:39 (1965); = *Aizopsis kurilensis* (Vorosch.) S.B. Gontch., Bull. Natl. Sci. Mus. Tokyo, B 25:54 (1999)]. **Endemic to the Russian Far East:** KUR.

***Phedimus rhodocarpus*** (V.V. Byalt & Sun-Den-Kho) A.A. Gontcharov, **comb. nov.** [= *Aizopsis rhodocarpa* V.V. Byalt & Sun-Den-Kho, Bot. Zhurn. (Moscow & Leningrad) 93(8):1265 (2008)]. **Siberia:** BRY, CTA(S). **NE Mongolia.**

## CYPERACEAE Juss.

***Carex altimontana*** (T.V. Ebel) Schekhovts., **comb. & stat. nov.** [= *Carex rupestris* All. subsp. *altimontana* T.V. Ebel, Turczaninowia 5(4):5 (2002)]. **Endemic to Siberia:** ALT.

***Carex crassispiculata*** (Malyshev) Schekhovts., **comb. & stat. nov.** [= *Carex vanheurckii* Müll. Agr. var. *crassispiculata* Malyshev, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 22:22 (1963); = *Carex vanheurckii* subsp. *crassispiculata* (Malyshev) Malyshev, Fl. Tsentral'noi Sibiri 1:186 (1979)]. **Endemic to Siberia:** KRA, IRK, BRY, CTA, YAK.

***Carex substepposa*** (Malyshev) Schekhovts., **comb. & stat. nov.** [= *Carex ledebouriana* C.A. Mey. ex Trevir. subsp. *substepposa* Malyshev, Fl. Sibir. (Cyperac.) 3:117 (1990)]. **Endemic to Siberia:** ALT.

***Carex transbaicalensis*** (Malyshev) Schekhovts., **comb. & stat. nov.** [= *Carex ledebouriana* C.A. Mey. ex Trevir. subsp. *transbaicalensis* Malyshev, Fl. Sibir. (Cyperac.) 3:118 (1990)]. **Endemic to Asian Russia. Siberia:** BRY, CTA. **Russian Far East:** ?AMU.

***Eleocharis shipunovii*** Ovczinnikova & Chepinoga, **nom. nov.** [= *Scirpus japonicus* Franch. & Sav. var. *thermalis* Hultén, Kungl. Svenska Vetenskapsakad. Handl. 3, 5(1):165 (1927); = *Eleocharis thermalis* (Hultén) T.V. Egorova, Novosti Sist. Vyssh. Rast. 17:74 (1980), non *Eleocharis thermalis* Rydb. (1900)]. **Russian Far East:** KAM, Japan (Hokkaido, Honshu, Shikoku, Kyushu Islands).

**Note.** The new name was proposed in honor of Alexey Shipunov, the researcher-enthusiast of the East Asian flora.

***Eriophorum arcticum*** (M.S. Novos.) Schekhovts., **comb. & stat. nov.** [= *Eriophorum scheuchzeri* Hoppe subsp. *arcticum* M.S. Novos., Bot. Zhurn. (Moscow & Leningrad) 79(4):112 (1994)]. **Siberia:** WSB(N), KRA(N), YAK(N). **Russian Far East:** MAG(N). **N Europe** (Spitzbergen). **North America** (Alaska, Arctic Canada).

***Eriophorum leiocarpum*** (M.S. Novos.) Schekhovts., **comb. & stat. nov.** [= *Eriophorum russeolum* Fr. subsp. *leiocarpum* M.S. Novos., Bot. Zhurn. (Moscow & Leningrad) 78(8):86 (1993)]. **Siberia:** WSB(N), KRA(N), YAK(N). **Russian Far East:** MAG(N). **N Europe** (Spitzbergen). **North America** (Alaska, Arctic Canada).

***Eriophorum sibiricum*** (M.S. Novos.) Schekhovts., **comb. & stat. nov.** [= *Eriophorum mandshuricum* Meinsh. subsp. *sibiricum* M.S. Novos., Bot. Zhurn. (Moscow & Leningrad) 78(8):87 (1993)]. **Endemic to Asian Russia. Siberia:** YAK. **Russian Far East:** KAM, MAG.

## ERICACEAE Juss.

***Andromeda pumila*** (V.M. Vinogr.) Chepinoga, **comb. & stat. nov.** [= *Andromeda polifolia* L. subsp. *pumila* V.M. Vinogr., Arktichesk. Fl. SSSR 8:134 (1980)]. **European Russia:** RUN. **Siberia:** WSB, KRA, Yak. **Russian Far East:** KAM, MAG. **N Europe** (Scandinavia), **North America** (Alaska).

***Rhododendron × palustriforme*** (A.P. Khokhr. & Mazurenko) Barkalov, **comb. nov.** [= *Ledum palustriforme* A.P. Khokhr. & Mazurenko, Sosud. Rast. Sovet. Dal'nego Vostoka 5:126 (1991)]. **Russian Far East:** AMU, KHA(S), PRM, SAK, KUR. **Japan.**

**Note.** The hybrid between *Rh. tolmachevii* Harmaja (= *Rh. agg. diversipilosum* (Nakai) Harmaja) and *Rh. subarcticum* Harmaja (= *Ledum decumbens* (Aiton) Lodd. & Steud.) was described from the Sakhalin Island.

## FABACEAE Lindl.

***Astragalus boreale*** (Kozhev.) Knjaz., **comb. & stat. nov.** [= *Astragalus alpinus* L. subsp. *borealis* Kozhev., Bot. Zhurn. (Moscow & Leningrad) 65(5):694 (1980); = *Phaca lapponica* DC., Prodr. 2:274 (1825), non *Phaca lapponica* Wahlenb. (1813); = *Astragalus arcticus* Bunge, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7,

11(16):23 (1868), nom. illeg., non *Astragalus arcticus* Spengl. (1827); = *Astragalus alpinus* var. *arcticus* (Bunge) Lindm., Sv. Fanerogamfl.: 319 (1918), nom. illeg.; = *Astragalus alpinus* subsp. *arcticus* (Bunge) Lindm., Sv. Fanerogamfl. ed. 2: 384 (1926), nom. illeg.; = *Astragalus lapponicus* (DC.) Schischk., in Kryl. Fl. Zapadnoi Sibiri 7:1654 (1933), nom. illeg.; = *Astragalus subpolaris* Boriss. & Schischk., Fl. SSSR 12: 44 (1946), nom. illeg.]. **Endemic to Russia. European Russia:** RUN(N). **Siberia:** WSB(N), KRA(N). **N Finland, WN Norway.**

***Astragalus graniticus*** (Knjaz.) Knjaz., **comb. & stat. nov.** [= *Astragalus clerveanus* Iljin & Krasch. subsp. *graniticus* Knjaz., Bot. Zhurn. (Moscow & Leningrad) 92(8):1219 (2007)]. **Endemic to Russia. European Russia:** RUE (M Ural). **Siberia:** WSB (S Ural).

***Astragalus oregonus*** (Jurtzev) Knjaz., **comb. & stat. nov.** [= *Astragalus inopinatus* Boriss. subsp. *oregonus* Jurtzev, Novosti Sist. Vyssh. Rast. 1965:313. (1965)]. **Endemic to Siberia:** YAK.

***Astragalus ozjorensis*** (Peschkova) Knjaz., **comb. & stat. nov.** [= *Astragalus angarensis* Turcz. ex Bunge subsp. *ozjorensis* Peschkova, Novosti Sist. Vyssh. Rast. 6: 289. (1970)]. **Endemic to Siberia:** IRK.

***Oxytropis albida*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis middendorffii* Trautv. subsp. *albida* Jurtzev, Novosti Sist. Vyssh. Rast.: 318 (1965)]. **Endemic to Siberia:** YAK(E).

***Oxytropis arctolenensis*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis sordida* (Willd.) Pers. subsp. *arctolenensis* Jurtzev, Arktichesk. Fl. SSSR 9(2):179, 114 (1986)]. **Endemic to Siberia:** YAK(N).

***Oxytropis brevidentata*** (Polozhij) Chepinoga, **comb. & stat. nov.** [= *Oxytropis argentata* Regel & Tiling subsp. *brevidentata* Polozhij, Fl. Sibir. (Fabaceae) 9:213 (1994)]. **Siberia:** ALT. **Kazakhstan.**

***Oxytropis dezhevii*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis deflexa* DC. var. *dezhevii* Jurtzev, Bot. Zhurn. (Moscow & Leningrad) 57(6):647 (1972); = *Oxytropis deflexa* subsp. *dezhevii* (Jurtzev) Jurtzev, Arktichesk. Fl. SSSR 9(2):79 (1986)]. **Russian Far East:** MAG (Chukotka). **North America** (? Alaska).

***Oxytropis malyshevii*** Chepinoga, **nom. nov.** [= *Oxytropis filiformis* DC. var. *monticola* Malyshev, Vysokogorn. Fl. Wost. Sayana: 175 (1965), non *Oxytropis monticola* A. Gray (1884); = *Oxytropis coerulea* (Pall.) DC. subsp. *monticola* (Malyshev) Peschkova, Fl. Tsentral'noi Sibiri 2:613 (1979)]. **Endemic to Siberia:** BRY (East Sayan Mts., Khamar-Daban Mts.).

***Oxytropis orulganica*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis middendorffii* Trautv. subsp. *orulganica* Jurtzev, Fl. Suntar-Khayata: 73 (1968)]. **Endemic to Siberia:** YAK(N).

***Oxytropis schamurini*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis sordida* (Willd.) Pers. subsp. *schamurini* Jurtzev, Arktichesk. Fl. SSSR 9(2):179, 115 (1986)]. **Endemic to Asian Russia. Siberia:** YAK(N). **Russian Far East:** MAG (Wrangel Island, Chukotka).

***Oxytropis subarctica*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis leucantha* Pers. subsp. *subarctica* Jurtzev, Arktichesk. Fl. SSSR 9(2):180, 119 (1986)]. **Endemic to Siberia:** YAK(N).

***Oxytropis submiddendorffii*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis middendorffii* Trautv. subsp. *submiddendorffii* Jurtzev, Arktichesk. Fl. SSSR 9(2):181, 137 (1986)]. **Endemic to the Russian Far East:** MAG (Chukotka, Wrangel Island).

***Oxytropis tshukotcensis*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [= *Oxytropis leucantha* Pers. subsp. *tshukotcensis* Jurtzev, Arktichesk. Fl. SSSR 9(2):180, 120 (1986)]. **Endemic to Asian Russia. Siberia:** YAK(NE). **Russian Far East:** KAM, MAG.

***Trifolium tundricum*** (Knjaz.) Knjaz., **comb. nov.** [= *Lupinaster tundricus* Knjaz., Turczaninowia 24(2):176 (2021); = *Trifolium tundricum* Iljin, Mater. Istor. Flor. Rastit. SSSR 4:213 (1963), nom. nud.]. **European Russia:** RUN(N). **Siberia:** WSB(N), ?ALT, ?KRA(S). **?NW China.**

***Trifolium uralense*** (Knjaz.) Knjaz., **comb. nov.** [= *Lupinaster uralense* Knjaz., Turczaninowia 24(2):173 (2021); = *Trifolium uralense* Iljin, Mater. Istor. Flor. Rastit. SSSR 4:213 (1963), nom. nud.]. **European Russia:** RUE (Ural, Kama River). **Siberia:** WSB (Ural). **NW Kazakhstan.**

## GENTIANACEAE Juss.

***Gentiana vodopjanovae*** (Zuev) Chepinoga, **comb. nov.** [= *Dasystephana vodopjanovae* Zuev, Fl. Sibir. (Pyrolac.-Lamiac.) 11:66 (1997)]. **Endemic to Asian Russia. Siberia:** IRK(N), CTA(N). **Russian Far East:** KHA (Dusse-Alin Ridge).

## GERANIACEAE Juss.

***Geranium turczaninowii*** (Serg.) Troshkina, **comb. & stat. nov.** [= *Geranium transbaicalicum* Serg. var. *turczaninowii* Serg., Syst. Zarnetki Mater. Gerb. Krylova Tomsk. Gosud. Univ. 1:4 (1934); = *Geranium transbaicalicum* subsp. *turczaninowii* (Serg.) Peschkova, Fl. Sibir. (Ge-



raniac.-Cornac.) 10:20 (1996). **Siberia:** KRA (Khakassia), TVA, BRY(S), CTA(S). **N & E Mongolia, Kazakhstan.**

## JUNCACEAE Juss.

***Juncus alaskanus*** (Hultén) Chepinoga, **comb. & stat. nov.** [≡ *Juncus arcticus* Willd. subsp. *alaskanus* Hultén, Acta Univ. Lund. 2, 39(1):418 (1943); ≡ *Juncus arcticus* var. *alaskanus* (Hultén) Novikov, Novosti Sist. Vyssh. Rast. 19:55 (1982)]. **Russian Far East:** MAG (Chukotka). **North America** (Alaska, NW Canada).

## LAMIACEAE Martinov

***Lamium asiaticum*** Melnikov, **nom. & stat. nov.** [≡ *Lamium album* L. subsp. *orientale* Kamelin & A.L. Budantsev, Novosti Sist. Vyssh. Rast. 27:138 (1990), non *Lamium orientale* E.H.L. Krause (1903)]. **Siberia:** WSB (Yamal Peninsula) IRK, BRY, CTA, YAK(SW). **Russian Far East:** KHA(S), PRM. **E Mongolia, NE China.**

## MENYANTHACEAE Dumort.

***Nephrophyllidium japonicum*** (Franch.) Chepinoga, **comb. nov.** [≡ *Fauria japonica* Franch., Bull. Annuel. Soc. Philom. Paris, Ser. 7, 10:141 (1886); ≡ *Fauria crista-galli* (Menzies ex Hook.) Gilg subsp. *japonica* (Franch.) J.M. Gillett, Canad. J. Bot. 46:95 (1968); ≡ *Nephrophyllidium crista-galli* subsp. *japonicum* (Franch.) Yonek. & H. Ohashi, J. Jap. Bot. 80:186 (2005)]. **Russian Far East:** KUR. **Japan.**

## ORCHIDACEAE Juss.

***Liparis orientalis*** (Efimov) Chepinoga, **comb. & stat. nov.** [≡ *Liparis loeselii* (L.) Rich. subsp. *orientalis* Efimov, Bot. Zhurn. (Moscow & Leningrad) 95(10):1470 (2010)]. **Siberia:** WSB(S), ALT, KRA(S), IRK. **Kazakhstan.**

## OROBANCHACEAE Vent.

***Castilleja vorkutensis*** (Rebrist.) Kosachev, **comb. & stat. nov.** [≡ *Castilleja arctica* Krylov & Serg. subsp. *vorkutensis* Rebrist., Arktichesk. Fl. SSSR, 8:281 (1980)]. **Endemic to Siberia:** WSB (Arctic Urals, West Siberia).

## PAPAVERACEAE Juss.

***Papaver alexandri*** (V.V. Petrovsky) Barkalov & Chepinoga, **comb. & stat. nov.** [≡ *Papaver pulvinatum* Tolm. subsp. *alexandri* V.V. Petrovsky, Ann. Bot. Fenn. 56(4–6):371 (2019); ≡ *Papaver pulvinatum* subsp. *lenaense* Tolm., 1975, Arktichesk. Fl. SSSR 7:24 (1975), nom. inval. sine typo, non *Papaver pulvinatum* subsp. *lenaense* Tolm. in Nikiforova, Rastitel'nyj mir Aziatskoj Rossii 2(22):19 (2016)]. **Endemic to Siberia:** YAK(N).

**Note.** Several attempts to designate the type for *P. pulvinatum* subsp. *lenaense* Tolm. failed for various reasons until O.D. Nikiforova (2016: 19) validated the name. However, the selected holotype doesn't conspecific to plants described by A.I. Tolmachev and belongs to *P. nudicaule* var. *riparium* V.V. Petrovsky. Since the name *P. pulvinatum* subsp. *lenaense* is occupied, V.V. Petrovsky described these plants under a new name *P. pulvinatum* subsp. *alexandri* (Petrovsky et al. 2019, see the detailed explanation therein). According to the accepted monophyletic concept, we publish a new combination based on V.V. Petrovsky's name.

***Papaver insulare*** (V.V. Petrovsky) Barkalov & Chepinoga, **comb. & stat. nov.** [≡ *Papaver nudicaule* L. subsp. *insulare* V.V. Petrovsky, Bot. Zhurn. (Moscow & Leningrad) 68(2):236 (1983)]. **Endemic to the Russian Far East:** MAG (Wrangel Island).

***Papaver interius*** (V.V. Petrovsky) Barkalov & Chepinoga, **comb. & stat. nov.** [≡ *Papaver pulvinatum* Tolm. subsp. *interius* V.V. Petrovsky, Bot. Zhurn. (Moscow & Leningrad) 65(5):657 (1980)]. **Endemic to Asian Russia. Siberia:** KRA (Taimyr), YAK(N). **Russian Far East:** MAG (W Chukotka, Wrangel Island).

***Papaver pospelovae*** Barkalov & Chepinoga, **nom. & stat. nov.** [≡ *Papaver lapponicum* (Tolm.) Nordh. subsp. *orientale* Tolm., Trudy Polyarn. Komiss. 13:7 (1932), non *Papaver orientale* L. (1753), non *Papaver orientale* M. Bieb. (1808)]. **Endemic to Asian Russia. Siberia:** KRA(N), YAK(N). **Russian Far East:** MAG (Magadan Oblast, Chukotka).

**Note.** To avoid the later homonyms, we suggested a new name, honored to Elena Pospelova, the well-known explorer of the flora of the Taimyr Peninsula, where the main range of the species is located.

## PLANTAGINACEAE Juss.

***Linaria pinetorum*** (Kosachev) Kosachev, **comb. & stat. nov.** [≡ *Linaria vulgaris* Mill. subsp. *pinetorum* Kosachev, Acta Biol. Sibir. 3(4):37 (2017)]. **Siberia:** ALT. **N Kazakhstan.**

## POACEAE Barnhart

“Grasses of Russia” published recently by Tzvelev & Probatova (2019) gives a unique overview of Poaceae diversity of Northern

Eurasia based on decadal in-depth morphological studies performed by the authors and narrow species concept within the aggregates. We are using a list of accepted species from this monograph as a taxonomic backbone in our checklist. Nonetheless, we have to validate 49 combinations and new names resulting from recent phylogenetic studies conflicting with a generic concept in Tzvelev & Probatova (2019). In particular, we are transferring 13 *Bromopsis* species into *Bromus*, 12 *Hierochloë* species into *Anthoxanthum*, seven *Trisetum* species into *Koeleria*, and two *Elytrigia* species into *Elymus*. Other minor adjustments refer to the current circumscription of × *Agroelymus*, *Arctohyalopoa*, *Campeioctachys*, × *Ehyleymus*, *Kengyilia*, *Lolium*, *Poa*, *Pseudoroegneria*, *Sibirotrisetokoeleria*, and *Sibirotrisetum*.

× ***Agroelymus hajastanica*** (Tzvelev) Chepinoga, **comb. nov.** [≡ *Agropyron hajastanicum* Tzvelev, Novosti Sist. Vyssh. Rast. [3]:292 (1966); ≡ × *Agrotirigia hajastanica* (Tzvelev) Tzvelev, Novosti Sist. Vyssh. Rast. 9:63 (1972); = × *Agrotirigia kotovi* Tzvelev, Novosti Sist. Vyssh. Rast. 9:63 (1972); = *Agropyron cristatum* (L.) Gaern. s.l. × *Elymus repens* (L.) Gould s.l. (= *Elytrigia repens* (L.) Nevski)]. **European Russia. Russian Far East:** AMU. **Armenia.**

***Anthoxanthum annulatum*** (Petrov) Chepinoga, **comb. nov.** [≡ *Hierochloë annulata* Petrov, Fl. Yakut. 1:131 (1930); ≡ *Hierochloë hirta* (Schränk) Borbás var. *annulata* (Petrov) Vilyasoo, Fl. Eestonskoj SSR 11:267 (1979); = *Hierochloë odorata* (L.) P. Beauv. subsp. *kolyemensis* Prob., Novosti Sist. Vyssh. Rast. 15:69 (1979)]. **Endemic to Asian Russia. Siberia:** YAK. **Russian Far East:** KAM, MAG.

***Anthoxanthum bungeanum*** (Trin.) Chepinoga, **comb. nov.** [≡ *Hierochloë bungeana* Trin., Mém. Acad. Imp. Sci. Pétersb., Sér. 6 (Sci. Math., Phys. Nat.), 5(2), Bot.: 82 (1839); ≡ *Hierochloë glabra* Trin. subsp. *bungeana* (Trin.) Peschkova, Fl. Sibir. (Poaceae) 2:118 (1990)]. **Siberia:** ALT, TVA. **Central Asia.**

***Anthoxanthum chakassicum*** (Peschkova) Chepinoga, **comb. & stat. nov.** [≡ *Hierochloë glabra* Trin. subsp. *chakassica* Peschkova, Fl. Sibir. (Poaceae) 2:118 (1990)]. **Siberia:** ALT, TVA, KRA(S), BRY. **N Mongolia.**

***Anthoxanthum belenae*** (Prob.) Chepinoga, **comb. nov.** [≡ *Hierochloë belenae* Prob., Fl. Ross. Dal'nego Vostoka: 445 (2006)]. **Endemic to Russian Far East:** PRM.

***Anthoxanthum kamtschaticum*** (Prob.) Chepinoga, **comb. nov.** [≡ *Hierochloë glabra* Trin. subsp. *kamtschatica* Prob., Novosti Sist. Vyssh. Rast. 13:38 (1976); ≡ *Hierochloë kamtschatica* (Prob.) Prob., Bot. Zhurn. (Moscow & Leningrad) 69(2):257 (1984)]. **Endemic to the Russian Far East:** KAM, KHA, SAK, KUR(N).

***Anthoxanthum orthanthum*** (I.J. Sørensen) Chepinoga, **comb. nov.** [≡ *Hierochloë orthantha* I.J. Sørensen, Meddel. Gronland 136(8):8 (1954); ≡ *Hierochloë alpina* (Sw. ex Willd.) Roem. & Schult. subsp. *orthantha* (I.J. Sørensen) G. Weim., Bot. Not. (Lund) 124, 1:161 (1971); ≡ *Anthoxanthum monticolium* (Bigelow) Veldkamp subsp. *orthanthum* (I.J. Sørensen) G.C. Tucker, Harvard Pap. Bot. 9:66 (1996)]. **Russian Far East:** MAG. **North America** (E Canada, Alaska, Greenland).

***Anthoxanthum panarcticum*** Chepinoga, **nom. nov.** [≡ *Hierochloë arctica* J. Presl, In: C. Presl, Reliq. Haenk. 1:252 (1830), non *Anthoxanthum arcticum* Veldkamp (1985); ≡ *Hierochloë hirta* (Schränk) Borbás subsp. *arctica* (J. Presl) G. Weim., Bot. Not. (Lund) 124, 1:146 (1971); ≡ *Hierochloë odorata* (L.) P. Beauv. subsp. *arctica* (J. Presl) Tzvelev, Zlaci SSSR: 349 (1976), s.str.; ≡ *Anthoxanthum hirtum* (Schränk) Y. Schouten et Veldkamp subsp. *arcticum* (J. Presl) G.C. Tucker, Harvard Pap. Bot. 9:66 (1996)]. **European Russia:** RUN, RUC, EUE. **Siberia:** WSB, ALT, KRA, IRK, BRY, CHA, YAK. **Russian Far East:** KAM, MAG. **N & C Europe, Central Asia, North America.**

**Note.** Veldkamp (1985) used *A. arcticum* as nomen novum for *H. pauciflora* R. Br. (1823); therefore, we suggest a new name to replace *H. arctica*.

***Anthoxanthum praetermissum*** (G. Weim.) Chepinoga, **comb. & stat. nov.** [≡ *Hierochloë odorata* (L.) P. Beauv. subsp. *praetermissa* G. Weim., Symb. Bot. Upsal. 27(2):176 (1987); ≡ *Hierochloë odorata* subsp. *praetermissa* (G. Weim.) B. Walln., Ann. Naturhist. Mus. Wien, Ser. B 108:257 (2007)]. **European Russia:** RUN, RUC, RUE. **Siberia:** WSB, ALT, KRA(S), IRK, BRY. **Caucasus, E Kazakhstan, N, C & E Europe, SW & Central Asia.**

***Anthoxanthum sachalinense*** (Printz) Chepinoga, **comb. nov.** [≡ *Hierochloë odorata* (L.) P. Beauv. var. *sachalinensis* Printz, Kongel. Norske Vidensk. Selsk. Skr. (Trondheim) 1916(3):8, t. 1 (1917); ≡ *Hierochloë odorata* subsp. *sachalinensis* (Printz) Tzvelev, Novosti Sist. Vyssh. Rast. 5:21 (1968); ≡ *Hierochloë glabra* Trin. subsp. *sachalinensis* (Printz) Tzvelev, Novosti Sist. Vyssh. Rast. 10:83 (1973); ≡ *Hierochloë sachalinensis* (Printz) Vorosch., Fl. Sovetsk. Dal'n. Vost.: 47 (1966); ≡ *Anthoxanthum nitens* (Weber) Y. Schouten & Waldekamp var. *sachalinense* (Printz) Yonek., J. Jap. Bot. 86(4):238 (2011)]. **Russian Far East:** KHA, PRM, SAK, KUR, KAM. **Japan.**

***Anthoxanthum sibiricum*** (Tzvelev) Chepinoga, **comb. & stat. nov.** [≡ *Hierochloë odorata* (L.) P. Beauv. subsp. *sibirica* Tzvelev,

- Novosti Sist. Vyssh. Rast. 5:21 (1968);  $\equiv$  *Hierochloë glabra* Trin. subsp. *sibirica* (Tzvelev) Tzvelev, Novosti Sist. Vyssh. Rast. 10:83 (1973);  $\equiv$  *Hierochloë sibirica* (Tzvelev) Czerep., Sosud. Rast. SSSR: 362 (1981);  $\equiv$  *Anthoxanthum glabrum* (Trin.) Veldkamp subsp. *sibiricum* (Tzvelev) Röser & Tkach, Taxon 69(2):264 (2020)]. **European Russia:** RUN (Karelia). **Siberia:** WSB, ALT, KRA, IRK, BRY. **Russian Far East:** AMU, KHA, PRM, KAM, MAG. **NE Kazakhstan, Mongolia.**
- Anthoxanthum trautvetterianum*** (Petrov) Chepinoga, **comb. nov.** [ $\equiv$  *Hierochloë trautvetteriana* Petrov, Fl. Iakut. Fasc. I: 130 (1930), nom. alt.;  $\equiv$  *Hierochloë odorata* (L.) P. Beauv. var. *trautvetteriana* Petrov, Fl. Iakut. Fasc. I: 130 (1930);  $\equiv$  *Hierochloë obovatensis* Prob., Bot. Zhurn. (Moscow & Leningrad) 69(2):257 (1984)]. **Siberia:** TVA, IRK, BRY, CTA, YAK. **Russian Far East:** AMU, KHA, PRM, MAG(S). **NE Kazakhstan, NE China.**
- Anthoxanthum wrangelicum*** (Jurtzev & Prob.) Chepinoga, **comb. nov.** [ $\equiv$  *Hierochloë wrangelica* Jurtzev & Prob., Bot. Zhurn. (Moscow & Leningrad) 74(1):111 (1989)]. **Endemic to the Russian Far East:** MAG (Wrangel Island).
- Arctohyalopoa zarubini*** (Enustsch. & Schumkin) Chepinoga, **comb. nov.** [ $\equiv$  *Hyalopoa zarubini* Enustsch. & Schumkin, Bot. Zhurn. (Moscow & Leningrad) 93(8):1269 (2008)]. **Endemic to Siberia:** BRY (East Sayan Mts.).
- Note.** The genus *Hyalopoa* (Tzvelev) Tzvelev, was one of several genera, previously distinguished from the very heterogeneous *Colpodium* Trin. (Tzvelev & Bolkhovskikh 1965). Molecular analysis showed that *Hyalopoa* is also heterogeneous. Thus, *H. lanatiflora* (Roshev.) Tzvelev was assigned not with other *Hyalopoa* but with *Dupontia* R. Br. and *Dupontiaopsis* Soreng, L.J. Gillespie & Koba indicating a hybrid background (Tkach et al. 2020). As a result, *H. lanatiflora* and three other closely related species were distinguished in a separate genus *Arctohyalopoa* Röser & Tkach (Tkach et al. 2020). Another locally distributed species, *H. zarubini* also belongs to *H. aggr. lanatiflora* was not treated by Tkach et al. (2020).
- Bromus altaicus*** (Peschkova) Galanin ex Chepinoga, **comb. nov.** [ $\equiv$  *Bromus altaica* Peschkova, Novosti Sist. Vyssh. Rast. 23:26 (1986);  $\equiv$  *Bromus altaica* (Peschkova) Galanin, Flora Dahurii 2: 38 (2009), nom. inval.;  $\equiv$  *Bromus altaica* subsp. *daburica* Galanin, Flora Dahurii 2: 38 (2009), nom. nud.]. **Siberia:** WSB (Kuznetsky Alatau), ALT, KRA(S), IRK. **Kazakhstan** (Altai Mts.), **Mongolia.**
- Note.** It is impossible to split the large *Bromus* into a reasonable number of monophyletic groups of generic rank based on molecular data, whereas the broad generic concept fits well with the current state of knowledge of phylogenetic relations within this group. Saarela et al. (2007) showed that small monophyletic groups usually accepted as natural genera (like *Anisantha*, *Bromus* s.str., and *Ceratocloa*) are deeply buried in the ITS tree within several unresolved clades of perennial species known as members of the genus *Bromopsis*. Plastid tree based on two markers showed better amalgamation of temperate *Bromopsis* (i.e., excluding some New World species of various relations) and worse resolving of annual species of *Anisantha* and *Bromus* s.str. which merged into a single clade (Saarela et al. 2007). ITS and plastid trees were completely incongruent both for topology and clade support showing various positions for *Bromopsis aspera* Fourr. (= *Bromus ramosus* Huds.), a type of the genus *Bromopsis*. Saarela et al. (2014) confirmed later the concept of the large *Bromus* with unresolved sectional classification for perennial species. A worldwide phylogenetic classification of the Poaceae II (Soreng et al. 2017) finally accepted *Bromus* s.l. with 165 species.
- Bromus austrosibiricus*** (Peschkova) Galanin ex Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis austrosibirica* Peschkova, Novosti Sist. Vyssh. Rast. 23:28 (1986);  $\equiv$  *Bromus austrosibirica* (Peschkova) Galanin, Flora Dahurii 2:38 (2009), nom. nud.]. **Endemic to Asian Russia.** **Siberia:** ALT, IRK, BRY, YAK. **Russian Far East:** MAG.
- Bromus bargusinensis*** (Drobow) Chepinoga, **comb. & stat. nov.** [ $\equiv$  *Bromus sibiricus* Drobow var. *bargusinensis* Drobow, Trudy Bot. Muz. Imp. Akad. Nauk 12:235 (1914);  $\equiv$  *Bromopsis pumpelliana* (Scribn.) Holub var. *bargusinensis* (Drobow) Tzvelev, Zlaki SSSR: 220 (1976);  $\equiv$  *Bromopsis sibirica* (Drob.) Peschkova var. *bargusinensis* (Drobow) Gubanov, Kat. Tip. Sosud. Rast. Gerb. Mosk. Univ. (MW): 16 (1993);  $\equiv$  *Bromopsis bargusinensis* (Drobow) Tzvelev, Bot. Zhurn. (Moscow & Leningrad) 94(2):279 (2009)]. **Endemic to Siberia:** IRK, BRY.
- Bromus flexuosoides*** Chepinoga, **nom. nov.** [ $\equiv$  *Bromus sibiricus* Drobow var. *flexuosoides* Drobow, Trudy Bot. Muz. Imp. Akad. Nauk 12:235 (1914), non *Bromus flexuosus* Planchuelo (1983);  $\equiv$  *Bromopsis pumpelliana* (Scribn.) Holub var. *flexuosa* (Drobow) Tzvelev, Zlaki SSSR: 219 (1976);  $\equiv$  *Bromopsis pumpelliana* subsp. *flexuosa* (Drobow) Prob., Sosud. Rast. Sovet. Dal'nego Vostoka 1:144 (1985);  $\equiv$  *Bromopsis flexuosa* (Drobow) Tzvelev, Bot. Zhurn. (Moscow & Leningrad) 94(2):278 (2009)]. **Siberia:** ?IRK, ?BRY. **Russian Far East:** AMU, KHA(S), PRM, ?SAK. N China.
- Bromus karavajevii*** (Tzvelev) Chepinoga, **comb. nov.** [ $\equiv$  *Zerna pumpelliana* (Scribn.) Tzvelev subsp. *karavajevii* Tzvelev, Novosti Sist. Vyssh. Rast. 7:58 (1971);  $\equiv$  *Bromopsis pumpelliana* (Scribn.) Holub subsp. *karavajevii* (Tzvelev) Tzvelev, Zlaki SSSR: 220 (1976);  $\equiv$  *Bromopsis karavajevii* (Tzvelev) Czerep., Sosud. Rast. SSSR: 337 (1981)]. **Endemic to Asian Russia.** **Siberia:** KRA(S), IRK, YAK. **Russian Far East:** MAG(S).
- Bromus kozhevnikovii*** (Prob.) Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis kozhevnikovii* Prob., Novosti Sist. Vyssh. Rast. 49:12 (2018)]. **Endemic to the Russian Far East:** KHA (Dusse-Alin Ridge).
- Bromus malyshchevii*** (N.V. Vlassova) Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis malyshchevii* N.V. Vlassova, Rast. Mir Aziatsk. Rossii 1(21):52 (2016)]. **Endemic to Siberia:** IRK, BRY, CTA, YAK(S).
- Bromus probatovae*** (Tzvelev) Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis probatovae* Tzvelev, Bot. Zhurn. (Moscow & Leningrad) 94(2):280 (2009)]. **Endemic to the Russian Far East:** PRM.
- Bromus roshevitzianus*** (Tzvelev) Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis roshevitziana* Tzvelev, Bot. Zhurn. (Moscow & Leningrad) 94(2):279 (2009)]. **Endemic to Siberia:** YAK.
- Bromus simaczvae*** (Tzvelev) Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis pumpelliana* (Scribn.) Holub subsp. *simaczvae* Tzvelev, Novosti Sist. Vyssh. Rast. 38:104 (2006);  $\equiv$  *Bromopsis simaczvae* (Tzvelev) Tzvelev, Bot. Zhurn. (Moscow & Leningrad) 94(2):279 (2009)]. **Endemic to Russia.** **European Russia:** RUN (Arkhangelsk). **Siberia:** IRK.
- Bromus subaustralis*** Chepinoga, **nom. nov.** [ $\equiv$  *Bromus inermis* Leyss. subsp. *australis* Zherebina, Trudy Prikl. Bot. 25(2):313 (1931), non *Bromus australis* R. Br. (1810);  $\equiv$  *Bromopsis australis* (Zherebina) Tzvelev & Prob., Bot. Zhurn. (Moscow & Leningrad) 95(6):859 (2010)]. **European Russia:** RUC, RUS, RUE. **Siberia:** WSB, ALT, KRA, YAK. **Russian Far East:** AMU, PRM. **Caucasus, E & S Europe, SW & Middle Asia.**
- Bromus taimyrensis*** (Peschkova) Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis taimyrensis* Peschkova, Fl. Sibir. (Poaceae) 2:64 (1990);  $\equiv$  *Bromopsis taimyrensis* Peschkova, Novosti Sist. Vyssh. Rast. 23:31 (1986), nom. nud.;  $\equiv$  *Bromus sibiricus* Drobow var. *taimyrensis* Roshev., Dokl. Akad. Nauk SSSR, Ser. A 7:108 (1930), nom. nud.;  $\equiv$  *Bromopsis pumpelliana* (Scribn.) Holub var. *taimyrensis* Tzvelev, Zlaki SSSR: 219 (1976), nom. nud.]. **European Russia:** RUN(N). **Siberia:** WSB(N), KRA(N), YAK. **Russian Far East:** MAG (Chukotka). **North America** (Alaska).
- Note.** This is a correct name for the widespread in northern Russia morphotype of *Bromus aggr. pumpellianus*. North American *B. pumpellianus* s.str. was described from Montana (USA) and is absent from Eurasia (Tzvelev & Probatova 2019).
- Bromus ubsunurica*** (Tzvelev) Chepinoga, **comb. nov.** [ $\equiv$  *Bromopsis ubsunurica* Tzvelev, Bot. Zhurn. (Moscow & Leningrad) 76(4):609 (1991);  $\equiv$  *Bromus ubsunurica* (Tzvelev) Urgamal, Oyuunsetseg, Nyambayar & Dulamsuren, Consp. Vasc. pl. Mongol.: 62 (2014), nom. inval.]. **Siberia:** TVA. **NW Mongolia** (Uvs Lake area).
- Note.** Urgamal et al. (2014) listed *Bromopsis ubsunurica* Tzvelev with a full and direct bibliographic reference in the synonymy of *Bromus pumpellianus* Scribn. In the notes, they accidentally named this species “*Bromus ubsunurica* Tzvelev”. Urgamal et al. (2014) didn't validate this name, because it was not explicitly accepted (contrary to Art. 36.1).
- Campeiostrachys pamirica*** (Tzvelev) Chepinoga, **comb. nov.** [ $\equiv$  *Elymus pamiricus* Tzvelev, Bot. Mater. Gerb. Bot. Inst. Kom. Akad. Nauk SSSR 20:425 (1960);  $\equiv$  *Elymus schrenkianus* (Fisch. & C.A. Mey.) Tzvelev subsp. *pamiricus* (Tzvelev) Tzvelev, Novosti Sist. Vyssh. Rast. 9:62 (1972);  $\equiv$  *Campeiostrachys schrenkiana* (Fisch. & C.A. Mey.) Drobow var. *pamirica* (Tzvelev) B.R. Baum, J.L. Yang & C. Yen, J. Syst. Evol. 49(2):56 (2011)]. **Siberia:** ALT. **Pamir, Mongolia, China** (Central Tien Shan, Tibet).
- Note.** According to recent studies (Tan et al. 2021), the genus *Campeiostrachys* Drobow was resurrected. But if originally, *Campeiostrachys* included 12 species and 14 varieties, presently, there are only three species including *C. schrenkiana* (Fisch. & C.A. Mey. ex Schrenk) Drobow (= *Elymus schrenkianus* (Fisch. & C.A. Mey. ex Schrenk) Tzvelev), the type of the genus (Tan et al. 2021). *Elymus pamiricus* Tzvelev, closely related to *E. schrenkianus* species, was not treated by Tan et al. (2021).
- $\times$  *Ehlymus pacificus*** (Prob.) Chepinoga, **comb. nov.** [ $\equiv$   $\times$  *Leymopteria pacifica* Prob., Bot. Zhurn. (Moscow & Leningrad) 69(2):258 (1984);  $\equiv$  *Elymus repens* (L.) Gould (= *Elytrigia repens* (L.) Nevski)  $\times$  *Leymus mollis* (Trin.) Pilg.]. **Russian Far East:** KAM, NAG.
- Note.** Multiple phylogenies published recently and aimed to resolve genera of *Triticeae* (including *Elymus*, *Elytrigia*, *Roegneria*, *Pseudoroegneria*, etc.) gave new insights into the origin and diversification of this economically important group. Various studies employed diverse nuclear and plastid markers and showed a variety of molecular trees (Amanthawat-Jonsson 2014, Sha et al. 2014, Sun 2014, Wang & Lu 2014). As a result, *Elytrigia* traditionally circumscribed by Tzvelev (1976) and Tzvelev & Probatova (2019) was segregated among *Elymus*, *Pseudoroegneria*,



- and *Thinopyrum*. Soreng et al. (2015, 2017, 2022) confirmed this concept, although they regard first two genera as being reticulate. To fit the classification by Soreng et al. (2017) we are shifting two and three *Elytrigia* species accepted by Tzvelev & Probatova (2019) into *Elymus* and *Pseudoroegneria* respectively, as well as three intergeneric hybrids with *Elymus repens* (L.) Gould to *Elylymus* B.R. Baum.
- × *Elylymus wiliucis* (Drobow) Chepinoga, **comb. nov.** [≡ *Agropyron wiliucum* Drobow, Trudy Bot. Muz. Imp. Akad. Nauk 16:95 (1916); ≡ × *Leymotrigia wiliuca* (Drobow) Tzvelev, Novosti Sist. Vyssh. Rast. 9:60 (1972); = *Elymus repens* (L.) Gould (= *Elytrigia repens* (L.) Nevski) × *Leymus litoralis* (Pall.) Peschkova]. **Endemic to Siberia:** IRK(N), YAK(C).
- × *Elylymus zarubini* (Peschkova) Chepinoga, **comb. nov.** [≡ × *Leymotrigia zarubini* Peschkova, Rast. Mir Aziatsk. Rossii 1(21): 59 (2016); ≡ × *Leymotrigia zarubini* Peschkova, Fl. Sibir. (Poaceae) 2:53 (1990), nom. inval., sine Herb. designat.; = *Elymus repens* (L.) Gould (= *Elytrigia repens* (L.) Nevski) × *Leymus chinensis* (Trin.) Tzvelev]. **Endemic to Siberia:** CTA(S).
- Elymus karawaevii* (P.A. Smirn.) Chepinoga, **comb. nov.** [≡ *Agropyron karawaevii* P.A. Smirn., Bot. Zhurn. (Moscow & Leningrad) 30(2):69 (1945); ≡ *Roegneria karawaevii* (P.A. Smirn.) Karav., Konsp. Fl. Yak.: 59 (1958); ≡ *Brachypodium villosum* Drobow, Trudy Bot. Muz. Imp. Akad. Nauk 12: 105 (1914), non *Elymus villosus* Muhl. ex Willd. (1809); = *Elytrigia villosa* (Drobow) Tzvelev, Arktichesk. Fl. SSSR 2:247 (1964)]. **Endemic to Siberia:** YAK.
- Elymus pseudocaesius* (Pacz.) Chepinoga, **comb. nov.** [≡ *Agropyron repens* (L.) P. Beauv. var. *pseudocaesium* Pacz., Zap. Novorossisk. Obshch. Estestvoisp. 39:30 (1912); ≡ *Agropyron repens* subsp. *pseudocaesium* (Pacz.) Lavrenko, Fl. SSSR 2:210 (1935); ≡ *Agropyron pseudocaesium* (Pacz.) Zoz, Journ. Inst. Bot. Acad. Sci. Ukraine Nos. 13-14:205 (1937); ≡ *Elytrigia pseudocaesia* (Pacz.) Prokudin, Proc. Bot. Inst., Kharkov St. Univ. 3:186 (1939); ≡ *Elytrigia repens* (L.) Nevski subsp. *pseudocaesia* (Pacz.) Tzvelev, Novosti Sist. Vyssh. Rast. 10:31 (1973); ≡ *Elymus repens* (L.) Gould subsp. *pseudocaesius* (Pacz.) Melderis, Bot. J. Linn. Soc. (London) 76(4):379 (1978)]. **European Russia:** RUS, RUE. **Siberia:** WSB(S). **Caucasus, Ukraine, NW Kazakhstan.**
- Pseudoroegneria aegilopoides* (Drobow) Chepinoga, **comb. nov.** [≡ *Agropyron aegilopoides* Drobow, 1914, Trudy Bot. Muz. Imp. Akad. Nauk 12:46 (1914), s.str.; ≡ *Agropyron strigosum* (M. Bieb.) Boiss. subsp. *aegilopoides* (Drobow) Tzvelev, Spisok Rast. Gerb. Fl. SSSR Bot. Inst. Vsesojuzn. Akad. Nauk 18:24 (1970); ≡ *Elytrigia strigosa* (M. Bieb.) Nevski subsp. *aegilopoides* (Drobow) Tzvelev, Novosti Sist. Vyssh. Rast. 12:118 (1975); ≡ *Pseudoroegneria strigosa* (M. Bieb.) A. Löve subsp. *aegilopoides* (Drobow) A. Löve, Feddes Repert. 95(7–8):444 (1984); = *Elytrigia gmelinii* (Trin.) Nevski, Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, 2:78 (1936); = *Triticum gmelinii* Trin., Linnæa 12:467 (1838)]. **Siberia:** WSB(S), ALT, KRA(S), BRY(S), CTA(S). **Russian Far East:** KHA(S). **Dzungaria, Tien-Shan.**
- Pseudoroegneria amgunensis* (Nevski) Chepinoga, **comb. nov.** [≡ *Agropyron amgunense* Nevski, Izv. Bot. Sada Akad. Nauk SSSR. 1931, 30:494, in obs., 505 (1932); ≡ *Elytrigia amgunensis* (Nevski) Nevski, Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, 2:78 (1936); 1936; ≡ *Agropyron strigosum* (M. Bieb.) Boiss. subsp. *amgunense* (Nevski) Tzvelev, Spisok Rast. Gerb. Fl. SSSR Bot. Inst. Vsesojuzn. Akad. Nauk 18:24 (1970); ≡ *Elytrigia strigosa* (M. Bieb.) Nevski subsp. *amgunensis* (Nevski) Tzvelev, Novosti Sist. Vyssh. Rast. 12:118 (1975); ≡ *Pseudoroegneria strigosa* (M. Bieb.) A. Löve subsp. *amgunensis* (Nevski) A. Löve, Feddes Repert. 95(7–8):444 (1984)]. **Endemic to the Russian Far East:** MAG (Okhotia, ?Kolyma).
- Pseudoroegneria jacutorum* (Nevski) Chepinoga, **comb. nov.** [≡ *Agropyron jacutorum* Nevski, Izv. Bot. Sada Akad. Nauk SSSR. 1931, 30:490, in obs., 502 (1932); ≡ *Elytrigia jacutorum* (Nevski) Nevski, Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, 1:24 (1933); ≡ *Agropyron strigosum* (M. Bieb.) Boiss. subsp. *jacutorum* (Nevski) Tzvelev, Spisok Rast. Gerb. Fl. SSSR Bot. Inst. Vsesojuzn. Akad. Nauk 18:24 (1970); ≡ *Elytrigia strigosa* (M. Bieb.) Nevski subsp. *jacutorum* (Nevski) Tzvelev, Novosti Sist. Vyssh. Rast. 12:118 (1975); ≡ *Pseudoroegneria strigosa* (M. Bieb.) A. Löve subsp. *jacutorum* (Nevski) A. Löve, Feddes Repert. 95(7–8):444 (1984)]. **Endemic to Asian Russia.** **Siberia:** IRK(N), YAK. **Russian Far East:** AMU, KHA, MAG.
- Kengyilia praetermissa* (Nevski) Chepinoga, **comb. nov.** [≡ *Elytrigia praetermissa* Nevski, Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, 2:84 (1936); ≡ *Agropyron praetermissum* (Nevski) Tzvelev & Prob., Zlaki Rossii: 83 (2019)]. **Endemic to Siberia:** WSB(S), KRA(S).
- Note.** Soreng et al. (2022) accepted *Kengyilia*, although regarded it as having a reticulate origin. Tzvelev & Probatova (2019) assumed that *K. praetermissa* could result from the hybridization of *A. fragile* (Roth) P. Candargy s.l. with *Elytrigia repens* s.l. (= *Elymus repens*), whereas *K. keryloviana* is an ancient hybrid between *A. desertorum* (Fisch. ex Link) Schult. s.l. and *Elytrigia repens* s.l. (= *Elymus repens*). If proven, both should be better treated within × *Agroelymus* E.G. Camus ex A. Camus.
- Koeleria alaskana* (Nash) Chepinoga, **comb. nov.** [≡ *Trisetum alaskanum* Nash, Bull. New York Bot. Gard. 2(6):155 (1901); ≡ *Trisetum spicatum* (L.) K. Richt. subsp. *alaskanum* (Nash) Hultén, Svensk Bot. Tidkr. 53(2):210 (1959); ≡ *Trisetum molle* Kunth subsp. *alaskanum* (Nash) Rebrist., Arktichesk. Fl. SSSR 2:100 (1964); ≡ *Koeleria spicata* (L.) Barberá, Quintanar, Soreng & P.M. Peterson subsp. *alaskana* (Nash) Barberá, Quintanar, Soreng & P.M. Peterson, Phytoneuron 2019-46:6 (2019)]. **Russian Far East:** KHA, SAK, KUR, KAM, MAG. **Korea, Japan, North America** (Alaska).
- Note.** Recent molecular phylogenetic studies indicate that *Trisetum* Pers. is polyphyletic (Soreng & Davis 2000, Quintanar et al. 2007, Saarela et al. 2017, Barberá et al. 2018, 2020, Peterson et al. 2019) and in particular, has close relationships with *Koeleria* Pers. (Saarela et al. 2017, Barberá et al. 2019). As a result, many representatives of *Trisetum* sect. *Trisetaria* were moved to *Koeleria* (Barberá et al. 2019) and *Trisetum* sect. *Sibirica* was elevated to generic rank (genus *Sibirotrisetum* Barberá, Soreng, Romasch., Quintanar & P.M. Peterson) (Barberá et al. 2020). Some regional races of *Trisetum* were accepted at the subspecies level or were not treated by the abovementioned authors. We move herewith six species of *Trisetum* to *Koeleria* and two species to *Sibirotrisetum*.
- Koeleria × jurtzevii* (Prob.) Chepinoga, **comb. nov.** [≡ × *Trisetokoeleria jurtzevii* Prob., Bot. Zhurn. (Moscow & Leningrad) 69(5):691 (1984); = *Koeleria asiatica* Domin s.l. × *Koeleria spicata* (L.) Barberá, Quintanar, Soreng & P.M. Peterson]. **Endemic to the Russian Far East:** MAG (Chukotka).
- Note.** After transferring *Trisetum* species to *Koeleria*, some intergeneric hybrids known between these genera (× *Trisetokoeleria* Tzvelev) became interspecific ones. Thus, × *Trisetokoeleria taimyrica* Tzvelev, the hybrid between *Koeleria asiatica* Domin s.l. and the former *Trisetum subalpestre* (Hartm.) Neuman (= *Koeleria subalpestris*) was combined into *Koeleria × taimyrica* (Tzvelev) Barberá, Quintanar, Soreng & P.M. Peterson (Barberá et al. 2019). Another hybrid, × *T. jurtzevii*, which occurred in Asian Russia, was missed by Barberá et al. (2019).
- Koeleria pseudomollis* Chepinoga, **nom. nov.** [≡ *Trisetum molle* Kunth, Révis. Gramin. 1:101 (1829), non *Koeleria mollis* Mann ex Opiz (1824); ≡ *Trisetum spicatum* (L.) K. Richt. subsp. *molle* (Kunth) Piper, Contr. U. S. Natl. Herb. 11:125 (1906); = *Avena mollis* Michx. Fl. Bor.-Amer.: 72 (1803), nom. illeg., non (L.) Salisb. (1796); ≡ *Koeleria spicata* (L.) Barberá, Quintanar, Soreng & P.M. Peterson subsp. *mollis* (Kunth) Barberá, Quintanar, Soreng & P.M. Peterson, Phytoneuron 2019-46:8 (2019)]. **European Russia:** RUN(N). **Siberia:** WSB(N), KRA(N), IRK(N), BRY(N), CTA(N), YAK. **Russian Far East:** AMU, KHA, PRM, SAK, KUR, KAM, MAG. **N Japan, North America** (Arctic and mountains).
- Koeleria pseudomongolica* Chepinoga, **nom. nov.** [≡ *Trisetum spicatum* (L.) K. Richt. subsp. *mongolicum* Hultén ex Veldkamp, Gard. Bull. Singapore 36(1):135 (1983), non *Koeleria mongolica* Domin (1907); ≡ *Trisetum spicatum* subsp. *mongolicum* Hultén, Sv. Bot. Tidskr. 53(2):214 (1959), nom. inval., sine typo; ≡ *Trisetum mongolicum* (Hultén ex Veldkamp) Peschkova, Tzvelev & Prob., Zlaki Rossii: 168 (2019); ≡ *Trisetum mongolicum* (Hultén) Peschkova, 1979, Fl. Tsentral'noi Sibiri 1:97 (1979), comb. inval.; ≡ *Koeleria spicata* (L.) Barberá, Quintanar, Soreng & P.M. Peterson subsp. *mongolica* (Hultén ex Veldkamp) Barberá, Quintanar, Soreng & P.M. Peterson, Phytoneuron 2019-46:8 (2019)]. **Siberia:** ALT, KRA(S), TVA, IRK, BRY, CTA. **Middle & Central Asia.**
- Koeleria roshevitzii* Chepinoga, **nom. nov.** [≡ *Trisetum altaicum* Roshev., Bot. Mater. Gerb. Glavn. Bot. Sada RSFSR 3:85 (1922), non *Koeleria altaica* (Domin) Krylov (1928), non *Koeleria altaica* Krylov ex B. Fedtsch. (1929)]. **Siberia:** ALT, KRA, IRK, BRY. **Russian Far East:** KHA (Sikhote-Alin Mts.). **Tarbagatai, Dzungaria, Tien Shan.**
- Note.** The proposed new name is honored Roman Roshevitz, the famous Russian agrostologist.
- Koeleria virescens* (Regel) Chepinoga, **comb. nov.** [≡ *Avena flavescens* L. var. *virescens* Regel, Bull. Soc. Imp. Nat. Moscou 41(2):299 (1868); ≡ *Trisetum spicatum* (L.) K. Richt. subsp. *virescens* (Regel) Tzvelev, Novosti Sist. Vyssh. Rast. 7:65 (1971); ≡ *Avena virescens* (Regel) Regel, Trudy Imp. S.-Peterburgsk. Bot. Sada 7(2):635 (1881); ≡ *Trisetum virescens* (Regel) B. Fedtsch., Enum. Pl. Imp. Ross. (Bull. Jard. Bot. Prieur le Grand, 14. Suppl. 2):64 (1914), nom. illeg., non Nees ex Steud. (1854); = *Trisetum seranschanicum* Roshev., Bot. Mater. Gerb. Glavn. Bot. Sada RSFSR 3: 88 (1922); ≡ *Koeleria spicata* (L.) Barberá, Quintanar, Soreng & P.M. Peterson subsp. *virescens* (Regel) Barberá, Quintanar, Soreng & P.M. Peterson, Phytoneuron 2019-46:9 (2019)]. **Russian Far East:** AMU, KAM, MAG. **Central Asia.**
- Koeleria wrangelensis* (V.V. Petrovsky) Chepinoga, **comb. nov.** [≡ *Trisetum spicatum* (L.) K. Richt. subsp. *wrangelense* V.V. Petrovsky, Bot. Zhurn. (Moscow & Leningrad) 63(9):1263 (1978); ≡ *Trisetum spicatum* subsp. *wrangelense* V.V. Petrovsky, Novosti Sist. Vyssh. Rast. 15:23 (1979) [1978]; ≡ *Trisetum wrangelense* (V.V. Petrovsky) Prob., Sosud. Rast. Sovet. Dal'nego Vostoka 1:163 (1985); ≡

*Koeleria spicata* (L.) Barberá, Quintanar, Soreng & P.M. Peterson subsp. *urangelensis* (V.V. Petrovsky) Barberá, Quintanar, Soreng & P.M. Peterson, *Phytoneuron* 2019:46:9 (2019)]. **Endemic to the Russian Far East:** MAG (Wrangel Island).

***Sibirotrisetum litorale*** (Roshev.) Chepinoga, **comb. nov.** [≡ *Trisetum sibiricum* Rupr. subsp. *litorale* Rupr. ex Roshev., *Izv. Glavn. Bot. Sada RSFSR* 21(2):90 (1922); ≡ *Trisetum sibiricum* f. *litorale* Rupr., *Beitr. Pflanzenk. Russ. Reich.* 2:65 (1845), nom. nud.; ≡ *Trisetum sibiricum* var. *litorale* (Rupr. ex Roshev.) Roshev., *Fl. SSSR* 2:254 (1934); ≡ *Trisetum litorale* (Rupr. ex Roshev.) A.P. Khokhr., *Bot. Zhurn. (Moscow & Leningrad)* 63(3):395 (1978), nom. illeg., non *Trisetum litorale* Phil. (1858); ≡ *Trisetum ruprechtianum* Tzvelev, *Novosti Sist. Vyssh. Rast.* 42: 89 (2011); ≡ *Sibirotrisetum sibiricum* (Rupr.) Barberá subsp. *litorale* (Rupr. ex Roshev.) Barberá, *J. Syst. Evol.* 58(4):524 (2019)]. **European Russia:** RUN. **Siberia:** WDB(N), KRA(N), YAK(N). **Russian Far East:** KUR(N), KAM, MAG. **North America** (Alaska).

***Sibirotrisetum umbratile*** (Kitag.) Chepinoga, **comb. nov.** [≡ *Trisetum sibiricum* Rupr. var. *umbratile* Kitag., *Rep. Inst. Sci. Res. Manchoukuo* 4:77 (1940); ≡ *Trisetum umbratile* (Kitag.) Kitag., *J. Jap. Bot.* 31:302 (1956); ≡ *Trisetum sibiricum* subsp. *umbratile* (Kitag.) Tzvelev, *Spisok Rast. Gerb. Fl. SSSR. Bot. Inst. Vsesojuzn. Akad. Nauk* 18:6 (1970)]. **Russian Far East:** KHA(S), PRM, SAK, KUR. **NW China, Korea.**

Besides *Trisetum*, Barberá et al. (2019) transferred into *Koeleria* also the genus *Trisetokoeleria* Tzvelev that comprised intergeneric hybrids between both genera. Most of *Trisetokoeleria* are intrageneric hybrids now, i.e., hybrids between *Koeleria* species. Although, the type of *Trisetokoeleria*, *Koeleria gorodkovii* Roshev., retained its intergeneric origin, while one of its parent species is *Sibirotrisetum*. For this reason, the nothogenus *Trisetokoeleria* has to be called × ***Sibirotrisetokoeleria*** Chepinoga **nom. nov.** ≡ × *Trisetokoeleria* Tzvelev, *Novosti Sist. Vyssh. Rast.* 7:73 (1971).

***Sibirotrisetokoeleria × gorodkovii*** (Roshev.) Chepinoga, **comb. nov.** [≡ *Koeleria gorodkovii* Roshev., *Izv. Bot. Sada Akad. Nauk SSSR* 1931, 30:296 (1932); ≡ × *Trisetokoeleria gorodkovii* (Roshev.) Tzvelev, *Novosti Sist. Vyssh. Rast.* 7:73 (1971); = *Koeleria asiatica* Domin s.l. × *Sibirotrisetum litorale* (Roshev.) Chepinoga]. **Endemic to Siberia:** WSB(N) (Gyda Peninsula).

***Lolium gudoschnikovii*** (Stepanov) Chepinoga, **comb. nov.** [≡ *Festuca gudoschnikovii* Stepanov, *Sist. Zametki Mater. Gerb. Krylova Tomsk. Gosud. Univ.* 111:6 (2015); ≡ *Schedonorus gudoschnikovii* (Stepanov) Prob., *Zlaki Rossii:* 262 (2019)]. **Endemic to Siberia:** KRA (West Sayan Mts.).

**Note.** In the last 20 years, a number of phylogenetic studies confirmed that broad-leaved fescues widely known as members of *Schedonorus* should be better amalgamated with *Lolium* (Gaut & al. 2000, Torrecilla & Catalán 2002, Torrecilla & al. 2003, Catalán & al. 2004, 2007). Soreng et al. (2015, 2017, 2022) confirmed this, whereas Minaya et al. (2017) finally demonstrated the monophyly of *Lolium* and *Schedonorus* on a strong ground within the broad-scale phylogeny of *Lolinae* clade. Simultaneously, Banfi et al. (2017) transferred merely all accepted species from *Schedonorus* to *Lolium*. We are adding one species here described in 2015 as *Festuca* and later transferred to *Schedonorus* by Probatova (in Tzvelev & Probatova 2019).

***Poa raniglumis*** (S.E. Fröhner) Chepinoga, **comb. nov.** [≡ *Poa annua* L. var. *raniglumis* S.E. Fröhner, *Wiss. Z. Mart.-Luth.-Univ. Halle-Witt.*, *Math.-Nat. Reihe* 12:670 (1963); ≡ *Poa annua* subsp. *raniglumis* (S.E. Fröhner) Chrtek, *Cas. Nár. Muz. Rada Prír.* 165(1-4):128 (1996); ≡ *Ochlopoa annua* (L.) H. Scholz subsp. *raniglumis* (S.E. Fröhner) H. Scholz & Valdés, *Willdenowia* 36:662 (2006); ≡ *Ochlopoa raniglumis* (S.E. Fröhner) Bomble, *Jahrb. Bochum Bot. Vereins.* 3:110 (2012)]. **European Russia:** RUW (St.-Petersburg), RUE (Kazan). **Russian Far East:** PRM (Vladivostok). **C & E Europe, Eastern Asia, North America.**

## POLYGONACEAE Juss.

***Koenigia angustifolia*** (Pall.) Chepinoga, **comb. nov.** [≡ *Polygonum angustifolium* Pall., *Reise Russ. Reich.* 3(1):230, 320 (1776); ≡ *Persicaria angustifolia* (Pall.) Rosne Decr., *Bot. J. Lin. Soc.* 98(4):367 (1988); ≡ *Aconogonon angustifolium* (Pall.) H. Hara, *Fl. E. Himalaya:* 631 (1966)]. **Siberia:** IRK, BRY, CTA. **Russian Far East:** AMU. **N Mongolia, NE China.**

**Note.** According to numerous results of molecular phylogeny (Galasso et al. 2009, Sanchez et al. 2009, Yurtseva et al. 2010, Schuster et al. 2011, 2015, Fan et al. 2013), the relationships between *Aconogonon* (Meisn.) Rchb. and *Koenigia* L. were resolved as paraphyletic and the species of *Aconogonon* should be transferred to *Koenigia* (Schuster et al. 2015). Most of the necessary nomenclatural novelties have been done by Schuster et al. (2015). Although, some species of the flora of Asian Russia still need to be transferred to *Koenigia*.

***Koenigia savatieri*** (Nakai) Chepinoga, **comb. nov.** [≡ *Polygonum savatieri* Nakai, *Bot. Mag. Tokyo* 23:414 (1909); ≡ *Aconogonon sa-*

*vatieri* (Nakai) Tzvelev, *Novosti Sist. Vyssh. Rast.* 24:77 (1987); ≡ *Aconogonon weyrichii* (F. Schmidt) T.M. Schust. & Reveal subsp. *savatieri* (Nakai) Tzvelev, *Novosti Sist. Vyssh. Rast.* 32:183 (2000)]. **Russian Far East:** KAM, SAK, KUR. **Japan, Taiwan.**

***Koenigia tzvelevii*** (Barkalov & Vyschin) Chepinoga, **comb. nov.** [≡ *Aconogonon tzvelevii* Barkalov & Vyschin, *Bot. Zhurn. (Moscow & Leningrad)* 74(8):1182 (1989)]. **Endemic to the Russian Far East:** PRM, KHA.

***Knorringia ubsunurica*** (Tzvelev) Chepinoga, **comb. & stat. nov.** [≡ *Knorringia sibirica* (Laxm.) Tzvelev subsp. *ubsunurica* Tzvelev, *Novosti Sist. Vyssh. Rast.* 29:56 (1993)]. **Siberia:** TVA. **W Mongolia.**

## PRIMULACEAE Batsch ex Borkh.

***Lysimachia arctica*** (Fisch. ex Hook.) Chepinoga, **comb. nov.** [≡ *Trientalis arctica* Fisch. ex Hook., *Fl. Bor. Am.* 2:121 (1837); ≡ *Trientalis europaea* L. subsp. *arctica* (Fisch. ex Hook.) Hultén, *Kungl. Svenska Vetenskapsakad. Handl.* 8(2):56 (1930)]. **Russian Far East:** KHA, PRM, SAK, KUR, KAM, MAG. **Japan, W North America.**

**Note.** Molecular analyses showed that *Trientalis*, as well as *Anagallis*, *Asterolinon*, and *Pelletiera* are derived groups that evolved from ancestors within *Lysimachia* (Manns & Anderberg 2005). Furthermore, analyses of ITS data and chloroplast data alone suggest different and conflicting placement of *Trientalis*, indicating its hybrid origin (Manns & Anderberg 2005). Consequently, a number of nomenclatural changes were made (Manns & Anderberg 2009). In particular, *T. europaea* L. was transferred to *Lysimachia* (= *L. europaea* (L.) U. Manns & Anderb.). Here, we transfer to *Lysimachia* the East Asian and North American species *T. arctica* that belong to the *L. aggr. europaea* (L.) U. Manns & Anderb.

***Primula kovtonyukiae*** Chepinoga, **nom. nov.** [≡ *Cortusa sibirica* Andr. ex Besser, *Flora (Regensb.)*, 17(1), *Beibl.* 1:22 (1834); *Los-Losinsk., Acta Inst. Bot. I. SSSR, Ser. I, Fasc. 3:* 245 (1937), descr. ampl., non *Primula sibirica* Wulfen (1778); ≡ *Primula matthioli* (L.) V.A. Richt. subsp. *sibirica* (Andr. ex Besser) Kovt., *Bot. Zhurn. (Moscow & Leningrad)* 96(7):964 (2011)]. **Endemic to Asian Russia. Siberia:** KRA, IRK, BRY, CTA, YAK. **Russian Far East:** AMU, KHA, PRM.

**Note.** The molecular studies of the last two decades showed that *Primula* L. together with *Cortusa* L., *Dionysia* L., and *Sredinskaia* (Stein) Fed. are descendants of the most recent common ancestor (Mast et al. 2001) and should be considered in one genus *Primula* (Richards 2003). The former genus *Cortusa* comprised a few close relative species that can be also treated as *Cortusa matthioli* L. s.l. Transferring *Cortusa* species to *Primula*, it was suggested to consider them as subspecies of *P. matthioli* (Kovtonyuk & Goncharov 2009, Kovtonyuk 2013). Taking into account a monophyletic concept accepted in the checklist, we publish new combinations within *Primula*. The new name *P. kovtonyukiae* was proposed in honor of Nataliya Kovtonyuk, the Siberian taxonomist of the Primulaceae family.

***Primula losinskajae*** Chepinoga, **nom. nov.** [≡ *Cortusa altaica* Losinsk., *Acta Inst. Bot. Acad. ŠC. SSSR, Ser. I Fasc.* 3:243 (1937), non *Primula altaica* Lehm. (1817), non *Primula altaica* Kuntze (1891); ≡ *Primula matthioli* (L.) V.A. Richt. subsp. *altaica* (Losinsk.) Kovt., *Bot. Zhurn. (Moscow & Leningrad)* 96(7):962 (2011); ≡ *Cortusa matthioli* (L.) V.A. Richt. subsp. *altaica* (Losinsk.) Korobkov, *Arktiches. Fl. SSSR* 8:187 (1980)]. **Siberia:** WSB, ALT, KRA, TVA, IRK, BRY. **Mongolia.**

**Note.** The new name is honored to Agnia Losina-Losinskaja, the Russian taxonomist of the genus *Cortusa*.

***Primula pekinensis*** (V.A. Richt.) Chepinoga, **comb. nov.** [≡ *Cortusa matthioli* (L.) V.A. Richt. var. *pekinensis* V.A. Richt., *Természetrázi Füzet.* 17:190 (1894); ≡ *Cortusa pekinensis* (V.A. Richt.) Losinsk., *Trudy Bot. Inst. Akad. Nauk SSSR, Ser. I, Fl. Sist. Vyssh. Rast.* 3:250 (1937); ≡ *Primula matthioli* (L.) V.A. Richt. subsp. *pekinensis* (V.A. Richt.) Kovt., *Bot. Zhurn. (Moscow & Leningrad)* 96(7):963 (2011)]. **Russian Far East:** PRM. **N China, Korea.**

**Note.** Probatova (1987) did not list this species for the Russian Far East. Although, Kovtonyuk (2011), referring to Probatova (1987), showed *P. pekinensis* for the Ussuri area (Primorsky Krai) just repeating Loina-Losinskaya (1937). The real geographical distribution of *P. pekinensis* in Russia is not clear.

***Primula probatovae*** Chepinoga, **nom. nov.** [≡ *Cortusa discolor* Vorosch. & Gorovoj, *Byull. Glavn. Bot. Sada* 75: 40 (1970), non *Primula × discolor* Leyb. (1855), non *Primula discolor* Schur ex Pax (1905); ≡ *Primula matthioli* (L.) V.A. Richt. subsp. *discolor* (Vorosch. & Gorovoj) Kovt., *Bot. Zhurn. (Moscow & Leningrad)* 96(7):963 (2011)]. **Endemic to the Russian Far East:** PRM.

**Note.** Kovtonyuk (2011: 963), allegedly quoting the words of Probatova (1987: 161), called *Cortusa discolor* “the most common and polymorphic in the Russian Far East”, but Probatova meant another species, *Cortusa sachalinensis* Losinsk. (Probatova &



Pavlova 2006: 132). Whereas, *C. discolor* is a local endemic species that occurred only in the vicinity of Dalnegorsk town and the watershed of a small river Rudnaya. The proposed new name is honored Nina Probatova, the famous taxonomist of the Russian Far East.

***Primula shipunovii*** Chepinoga, **nom. nov.** [≡ *Cortusa sachalinensis* Losinsk., Acta Inst. Bot. Acad. Sc. SSSR, Ser. I. Fasc. 3:248 (1937), non *Primula sachalinensis* Nakai (1932); ≡ *Primula matthioli* (L.) V.A. Richt. subsp. *sachalinensis* (Losinsk.) Kovt., Bot. Zhurn. (Moscow & Leningrad) 96(7):964 (2011)]. **Russian Far East:** SAK (Sakhalin Island, Moneron Island). **Japan.**

**Note.** The new name was proposed in honor of Alexey Shipunov, the researcher-enthusiast of the East Asian flora.

#### RANUNCULACEAE Juss.

***Anemonastrum glabratum*** (Maxim.) Chepinoga, **comb. nov.** [≡ *Anemone baicalensis* Turcz. var. *glabrata* Maxim., Prim. Fl. Amur.: 18 (1859); ≡ *Anemone glabrata* (Maxim.) Juz., Fl. SSSR 7:254 (1937); ≡ *Anemone baicalensis* subsp. *glabrata* (Maxim.) Kitag., Rep. Inst. Sci. Res. Manchoukuo 4:81 (1940); ≡ *Anemonoides glabrata* (Maxim.) Holub, Folia Geobot. Phytotax. 11(1):81 (1976); ≡ *Arsenjevina glabrata* (Maxim.) Starod., Bot. Zhurn. (Moscow & Leningrad) 74(9):1345 (1989)]. **Russian Far East:** AMU, KHA(S), PRM. **NE China.**

**Note.** The taxonomy of *Anemone* L. and related taxa has always been complex (Starodubtsev 1991, Ehrendorfer 1995). The molecular phylogenetic data did not become an easy way to solve these problems however, there is a general trend toward accepting the genus *Anemone* in a wide sense, including *Anemonastrum* Holub, *Anemonidium* (Spach) Holub, *Anemonoides* Mill., *Arsenjevina* Starod., *Eriocapitella* Nakai, *Jurtsevia* A. Löve & D. Löve, *Pulsatilloides* (DC.) Starod., and *Tamuria* Starod. (Hoot et al. 2012) but also *Clematis* L. (incl. *Atragene* L.) (Lehtonen et al. 2016) and *Anemoclema* (Franch.) W.T. Wang (Zhang et al. 2015). Mosyakin (2016, 2018) suggested a rational approach to accept several genera that can be recognized, based on the clades revealed in Hoot et al. (2012) and in other molecular phylogenetic studies as well as on some of the morphologically outlined groups (infrageneric taxa or segregate genera) put forward in recent taxonomic treatments. Thus, the proposed nomenclatural transfers to *Anemonastrum* Holub, re-circumscribed to include the segregate genera *Anemonidium* (Spach) Holub, *Arsenjevina* Starod., *Tamuria* Starod., and *Jurtsevia* A. Löve & D. Löve (Mosyakin 2018), have been gradually becoming widely accepted (e.g., COL 2023). Mosyakin accepted *Anemonastrum baicalense* (Turcz.) Mosyakin in a wide sense (Mosyakin 2018), but we consider it important to distinguish some infraspecific taxa at a specific rank.

***Anemonastrum rossii*** (S. Moore) Chepinoga, **comb. nov.** [≡ *Anemone rossii* S. Moore, J. Linn. Soc., Bot. 17:376, tab. 16, fig. 1, 2 (1879 [1880]); ≡ *Anemone baicalensis* Turcz. var. *rossii* (S. Moore) Kitag., Lin. Fl. Manshur.: 213. (1939); ≡ *Anemonoides rossii* (S. Moore) Holub, Folia Geobot. Phytotax. 8(2):166 (1973); ≡ *Anemone baicalensis* subsp. *rossii* (S. Moore) Starod., Bot. Zhurn. (Moscow & Leningrad) 68(8):1018 (1983); ≡ *Arsenjevina rossii* (S. Moore) Starod., Bot. Zhurn. (Moscow & Leningrad) 74(9):1345 (1989)]. **Russian Far East:** AMU(E), PRM(S). **NE China, Korea.**

***Caltha renifolia*** (Tolm.) Lufarov, **comb. & stat. nov.** [≡ *Caltha sibirica* (Regel) Tolm. var. *renifolia* Tolm., Bot. Mater. Gerb. Bot. Inst. Kom. Akad. Nauk SSSR 17:159 (1955); ≡ *Caltha palustris* L. subsp. *renifolia* (Tolm.) Lufarov, Byull. Mosk. Obsch. Isp. Priir., Otd. Biol. 96(5):74 (1991)]. **Endemic to the Russian Far East:** KAM (Kamchatka, Bering Island).

***Ranunculus taimyrensis*** (Kuvaev) Lufarov, **comb. & stat. nov.** [≡ *Ranunculus sulphureus* Sol. subsp. *taimyrensis* Kuvaev, Byull. Mosk. Obsch. Isp. Priir., Otd. Biol. 102(5):71 (1997); ≡ *Ranunculus altaicus* Laxm. subsp. *taimyrensis* (Kuvaev) Lufarov, Byull. Glavn. Bot. Sada 192:96 (2006)]. **Endemic to Siberia:** KRA(N), YAK(N).

#### ROSACEAE Juss.

***Dryas beringensis*** (Jurtzev) Chepinoga, **comb. & stat. nov.** [≡ *Dryas ajanensis* Juz. subsp. *beringensis* Jurtzev, Arktichesk. Fl. SSSR 9(1):322 (1984)]. **Russian Far East:** MAG (Chukotka). **North America** (Alaska).

***Geum maximowiczianum*** (Teppner) Chepinoga, **comb. nov.** [≡ *Waldsteinia ternata* (Stephan) Fritsch subsp. *maximowicziana* Teppner, Phytton (Horn) 16(1–4):285 (1974); Teppner, Zur Kenntnis der Gattung *Waldsteinia*: 71 (1968), nom. inval.; ≡ *Waldsteinia maximowicziana* (Teppner) Prob., Flora Russ. Far East. Add. and corr.: 161 (2006), comb. inval.; ≡ *Waldsteinia maximowicziana* (Teppner) Prob., Novosti Sist. Vyssh. Rast. 46:237 (2015)]. **Russian Far East:** KHA(S), PRM, SAK. **NE China, Japan, Korea.**

**Note.** Since the taxonomical revision by Smedmark (Smedmark & Eriksson 2002, Smedmark 2006), *Waldsteinia*, like some other genera, was transferred to *Geum* L. s.l. For most of the transferred species, the appropriate combinations have been published (Smedmark 2006), excluding *W. maximowicziana* treated

as a synonym of *G. ternatum* (Stephan) Smedmark (= *W. ternata* (Stephan) Fritsch). Recent molecular research based on a broader sampling showed that *W. maximowicziana* is a common ancestor of all *Waldsteinia*-species, and for this reason alone, deserves to be treated as a separate species (Protopopova et al. 2023).

***Potentilla boreoasiatica*** (Jurtzev & Kamelin) Kechaykin, **comb. & stat. nov.** [≡ *Potentilla gelida* C.A. Mey. subsp. *boreoasiatica* Jurtzev & Kamelin, Arktichesk. Fl. SSSR 9(1):320 (1984); ≡ *Potentilla crantzii* (Crantz) Fritsch subsp. *boreoasiatica* (Jurtzev & Kamelin) Soják, Preslia 65(2):129 (1993)]. **European Russia:** RUN (N). **Siberia:** WSB (N), ALT, KRA, TVA, IRK, BRY, CTA, YAK. **Russian Far East:** AMU, KHA, KAM, MAG. **Western Asia** (AFG), **Indian Subcontinent** (PAK, WHM, NEP), **China** (CNT, CNX), **Mongolia, Middle Asia** (KAZ, KGZ, TJK, UZB).

***Potentilla jurtzevii*** Kechaykin, **nom. & stat. nov.** [≡ *Potentilla villosula* Jurtzev subsp. *congesta* Jurtzev, Bot. Zhurn. (Moscow & Leningrad) 78(11):84 (1993), non *Potentilla congesta* (Douglas ex Hook.) Baill. (1869)]. **Russian Far East:** MAG (Chukotka). **North America** (Alaska).

**Note.** The new name was proposed in honor Boris Yurtzev, the famous phytogeographer and explorer of the Arctic flora.

***Potentilla nivicola*** (Jurtzev & V.V. Petrovsky) Kechaykin, **comb. & stat. nov.** [≡ *Potentilla hyparctica* Malte subsp. *nivicola* Jurtzev & V.V. Petrovsky, Arktichesk. Fl. SSSR 9(1):319 (1984)]. **Endemic to Asian Russia. Siberia:** YAK(N). **Russian Far East:** KHA, MAG.

#### SALICACEAE Mirb.

***Salix carbonicola*** (V.V. Petrovsky) Barkalov, **comb. & stat. nov.** [≡ *Salix stolonifera* Coville subsp. *carbonicola* V.V. Petrovsky, Bot. Zhurn. (Moscow & Leningrad) 68(1):36 (1983)]. **Russian Far East:** MAG (Wrangel Island). **?North America.**

**Note.** A close relative to the North American *S. stolonifera* Coville, but has intermediate features between *S. arctica* Pall. and *S. stolonifera*. For this reason, Argus (1973) suggested a hybrid origin for such species. In Wrangel Island, *S. stolonifera* is absent and *S. arctica* is a very rare species. At the same time, *S. carbonicola* is a relatively common species (Petrovsky & Zhukova 1983). Due to its apparently hybrid nature, the geographical distribution of *S. carbonicola* perhaps extends far beyond Wrangel Island.

***Salix jamu-taridensis*** (A.K. Skvortsov ex V.V. Petrovsky) Barkalov, **comb. & stat. nov.** [≡ *Salix arctica* Pall. subsp. *jamu-taridensis* A.K. Skvortsov ex V.V. Petrovsky, Bot. Zhurn. (Moscow & Leningrad) 68(1):31 (1983)]. **Endemic to Asian Russia. Siberia:** YAK(N). **Russian Far East:** MAG (W & S Chukotka).

**Note.** One of the geographic races of extremely variable *S. arctica* Pall. is associated with carbonate rocks (Petrovsky & Zhukova 1983).

#### SAXIFRAGACEAE Juss.

***Micranthes insularis*** (Hultén) Chepinoga, **comb. & stat. nov.** [≡ *Saxifraga punctata* L. subsp. *insularis* Hultén, Svensk Bot. Tidskr. 30:524, f. 5 (1936); ≡ *Saxifraga punctata* subsp. *insularis* (Hultén) B. Boivin, Naturaliste Canad. 94:635 (1967); ≡ *Saxifraga punctata* subsp. *insularis* (Hultén) S.L. Welsh, Great Basin Naturalist 28:155 (1968); ≡ *Saxifraga insularis* (Hultén) Sipliv., Novosti Sist. Vyssh. Rast. 13:139 (1976)]. **Russian Far East:** KHA, KUR, KAM, MAG. **North America, ?Japan.**

**Note.** *Micranthes* was accepted in the last decades by some major treatments like Brouillet & Elvander (2009) on the basis of certain morphological differences (Webb & Gornall 1989) and preliminary molecular data (Soltis et al. 1996). Late Russian floras and taxonomic works regarded *Micranthes* within the big *Saxifraga* (Charkevich 1989, Peschkova 1994, Zhmylev 1996). Robust phylogenetic data by Tkach et al. (2015) supplemented with a list of accepted names led to a wide final acceptance of *Micranthes* as a distinct genus.

***Micranthes × jurtzevii*** (Zhmylev) Chepinoga, **comb. nov.** [≡ *Saxifraga × jurtzevii* Zhmylev, Byull. Mosk. Obsch. Isp. Priir., Otd. Biol. 104(2):40 (1999)]. **Endemic to Siberia:** KRA (Taimyr Peninsula).

**Note.** The species was described from Taimyr Peninsula and compared with *M. tenuis* Small (= *Saxifraga nivalis* L. var. *tenuis* Wahl) and *M. nivalis* (L.) Small (= *S. nivalis* L.) in the protologue (Zhmylev 1999). In PAF, it is listed as “not accepted until more information is available” (Elven 2007–2023) with a note that this plant is not clear as to morphological distinction, relationships, and geographical range. Pospelova & Pospelov (2007) undoubtedly accepted it as a hybrid *S. nivalis* × *S. tenuis*. Tkach et al. (2015) accepted both parental species adjusting the hybrid as a distinct taxon in *Micranthes*.

***Micranthes longifolia*** (Engl. & Irmsch.) Chepinoga, **comb. & stat. nov.** [≡ *Saxifraga hieracifolia* Waldst. & Kit. f. *longifolia* Engl. & Irmsch., Pflanzenr. (Engler) IV. 117 (Heft 67):24 (1916); ≡ *Saxifraga hieracifolia* subsp. *longifolia* (Engl. & Irmsch.) Jurtzev & V.V. Petrov-

sky, Byull. Mosk. Obshch. Isp. Prir., Otd. Biol. 85(6):101 (1980). **Endemic to Asian Russia. Siberia:** ?YAK(NE). **Russian Far East:** MAG, ?KAM(N).

***Micranthes myosotifolia*** (D. Don) Chepinoga, **comb. nov.** [≡ *Saxifraga myosotifolia* D. Don, Trans. Linn. Soc. London 13(2):373 (1822)]. **Endemic to the Russian Far East:** KUR, KAM.

***Micranthes pacifica*** (Hultén) Chepinoga, **comb. nov.** [≡ *Saxifraga punctata* L. subsp. *pacifica* Hultén, Acta Univ. Lund. 2, 41:928 (1945); ≡ *Saxifraga punctata* subsp. *pacifica* (Hultén) S.L. Welsh, Great Basin Naturalist 28:155 (1968); ≡ *Saxifraga pacifica* (Hultén) Zhmylev & V.V. Petrovsky, Byull. Mosk. Obshch. Isp. Prir., Otd. Biol. 100(3):78 (1995)]. **Russian Far East:** KAM, MAG. **North America** (Alaska, NE Canada).

***Micranthes reniformis*** (Ohwi) Chepinoga, **comb. nov.** [≡ *Saxifraga reniformis* Ohwi, Acta Phytotax. & Geobot. 2:25 (1933)]. **Russian Far East:** SAK, KUR. **Japan** (Hokkaido).

***Micranthes soczavae*** (Rebrist.) Chepinoga, **comb. & stat. nov.** [≡ *Saxifraga nudicaulis* D. Don subsp. *soczavae* Rebrist., Arktichesk. Fl. SSSR 9(1):60 (1984)]. **Endemic to Asian Russia. Siberia:** IRK(N), CIA(N), YAK(S). **Russian Far East:** KHA(S).

***Micranthes* × *tolmatchevii*** (Zhmylev) Chepinoga, **comb. nov.** [≡ *Saxifraga tolmatchevii* Zhmylev, Byull. Mosk. Obshch. Isp. Prir., Otd. Biol. 100(3):81 (1995); = *Micranthes porsildiana* (Calder & Savile) Elven & D.F. Murray (= *Saxifraga punctata* L. subsp. *porcildiana* Calder & Savile) × *Micranthes nelsoniana* (D. Don) Small (= *Saxifraga nelsoniana* D. Don)]. **Endemic to the Russian Far East:** MAG (Chukotka).

**Note.** Zhmylev (1996) described this hybrid between *S. porsildiana* and *S. nelsoniana*. Tkach et al. (2015) accepted both parental species adjusting the hybrid as a distinct taxon in *Micranthes*.

***Micranthes vaginalis*** (Turcz. ex Ledeb.) Chepinoga, **comb. nov.** [≡ *Saxifraga vaginalis* Turcz. ex Ledeb., Fl. Ross. (Ledeb.) 2(1,5):220 (1844); ≡ *Saxifraga nudicaulis* D. Don subsp. *vaginalis* (Turcz. ex Ledeb.) Rebrist., Arktichesk. Fl. SSSR 9(1):60 (1984)]. **Endemic to Asian Russia. Siberia:** YAK. **Russian Far East:** AMU, KHA, PRM, SAK, KAM, MAG.

***Micranthes vicaria*** (Sipliv.) Chepinoga, **comb. nov.** [≡ *Saxifraga vicaria* Sipliv., Novosti Sist. Vyssh. Rast. 13:140 (1976)]. **Endemic to Asian Russia. Siberia:** YAK(N). **Russian Far East:** KAM, MAG.

**Note.** *Saxifraga vicaria* is accepted as a distinct species by Peschkova (1994) in the notes, but Kharkevich (1989) treated it as a synonym of *S. davurica*. Tkach et al. (2015) accepted the taxon as a variety named *M. davurica* (Willd.) Small var. *grandipetala* (Engl. & Irmisch.) Tkach. Siplivinsky (1976) correctly noted that *S. davurica* f. *grandipetala* could not be accepted, because characters described in the protologue (for instance, petals 4.0–4.5 mm long) do not match our plants with petals uniformly ca. 2.8 mm long. He supposed that the type destroyed in Berlin in 1943 is most probably referring to either *S. calycina* or *S. calycina* × *S. unalaschensis*. On this ground, he precisely described *S. vicaria* Sipliv. on a new type. We suppose Siplivinsky's name is more desirable for this group with a type available for verification.

***Micranthes voroschilovii*** (Sipliv.) Chepinoga, **comb. nov.** [≡ *Saxifraga voroschilovii* Sipliv., Novosti Sist. Vyssh. Rast. 13:145 (1976)]. **Endemic to the Russian Far East:** SAK.

## VITACEAE Juss.

***Ampelopsis maximowiczii*** (Regel) Barkalov, **comb. & stat. nov.** [≡ *Vitis heterophylla* Thunb. var. *maximowiczii* Regel, Trudy Imp. S.-Peterburgsk. Bot. Sada 2:392 (1873), non *Ampelopsis heterophylla* Blume (1825); ≡ *Ampelopsis brevipedunculata* (Maxim.) Trautv. var. *maximowiczii* (Regel) Rehder, Gentes Herbarium 1:36 (1920)]. **Russian Far East:** PRM, SAK, KUR (Kunashir & Shikotan Islands). **E China, Japan.**

## ZYGOPHYLLACEAE R. Br.

***Zygophyllum chakassicum*** (Peschkova) A.L. Ebel, **comb. & stat. nov.** [≡ *Zygophyllum pinnatum* Cham. subsp. *chakassicum* Peschkova, Fl. Sibir. (Geraniac.-Cornac.) 10:32 (1996)]. **Endemic to Siberia:** KRA(S).

***Zygophyllum tuvinicum*** (Peschkova) A.L. Ebel, **comb. & stat. nov.** [≡ *Zygophyllum pterocarpum* Bunge subsp. *tuvinicum* Peschkova, Fl. Sibir. (Geraniac.-Cornac.) 10:33 (1996)]. **Siberia:** TVA. **?W Mongolia.**

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