

## IAPT CHROMOSOME DATA

## IAPT chromosome data 38

Karol Marhold (ed.),<sup>1,2</sup> Jaromír Kučera (ed.),<sup>1</sup> Tatiana G. Aleksandrova,<sup>3</sup> Tatiana V. Alexeeva,<sup>4</sup> Elena A. Andriyanova,<sup>5</sup> Evgeny V. Banaev,<sup>6</sup> Alexander A. Bobrov,<sup>7</sup> Evgeny V. Boltenev,<sup>8</sup> Evgeniy A. Bondarevich,<sup>9</sup> Irina G. Boyarskikh,<sup>6</sup> Olga A. Chernyagina,<sup>10</sup> Daba G. Chimitov,<sup>11</sup> Tatyana V. Dyubenko,<sup>3</sup> Elena A. Dzyubenko,<sup>3</sup> Aleksandr L. Ebel,<sup>6,12</sup> Andrey S. Erst,<sup>6</sup> Anna A. Erst,<sup>6</sup> Anahit G. Ghukasyan,<sup>13</sup> Maria G. Khoreva,<sup>5</sup> Mikhail S. Knyazev,<sup>14</sup> Violetta V. Kotseruba,<sup>15,16</sup> Denis A. Krivenko,<sup>17</sup> Polina A. Kuzmina,<sup>17</sup> Eduard M. Machs,<sup>15</sup> Natalia Yu. Malysheva,<sup>3</sup> Elizaveta Yu. Mitrenina,<sup>12</sup> Olga A. Mochalova,<sup>5</sup> Yulia A. Myakoshina,<sup>15</sup> Anush A. Nersesyan,<sup>13</sup> Tatiana A. Ostroumova,<sup>4</sup> Tatyana V. Pankova,<sup>6</sup> Galina I. Pendinen,<sup>3</sup> Michail G. Pimenov,<sup>4</sup> Tatiana A. Poliakova,<sup>18</sup> Nina S. Probatova,<sup>19</sup> Yuliya A. Pshenichkina,<sup>6</sup> Alexander V. Rodionov,<sup>15,16</sup> Anna V. Shatkhina,<sup>18</sup> Dmitry N. Shaulo,<sup>6</sup> Julia V. Shner,<sup>4</sup> Mariya A. Tomoshevich,<sup>6</sup> Vasily S. Vishnyakov,<sup>7</sup> Wei Wang<sup>20</sup> & Elena Yu. Zykova<sup>6</sup>

- 1 *Plant Science and Biodiversity Centre, Institute of Botany, Slovak Academy of Sciences, Dúbravská cesta 9, 845 23 Bratislava, Slovak Republic*
- 2 *Department of Botany, Charles University, Benátská 2, 128 01 Praha, Czech Republic*
- 3 *N.I. Vavilov All-Russian Institute of Plant Genetic Resources (VIR), Bolshaya Morskaya Str. 42–44, 190000 St. Petersburg, Russian Federation*
- 4 *Botanical Garden, Moscow State University, 119234 Moscow, Russian Federation*
- 5 *Institute of Biological Problems of the North FEB RAS, Portovaya St. 18, 685000 Magadan, Russian Federation*
- 6 *Central Siberian Botanical Garden, Siberian Branch of the Russian Academy of Sciences, Zolotodolinskaya Str. 101, 630090 Novosibirsk, Russian Federation*
- 7 *I.D. Papanin Institute for Biology of Inland Waters of the Russian Academy of Sciences, 152742 Borok, Russian Federation*
- 8 *Botanical Garden-Institute, Far Eastern Branch, Russian Academy of Sciences, Makovskogo Str. 142, 690024 Vladivostok, Russian Federation*
- 9 *Department of Chemistry and Biochemistry, Chita State Medical Academy, Gorkiy Str. 39a, 672000 Chita, Russian Federation*
- 10 *Kamchatka Branch of the Pacific Geographical Institute of the Far Eastern Branch of the Russian Academy of Sciences, Partizanskaya Str. 6, 683000 Petropavlovsk-Kamchatskii, Russian Federation*
- 11 *Institute of General & Experimental Biology of the Siberian Branch of the Russian Academy of Sciences, Sakhyanovoi Str. 6, 670047 Ulan-Ude, Russian Federation*
- 12 *Tomsk State University, Lenin Ave. 36, 634050 Tomsk, Russian Federation*
- 13 *A. Takhtajyan Institute of Botany, National Academy of Sciences of Armenia, Acharyan Str. 1, 0063 Yerevan, Armenia*
- 14 *Botanical Garden of the Ural Branch of the Russian Academy of Sciences, Vosmogo Marta Str. 202b, 620144 Yekaterinburg, Russian Federation*
- 15 *Komarov Botanical Institute of the Russian Academy of Sciences, Prof. Popov Str. 2, 197376 St. Petersburg, Russian Federation*
- 16 *Saint Petersburg State University (SPbSU), Universitetskaya Emb. 7/9, 199034 St. Petersburg, Russian Federation*
- 17 *Siberian Institute of Plant Physiology & Biochemistry of the Siberian Branch of the Russian Academy of Sciences, Lermontov Str. 132, 664033 Irkutsk, Russian Federation*
- 18 *Department of Population Genetics, N.I. Vavilov Institute of General Genetics (VIGG), Russian Academy of Sciences, Gubkina Str. 3, 119991 Moscow, Russian Federation*
- 19 *Federal Scientific Center of the East Asia Terrestrial Biodiversity of the Far Eastern Branch of the Russian Academy of Sciences, Centennial Ave. 159, 690022 Vladivostok, Russian Federation*
- 20 *State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany of the Chinese Academy of Sciences, Nanxincun 20, Xiangshan, 100093 Beijing, China*

**Author information** KM, <https://orcid.org/0000-0002-7658-0844>; JK, <https://orcid.org/0000-0002-9983-7630>; TGA, <https://orcid.org/0000-0001-9152-4528>; TVA, –; EAA, <https://orcid.org/0000-0003-1441-8283>; EVB, <https://orcid.org/0000-0003-1314-8429>; AAB, <https://orcid.org/0000-0002-9819-5111>; EVB, <https://orcid.org/0000-0002-7310-659X>; EAB, –; IGB, <https://orcid.org/0000-0001-6212-0129>; OACH, <https://orcid.org/0000-0003-0801-8961>; DGCh, <https://orcid.org/0000-0002-1251-3167>; TVD, <https://orcid.org/0000-0002-3142-2877>; EAD, <https://orcid.org/0000-0003-4576-1527>; ALE, <https://orcid.org/0000-0002-7889-4580>; ASE, <https://orcid.org/0000-0002-4844-0254>; AAE, <https://orcid.org/0000-0002-1980-4100>; AGG, <https://orcid.org/0000-0002-1980-4100>

All materials for the chromosome column should be submitted electronically to: Karol Marhold, [karol.marhold@savba.sk](mailto:karol.marhold@savba.sk). The full version of this contribution is available in the online edition of TAXON appended to this article. The following citation format is recommended: Korobkov, A.A., Kotseruba, V.V. & Krivenko, D.A. 2019. IAPT chromosome data 30/4. In: Marhold, K. & Kučera, J. (eds.) & al., IAPT chromosome data 30. *Taxon* 68: 882, E1–E2.

© 2022 International Association for Plant Taxonomy.

0002-4580-2061; **MGK**, <https://orcid.org/0000-0003-2290-3043>; **MSK**, <https://orcid.org/0000-0002-3868-8010>; **VVK**, <https://orcid.org/0000-0003-1872-2223>; **DAK**, <https://orcid.org/0000-0003-2658-1723>; **PAK**, <https://orcid.org/0000-0003-1096-6223>; **EMM**, <https://orcid.org/0000-0001-9347-5379>; **NYuM**, <https://orcid.org/0000-0002-5688-6694>; **EYuM**, <https://orcid.org/0000-0002-8487-5714>; **OAM**, <https://orcid.org/0000-0002-1325-112X>; **YuAM**, <https://orcid.org/0000-0002-4668-5450>; **AAN**, <https://orcid.org/0000-0002-4380-7715>; **TAO**, –; **TVP**, <https://orcid.org/0000-0003-3661-0719>; **GIP**, <https://orcid.org/0000-0003-2814-7074>; **MGP**, –; **TAP**, –; **NSP**, <https://orcid.org/0000-0002-3279-4824>; **YuAP**, <https://orcid.org/0000-0002-2527-2577>; **AVR**, <https://orcid.org/0000-0003-1146-1622>; **AVS**, –; **DNS**, <https://orcid.org/0000-0002-1835-8532>; **JVS**, –; **MAT**, <https://orcid.org/0000-0002-0307-5919>; **VSV**, <https://orcid.org/0000-0003-3807-2221>; **WW**, <https://orcid.org/0000-0001-6901-6375>; **EYuZ**, <https://orcid.org/0000-0002-1847-5835>;

Publication of the contributions from Russian scientists cannot be in any way interpreted as support of the current military policy of the Russian Federation either by editors or by the International Association for Plant Taxonomy.

DOI <https://doi.org/10.1002/tax.12836>

First published as part of this issue. See online for details.

## IAPT chromosome data 38/1

Elena A. Andriyanova,\* Olga A. Mochalova, Maria G. Khoreva & Alexander A. Bobrov

\*Address for correspondence: [elena.a.andriyanova@gmail.com](mailto:elena.a.andriyanova@gmail.com)

This work was partially supported by the Russian Foundation for Basic Research (grants no. 19-04-01090-a, 19-05-00133-a) and performed in the framework of the state assignment (theme no. 12105110 0099-5, IBIW RAS and no. AAAA-A17-117122590002-0, IBPN FEB RAS).

All materials CNH; collectors: *AB* = A.A. Bobrov; *EA* = E.A. Andriyanova, *EC* = E.V. Chemeris, *MK* = M.G. Khoreva; *OM* = O.A. Mochalova.

### RANUNCULACEAE

*Ranunculus ashibetsuensis* Wiegleb.,  $2n = 48$ ; Russian Federation, Kamchatskii Krai, *OM*, *AB*, *EA* & *EC* M20001 (MAG 0011650), *OM*, *AB*, *EA* & *EC* M20002 (MAG 0011651), *OM*, *AB*, *EA* & *EC* M20003 (MAG 0011652), *OM* & *AB* M20004 (MAG 0011740), *OM* & *AB* M20005 (MAG 0011741).

*Ranunculus codyanus* B.Boivin,  $2n = 48$ ; Russian Federation, Chukotskii Avtonomnyi Okrug, *MK* K20007 (MAG 0005388), *MK* K20005 (MAG 0005384).

*Ranunculus nipponicus* Nakai,  $2n = 32$ ; Russian Federation, Magadanskaya Oblast', *OM* M20006 (MAG 0011714).

*Ranunculus trichophyllus* Chaix,  $2n = 32$ ; Russian Federation, Magadanskaya Oblast', *OM* M19020 (MAG 0001466).

## IAPT chromosome data 38/2

Evgeny V. Banaev,\* Mariya A. Tomoshevich, Irina G. Boyarskikh, Yuliya A. Pshenichkina & Anna A. Erst

\*Address for correspondence: [almus2005@mail.ru](mailto:almus2005@mail.ru)

This research was carried out within the framework of the topic “Theoretical and applied aspects of studying genofunds of natural plant populations and conservation of plant diversity ‘outside the typical environment’ (ex situ)” (AAAA-A21-121011290027-6).

All materials CHN; collectors: *AP* = A.Ya. Pshenichkin, *EB* = E.V. Banaev, *IB* = I.G. Boyarskikh, *MT* = M.A. Tomoshevich; vouchers in NSK.

### CAPRIFOLIACEAE

*Lonicera boczkarnikovae* Plekhanova,  $2n = 18$ ; China, Heilongjiang Province, *IB* 3001604; Russian Federation, Primorskii Krai, *IB* 3001605.

*Lonicera caerulea* subsp. *altaica* (Pall.) Gladkova,  $2n = 36$ ; Russian Federation, Republic of Altai, *IB* 3001599, *IB* 3001600, *IB* 3001601, *IB* 3001602.

*Lonicera caerulea* subsp. *emphylocalyx* (Maxim.) Plekhanova,  $2n = 36$ ; Russian Federation, Yuzhno-Kurilskii Urban District, *IB* 3001606.

*Lonicera caerulea* subsp. *pallasii* (Ledeb.) Browicz,  $2n = 36$ ; Russian Federation, Tomsk Region, *IB* 3001603.

*Lonicera edulis* Turcz. ex Freyn,  $2n = 18$ ; Russian Federation, Buryatia, Pribaikalskii District, *EB* & *MT* 3001597.

*Lonicera hispida* Pall. ex Schult.,  $2n = 18$ ; Russian Federation, Republic of Altai, *IB* 3001598.

### FABACEAE

*Caragana bungei* Ledeb.,  $2n = 32, 48, 52$ ; Russian Federation, Republic of Tuva, *EB* & *MT* 3001744.  $2n = 24, 32$ ; Russian Federation, Republic of Tuva, *EB* & *MT* 3001749.

*Caragana microphylla* Lam.,  $2n = 24, 32$ ; Russian Federation, Buryatia, *EB* & *MT* 3001751.

*Caragana spinosa* (L.) Hornem.,  $2n = 16, 32, 48$ ; Russian Federation, Buryatia, *EB* & *MT* 3001753.

### LAMIACEAE

*Thymus elegans* Serg.,  $2n = 14$ ; Russian Federation, Republic of Altai, Ongudaiskii District, *AP* 3001520.

*Thymus marschallianus* Willd.,  $2n = 28$ ; Russian Federation, Novosibirsk Region, *AP* 3001521.

### NITRARIACEAE

*Nitraria schoberi* L.,  $2n = 48$ ; Russian Federation, Astrakhanskaya Oblast', *EB* & *MT* 3000931.

### POLYGONACEAE

*Atraphaxis davurica* Jaub. & Spach,  $2n = 48, 56$ ; Russian Federation, Buryatia, *EB* & *MT* 3001756, *EB* & *MT* 3001711, *EB* & *MT* 3001773.

*Atraphaxis davurica* var. *chikoensis* Yurtseva & Mavrodiev,  $2n = 48, 56$ ; Russian Federation, Buryatia, *EB* & *MT* 3001759.

*Atraphaxis frutescens* (L.) K.Koch,  $2n = 16, 24$ ; Russian Federation, Krasnoyarskii Krai, *EB* & *MT* 3001765.  $2n = 16$ ; Russian Federation, Republic of Khakasiya, *EB* & *MT* 3001768.

*Atraphaxis pungens* (M.Bieb.) Jaub. & Spach,  $2n = 24, 36, 38$ ; Russian Federation, Krasnoyarskii Krai, *EB* & *MT* 3001770.  $2n = 32, 38, 40$ ; Russian Federation, Republic of Tuva, *EB* & *MT* 3001760.

*Atraphaxis selengensis* Yurtseva & Mavrodiev,  $2n = 24, 32$ ; Russian Federation, Buryatiya, *EB* & *MT* 3001774.

### IAPT chromosome data 38/3

Tatyana V. Dyubenko, Tatiana G. Aleksandrova, Elena A. Dzyubenko, Violetta V. Kotseruba,\* Eduard M. Machs & Alexander V. Rodionov

\*Address for correspondence: [viola.kotseruba@gmail.com](mailto:viola.kotseruba@gmail.com)

This work was performed within the framework of the VIR budget projects No. 0481-2022-0002 “Identification of the possibilities of legume crop genetic diversity to optimize their breeding and diversify uses in various sectors of the national economy” and No. 0481-2022-0006 “Disclosing the scientific potential of the herbarium collection at VIR as an independent specific unit of worldwide agricultural biodiversity conservation for scientifically justified mobilization, effective studying and preservation of genetic diversity”, the framework of the State Task No. AAAA-A18-118040290161-3 and the grant No. 60256916 of SPbSU.

All materials CHN; collectors: *AB* = A.P. Boyko, *CF* = C. Fullilove, *ED* = E.A. Dzyubenko, *EG* = E.A. Gubanova, *ES* = E.A. Sergeev, *GB* = G.V. Belskaya, *GG* = G.A. Gridnev, *ICH* = I.G. Chukhina, *IS* = I.V. Seferova, *JP* = J. Piggin, *LB* = L.V. Bagmet, *MB* = M.O. Burlyaeva, *MW* = M. Williamson, *NT* = N.I. Topilskaya, *OR* = O.E. Radchenko, *TS* = T.A. Sinitsyna, *VS* = V.A. Semenov, *YuYu* = Yu.V. Yurlov, *ZW* = Z. Webber; seed vouchers in the seed collection of the N.I. Vavilov All-Russian Institute of Plant Genetic Resources (VIR), herbarium vouchers in WIR.

#### FABACEAE

*Vicia cracca* L. (s.l.),  $2n = 28$ ; Russian Federation, Karachay-Cherkess Republic, *VS*, *MB*, *IS* & *LB* s.n. (VIR i-o144986; WIR 53616); Russian Federation, Krasnodarskii Krai, *LB*, *AB* & *OR* s.n. (VIR i-o145598; WIR 101167).

*Vicia tetrasperma* (L.) Schreb.,  $2n = 14$ ; Russian Federation, Tambovskaya Oblast', *GG*, *MB*, *GB*, *ES*, *EG*, *YuYu* & *NT* s.n. (VIR i-o156232; WIR 53739).

#### POACEAE

*Elymus dahuricus* Turcz. ex Griseb.,  $2n = 42$ ; Russian Federation, Republic of Altai, *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160072; WIR 101892).

*Elymus excelsus* Turcz. ex Griseb. (s.str.),  $2n = 42$ ; Russian Federation, Republic of Altai, *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160070; WIR 101891).

*Elymus fedtschenkoi* Tzvelev,  $2n = 28$ ; Russian Federation, Republic of Altai, *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160107; WIR 101895).

*Elymus gmelinii* (Ledeb.) Tzvelev,  $2n = 28$ ; Russian Federation, Republic of Altai, *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160090; WIR 101893).

*Elymus kronokensis* (Komarov) Tzvelev,  $2n = 28$ ; Russian Federation, Republic of Altai, *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160118; WIR 101896).

*Elymus sibiricus* L.,  $2n = 28$ ; Russian Federation, Republic of Altai, *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160052; WIR 101889), *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160046; WIR 101890).

*Elymus transbaicalensis* (Nevski) Tzvelev (s.str.),  $2n = 28$ ; Russian Federation, Republic of Altai, *ICH*, *ED*, *TS*, *ZW*, *MW*, *JP* & *CF* s.n. (VIR i-o160121; WIR 101897).

### IAPT chromosome data 38/4

Anahit G. Ghukasyan, Violetta V. Kotseruba\* & Anush A. Nersesyan

\*Author for correspondence: [viola.kotseruba@gmail.com](mailto:viola.kotseruba@gmail.com)

This work was performed within the framework of the State Task No. AAAA-A18-118040290161-3 and grant No. 60256916 of St. Petersburg State University.

All materials CHN; collected in Armenia; collectors: *AAN* = A.A. Nersesyan, *EMN* = E.M. Navasardyan, *ETSG* = E.Ts. Gabrielian, *GMF* = G.M. Fayvush, *IGA* = I.G. Arevshatyan, *IGG* = I.G. Gabrielyan, *KZJ* = K.Z. Janjughazyan, *PPG* = P.P. Ghambaryan; vouchers in ERE.

#### APIACEAE

*Chaerophyllum aureum* L.,  $2n = 22$ ; *AAN* & *IGA* 2011 183221.

*Xanthogalum purpurascens* Avé-Lall.,  $2n = 22$ ; *AAN* & *IGA* 2011 183208.

#### ASTERACEAE

*Gundelia aragatsi* subsp. *steineri* Vitek & al.,  $2n = 18$ ; *GMF* 185090. *Rhaponticoides hajastana* (Tzvelev) M.V.Agab.,  $2n = 30$ ; *ETSG* 180418.

*Rhaponticoides tamanianae* (M.V.Agab.) M.V.Agab. & Greuter,  $2n = 30$ ; *GMF* 186848.

#### BRASSICACEAE

*Conringia orientalis* (L.) C.Presl,  $2n = 14$ ; *AAN*, *PPG* & *IGG* 186897.

*Turritis glabra* L.,  $2n = 12$ ; *AAN* & *EMN* 189958.

#### FABACEAE

*Medicago hemicycla* Grossh.,  $2n = 16$ ; *IGG* & *IGA* 200251.

*Medicago minima* (L.) Bartal.,  $2n = 16$ ; *PPG* & *AAN* 200252.

#### PLANTAGINACEAE

*Plantago lanceolata* L.,  $2n = 12$ ; *PPG*, *IGA* & *AAN* 200253.

#### RANUNCULACEAE

*Ranunculus oxyspermus* Willd.,  $2n = 16$ ; *PPG* & *AAN* 200250.

#### ROSACEAE

*Potentilla porphyrantha* Juz.,  $2n = 14$ ; *GMF* & *KZJ* 193408.

*Potentilla recta* L.,  $2n = 14$ ; *AAN*, *IGA* & *EMN* 193020.

#### RUBIACEAE

*Callipeltis cucullaris* (L.) DC.,  $2n = 22$ ; *PPG*, *AAN* & *IGA* 200254.

## IAPT chromosome data 38/5

Denis A. Krivenko,\* Polina A. Kuzmina, Daba G. Chimitov, Mikhail S. Knyazev & Vasily S. Vishnyakov

\*Address for correspondence: [krivenko.irk@gmail.com](mailto:krivenko.irk@gmail.com)

The work was supported by the Ministry of Science and Higher Education of the Russian Federation, the grant No. 075-15-2020-787 for the implementation of Major scientific projects on priority areas of scientific and technological development (project “Fundamentals, methods and technologies for digital monitoring and forecasting of the environmental situation on the Baikal natural territory”).

All materials CHN.

## AIZOACEAE

*Trianthema portulacastrum* L.,  $2n = 26$ ; Egypt, *E.V. Matveeva* 66766 (IRK).

## BORAGINACEAE

*Stenosolenium saxatile* Turcz.,  $2n = 10$ ; Russian Federation, Republic of Buryatia, *O.V. Imetkhenova & D.G. Chimitov* 49511 (IRK).

## FABACEAE (LEGUMINOSAE)

*Astragalus chakassiensis* Polozhij (= *A. depauperatus* agg.),  $2n = 64$ ; Russian Federation, Republic of Khakassia, 08 Jul 2016, *A.L. Ebel* s.n. (TK).

*Astragalus depauperatus* Ledeb.,  $2n = 32$ ; Russian Federation, Chelyabinskaya Oblast', Jul 2018, *M.S. Knyazev s.n.* (SVER); Russian Federation, Orenburgskaya Oblast', *M.S. Knyazev 01* (SVER), *M.S. Knyazev 02* (SVER), *M.S. Knyazev 05* (SVER), *M.S. Knyazev 06* (SVER), *M.S. Knyazev 07* (SVER), *M.S. Knyazev 08* (SVER), *M.S. Knyazev 10* (SVER).

*Astragalus frigidus* (L.) A.Gray,  $2n = 16$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov & O.V. Imetkhenova* 64542 (IRK), *D.G. Chimitov* 65279 (IRK).

*Astragalus kasachstanicus* Golosk.,  $2n = 16$ ; Kazakhstan, Akmolinskaya Oblast', 28 Jun 2018, *M.S. Knyazev s.n.* (SVER).

*Astragalus mongholicus* Bunge,  $2n = 16$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65282 (IRK), *D.G. Chimitov* 65273 (IRK), *D.G. Chimitov* 65278 (IRK), *D.G. Chimitov* 65281 (IRK); Russian Federation, Zabaikalskii Krai, *D.G. Chimitov* 65228 (IRK, LE, PVB).

*Astragalus permianensis* var. *sacrimontis* Knjaz.,  $2n = 64$ ; Russian Federation, Republic of Bashkortostan, 04 Aug 2017, *M.S. Knyazev* s.n. (IRK00006660).

*Astragalus sareptanus* A.K.Becker s.str. (= *A. rupifragus* auct. non Pall.),  $2n = 16$ ; Russian Federation, Republic of Bashkortostan, 25 Jun 2017, *M.S. Knyazev & V.M. Vasjukov* s.n. (IRK00006659).  $2n = 96$ ; Russian Federation, Orenburgskaya Oblast', 18 Jul 2018, *M.S. Knyazev s.n.* (SVER); Russian Federation, Volgogradskaya Oblast', 16 Jun 2011, *M.S. Knyazev s.n.* (SVER).

*Astragalus scopaeformis* Ledeb. (= *A. tenuifolius* L.),  $2n = 32$ ; Russian Federation, Orenburgskaya Oblast', 19 Jul 2018, *M.S. Knyazev s.n.* (SVER).

*Astragalus storozhevae* Knjaz. var. *storozhevae* (= *A. pallescens* auct. non M.Bieb.),  $2n = 64$ ; Russian Federation, Orenburgskaya Oblast', 21 Jul 2018, *M.S. Knyazev s.n.* (SVER).

*Astragalus trigonocarpus* (Turcz.) Bunge,  $2n = ca. 48$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65274 (IRK),

*D.A. Krivenko* 64836 (IRK, IRKU, LE, MW, NSK, PVB, UUH, VLA).

*Glycyrrhiza orientalis* Grankina & Letjaeva (= *G. uralensis* Fisch. ex DC.),  $2n = 16$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65272 (IRK).

*Gueldenstaedtia verna* (Georgi) Boriss.,  $2n = 14$ ; Russian Federation, Republic of Buryatia, *D.A. Krivenko* 66512 (IRK, NSK), *D.G. Chimitov* 65269 (IRK).

*Hedysarum kulikovii* Knjaz. (= *H. razoumowianum* auct. non Helm & Fisch. ex DC.),  $2n = 48$ ; Russian Federation, Orenburgskaya Oblast', 18 Jul 2018, *M.S. Knyazev s.n.* (SVER).

*Hedysarum razoumowianum* Helm & Fisch. ex DC.,  $2n = 16$ ; Russian Federation, Orenburgskaya Oblast', 18 Jul 2018, *M.S. Knyazev s.n.* (SVER).

*Hedysarum villosissimum* Knjaz.,  $2n = 16$ ; Kazakhstan, Karandinskaya Oblast', 30 Jun 2018, *M.S. Knyazev s.n.* (SVER).

*Oxytropis ×bardonovae* Chimitov,  $2n = 16$ ; Russian Federation, Republic of Buryatia, 23 Jul 2014, *D.G. Chimitov s.n.* (paratype, IRK00000256).

*Oxytropis caespitosa* (Pall.) Pers.,  $2n = 32$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65295 (IRK).  $2n = 48$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65293 (IRK), *D.G. Chimitov* 65294 (IRK).

*Oxytropis glandulosa* Turcz.,  $2n = 16$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65275 (IRK).

*Oxytropis interposita* Sipliv.,  $2n = 32$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65267 (IRK).

*Oxytropis leptophylla* (Pall.) DC.,  $2n = 16$ ; Mongolia, Dordon Aimag, *D.G. Chimitov* 49510 (IRK).

*Oxytropis squammulosa* DC.,  $2n = 16$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65268 (IRK).

*Oxytropis strobilacea* Bunge,  $2n = 16$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65271 (IRK).  $2n = 32$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65276 (IRK).

*Oxytropis triphylla* (Pall.) DC.,  $2n = 16$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65283 (IRK).

*Oxytropis turczaninovi* Jurtzev,  $2n = 32$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov* 65285 (IRK).

*Oxytropis subverticillaris* C.A.Mey.,  $2n = 32$ ; Kazakhstan, Karandinskaya Oblast', 30 Jun 2018, *M.S. Knyazev s.n.* (SVER).

## PAPAVERACEAE

*Chelidonium majus* L.,  $2n = 12$ ; Belarus, Minsk city, *V.S. Vishnyakov* 66117 (IRK). Russian Federation, Altaiskii Krai, *D.A. Krivenko* 68041 (IRK), *D.A. Krivenko* 68003 (IRK), *D.A. Krivenko* 68044 (IRK); Russian Federation, Krasnodarskii Krai, *P.A. Zaremba* 65898 (IRK), *P.A. Zaremba* 65900 (IRK), *P.A. Zaremba* 65901 (IRK), *P.A. Zaremba* 65903 (IRK), *V.S. Vishnyakov* 68055 (IRK); Russian Federation, Nizhegorodskaya Oblast', *V.S. Vishnyakov* 66110 (IRK); Russian Federation, Republic of Ingushetia, *A.N. Bersanova & D.A. Krivenko* 65593 (IRK); Russian Federation, Republic of Tatarstan, *M.A. Markaryan* 65578 (IRK), *M.A. Markaryan* 65579 (IRK), *M.A. Markaryan* 65580 (IRK); Russian Federation, Ryazanskaya Oblast', *V.S. Vishnyakov* 68056 (IRK); Russian Federation, Stavropolskii Krai, *D.A. Krivenko* 65590 (IRK); Russian Federation, Tambovskaya Oblast', *V.S. Vishnyakov* 68084 (IRK); Russian Federation, Tul'skaya Oblast', *V.S. Vishnyakov* 65462 (IRK); Russian Federation, Vladimirskaia Oblast', *V.S. Vishnyakov* 68080 (IRK); Russian Federation, Volgogradskaya Oblast', *V.S. Vishnyakov* 68061 (IRK); Russian Federation, Voronezhskaya Oblast', *V.S. Vishnyakov* 68063 (IRK), *V.S. Vishnyakov* 68058

(IRK), *V.S. Vishnyakov 65464* (IRK); Russian Federation, Yaroslavl'skaya Oblast', *V.S. Vishnyakov 66113* (IRK), *V.S. Vishnyakov 66116* (IRK), *V.S. Vishnyakov 68076* (IRK), *V.S. Vishnyakov 65460* (IRK), *V.S. Vishnyakov 68088* (IRK), *V.S. Vishnyakov 68087* (IRK), *V.S. Vishnyakov 68079* (IRK).

#### POACEAE (GRAMINEAE)

*Echinochloa colonum* (L.) Link,  $2n = 48$ ; Egypt, *E.V. Matveeva 66764* (IRK).

#### VIOLACEAE

*Viola ×incissecta* V.I.V.Nikitin,  $2n = 24$ ; Russian Federation, Republic of Buryatia, *D.G. Chimitov 49517* (IRK).

### IAPT chromosome data 38/6

Elizaveta Yu. Mitrenina, Eugeny V. Boltenkov, Andrey S. Erst\* & Wei Wang

\*Address for correspondence: [erst\\_andrew@yahoo.com](mailto:erst_andrew@yahoo.com)

The study was carried out within the framework State Assignment of the CSBG SB RAS (project No. AAAA-A21-12101129 0024-5); the institutional research project of the Botanical Garden-Institute, Far Eastern Branch, Russian Academy of Sciences (No. 122040800085-4); and National Natural Science Foundation of China (No. 32011530072 and No. 31770233).

All materials CHN; collectors: *ASE* = A.S. Erst, *EVB* = E.V. Boltenkov, *TNV* = T.N. Veklich, *TVE* = T.V. Erst; vouchers in VBG1.

#### IRIDACEAE

*Iris bloudowii* Ledeb.,  $2n = 16$ ; Russian Federation, Altai Republic, *EVB, ASE & TVE 7*; *EVB, ASE & TVE 15*; *EVB, ASE & TVE 20*; *EVB, ASE & TVE 21*; *EVB, ASE & TVE 40*.

*Iris humilis* Georgi,  $2n = 28$ ; Russian Federation, Altai Republic, *EVB, ASE & TVE 22-1*; *EVB, ASE & TVE 28*; Russian Federation, Amur Oblast', 4 Jul 2020, *TNV s.n.*

*Iris kamelinii* Alexeeva,  $2n = 22$ ; Russian Federation, Altai Republic, *EVB, ASE & TVE 34*.

*Iris potaninii* Maxim.,  $2n = 22$ ; Russian Federation, Altai Republic, *EVB, ASE & TVE 22-2*; *EVB, ASE & TVE 24*; *EVB, ASE & TVE 25*; *EVB, ASE & TVE 26*; *EVB, ASE & TVE 33*.

*Iris ruthenica* Ker Gawl.,  $2n = 84$ ; Russian Federation, Altai Republic, *EVB, ASE & TVE 10-1*.

*Iris tigridia* Bunge,  $2n = 38$ ; Russian Federation, Altai Republic, *EVB, ASE & TVE 17*.

### IAPT chromosome data 38/7

Yulia A. Myakoshina, Natalia Yu. Malysheva, Galina I. Pendinen, Violetta V. Kotseruba\* & Eduard M. Machs

\*Address for correspondence: [viola.kotseruba@gmail.com](mailto:viola.kotseruba@gmail.com)

This work was performed within the framework of the VIR budget projects No. 0481-2022-0002 "Identification of the possibilities of legume crop genetic diversity to optimize their breeding and diversify uses in various sectors of the national economy" and No. 0481-2022-0006 "Disclosing the scientific potential of the herbarium collection at VIR as an independent specific unit of worldwide

agricultural biodiversity conservation for scientifically justified mobilization, effective studying and preservation of genetic diversity", the framework of the State Task No. AAAA-A18-118040290161-3 and the grant No. 60256916 of St. Petersburg State University.

All materials CHN; collector: *NYM* = N.Yu. Malysheva; seed vouchers in the seed collection of the N.I. Vavilov All-Russian Institute of Plant Genetic Resources (VIR), herbarium vouchers in LE.

#### FABACEAE

*Medicago lupulina* L.,  $2n = 16$ ; Italy, *NYM s.n.* (VIR k-5358; LE 01060193). Lithuania, *NYM s.n.* (VIR i-o640309; LE 01060187). Russian Federation, Pskovskaya Oblast', *NYM s.n.* (VIR i-o99537; LE 01060190).

### IAPT chromosome data 38/8

Tatyana V. Pankova,\* Elena Yu. Zykova, Dmitry N. Shaulo & Aleksandr L. Ebel

\*Address for correspondence: [ankova\\_tv@mail.ru](mailto:ankova_tv@mail.ru)

The investigation was carried with the support of the scientific program AAAA-A21-121011290024-5 of the Central Siberian Botanical Garden of the Siberian Branch of the Russian Academy of Sciences. Scientific collections of the Central Siberian Botanical Garden Siberian Branch of the Russian Academy of Sciences (USU 440537, Herbarium NS) were used in the work. Sample pretreatment with chemical reagents was financially supported by the Ministry of Education and Science of Russia under Agreement No. 075-15-2021-1056 of September 28, 2021 between the BIN RAS and the Ministry of Science and Higher Education of the Russian Federation, also under Agreement No. EP/29-10-21-4 of October 29, 2021 between BIN RAN and CSBG SB RAS.

All materials CHN; collectors: *AE* = A. Ebel, *DSh* = D. Shaulo, *EZ* = E. Zykova, *TSh* = T. Shemetova, *YuS* = Yu. Studenikin; vouchers in NS.

#### AMARANTHACEAE

*Amaranthus retroflexus* L.,  $2n = 32$ ; Russian Federation, Novosibirsk Territory, *DSh EZ7031*.

*Chenopodium album* L.,  $2n = 54$ ; Russian Federation, Republic of Altai, *EZ EZ395-6117*.

#### ASTERACEAE

*Arctium lappa* L.,  $2n = 36$ ; Russian Federation, Novosibirsk Territory, *DSh EZ698*.

*Artemisia absinthium* L.,  $2n = 18$ ; Russian Federation, Novosibirsk Territory, *DSh EZ696*.

*Cichorium intybus* L.,  $2n = 18$ ; Russian Federation, Novosibirsk Territory, *DSh EZ697*.

*Lactuca serriola* L.,  $2n = 18$ ; Russian Federation, Republic of Tyva, *DSh EZ735-77*.

#### BRASSICACEAE

*Dontostemon micranthus* C.A.Mey.,  $2n = 14$ ; Mongolia, Bayan-Ölgii Province, *YuS EZ577*.

*Erucastrum gallicum* (Willd.) O.E.Schulz,  $2n = 30$ ; Russian Federation, Kemerovo Region, *AE EZ919*.

**CARYOPHYLLACEAE**

- Silene csereii* Baumg.,  $2n = 24$ ; Russian Federation, Republic of Khakassia, *AE EZ849*.  
*Spergula arvensis* L.,  $2n = 18$ ; Russian Federation, Republic of Khakassia, *DSh EZ705*.

**FABACEAE**

- Caragana pygmaea* (L.) DC.,  $2n = 16$ ; Russian Federation, Republic of Tyva, *DSh EZ902*.  
*Medicago lupulina* L.,  $2n = 16$ ; Russian Federation, Republic of Altai, *EZ EZ386-1917*.  
*Vicia hirsuta* (L.) Gray,  $2n = 14$ ; Russian Federation, Krasnoyarsk Territory, *DSh EZ737-46*.

**ONAGRACEAE**

- Oenothera biennis* L. (= *O. rubricaulis* Kleb.),  $2n = 14$ ; Russian Federation, Krasnoyarsk Territory, *AE EZ917*.

**POACEAE**

- Panicum miliaceum* L. (= *P. ruderales* (Kitag.) D.M.Chang),  $2n = 36$ ; Russian Federation, Krasnoyarsk Territory, *DSh EZ828*.  
*Setaria viridis* (L.) P.Beauv.,  $2n = 18$ ; Russian Federation, Krasnoyarsk Territory, *DSh EZ736-70*; Russian Federation, Republic of Altai, *EZ EZ460, EZ EZ461*; Russian Federation, Novosibirsk Region, *EZ & TSh EZ361*.

**IAPT chromosome data 38/9**

Nina S. Probatova, Denis A. Krivenko\* & Olga A. Chernyagina

\*Address for correspondence: [krivenko.irk@gmail.com](mailto:krivenko.irk@gmail.com)

The authors are grateful to E.G. Rudyka (Vladivostok) for assistance in chromosome counting and to Dr. M.N. Lomonosova (Novosibirsk) for correcting species names in Amaranthaceae.

All materials CHN.

**AMARANTHACEAE**

- Atriplex prostrata* Boucher ex DC.,  $2n = 18$ ; Russian Federation, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 11275* (VLA).  
*Atriplex verrucifera* M.Bieb.,  $2n = 18$ ; Russian Federation, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 11271* (VLA).  
*Chenopodium bryoniifolium* Bunge,  $2n = 18$ ; Russian Federation, Khabarovskii Krai, *L.A. Antonova & al. 12212* (VLA).  
*Chenopodium vachellii* Hook. & Arn. (= *Ch. acuminatum* Willd.),  $2n = 36$ ; Russian Federation, Primorskii Krai, *V.T. Lapenko 13627* (VLA).  
*Dysphania botrys* (L.) Mosyakin & Clemants,  $2n = 18$ ; Russian Federation, Republic of Dagestan, *D.A. Krivenko 13738* (IRK, VLA).  
*Habitzia tannoides* M.Bieb.,  $2n = 18$ ; Russian Federation, Kabardino-Balkarian Republic, *D.A. Krivenko 13734* (IRK, VLA).

**ASTERACEAE**

- Crepis rhoeadifolia* M.Bieb. (≡ *C. foetida* subsp. *rhoeadifolia* (M.Bieb.) Čelak.),  $2n = 8$ ; Russian Federation, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 11272a* (VLA).  
*Crepis setosa* Haller f.,  $2n = 16$ ; Russian Federation, Krasnodarskii Krai, *N.S. Probatova & V.P. Seledets 11272b* (VLA).

- Erigeron canadensis* L.,  $2n = 18$ ; Russian Federation, Chechenskaya Republic, *D.A. Krivenko 13764* (IRK, VLA); Russian Federation, Republic of Ingushetia, *D.A. Krivenko 13750* (IRK, VLA).  
*Lapsana grandiflora* M.Bieb. (≡ *L. communis* subsp. *grandiflora* (M.Bieb.) P.D.Sell),  $2n = 14$ ; Russian Federation, Republic of Dagestan, *D.A. Krivenko 13713* (IRK, VLA).  
*Matricaria discoidea* DC.,  $2n = 18$ ; Russian Federation, Kamchatskii Krai, *O.A. Chernyagina 13745* (VLA).  
*Pentanema britannica* (L.) D.Gut.Larr. & al.,  $2n = 24$ ; Russian Federation, Republic of Tatarstan, *M.A. Markaryan 13726* (IRK, VLA).  
*Saussurea nuda* Ledeb.,  $2n = 26$ ; Russian Federation, Kamchatskii Krai, *O.A. Chernyagina 13766* (VLA).  
*Tanacetum boreale* Fisch. ex DC.,  $2n = 18$ ; Russian Federation, Kamchatskii Krai, *O.A. Chernyagina 13747* (VLA).

**BRASSICACEAE**

- Berteroa incana* (L.) DC.,  $2n = 16$ ; Russian Federation, Republic of Tatarstan, *M.A. Markaryan 13702* (IRK, VLA).

**CAMPANULACEAE**

- Campanula patula* L.,  $2n = 18$ ; Russian Federation, Republic of Tatarstan, *M.A. Markaryan 13763* (IRK, VLA).

**CARYOPHYLLACEAE**

- Spergula arvensis* L.,  $2n = 18$ ; Russian Federation, Kamchatskii Krai, *O.A. Chernyagina 13716* (VLA).

**COMMELINACEAE**

- Commelina benghalensis* L.,  $2n = 22$ ; Thailand, *O.A. Chernysheva 13594* (IRK, VLA).  
*Commelina communis* L.,  $2n = 32$ ; Russian Federation, Amurskaya Oblast', *G.F. Darman 13770* (VLA); Russian Federation, Primorskii Krai, *G.G. Probatova 13567* (VLA), *G.M. Gulariants 13571* (VLA).  $2n = 36$ ; Russian Federation, Primorskii Krai, *E.B. Volynets 13663* (VLA), *G.G. Probatova 13566* (VLA), *G.M. Gulariants 13569* (VLA).  $2n = 40$ ; Russian Federation, Primorskii Krai, *N.S. Probatova 13665* (VLA), *G.M. Gulariants 13570* (VLA), *G.M. Gulariants 13571* (VLA).  $2n = 42$ ; Russian Federation, Primorskii Krai, *G.M. Gulariants 13572* (VLA).  $2n = 48$ ; Russian Federation, Khabarovskii Krai, *G.G. Probatova 13564* (VLA); Russian Federation, Primorskii Krai, *Z.V. Kozhevnikova 13670* (VLA).  $2n = 52$ ; Russian Federation, Primorskii Krai, *Z.V. Kozhevnikova 13669* (VLA).  $2n = 54$ ; Russian Federation, Primorskii Krai, *E.G. Rudyka 13565* (VLA).  $2n = 62$ ; Russian Federation, Primorskii Krai, *N.S. Probatova 13562* (VLA).  $2n = 72$ ; Russian Federation, Primorskii Krai, *T. Ignat'eva 13666* (VLA).  $2n = 86$ ; Russian Federation, Primorskii Krai, *G.G. Probatova 13568* (VLA).  $2n = 96$ ; Russian Federation, Primorskii Krai, *E.B. Volynets 13573* (VLA).

**FABACEAE**

- Hedysarum hedysaroides* (L.) Schinz & Thell.,  $2n = 14$ ; Russian Federation, Kamchatskii Krai, *O.A. Chernyagina 13754* (VLA).

**GERANIACEAE**

- Geranium palustre* L.,  $2n = 28$ ; Russian Federation, Republic of Ingushetia, *D.A. Krivenko 13744* (IRK, VLA).

**LAMIACEAE**

- Galeopsis bifida* Boenn.,  $2n = 32$ ; Russian Federation, Kamchatskii Krai, *O.A. Chernyagina 13749* (VLA).

**ONAGRACEAE**

*Epilobium pseudorubescens* A.K.Skvortsov,  $2n = 36$ ; Russian Federation, Republic of Tatarstan, M.A. Markaryan 13755 (IRK, VLA).  
*Oenothera villosa* Thunb.,  $2n = 14$ ; Russian Federation, Republic of Tatarstan, M.A. Markaryan 13695 (IRK, VLA).

**OXALIDACEAE**

*Oxalis stricta* L.,  $2n = 24$ ; Russian Federation, Republic of Tatarstan, M.A. Markaryan 13706 (IRK, VLA).

**PAPAVERACEAE**

*Papaver fugax* Poir. (= *P. armeniacum* (L.) DC.),  $2n = 14$ ; Russian Federation, Republic of Ingushetia, D.A. Krivenko 13733 (IRK, VLA).

*Papaver somniferum* L.,  $2n = 22$ ; Russian Federation, Irkutskaya Oblast', N.V. Filinova & D.A. Krivenko 13689 (IRK, NSK, VLA).

**POACEAE**

*Leymus mollis* (Trin.) Pilg.,  $2n = 28$ ; Russian Federation, Kamchatskii Krai, O.A. Chernyagina 13753 (VLA).

*Phalaris canariensis* L.,  $2n = 12$ ; Russian Federation, Novosibirskaya Oblast', D.A. Krivenko 13685 (IRK, VLA).

*Poa botryoides* (Trin. ex Griseb.) Kom. (= *P. attenuata* Trin.),  $2n = 28$ ; Russian Federation, Kamchatskii Krai, V.V. Yakubov 13636 (VLA).  $2n = 42$ ; Russian Federation, Kamchatskii Krai, V.V. Yakubov 13639 (VLA).

*Poa pratensis* L.,  $2n = 56$ ; Russian Federation, Primorskii Krai, G.M. Gulariants 13628 (VLA).

*Setaria pumila* (Poir.) Roem. & Schult.,  $2n = 18$ ; Russian Federation, Irkutskaya Oblast', D.A. Krivenko & O.A. Chernysheva 13584 (IRK, VLA).  $2n = 36$ ; Russian Federation, Republic of Tatarstan, M.A. Markaryan 13696 (IRK, VLA).

*Setaria viridis* (L.) P.Beauv.,  $2n = 18$ ; Armenia, D.A. Krivenko & al. 13491 (IRK, VLA).

**POLYGONACEAE**

*Aconogonon weyrichii* (F.Schmidt) H.Hara (≡ *Koenigia weyrichii* (F.Schmidt) T.M.Schust. & Reveal),  $2n = 20$ ; Russian Federation, Kamchatskii Krai, O.A. Chernyagina 13760 (VLA).

*Fallopia convolvulus* (L.) Á.Löve,  $2n = 40$ ; Russian Federation, Kamchatskii Krai, O.A. Chernyagina 13762 (VLA).

*Rumex patientia* L.,  $2n = 40$ ; Russian Federation, Novosibirskaya Oblast', D.A. Krivenko 13691 (IRK, VLA).

*Rumex thyriflorus* Fingerh.,  $2n = 14$ ; Russian Federation, Republic of Tatarstan, M.A. Markaryan 13714 (IRK, VLA).

**RANUNCULACEAE**

*Ranunculus trichophyllus* Chaix ex Vill.,  $2n = 48$ ; Russian Federation, Irkutskaya Oblast', O.A. Chernysheva 13605 (IRK, VLA).

**ROSACEAE**

*Potentilla inclinata* Vill.,  $2n = 28$ ; Russian Federation, Republic of Tatarstan, M.A. Markaryan 13724 (IRK, VLA), M.A. Markaryan 13729 (IRK, VLA); Russian Federation, Irkutskaya Oblast', O.Yu. Zavgorodnyaia 13739 (VLA).

**RUBIACEAE**

*Galium mollugo* L.,  $2n = 22$ ; Russian Federation, Republic of Tatarstan, M.A. Markaryan 13705 (IRK, VLA).

**SCROPHULARIACEAE**

*Linaria vulgaris* Mill.,  $2n = 12$ ; Russian Federation, Kamchatskii Krai, O.A. Chernyagina 13737 (VLA).

**SOLANACEAE**

*Solanum nigrum* L.,  $2n = 72$ ; Russian Federation, Primorskii Krai, N.S. Probatova 13563 (VLA).

**VIOLACEAE**

*Viola nemoralis* Kuetz.,  $2n = 20$ ; Russian Federation, Republic of Dagestan, D.A. Krivenko 13743 (IRK, VLA).

**IAPT chromosome data 38/10**

Anna V. Shatokhina,\* Tatiana A. Poliakova & Evgeniy A. Bondarevich

\*Address for correspondence: [shatokhina78@mail.ru](mailto:shatokhina78@mail.ru)

The work was carried out within the framework of the state assignment of the Ministry of Science and Higher Education of the Russian Federation for the N.I. Vavilov Institute of General Genetics of the Russian Academy of Sciences No. 0112-2019-0001.

All materials CHN; collectors: APE = A.P. Efimova, EAB = E.V. Bondarevich, TAP = T.A. Poliakova; voucher specimens (= herbarium and seeds) are deposited in Vavilov Institute of General Genetics of RAS (VIGG), Laboratory of Population Genetics, Moscow.

**ROSACEAE**

*Spiraea aquilegifolia* Pall.,  $2n = 18$ ,  $2n = 36$ ; Russian Federation, Zabaikalskii Krai, EAB 10315.

*Spiraea chamaedryfolia* L.,  $2n = 36$ ,  $2n = 27$ ,  $2n = 18$ ,  $2n = 32$ ; Russian Federation, Krasnoyarskii Krai, TAP 10916.

*Spiraea dahurica* (Rupr.) Maxim.,  $2n = 18$ ,  $2n = 27$ ,  $2n = 36$ ; Russian Federation, Republic of Sakha (Yakutia), TAP & APE 11217.

*Spiraea flexuosa* Fisch. ex Cambess.,  $2n = 18$ ; Russian Federation, Republic of Buryatia, TAP 11517.

*Spiraea media* Fr.Schmidt.,  $2n = 18$ ,  $2n = 27$ ; Russian Federation, Republic of Sakha (Yakutia), TAP & APE 11915.

*Spiraea pubescens* Turcz.,  $2n = 18$ ,  $2n = 36$ ; Russian Federation, Zabaikalskii Krai, EAB 12115.

*Spiraea stevenii* (C.K.Schneid.) Rydb.,  $2n = 18$ ,  $2n = 27$ ; Russian Federation, Republic of Sakha (Yakutia), TAP 12517.

**IAPT chromosome data 38/11**

Julia V. Shner,\* Tatiana V. Alexeeva, Michail G. Pimenov & Tatiana A. Ostroumova

\*Address for correspondence: [juliashner@gmail.com](mailto:juliashner@gmail.com)

All material CHN; collectors: MP = M.G. Pimenov, SS = S. Stoyanov, TO = T.A. Ostroumova.

**APIACEAE / UMBELLIFERAE**

*Ammoides pusilla* (Brot.) Breistr.,  $n = 6$ ; Croatia, MP 7-18 (MW).

*Astydamia latifolia* (L.) Baill.,  $n = 11$ ,  $2n = 22$ ; Spain, Canary Islands, MP 15-17 (MW).

- Bupleurum falcatum* L.,  $n = 8$ ; Romania, 13 Aug 2016, *TO s.n.* (MW).
- Bupleurum glumaceum* Sm.,  $n = 8$ ; Croatia, *MP 17-18* (MW).
- Bupleurum salicifolium* R.Br.,  $2n = 32$ ; Spain, Canary Islands, *MP 17-17* (MW).
- Bupleurum veronense* Turra,  $2n = 16$ ; Croatia, 02 Sep 2017, *TO s.n.* (MW). Italy, 30 Sep 2018, *TO s.n.* (MW).
- Canaria tortuosa* (Webb & Berthel.) Jim. Mejias & P.Vargas,  $2n = 22$ ; Spain, Canary Islands, *MP 1-17* (MW).
- Chaerophyllum coloratum* L.,  $2n = 22$ ; Bosnia & Hercegovina, *MP 20-18* (MW). Croatia, 08 Sep 2017, *TO s.n.* (MW); Croatia, 09 Sep 2017, *TO s.n.* (MW).
- Conopodium majus* (Gouan) Loret,  $2n = 22$ ; Norway, 15 Jul 2016, *MP s.n.* (MW).
- Crithmum maritimum* L.,  $2n = 22$ ; Spain, Canary Islands, 22 Sep 2018, *MP s.n.* (MW).
- Daucus carota* L.,  $n = 9$ ; Croatia, 07 Sep 2017, *TO s.n.* (MW). Romania, 06 Aug 2016, *TO s.n.* (MW).  $2n = 18$ ; Croatia, 09 Sep 2017, *TO s.n.* (MW).
- Dichoropetalum schottii* (Besser ex DC.) Pimenov & Kljuykov,  $2n = 22$ ; Italy, 30 Sep 2018, *TO s.n.* (MW).
- Eryngium amethystinum* L.,  $2n = 14$ ; Croatia, 07 Sep 2017, *TO s.n.* (MW).
- Eryngium creticum* Lam.,  $n = 7$ ; Croatia, *MP 25-18* (MW).
- Ferulago galbanifera* (Mill.) W.D.J.Koch,  $n = 11$ ; Croatia, *MP 10-18* (MW).
- Heracleum sphondylium* L.,  $n = 11$ ; Croatia, 24 Jun 2018, *MP s.n.* (MW).
- Katapsuxis silaifolia* (Jacq.) Reduron & al.,  $2n = 22$ ; Italy, 30 Sep 2018, *TO s.n.* (MW).
- Oreoselinum nigrum* Delarbre,  $n = 11$ ,  $2n = 22$ ; Italy, 30 Sep 2018, *TO s.n.* (MW).
- Orlaya grandiflora* (L.) Hoffm.,  $2n = 20$ ; Croatia, 08 Sep 2017, *TO s.n.* (MW).
- Pimpinella junionae* Ceballos & Ortuno,  $n = 10$ ; Spain, Canary Islands, *MP 16-17* (MW).
- Pimpinella saxifraga* L.,  $n = 10$ ; Romania, 13 Aug 2016, *TO s.n.* (MW).
- Portenschlagiella ramosissima* (Port.) Tutin,  $n = 11$ ; Croatia, *MP 15-18* (MW);  $2n = 22$ ; Croatia, 10 Sep 2017, *TO s.n.* (MW).
- Seseli besserianum* Stoyanov & Ostr.,  $2n = 22$ ; Bulgaria, *SS s.n.* (SOM 176662), *SS s.n.* (SOM 176676), *SS s.n.* (SOM 176664).
- Seseli globiferum* Vis.,  $n = 11$ ; Montenegro, *MP 15-19* (MW).
- Tordylium apulum* L.,  $2n = 20$ ; Croatia, *MP 5-18* (MW).
- Torilis arvensis* (Huds.) Link,  $2n = 12$ ; Spain, Canary Islands, 20 Sep 2017, *MP s.n.* (MW).
- Torilis ucranica* Spreng.,  $2n = 16$ ; Italy, 29 Sep 2018, *TO s.n.* (MW).
- Xanthoselinum alsaticum* (L.) Schur,  $n = 11$ ; Albania, 02 Aug 2018, *MP s.n.* (MW);  $n = 11$ ,  $2n = 22$ ; Italy, 30 Sep 2018, *TO s.n.* (MW).



## IAPT CHROMOSOME DATA

## IAPT chromosome data 38 – Extended version

Karol Marhold (ed.),<sup>1,2</sup> Jaromír Kučera (ed.),<sup>1</sup> Tatiana G. Aleksandrova,<sup>3</sup> Tatiana V. Alexeeva,<sup>4</sup> Elena A. Andriyanova,<sup>5</sup> Evgeny V. Banaev,<sup>6</sup> Alexander A. Bobrov,<sup>7</sup> Evgeny V. Boltenkov,<sup>8</sup> Evgeniy A. Bondarevich,<sup>9</sup> Irina G. Boyarskikh,<sup>6</sup> Olga A. Chernyagina,<sup>10</sup> Daba G. Chimitov,<sup>11</sup> Tatyana V. Dyubenko,<sup>3</sup> Elena A. Dzyubenko,<sup>3</sup> Aleksandr L. Ebel,<sup>6,12</sup> Andrey S. Erst,<sup>6</sup> Anna A. Erst,<sup>6</sup> Anahit G. Ghukasyan,<sup>13</sup> Maria G. Khoreva,<sup>5</sup> Mikhail S. Knyazev,<sup>14</sup> Violetta V. Kotseruba,<sup>15,16</sup> Denis A. Krivenko,<sup>17</sup> Polina A. Kuzmina,<sup>17</sup> Eduard M. Machs,<sup>15</sup> Natalia Yu. Malysheva,<sup>3</sup> Elizaveta Yu. Mitrenina,<sup>12</sup> Olga A. Mochalova,<sup>5</sup> Yulia A. Myakoshina,<sup>15</sup> Anush A. Nersesyan,<sup>13</sup> Tatiana A. Ostroumova,<sup>4</sup> Tatyana V. Pankova,<sup>6</sup> Galina I. Pendinen,<sup>3</sup> Michail G. Pimenov,<sup>4</sup> Tatiana A. Poliakova,<sup>18</sup> Nina S. Probatova,<sup>19</sup> Yuliya A. Pshenichkina,<sup>6</sup> Alexander V. Rodionov,<sup>15,16</sup> Anna V. Shatkhina,<sup>18</sup> Dmitry N. Shaulo,<sup>6</sup> Julia V. Shner,<sup>4</sup> Mariya A. Tomoshevich,<sup>6</sup> Vasily S. Vishnyakov,<sup>7</sup> Wei Wang<sup>20</sup> & Elena Yu. Zykova<sup>6</sup>

- 1 *Plant Science and Biodiversity Centre, Institute of Botany, Slovak Academy of Sciences, Dúbravská cesta 9, 845 23 Bratislava, Slovak Republic*
- 2 *Department of Botany, Charles University, Benátská 2, 128 01 Praha, Czech Republic*
- 3 *N.I. Vavilov All-Russian Institute of Plant Genetic Resources (VIR), Bolshaya Morskaya Str. 42–44, 190000 St. Petersburg, Russian Federation*
- 4 *Botanical Garden, Moscow State University, 119234 Moscow, Russian Federation*
- 5 *Institute of Biological Problems of the North FEB RAS, Portovaya St. 18, 685000 Magadan, Russian Federation*
- 6 *Central Siberian Botanical Garden, Siberian Branch of the Russian Academy of Sciences, Zolotodolinskaya Str. 101, 630090 Novosibirsk, Russian Federation*
- 7 *I.D. Papanin Institute for Biology of Inland Waters of the Russian Academy of Sciences, 152742 Borok, Russian Federation*
- 8 *Botanical Garden-Institute, Far Eastern Branch, Russian Academy of Sciences, Makovskogo Str. 142, 690024 Vladivostok, Russian Federation*
- 9 *Department of Chemistry and Biochemistry, Chita State Medical Academy, Gorkiy Str. 39a, 672000 Chita, Russian Federation*
- 10 *Kamchatka Branch of the Pacific Geographical Institute of the Far Eastern Branch of the Russian Academy of Sciences, Partizanskaya Str. 6, 683000 Petropavlovsk-Kamchatskii, Russian Federation*
- 11 *Institute of General & Experimental Biology of the Siberian Branch of the Russian Academy of Sciences, Sakhyanovoi Str. 6, 670047 Ulan-Ude, Russian Federation*
- 12 *Tomsk State University, Lenin Ave. 36, 634050 Tomsk, Russian Federation*
- 13 *A. Takhtajyan Institute of Botany, National Academy of Sciences of Armenia, Acharyan Str. 1, 0063 Yerevan, Armenia*
- 14 *Botanical Garden of the Ural Branch of the Russian Academy of Sciences, Vosmogo Marta Str. 202b, 620144 Yekaterinburg, Russian Federation*
- 15 *Komarov Botanical Institute of the Russian Academy of Sciences, Prof. Popov Str. 2, 197376 St. Petersburg, Russian Federation*
- 16 *Saint Petersburg State University (SPbSU), Universitetskaya Emb. 7/9, 199034 St. Petersburg, Russian Federation*
- 17 *Siberian Institute of Plant Physiology & Biochemistry of the Siberian Branch of the Russian Academy of Sciences, Lermontov Str. 132, 664033 Irkutsk, Russian Federation*
- 18 *Department of Population Genetics, N.I. Vavilov Institute of General Genetics (VIGG), Russian Academy of Sciences, Gubkina Str. 3, 119991 Moscow, Russian Federation*
- 19 *Federal Scientific Center of the East Asia Terrestrial Biodiversity of the Far Eastern Branch of the Russian Academy of Sciences, Centennial Ave. 159, 690022 Vladivostok, Russian Federation*
- 20 *State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany of the Chinese Academy of Sciences, Nanxincun 20, Xiangshan, 100093 Beijing, China*

**Author information** KM, <https://orcid.org/0000-0002-7658-0844>; JK, <https://orcid.org/0000-0002-9983-7630>; TGA, <https://orcid.org/0000-0001-9152-4528>; TVA, –; EAA, <https://orcid.org/0000-0003-1441-8283>; EVB, <https://orcid.org/0000-0003-1314-8429>; AAB, <https://orcid.org/0000-0002-9819-5111>; EVB, <https://orcid.org/0000-0002-7310-659X>; EAB, –; IGB, <https://orcid.org/0000-0001-6212-0129>; OACH, <https://orcid.org/0000-0003-0801-8961>; DGCh, <https://orcid.org/0000-0002-1251-3167>; TVD, <https://orcid.org/0000-0002-3142-2877>; EAD, <https://orcid.org/0000-0003-4576-1527>; ALE, <https://orcid.org/0000-0002-7889-4580>; ASE, <https://orcid.org/0000-0002-4844-0254>; AAE, <https://orcid.org/0000-0002-1980-4100>; AGG, <https://orcid.org/0000-0002-4580-2061>; MGK, <https://orcid.org/0000-0003-2290-3043>; MSK, <https://orcid.org/0000-0002-3868-8010>; VVK, <https://orcid.org/0000-0003-1872-2223>; DAK, <https://orcid.org/0000-0003-2658-1723>; PAK, <https://orcid.org/0000-0003-1096-6223>; EMM, <https://orcid.org/0000-0001-9347-5379>; NYuM, <https://orcid.org/0000-0002-5688-6694>; EYuM, <https://orcid.org/0000-0002-8487-5714>; OAM, <https://orcid.org/0000-0002-1325-112X>; YuAM, <https://orcid.org/0000-0002-4668-5450>; AAN, <https://orcid.org/0000-0002-4380-7715>; TAO, –; TVP, <https://orcid.org/0000-0003-3661-0719>; GIP, <https://orcid.org/0000-0003-2814-7074>; MGP, –; TAP, –; NSP, <https://orcid.org/0000-0002-3279-4824>; YuAP, <https://orcid.org/0000-0002-2527-2577>; AVR, <https://orcid.org/0000-0003->

1146-1622; AVS, –; DNS, <https://orcid.org/0000-0002-1835-8532>; JVS, –; MAT, <https://orcid.org/0000-0002-0307-5919>; VSV, <https://orcid.org/0000-0003-3807-2221>; WW, <https://orcid.org/0000-0001-6901-6375>; EYuZ, <https://orcid.org/0000-0002-1847-5835>;

Publication of the contributions from Russian scientists cannot be in any way interpreted as support of the current military policy of the Russian Federation either by editors or by the International Association for Plant Taxonomy.

## IAPT chromosome data 38/1

Elena A. Andriyanova,\* Olga A. Mochalova, Maria G. Khoreva & Alexander A. Bobrov

\*Address for correspondence: [elena.a.andriyanova@gmail.com](mailto:elena.a.andriyanova@gmail.com)

This work was partially supported by the Russian Foundation for Basic Research (grants no. 19-04-01090-a, 19-05-00133-a) and performed in the framework of the state assignment (themes no. 12105110 0099-5, IBIW RAS and no. AAAA-A17-117122590002-0, IBPN FEB RAS).

All cytological investigations have been carried out on root tips. The root tips were collected in natural habitats or obtained from seedlings, pretreated in 0.2% colchicine, fixed in methanol : acetic acid (3 : 1) and stained in 1% acetic hematoxylin (Smirnov, 1968).

### RANUNCULACEAE

*Ranunculus ashibetsuensis* Wiegleb

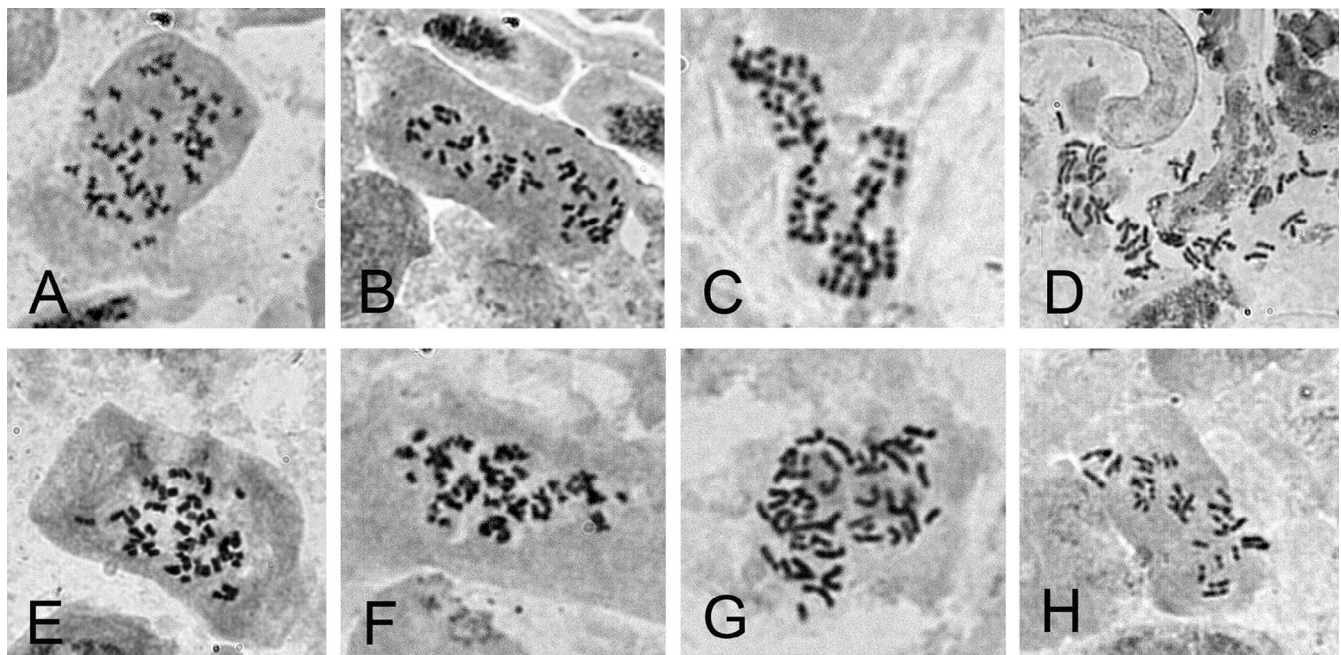
$2n = 48$ , CHN. Russian Federation, Kamchatskii Krai, vicinity of Paratunka town, small non-freezing stream, in water, 52°58'11.40"N, 158°15'26.97"E, 12 Mar 2021, O. Mochalova, A. Bobrov, E. Andriyanova & E. Chemeris M20001 (MAG 0011650) [Fig. 1A]; Russian Federation, Kamchatskii Krai, vicinity of Paratunka town, small

non-freezing stream, in water, 52°58'11.40"N, 158°15'26.97"E, 12 Mar 2021, O. Mochalova, A. Bobrov, E. Andriyanova & E. Chemeris M20002 (MAG 0011651) [Fig. 1B]; Russian Federation, Kamchatskii Krai, vicinity of Paratunka town, small non-freezing stream, in water, 52°58'11.40"N, 158°15'26.97"E, 12 Mar 2021, O. Mochalova, A. Bobrov, E. Andriyanova & E. Chemeris M20003 (MAG 0011652) [Fig. 1C]; Russian Federation, Kamchatskii Krai, vicinity of Elizovo city, Avacha River, non-freezing sand-pebble spit, 53°11'23.89"N, 158°23'26.45"E, 14 Mar 2021, O. Mochalova & A. Bobrov M20004 (MAG 0011740) [Fig. 1D]; Russian Federation, Kamchatskii Krai, vicinity of Elizovo city, Avacha River, non-freezing sand-pebble spit, 53°11'23.89"N, 158°23'26.45"E, 14 Mar 2021, O. Mochalova & A. Bobrov M20005 (MAG 0011741) [Fig. 1E].

Different chromosome numbers ( $2n = 16, 18, 24, 32, 36, 48$ ) for this species were reported earlier from Kamchatskii Krai, Sakhalin and Kunashir Island (Bobrov & al., 2015). We counted chromosomes for five samples of this species from two localities and found  $2n = 48$  for all plants, which was reported as the most frequent number for the species (Wiegleb & al., 2017).

*Ranunculus codyanus* B.Boivin

$2n = 48$ , CHN. Russian Federation, Chukotskii Avtonomnyi Okrug, Anadyrskii Raion, vicinity of Ugol'nye Kopi settlement, small technogenic pond near the road, 64°42'10.14"N, 177°43'



**Fig. 1.** Mitotic metaphases. **A**, *R. ashibetsuensis* M20001,  $2n = 48$ ; **B**, *R. ashibetsuensis* M20002,  $2n = 48$ ; **C**, *R. ashibetsuensis* M20003,  $2n = 48$ ; **D**, *R. ashibetsuensis* M20004,  $2n = 48$ ; **E**, *R. ashibetsuensis* M20005,  $2n = 48$ ; **F**, *Ranunculus codyanus* K20007,  $2n = 48$ ; **G**, *R. codyanus* K20005,  $2n = 48$ ; **H**, *R. nipponicus*,  $2n = 32$ .

22.03°E, 17 m, 26 Jun 2020, *M. Khoreva K20007* (MAG 0005388) [Fig. 1F]; Russian Federation, Chukotskii Avtonomnyi Okrug, Anadyrskii Raion, vicinity of Ugol'nye Kopi settlement, small technogenic pond near the mouth of the Pervaya Rechka River, 64°41'26.05"N, 177°43'19.60"E, 4 m, 12 Jul 2020, *M. Khoreva K20005* (MAG 0005384) [Fig. 1G].

*Ranunculus nipponicus* Nakai

2n = 32, CHN. Russian Federation, Magadanskaya Oblast', Olskii Raion, tributary of the Yana River, non-freezing stream, 59°45'39.20"N, 149°11'24.61"E, 27 Mar 2021, *O. Mochalova M20006* (MAG 0011714) [Fig. 1H].

*Ranunculus trichophyllus* Chaix

2n = 32, CHN. Russian Federation, Magadanskaya Oblast', Khasynskii Raion, vicinity of Talaya settlement, valley of the Talaya River, small lake in *Larix cajanderi* forest, 61°10'10.57"N, 152°20'16.15"E, 02 Jul 2019, *O. Mochalova M19020* (MAG 0001466).

LITERATURE CITED

- Bobrov, A.A., Erst, A.S., An'kova, T.V. & Movergoz, E.A.** 2015. Chisla khromosom vodyanykh lyutikov (*Ranunculus* sektsiya *Batrachium*, Ranunculaceae) flory Rossii [Chromosome numbers of water crowfoots (*Ranunculus* section *Batrachium*, Ranunculaceae) of the flora of Russia]. *Bot. Zhurn. (Moscow & Leningrad)* 100: 595–601. [in Russian] <https://doi.org/10.1134/S0006813615060095>
- Smirnov, Yu.A.** 1968. Uskorenniy metod issledovaniya somaticheskikh khromosom plodovykh [Accelerated method for studying somatic chromosomes in fruit trees]. *Tsitologia* 10: 1132–1134. [in Russian]
- Wiegleb, G., Bobrov, A.A. & Zalewska-Galosz, J.** 2017. A taxonomic account of *Ranunculus* section *Batrachium* (Ranunculaceae). *Phytotaxa* 319: 1–55. <https://doi.org/10.11646/phytotaxa.319.1.1>

IAPT chromosome data 38/2

**Evgeny V. Banaev,\* Mariya A. Tomoshevich, Irina G. Boyarskikh, Yuliya A. Pshenichkina & Anna A. Erst**

\*Address for correspondence: [almus2005@mail.ru](mailto:almus2005@mail.ru)

This research was carried out within the framework of the topic “Theoretical and applied aspects of studying genofunds of natural plant populations and conservation of plant diversity ‘outside the typical environment’ (ex situ)” (AAAA-A21-121011290027-6).

\* First chromosome count from the given region.

CAPRIFOLIACEAE

\**Lonicera boczkarnikovae* Plekhanova

2n = 18, CHN. China, Heilongjiang Province, 10 km south of Boli City, 45°39'02.6"N, 130°30'29.3"E, 01 Jul 2014, *I.G. Boyarskikh 3001604* (NSK).

2n = 18, CHN. Russian Federation, Primorskii Krai, Chuguevskii District, left bank of the Pravaya Poperechka River, 43°42'22"N, 133°51'16"E, 06 Aug 2020, *I.G. Boyarskikh 3001605* (NSK).

\**Lonicera caerulea* subsp. *altaica* (Pall.) Gladkova

2n = 36, CHN. Russian Federation, Republic of Altai, Ust'-Koksinskii District, left bank of the Katun River, the southwestern

foot of Mt. Belukha, 49°43'52.5"N, 86°32'46.2"E, 03 Aug 2021, *I.G. Boyarskikh 3001599* (NSK).

2n = 36, CHN. Russian Federation, Republic of Altai, Ust'-Koksinskii District, vicinity of Verkhni Uimon village, northwestern spur of the Katunskii Ridge, right bank of the Okol River, 50°10'05.8"N, 85°42'24.9"E, 21 Jul 2015, *I.G. Boyarskikh 3001600* (NSK).

2n = 36, CHN. Russian Federation, Republic of Altai, Ust'-Koksinskii District, vicinity of Multa village, right bank of the Multal River, 50°05'38.1"N, 85°54'17.1"E, 01 Jul 2019, *I.G. Boyarskikh 3001601* (NSK).

2n = 36, CHN. Russian Federation, Republic of Altai, Kosh-Agachskii District, Severo-Chuyskii Range, left bank of the Kyzylaryk River, 50°05'15.3"N, 87°57'03.1"E, 27 Jul 2017, *I.G. Boyarskikh 3001602* (NSK).

\**Lonicera caerulea* subsp. *emphylocalyx* (Maxim.) Plekhanova

2n = 36, CHN. Russian Federation, Yuzhno-Kurilskii Urban District, Sakhalin Region, Kunashir island, vicinity of the village of Golovnino, right bank of the Rikorda River, 43°44'28"N, 145°32'05"E, 15 Aug 2015, *I.G. Boyarskikh 3001606* (NSK).

\**Lonicera caerulea* subsp. *pallasii* (Ledeb.) Browicz

2n = 36, CHN. Russian Federation, Tomsk region, Bakcharskii District, vicinity of the village of Plotnikovo, right bank of the Iksha River, 56°50'10.01"N, 83°07'57.04"E, 26 Jul 2013, *I.G. Boyarskikh 3001603* (NSK).

\**Lonicera edulis* Turcz. ex Freyn

2n = 18, CHN. Russian Federation, Republic of Buryatia, Pribaikalskii District, the bank of the Turka River, on the shore of Lake Baikal, 52°58'14"N, 108°14'43.09"E, 23 Jul 2021, *E.V. Banaev & M.A. Tomoshevich 3001597* (NSK).

\**Lonicera hispida* Pall. ex Schult.

2n = 18, CHN. Russian Federation, Republic of Altai, Ust'-Koksinskii District, left bank of the Katun River, southwestern foot of Mt. Belukha, 49°43'52.09"N, 86°32'46.01"E, 03 Aug 2021, *I.G. Boyarskikh 3001598* (NSK).

FABACEAE

\**Caragana bungei* Ledeb.

2n = 32, 48, 52, CHN. Russian Federation, Republic of Tuva, Tandinskii District, shore of Lake Khadyn, 51°22.262'N, 94°28.301'E, 03 Aug 2021, *E.V. Banaev & M.A. Tomoshevich 3001744* (NSK).

2n = 24, 32, CHN. Russian Federation, Republic of Tuva, Teskhenskii District, vicinity of Beldir-Aryg village, steppe, 50°33.757'N, 94°55.066'E, 05 Aug 2021, *E.V. Banaev & M.A. Tomoshevich 3001749* (NSK).

\**Caragana microphylla* Lam.

2n = 24, 32, CHN. Russian Federation, Buryatia, Kyakhtinskii District, vicinity of Ust'-Kyakhta village, bank of the river Selenga, Mt. Chernaya, southwestern rocky slope, 50°31.541'N, 106°16.117'E, 22 Jul 2021, *E.V. Banaev & M.A. Tomoshevich 3001751* (NSK).

\**Caragana spinosa* (L.) Hornem.

2n = 16, 32, 48, CHN. Russian Federation, Buryatia, Selenginskii District, lake Gusinoe, western sandy shore, 51°06.167'N, 106°18.813'E, 25 Jul 2021, *E.V. Banaev & M.A. Tomoshevich 3001753* (NSK).

**LAMIACEAE**\**Thymus elegans* Serg.

$2n = 14$ , CHN. Russian Federation, Republic of Altai, Ongudaiskii District, vicinity of Inya village, 50°27'10"N, 86°37'17"E, 17 Aug 2021, A.Ya. Pshenichkin 3001520 (NSK).

\**Thymus marschallianus* Willd.

$2n = 28$ , CHN. Russian Federation, Novosibirskii region, Zdvinskii District, vicinity of Chulim village, 54°33'49"N, 78°20'45"E, 25 Aug 2019, A.Ya. Pshenichkin 3001521 (NSK).

**NITRARIACEAE**\**Nitraria schoberi* L.

$2n = 48$ , CHN. Russian Federation, Astrakhanskaya Oblast', Limanskii Raion, vicinity of Rinok village, 45°40'18"N, 47°34'34"E, 25 Jul 2018, E.V. Banaev & M.A. Tomoshevich 3000931 (NSK).

**POLYGONACEAE**\**Atraphaxis davurica* Jaub. & Spach

$2n = 48, 56$ , CHN. Russian Federation, Buryatia, Selenginskii District, lake Gusinoe, western sandy shore, 51°06.167'N, 106°18.813'E, 24 Jul 2021, E.V. Banaev & M.A. Tomoshevich 3001756 (NSK).

$2n = 48, 56$ , CHN. Russian Federation, Buryatia, Selenginskii District, right bank of the river Chikoi, near the road to Zurgan-Debe, rocks, 51°01.998'N, 106°39.759'E, 22 Jul 2021, E.V. Banaev & M.A. Tomoshevich 3001711 (NSK).

$2n = 48, 56$ , CHN. Russian Federation, Buryatia, Selenginskii District, vicinity of Tokhoi village, shore of the lake Salty, 51°21.980'N, 106°34.606'E, 25 Jul 2021, E.V. Banaev & M.A. Tomoshevich 3001773 (NSK).

\**Atraphaxis davurica* var. *chikoensis* Yurtseva & Mavrodiev

$2n = 48, 56$ , CHN. Russian Federation, Buryatia, Kyakhtinskii District, rocky outcrops in the vicinity of Anagustai village, 49°58.357'N, 107°36.614'E, 23 Jul 2021, E.V. Banaev & M.A. Tomoshevich 3001759 (NSK).

\**Atraphaxis frutescens* (L.) K.Koch

$2n = 16, 24$ , CHN. Russian Federation, Krasnoyarskii Krai, vicinity of Minusinsk city, right bank of the river Yenisei, 53°39.587'N, 91°34.525'E, 06 Aug 2021, E.V. Banaev & M.A. Tomoshevich 3001765 (NSK).

$2n = 16$ , CHN. Russian Federation, Republic of Khakassiya, Bogradskii District, vicinity of Troitskoe village, 54°15.399'N, 91°07.174'E, 06 Aug 2021, E.V. Banaev & M.A. Tomoshevich 3001768 (NSK).

\**Atraphaxis pungens* (M.Bieb.) Jaub. & Spach

$2n = 24, 36, 38$ , CHN. Russian Federation, Krasnoyarskii Krai, vicinity of Minusinsk city, right bank of the river Yenisei, 53°39.942'N, 91°34.988'E, 06 Aug 2021, E.V. Banaev & M.A. Tomoshevich 3001770 (NSK).

$2n = 32, 38, 40$ , CHN. Russian Federation, Republic of Tuva, Tes-Khemskaia, vicinity of Beldir-Aryg village, steppe, 50°33.757'N, 94°55.066'E, 05 Aug 2021, E.V. Banaev & M.A. Tomoshevich 3001760 (NSK).

\**Atraphaxis selengensis* Yurtseva & Mavrodiev

$2n = 24, 32$ , CHN. Russian Federation, Buryatia, Selenginskii District, bank of the river Chikoi, turn to Enkhor village, sand dunes,

rock, 50°59.751'N, 106°38.088'E, 24 Jul 2021, E.V. Banaev & M.A. Tomoshevich 3001774 (NSK).

**IAPT chromosome data 38/3**

**Tatyana V. Dyubenko, Tatiana G. Aleksandrova, Elena A. Dzyubenko, Violetta V. Kotseruba,\* Eduard M. Machs & Alexander V. Rodionov**

\*Address for correspondence: [viola.kotseruba@gmail.com](mailto:viola.kotseruba@gmail.com)

This work was performed within the framework of the VIR budget projects No. 0481-2022-0002 "Identification of the possibilities of legume crop genetic diversity to optimize their breeding and diversify uses in various sectors of the national economy" and No. 0481-2022-0006 "Disclosing the scientific potential of the herbarium collection at VIR as an independent specific unit of worldwide agricultural biodiversity conservation for scientifically justified mobilization, effective studying and preservation of genetic diversity", the framework of the State Task No. AAAA-A18-118040290161-3 and the grant No. 60256916 of SPbSU.

Seed vouchers have been deposited in the seed collection of the N.I. Vavilov All-Russian Institute of Plant Genetic Resources (VIR), herbarium vouchers in WIR. Herbarium samples of species of the genus *Elymus* L. (Poaceae) reported in this communication were grown in the Pushkin and Pavlovsk Laboratories of VIR from seeds gathered in nature and collected by E.A. Dzyubenko on 20 September 2021. All materials fixed on seedlings produced from seeds collected in VIR collecting missions.

**FABACEAE***Vicia cracca* L. (s.l.)

$2n = 28$ , CHN. Russian Federation, Karachay-Cherkess Republic, Karachaevskii Raion, Mount Elmeztebe, above the village of Khurzuk, near the path among meadow vegetation, close to rocky scree surrounded by pine forest, 1728 m, 43°25.698'N, 42°11.295'E, 07 Sep 2009, V.A. Semenov, M.O. Burlyaeva, I.V. Seferova & L.V. Bagmet s.n. (VIR i-o144986; WIR 53616) [Fig. 2A]; Russian Federation, Krasnodarskii Krai, Adlerskii Raion, about 50 km W of Krasnaya Polyana village, Mount Aishkho, meadow slope of SW exposure with scree, 2334 m, 43°38.673'N, 40°27.346'E, 05 Aug 2010, L.V. Bagmet, A.P. Boyko & O.E. Radchenko s.n. (VIR i-o145598; WIR 101167).

*Vicia tetrasperma* (L.) Schreb.

$2n = 14$ , CHN. Russian Federation, Tambovskaya Oblast', Niki-forovskii Raion, vicinity of Staroe Saburovo village, forb meadow near a road, 158 m, 52°57'57.7"N, 41°00'46.8"E, 04 Aug 2017, G.A. Gridnev, M.O. Burlyaeva, G.V. Belskaya, E.A. Sergeev, E.A. Gubanova, Yu.V. Yurlov & N.I. Topilskaya s.n. (VIR i-o156232; WIR 53739) [Fig. 2B].

**POACEAE***Elymus dahuricus* Turcz. ex Griseb.

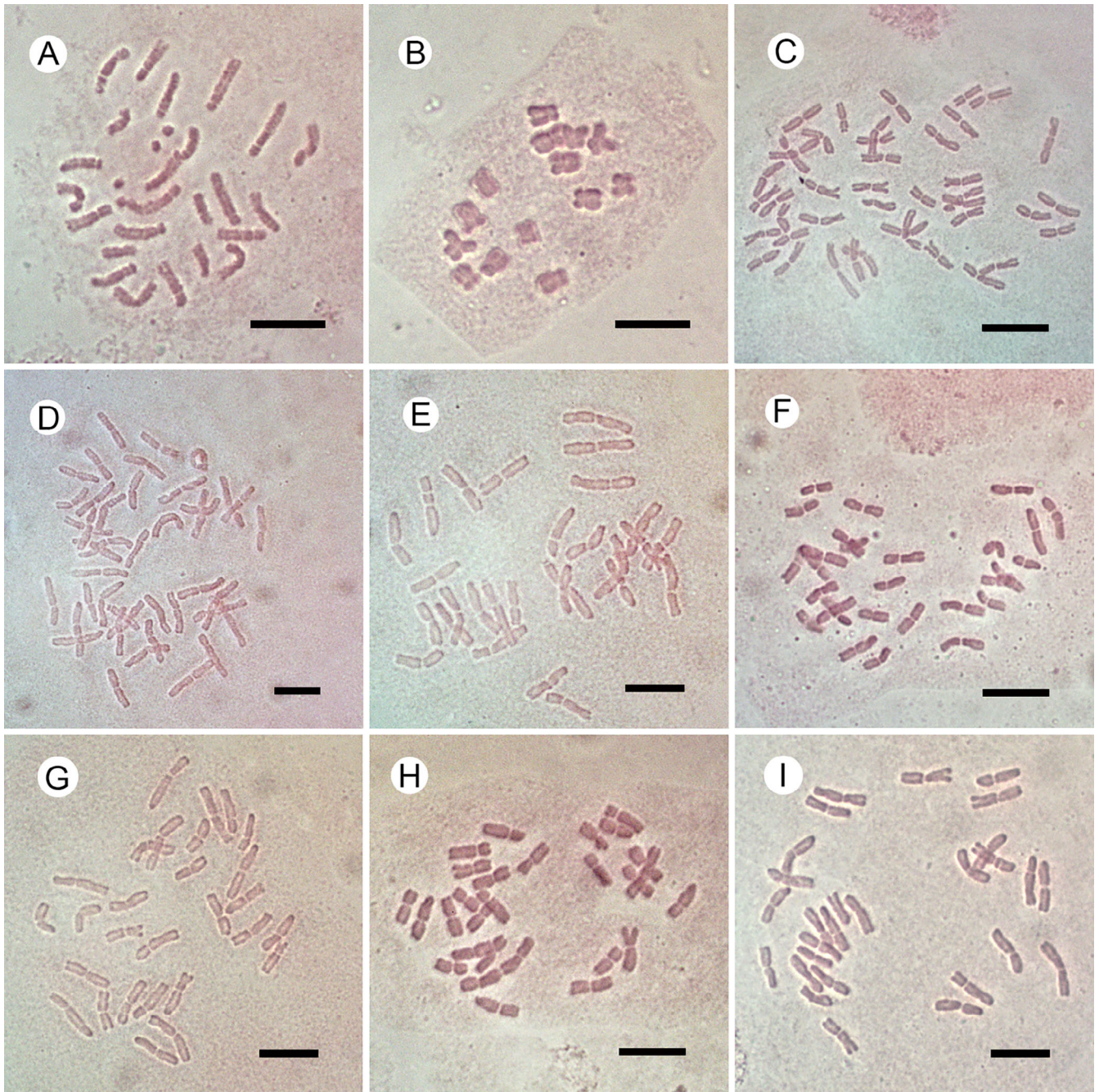
$2n = 42$ , CHN. Russian Federation, Republic of Altai, Ongudaiskii Raion, not far from Belyi Bom village, next to the "Old Chuya Tract" monument, near rocks, 812 m, 50°20'N, 86°16'E, 18 Aug 2016, I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitysyna, Z. Webber, M. Williamson, J. Piggitt & C. Fullilove s.n. (VIR i-o160072; WIR 101892) [Fig. 2C].

*Elymus excelsus* Turcz. ex Griseb. (s.str.)

$2n = 42$ , CHN. Russian Federation, Republic of Altai, Ongudaiskii Raion, meadow between the mountain and the bank of the Chuya River, 860 m, 50°20'N, 87°26'E, 18 Aug 2016, I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitsyna, Z. Webber, M. Williamson, J. Piggin & C. Fullilove s.n. (VIR i-o160070; WIR 101891) [Fig. 2D].

*Elymus fedtschenkoi* Tzvelev

$2n = 28$ , CHN. Russian Federation, Republic of Altai, Chemalskii Raion, base of educational practices of Barnaul State University near the Katun' River, about 1 km S of Chemal village, edge of a pine forest, 428 m, 51°20'N, 85°59'E, 22 Aug 2016, I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitsyna, Z. Webber, M. Williamson, J. Piggin & C. Fullilove s.n. (VIR i-o160107; WIR 101895) [Fig. 2E].



**Fig. 2.** Mitotic chromosomes. **A**, *Vicia cracca*,  $2n = 28$ ; **B**, *V. tetrasperma*,  $2n = 14$ ; **C**, *Elymus dahuricus*,  $2n = 42$ ; **D**, *E. excelsus*,  $2n = 42$ ; **E**, *E. fedtschenkoi*,  $2n = 28$ ; **F**, *E. gmelinii*,  $2n = 28$ ; **G**, *E. kronokensis*,  $2n = 28$ ; **H**, *E. sibiricus*,  $2n = 28$ ; **I**, *E. transbaicalensis*,  $2n = 28$ . — Scale bars = 10  $\mu\text{m}$ .

*Elymus gmelinii* (Ledeb.) Tzvelev

$2n = 28$ , CHN. Russian Federation, Republic of Altai, Ongudaiskii Raion, about 7 km SW of Karakol village, gorge near the Tuekta River, hay and pasture meadow, 893 m, 50°46'N, 85°53'E, 14 Aug 2016, *I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitsyna, Z. Webber, M. Williamson, J. Piggin & C. Fullilove s.n.* (VIR i-o160090; WIR 101893) [Fig. 2F].

*Elymus kronokensis* (Kom.) Tzvelev

$2n = 28$ , CHN. Russian Federation, Republic of Altai, Ongudaiskii Raion, about 20 km S of Belyi Bom village, near the Ai-Gulak River, slope of steppe meadow, overgrazing, 861 m, 50°19'N, 87°16'E, 18 Aug 2016, *I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitsyna, Z. Webber, M. Williamson, J. Piggin & C. Fullilove s.n.* (VIR i-o160118; WIR 101896) [Fig. 2G].

*Elymus sibiricus* L.

$2n = 28$ , CHN. Russian Federation, Republic of Altai, Shebalinskii Raion, about 2 km S of Shebalino village, bank of the Sema River, 861 m, 51°17'N, 85°40'E, 20 Aug 2016, *I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitsyna, Z. Webber, M. Williamson, J. Piggin & C. Fullilove s.n.* (VIR i-o160052; WIR 101889) [Fig. 2H]; Russian Federation, Republic of Altai, Ongudaiskii Raion, old Chuiskii tract near the Chike-Taman pass, near the road under the larches, 1038 m, 50°39'N, 86°17'E, 15 Aug 2016, *I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitsyna, Z. Webber, M. Williamson, J. Piggin & C. Fullilove s.n.* (VIR i-o160046; WIR 101890).

*Elymus transbaicalensis* (Nevski) Tzvelev (s.str.)

$2n = 28$ , CHN. Russian Federation, Republic of Altai, Ongudaiskii Raion, about 1 km S of Nizhnyaya Talda village, dry small meadow, grazing between the rocks and the bank of the Katun' River, and on the rocks, 953 m, 51°01'N, 85°38'E, 19 Aug 2016, *I.G. Chukhina, E.A. Dzyubenko, T.A. Sinitsyna, Z. Webber, M. Williamson, J. Piggin & C. Fullilove s.n.* (VIR i-o160121; WIR 101897) [Fig. 2I].

## IAPT chromosome data 38/4

Anahit G. Ghukasyan, Violetta V. Kotseruba\* & Anush A. Nersesyan

\*Author for correspondence: [viola.kotseruba@gmail.com](mailto:viola.kotseruba@gmail.com)

This work was performed within the framework of the State Task No. AAAA-A18-118040290161-3 and grant No. 60256916 of St. Petersburg State University.

All materials fixed on seedlings produced from collections of the Seed Bank of Armenian Flora (SBAF) of the A. Takhtajyan Institute of Botany of the National Academy of Sciences of the Republic of Armenia.

## APIACEAE

*Chaerophyllum aureum* L.

$2n = 22$ , CHN. Armenia, Lori Marz, near the village Dsegh, gorge “Surb Griqor”, 40.59°N, 44.40°E, 1070 m, 26 Aug 2011, *A.A. Nersesyan & I.G. Arevshatyan 183221* (ERE).

*Xanthogalum purpurascens* Avé-Lall.

$2n = 22$ , CHN. Armenia, Shirak Marz, village Jajur, mountain pass, 40.53°N, 44.00°E, 1970 m, 17 Aug 2011, *A.A. Nersesyan & I.G. Arevshatyan 183208* (ERE).

## ASTERACEAE

*Gundelia aragatsi* subsp. *steineri* Vitek & al.

$2n = 18$ , CHN. Armenia, Vayots Dzor Marz, W of Yeghegnadzor, SE of crossroad to Yeghegnadzor, slopes S of the river Arpa, 39.44041°N, 45.15162°E, 1050 m, 01 Jun 2009, *G.M. Fayvush 185090* (ERE).

*Rhaponticoides hajastana* (Tzvelev) M.V.Agab. & Greuter

$2n = 30$ , CHN. Armenia, Shirak Marz, Ani District, between villages of Bagravan and Haykadzor, 1450 m, 03 Jul 2007, *E.Ts. Gabrielian 180418* (ERE).

*Rhaponticoides tamaniae* (M.V.Agab.) M.V.Agab. & Greuter

$2n = 30$ , CHN. Armenia, Vayots Dzor Marz, Yeghegnadzor Region, near the village of Mozrov, along the village Gnishik, 1700 m, 06 Jul 2012, *G.M. Fayvush 186848* (ERE).

## BRASSICACEAE

*Conringia orientalis* (L.) C.Presl

$2n = 14$ , CHN. Armenia, Kotayk Marz, near the village of Voghjaberd, 40.178°N, 44.651°E, 1300 m, 18 Jul & 03 Aug 2012, *A.A. Nersesyan, P.P. Ghambaryan & I.G. Gabrielyan 186897* (ERE).

*Turritis glabra* L.

$2n = 12$ , CHN. Armenia, Gegharkunik Marz, lake Sevan, near the town of Sevan, 40.35°N, 44.59°E, 2000 m, 22 Aug 2012, *A.A. Nersesyan & E.M. Navasardyan 189958* (ERE).

## FABACEAE

*Medicago hemicycla* Grossh.

$2n = 16$ , CHN. Armenia, Lori Marz, near the town of Spitak, 40.74°N, 44.20°E, 1900 m, 05 Sep 2015, *I.G. Gabrielyan & I.G. Arevshatyan 200251* (ERE).

*Medicago minima* (L.) Bartal.

$2n = 16$ , CHN. Armenia, Yerevan, Avan District., 40.13°N, 44.35°E, 1350 m, 19 Jun 2015, *P.P. Ghambaryan & A.A. Nersesyan 200252* (ERE).

## PLANTAGINACEAE

*Plantago lanceolata* L.

$2n = 12$ , CHN. Armenia, Yerevan, Avan District, 40.13°N, 44.35°E, 1350 m, 19 Jun 2015, *P.P. Ghambaryan, I.G. Arevshatyan & A.A. Nersesyan 200253* (ERE).

## RANUNCULACEAE

*Ranunculus oxyspermus* Willd.

$2n = 16$ , CHN. Armenia, Yerevan, NE of Avan District, 40.13°N, 44.35°E, 1280 m, 26 May 2015, *P.P. Ghambaryan & A.A. Nersesyan 200250* (ERE).

## ROSACEAE

*Potentilla porphyrantha* Juz.

$2n = 14$ , CHN. Armenia, Vayots Dzor Marz, Alulsar Mts., Mt. Artavazdez, 2990 m, 24 Aug 2016, *G.M. Fayvush & K.Z. Janjughazyan 193408* (ERE).

*Potentilla recta* L.

$2n = 14$ , CHN. Armenia, Kotayk Marz, along the road to Sevan town, near “Tea House, 40.22°N, 44.39°E, 1750 m, 05 Aug 2013, *A.A. Nersesyan, I.G. Arevshatyan & E.M. Navasardyan 193020* (ERE).

**RUBIACEAE***Callipeltis cucullaris* (L.) DC.

$2n = 22$ , CHN. Armenia, Kotayk Marz, near the village of Zovuni, 40.10°N, 44.39°E, 1900 m, 07 Jun 2015, P.P. Ghambaryan, A.A. Nersesyan & I.G. Arevshatyan 200254 (ERE).

**IAPT chromosome data 38/5**

Denis A. Krivenko,\* Polina A. Kuzmina, Daba G. Chimitov, Mikhail S. Knyazev & Vasily S. Vishnyakov

\*Address for correspondence: [krivenko.irk@gmail.com](mailto:krivenko.irk@gmail.com)

The work was supported by the Ministry of Science and Higher Education of the Russian Federation, the grant No. 075-15-2020-787 for the implementation of Major scientific projects on priority areas of scientific and technological development (the project “Fundamentals, methods and technologies for digital monitoring and forecasting of the environmental situation on the Baikal natural territory”).

\* First chromosome count for the genus.

\*\* First chromosome count for the species or intraspecific taxon.

# New chromosome number (cytotype) for the species.

**AIZOACEAE***Trianthema portulacastrum* L.

$2n = 26$ , CHN. Egypt, South Sinai Governorate, S tip of Sinai Peninsula, coast of Red Sea, Sharm El Sheikh city, 27°54'53.53"N, 34°19'31.47"E, 07 Dec 2021, E.V. Matveeva 66766 (IRK).

**BORAGINACEAE***Stenosolenium saxatile* Turcz.

$2n = 10$ , CHN. Russian Federation, Republic of Buryatia, Seleninskii Raion, vicinity of Noselenginsk settlement, above dump, steppe slope, 51°04'02.25"N, 106°35'44.54"E, 07 Jul 2012, O.V. Imetkhenova & D.G. Chimitov 49511 (IRK) [Fig. 3A].

**FABACEAE (LEGUMINOSAE)**

\*\**Astragalus chakassiensis* Polozhij (= *A. depauperatus* agg.)

$2n = 64$ , CHN. Russian Federation, Republic of Khakassia, Shirinskii Raion, right bank of the Belyi Iyus River, vicinity of Efremkino village, 54°29'47"N, 89°27'45"E, 08 Jul 2016, A.L. Ebel s.n. (TK).

*Astragalus depauperatus* Ledeb.

$2n = 32$ , CHN. Russian Federation, Chelyabinskaya Oblast', Kizil'skii Raion, left bank of the Khudolaz River, about 2.5 km N of Novopokrovskii settlement, limestone rocks, Jul 2018, M.S. Knyazev s.n. (SVER); Russian Federation, Orenburgskaya Oblast', Gaiskii Raion, 50 m from the eastern outskirts of settlement of the Khalilovo railway station, small old quarry, 22 Jul 2018, M.S. Knyazev 01 (SVER), M.S. Knyazev 02 (SVER), M.S. Knyazev 05 (SVER), M.S. Knyazev 06 (SVER), M.S. Knyazev 07 (SVER), M.S. Knyazev 08 (SVER), M.S. Knyazev 10 (SVER).

*Astragalus frigidus* (L.) A.Gray

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Barguzinskii Raion, E macro-slope of Barguzinskii ridge, vicinity of Yarikta village, hydroelectric power station on the Ulzukha River, 53°54'37.11"N, 109°59'16.38"E, 27 Jul 2013, D.G. Chimitov &

O.V. Imetkhenova 64542 (IRK) [Fig. 3B]; Russian Federation, Republic of Buryatia, Mukhorshibirskii Raion, vicinity of Kusoty village, larch-pine forest, 51°21'23.19"N, 108°23'17.98"E, 20 Jul 2014, D.G. Chimitov 65279 (IRK) [Fig. 3C].

\*\**Astragalus kasachstanicus* Golosk.

$2n = 16$ , CHN. Kazakhstan, Akmolinskaya Oblast', Tselinogradskii Raion, right bank of the Nura River, 1.5 km N of Rakhymzhana Koshkarbaeva (Romanovka) village, gulches and rubble quarry, 28 Jun 2018, M.S. Knyazev s.n. (SVER).

*Astragalus mongholicus* Bunge

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Barguzinskii Raion, Barguzinskaya valley, vicinity of Ulyun village, forest edge, 54°53'12.61"N, 111°06'48.90"E, 25 Jul 2014, D.G. Chimitov 65282 (IRK); Russian Federation, Republic of Buryatia, Kurumkanskii Raion, Barguzinskaya valley, valley of the Barguzin River, Umkhei, pine forest edge, 54°59'02.88"N, 111°06'48.98"E, 27 Jul 2014, D.G. Chimitov 65273 (IRK) [Fig. 3D]; Russian Federation, Republic of Buryatia, Ulan-Ude city, Yuzhnyi settlement, sands on the road, 51°43'46.19"N, 107°42'08.45"E, 17 Jun 2014, D.G. Chimitov 65278 (IRK) [Fig. 3E]; Russian Federation, Republic of Buryatia, Ulan-Ude city, Yuzhnyi settlement, pine forest, 51°43'45.77"N, 107°42'47.53"E, 19 Jun 2014, D.G. Chimitov 65281 (IRK) [Fig. 3F]; Russian Federation, Zabaikalskii Krai, Duldurginskii Raion, about 25 km NNW of Alkhanai village, Alkhanai healing spring, pine-larch forest, 50°50'16.55"N, 113°23'34.85"E, 11 Aug 2014, D.G. Chimitov 65228 (IRK, LE, PVB).

\*\**Astragalus permiensis* var. *sacrimontis* Knjaz.

$2n = 64$ , CHN. Russian Federation, Republic of Bashkortostan, Sterlitamanskii Raion, Toratau (Tratau) Mt., 12 km SE of Sterlitamak town, 04 Aug 2017, M.S. Knyazev s.n. (IRK00006660) [Fig. 3G].

\*\**Astragalus sareptanus* A.K.Becker s.str. (= *A. rupifragus* auct. non. Pall.)

$2n = 16$ , CHN. Russian Federation, Republic of Bashkortostan, Tuimaziinskii Raion, right bank of the Usen River, N along the highway near Novosukkulovo village, slopes, 54°29'23.8"N, 53°55'55.8"E, 25 Jun 2017, M.S. Knyazev & V.M. Vasjukov s.n. (IRK00006659).

$2n = 96$ , CHN. Russian Federation, Orenburgskaya Oblast', Perevolotskii Raion, 2 km E of Syrt settlement of the railway station, 18 Jul 2018, M.S. Knyazev s.n. (SVER); Russian Federation, Volgogradskaya Oblast', right bank of the Ilovlya River, between Mikchailovka and Zakharovka villages, chalky cliffs, 16 Jun 2011, M.S. Knyazev s.n. (SVER).

\*\**Astragalus scopaeformis* Ledeb. (= *A. tenuifolius* L.)

$2n = 32$ , CHN. Russian Federation, Orenburgskaya Oblast', Perevolotskii Raion, NE of Syrt settlement of the railway station, elongated elevation, 19 Jul 2018, M.S. Knyazev s.n. (SVER) [Fig. 3H].

\*\**Astragalus storozhevae* Knjaz. var. *storozhevae* (= *A. pallescens* auct. non M.Bieb.)

$2n = 64$ , CHN. Russian Federation, Orenburgskaya Oblast', Kuvandykskii Raion, SW of Dubinovka railway station, from Chulpan village to W, elongated elevation, 21 Jul 2018, M.S. Knyazev s.n. (SVER) [Fig. 3I].

*Astragalus trigonocarpus* (Turcz.) Bunge

#  $2n = ca. 48$ , CHN. Russian Federation, Republic of Buryatia, Kurumkanskii Raion, Barguzinskaya valley, valley of the Barguzin

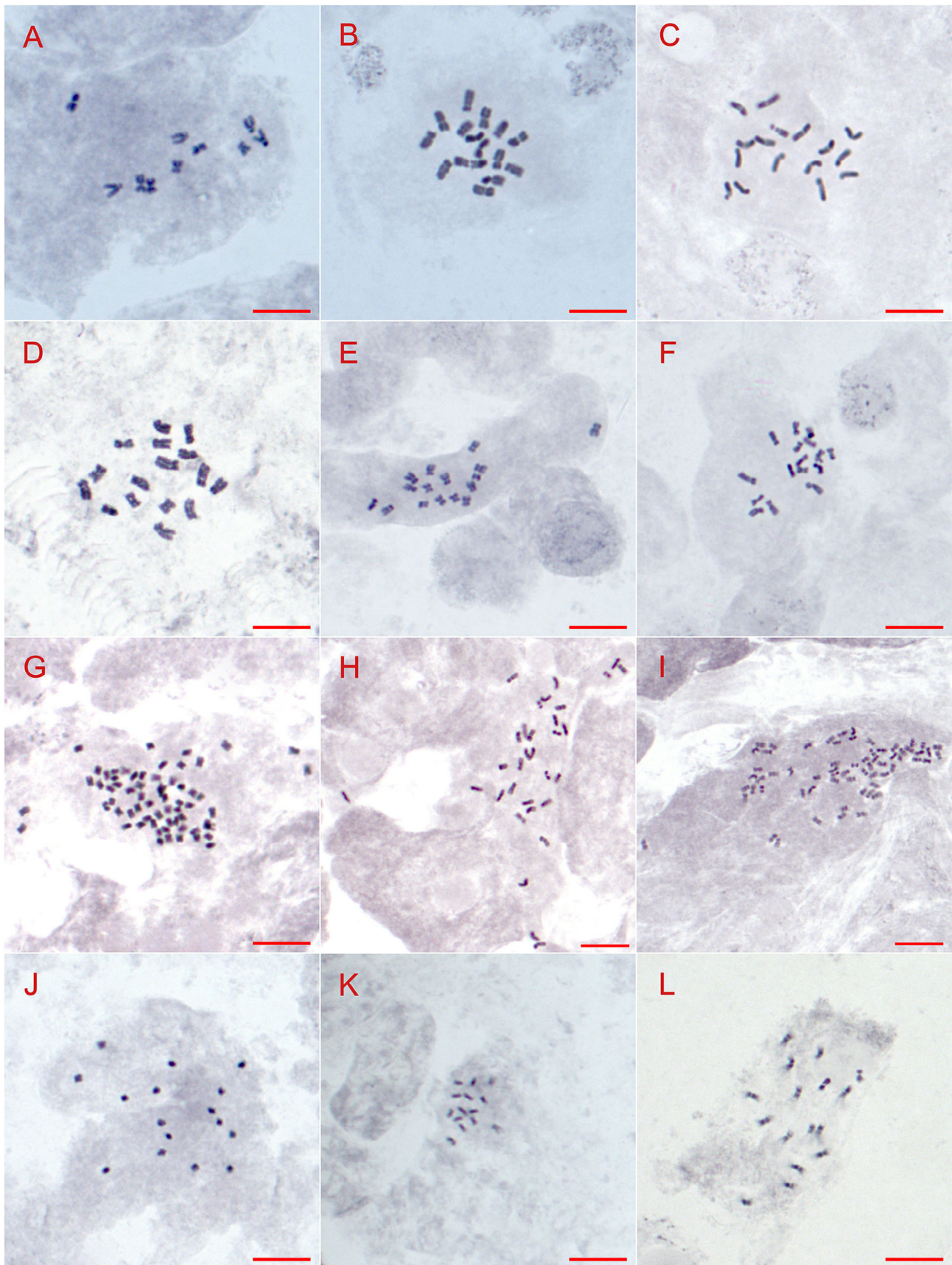


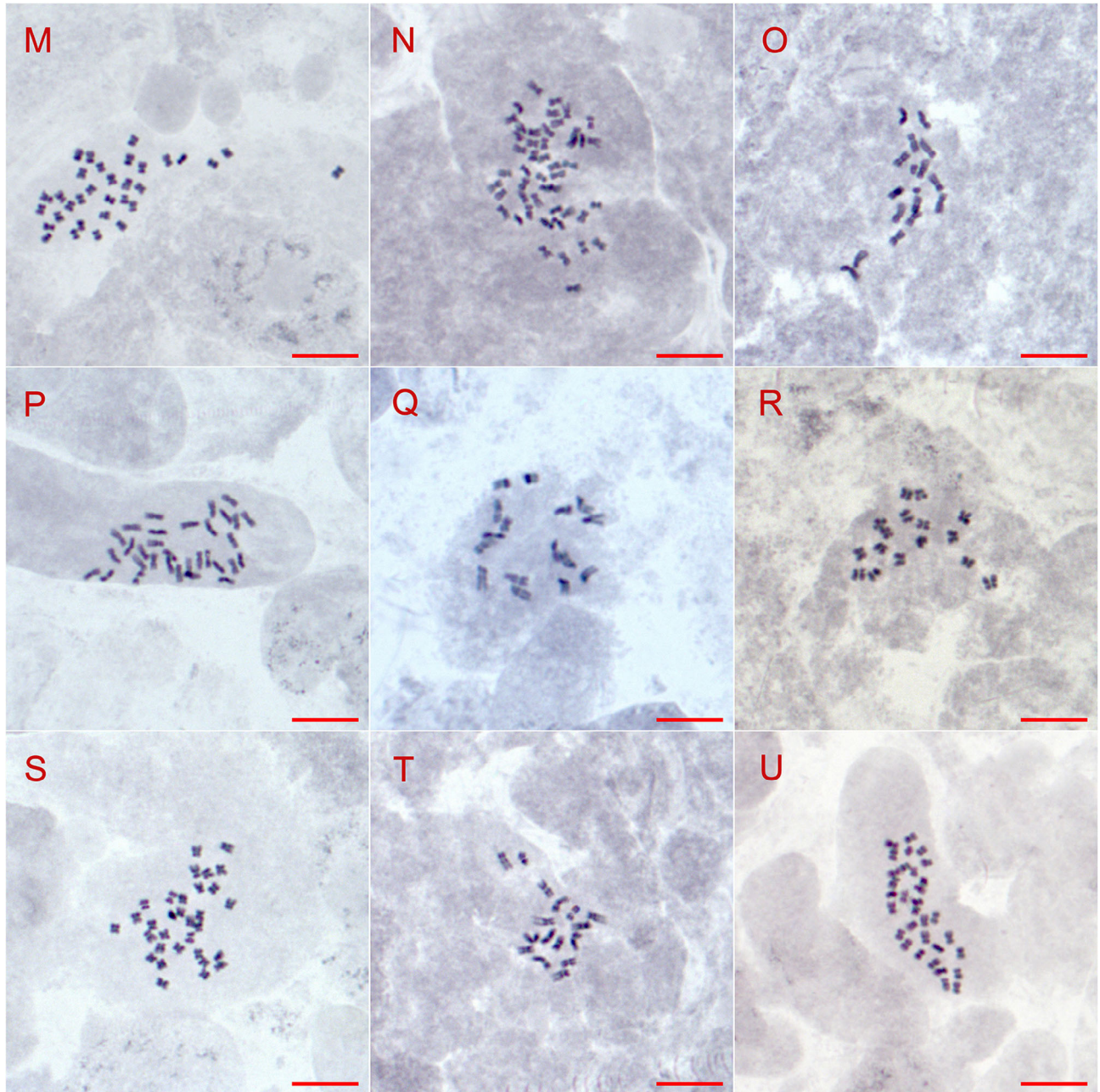
Fig. 3. Continues.



River, Umkhei field name, pine forest edge, 54°59'02.88"N, 111°06'48.98"E, 27 Jul 2014, *D.G. Chimitov 65274* (IRK); Russian Federation, Republic of Buryatia, Kurumkanskiy Raion, Barguzinskaya valley, left bank of the Barguzin River, near Umkhei cordon of the Dzherginskii nature reserve, sandy-stony river bank, 584 m, 54°58'09.3"N, 111°07'25.4"E, 04 Jul 2015, *D.A. Krivenko 64836* (IRK, IRKU, LE, MW, NSK, PVB, UUH, VLA).

*Glycyrrhiza orientalis* Grankina & Letjaeva (= *G. uralensis* Fisch. ex DC.)

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Ulan-Ude city, Yuzhnyi settlement, roadside, 51°49'27.42"N, 107°44'23.13"E, 19 Jul 2014, *D.G. Chimitov 65272* (IRK) [Fig. 3J].



**Fig. 3.** (Continued) Mitotic metaphases. **A**, *Stenosolenium saxatile* ( $2n = 10$ ); **B**, *Astragalus frigidus*, 64542 ( $2n = 16$ ); **C**, *A. frigidus*, 65279 ( $2n = 16$ ); **D**, *A. mongolicus*, 65273 ( $2n = 16$ ); **E**, *A. mongolicus*, 65278 ( $2n = 16$ ); **F**, *A. mongolicus*, 65281 ( $2n = 16$ ); **G**, *A. permienis* var. *sacrimontis* ( $2n = 64$ ); **H**, *A. scopaeformis* ( $2n = 32$ ); **I**, *A. storozhevae* var. *storozhevae* ( $2n = 64$ ); **J**, *Glycyrrhiza orientalis* ( $2n = 16$ ); **K**, *Gueldenstaedtia verna*, 65269 ( $2n = 14$ ); **L**, *Oxytropis* × *bardonovae* ( $2n = 16$ ); **M**, *O. caespitosa* ( $2n = 32$ ); **N**, *O. caespitosa* ( $2n = 48$ ); **O**, *O. glandulosa* ( $2n = 16$ ); **P**, *O. interposita* ( $2n = 32$ ); **Q**, *O. leptophylla* ( $2n = 16$ ); **R**, *O. strobilacea* ( $2n = 16$ ); **S**, *O. strobilacea* ( $2n = 32$ ); **T**, *O. triphylla* ( $2n = 16$ ); **U**, *O. turczaninovii* ( $2n = 32$ ). — Scale bars = 10  $\mu$ m.

*Gueldenstaedtia verna* (Georgi) Boriss.

#  $2n = 14$ , CHN. Russian Federation, Republic of Buryatia, Pribaikalskii Raion, between Zasukhino and Klochnevo villages, right bank of the Itantsa River – right tributary of the Selenga River, sandy-stony steppe slope, 486 m, 52°11'26.52"N, 107°35'13.08"E, 26 Jun 2019, *D.A. Krivenko 66512* (IRK, NSK); Russian Federation, Republic of Buryatia, Ulan-Ude city, Yuzhnyi settlement, pine forest edge, 51°49'27.42"N, 107°44'23.13"E, 19 Jun 2014, *D.G. Chimitov 65269* (IRK) [Fig. 3K].

*Hedysarum kulikovii* Knjaz. (= *H. razoumowianum* auct. non Helm & Fisch. ex DC.)

$2n = 48$ , CHN. Russian Federation, Orenburgskaya Oblast', Kuvandykskii Raion, about 8 km S of Kuvandyk city, elongated elevation, 21 Jul 2018, *M.S. Knyazev s.n.* (SVÉR).

*Hedysarum razoumowianum* Helm & Fisch. ex DC.

$2n = 16$ , CHN. Russian Federation, Orenburgskaya Oblast', Perevolotskii Raion, W of Syrt settlement of the railway station, S of 1473rd km railway location marker, elongated elevation, 18 Jul 2018, *M.S. Knyazev s.n.* (SVÉR).

\*\**Hedysarum villosissimum* Knjaz.

$2n = 16$ , CHN. Kazakhstan, Karandinskaya Oblast', Shetskii Raion, Buguly Massif, about 10 km NNE of Zharyk settlement of the railway station, 30 Jun 2018, *M.S. Knyazev s.n.* (SVÉR).

\*\**Oxytropis ×bardonovae* Chimitov

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Ulan-Ude city, Teplovik garden non-profit association, pine forest edge, 596 m, 51°48'47.57"N, 107°46'34.79"E, 23 Jul 2014, *D.G. Chimitov s.n.* (paratype, IRK 00000256) [Fig. 3L].

*Oxytropis caespitosa* (Pall.) Pers.

#  $2n = 32$ , CHN. Russian Federation, Republic of Buryatia, Selenginskii Raion, right bank of the Selenga River, vicinity of Novoselelensk settlement, steppe, 51°06'20.91"N, 106°37'09.27"E, 17 Jun 2014, *D.G. Chimitov 65295* (IRK) [Fig. 3M].

$2n = 48$ , CHN. Russian Federation, Republic of Buryatia, Ivolginskii Raion, left bank of the Selenga River, vicinity of Khuramsha village, steppe, 51°37'40.33"N, 106°58'27.50"E, 16 Jul 2014, *D.G. Chimitov 65293* (IRK); Russian Federation, Republic of Buryatia, Ulan-Ude city, Yuzhnyi settlement, pine forest, 51°49'04.46"N, 107°43'20.62"E, 19 Jul 2014, *D.G. Chimitov 65294* (IRK) [Fig. 3N].

*Oxytropis glandulosa* Turcz.

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Kurumkanskii Raion, Barguzinskaya valley, right bank of the Agrada River – left tributary of the Barguzin River, vicinity of Argada village, 54°15'08.48"N, 110°40'08.23"E, 29 Jul 2014, *D.G. Chimitov 65275* (IRK) [Fig. 3O].

*Oxytropis interposita* Sipliv.

#  $2n = 32$ , CHN. Russian Federation, Republic of Buryatia, Kurumkanskii Raion, Barguzinskaya valley, left bank of the Alla River – right tributary of the Barguzin River, vicinity of Alla village, mixed forest, 54°41'19.70"N, 110°49'03.89"E, 28 Jul 2014, *D.G. Chimitov 65267* (IRK) [Fig. 3P].

*Oxytropis leptophylla* (Pall.) DC.

$2n = 16$ , CHN. Mongolia, Dordon Aimag, vicinity of Bayandun somon, petrophytic steppe, 49°14'47.36"N, 113°21'41.80"E, 06 Aug 2017, *D.G. Chimitov 49510* (IRK) [Fig. 3Q].

*Oxytropis squammulosa* DC.

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Zaigraevskii Raion, valley of the Uda River – right tributary of the Selenga River, right bank, vicinity of Naryn-Atsagat village, near Gortopovskii bridge, steppe slope towards the river, 52°00'23.02"N, 108°17'14.41"E, 15 Jul 2014, *D.G. Chimitov 65268* (IRK).

*Oxytropis strobilacea* Bunge

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Ivolginskii Raion, left bank of the Selenga River, vicinity of Khuramsha village, Karasinka Lake, pine forest, 51°37'50.85"N, 106°54'40.19"E, 16 Jul 2014, *D.G. Chimitov 65271* (IRK) [Fig. 3R].

$2n = 32$ , CHN. Russian Federation, Republic of Buryatia, Kurumkanskii Raion, Barguzinskaya valley, right bank of the Barguzin River, vicinity of Elesun village, dry riverbed, 54°01'12.48"N, 110°04'55.54"E, 30 Jul 2014, *D.G. Chimitov 65276* (IRK) [Fig. 3S].

*Oxytropis triphylla* (Pall.) DC.

$2n = 16$ , CHN. Russian Federation, Republic of Buryatia, Zaigraevskii Raion, left bank of the Kurba River, vicinity of Unegetei, Mt. Belaya, old limestone for the extraction of limestone, petrophytic steppe on the S slope, 658 m, 52°06'00.42"N, 108°33'48.87"E, 10 Jun 2014, *D.G. Chimitov 65283* (IRK) [Fig. 3T].

*Oxytropis turczaninovii* Jurtzev

$2n = 32$ , CHN. Russian Federation, Republic of Buryatia, Ulan-Ude city, Yuzhnyi settlement, sandy slopes of the railway track, 51°49'27.42"N, 107°44'23.13"E, 19 Jul 2014, *D.G. Chimitov 65285* (IRK) [Fig. 3U].

\*\**Oxytropis subverticillaris* C.A.Mey.

$2n = 32$ , CHN. Kazakhstan, Karandinskaya Oblast', Shetskii Raion, Buguly Massif, about 8–9 km NNE of Zharyk railway station, 30 Jun 2018, *M.S. Knyazev s.n.* (SVÉR).

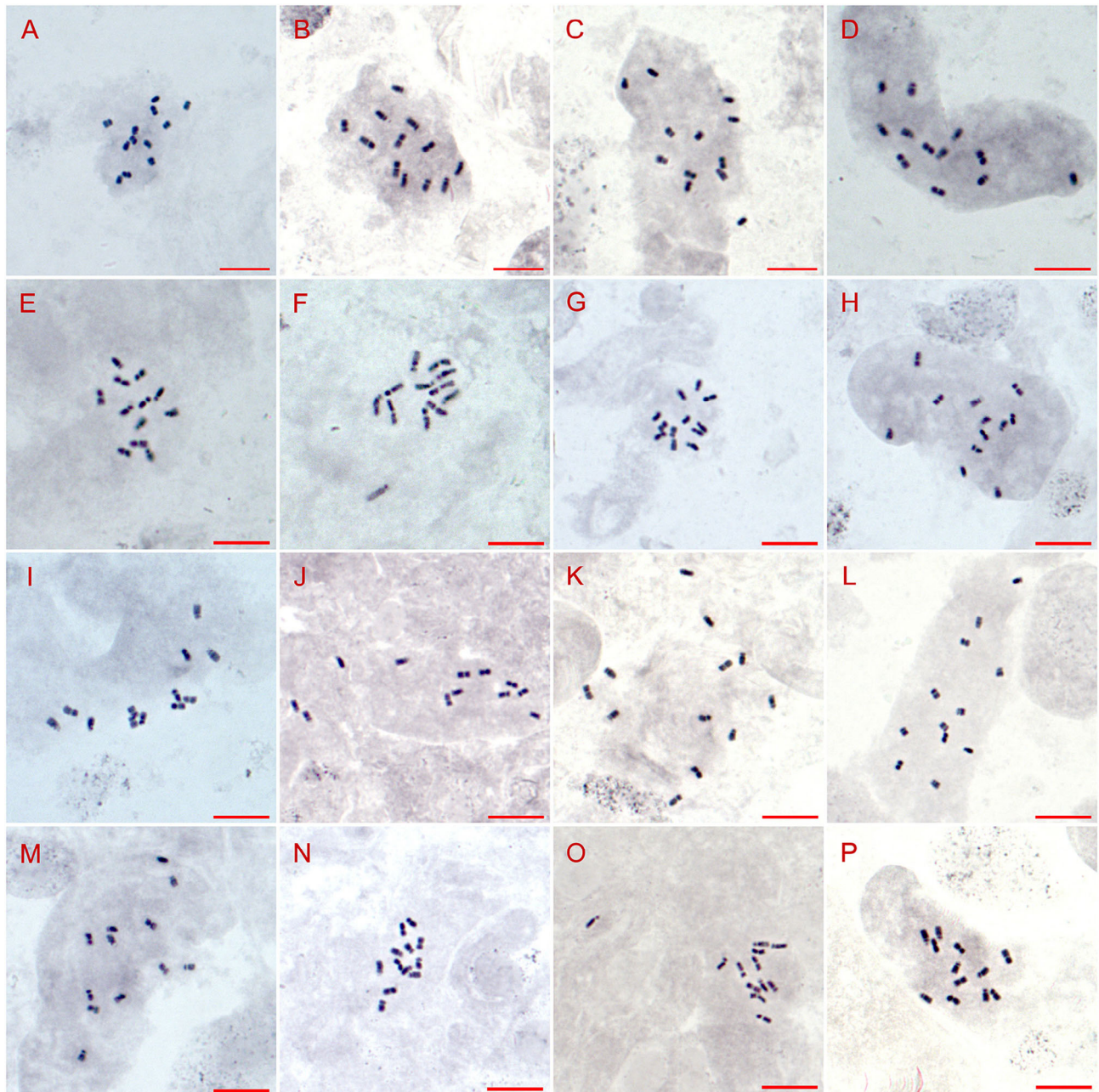
## PAPAVERACEAE

*Chelidonium majus* L.

$2n = 12$ , CHN. Belarus, Minsk city, Central Botanical Garden of the National Academy of Sciences of Belarus, alley of *Populus nigra*, on lawn, 53°54'57.16"N, 27°36'16.98"E, 25 Aug 2021, *V.S. Vishnyakov 66117* (IRK) [Fig. 4A]. Russian Federation, Altaiskii Krai, Aleisk town, left bank of the Alei River, Ulyanovskii lane, weed-ruderal plant groups, 184 m, 52°29'45.03"N, 82°45'11.48"E, 25 Jul 2022, *D.A. Krivenko 68041* (IRK); Russian Federation, Altaiskii Krai, Barnaul city, left bank of the Ob' River, Kanifolnyi passage, weed-ruderal plant groups, 154 m, 53°19'50.29"N, 83°45'36.50"E, 11 Jul 2022, *D.A. Krivenko 68003* (IRK) [Fig. 4B]; Russian Federation, Altaiskii Krai, Barnaul city, left bank of the Ob' River, Dmitrova Str., weed-ruderal plant groups, 188 m, 53°20'54.05"N, 83°47'12.08"E, 30 Jul 2022, *D.A. Krivenko 68044* (IRK) [Fig. 4C]; Russian Federation, Krasnodarskii Krai, coast of the Black Sea, Sochi city, Adlerskii District, Narodnaya Str., in yard, 43°23'41"N, 39°58'52"E, 10 Sep 2021, *P.A. Zaremba 65898* (IRK) [Fig. 4D]; Russian Federation, Krasnodarskii Krai, coast of the Black Sea, Sochi city, Adlerskii District, lane of Sraroshkolnaya and Kramskoi

streets, weed-ruderal plant groups, 43°23'37"N, 39°58'59"E, 10 Sep 2021, *P.A. Zaremba 65900* (IRK) [Fig. 4E]; Russian Federation, Krasnodarskii Krai, coast of the Black Sea, Sochi city, Adlerskii District, at the intersection of Sraroshkolnaya and Polevaya streets, weed-ruderal plant groups, 43°23'40"N, 39°58'57"E, 10 Sep 2021, *P.A. Zaremba 65901* (IRK) [Fig. 4F]; Russian Federation, Krasnodarskii Krai, coast of the Black Sea, Sochi city, Adlerskii District, at the intersection of Sraroshkolnaya and Polevaya streets, weed-ruderal plant groups, 43°23'40"N, 39°58'56"E, 10 Sep 2021, *P.A. Zaremba 65903* (IRK); Russian Federation, Krasnodarskii Krai, Sochi city, vicinity of Rosa Khutor station, confluence of the Laura and Mzymta rivers, on rocky slope, 43°40'51.16"N, 40°16'32.39"E,

06 May 2022, *V.S. Vishnyakov 68055* (IRK); Russian Federation, Nizhegorodskaya Oblast', Nizhnii Novgorod city, on Oksinskii S"ezd Str. 8, in the backyard on wasteland, 56°18'20.17"N, 43°58'44.28"E, 25 Sep 2021, *V.S. Vishnyakov 66110* (IRK) [Fig. 4G]; Russian Federation, Republic of Ingushetia, Sunzhenskii Raion, third advanced ridge of the N macro-slope of the Greater Caucasus, Skalistyi range, Assinskoe gorge, left bank of the Assa River, 4 km N of abandoned Egikkhal village, in thickets of shrubs, 950 m, 42°52'37"N, 44°55'49"E, 17 Aug 2021, *A.N. Bersanova & D.A. Krivenko 65593* (IRK) [Fig. 4H]; Russian Federation, Republic of Tatarstan, Kazan city, Sovetskii District, Malye Klyki housing area, at the intersection of Rabochaya and Zazhora streets, on the plot in garden,



**Fig. 4.** Mitotic metaphases of *Chelidonium majus* ( $2n = 12$ ). A, 66117; B, 68003; C, 68044; D, 65898; E, 65900; F, 65901; G, 66110; H, 65593; I, 65579; J, 68056; K, 68084; L, 68061; M, 65464; N, 66113; O, 68076; P, 68088. — Scale bars = 10  $\mu$ m.

80 m, 55°47'56"N, 49°13'26"E, 16 Jul 2021, *M.A. Markaryan 65578* (IRK); Russian Federation, Republic of Tatarstan, Kazan city, Malye Klyki housing area, at the intersection of Rabochaya and Zazhora streets, in yard, 100 m, 55°47'56"N, 49°13'25"E, 16 Jul 2021, *M.A. Markaryan 65579* (IRK) [Fig. 4I]; Russian Federation, Republic of Tatarstan, Kazan city, Sovetskii District, Malye Klyki housing area, along Bolshaya Krasnaya Str., roadside, 60 m, 55°48'05"N, 49°13'22"E, 02 Aug 2021, *M.A. Markaryan 65580* (IRK); Russian Federation, Ryazanskaya Oblast', Mikhailovskii Raion, vicinity of Mikhailov town, Caspii highway, on roadside, 54°16'21.60"N, 38°59'38.66"E, 18 Jun 2022, *V.S. Vishnyakov 68056* (IRK) [Fig. 4J]; Russian Federation, Stavropolskii Krai, Pyatigorsk city, in the yard on Rozhansky Str., under trees, 480 m, 44°01'55"N, 43°04'13"E, 15 Aug 2021, *D.A. Krivenko 65590* (IRK); Russian Federation, Tambovskaya Oblast', Tambov city, Montazhnikov Str., car parking, at fence, 52°44'48.99"N, 41°27'59.03"E, 01 Jul 2022, *V.S. Vishnyakov 68084* (IRK) [Fig. 4K]; Russian Federation, Tul'skaya Oblast', Kireevskii Raion, Don Highway, vicinity of Krasnye Oзера settlement, on lawn, 54°01'13.67"N, 38°00'41.90"E, 14 Jul 2021, *V.S. Vishnyakov 65462* (IRK); Russian Federation, Vladimirskaya Oblast', Gus'-Khrustalnyi Raion, N of Velikodvorskii settlement, roadside, 55°15'25.2"N, 40°40'08.4"E, 01 Jul 2022, *V.S. Vishnyakov 68080* (IRK); Russian Federation, Volgogradskaya Oblast', Frolovskii Raion, Vetyutnev farm, on the dam between ponds, 49°46'06.55"N, 43°31'47.82"E, 19 Jun 2022, *V.S. Vishnyakov 68061* (IRK) [Fig. 4L]; Russian Federation, Voronezhskaya Oblast', Borisoglebskii Raion, town of Borisoglebsk, Matrosovskaya Str., at the walls of house, 51°22'34.09"N, 42°04'34.55"E, 30 Jun 2022, *V.S. Vishnyakov 68063* (IRK); Russian Federation, Voronezhskaya Oblast', Gribovskii Raion, 602nd km of Caspii Highway, edge of broadleaf forest, 51°27'07.15"N, 42°01'05.57"E, 18 Jun 2022, *V.S. Vishnyakov 68058* (IRK); Russian Federation, Voronezhskaya Oblast', Novousmanskii Raion, Venevitinskii settlement, at fence, 51°48'50.12"N, 39°23'06.49"E, 13 Jul 2021, *V.S. Vishnyakov 65464* (IRK) [Fig. 4M]; Russian Federation, Yaroslavl'skaya Oblast', Uglichskii Raion, town of Uglich, on Naberezhnaya Reki Volgi Str. 7, South facade, in crack in the house's foundation, 57°32'03.33"N, 38°19'28.03"E, 11 Oct 2021, *V.S. Vishnyakov 66113* (IRK) [Fig. 4N]; Russian Federation, Yaroslavl'skaya Oblast', Uglichskii Raion, Uglich town, on Yaroslavl'skaya Str. 21, at fence, 57°31'47.46"N, 38°19'34.67"E, 12 Oct 2021, *V.S. Vishnyakov 66116* (IRK); Russian Federation, Yaroslavl'skaya Oblast', Nekouzskii Raion, Borok settlement, in flowerbed, 58°03'51.93"N, 38°14'00.10"E, 02 Jul 2022, *V.S. Vishnyakov 68076* (IRK) [Fig. 4O]; Russian Federation, Yaroslavl'skaya Oblast', Nekouzskii Raion, Borok settlement, roadside of bypass road, 58°03'38.99"N, 38°14'10.93"E, 17 Jul 2021, *V.S. Vishnyakov 65460* (IRK); Russian Federation, Yaroslavl'skaya Oblast', Nekouzskii Raion, Shestikhino settlement, on railway embankment, 57°55'54.80"N, 38°14'33.61"E, 04 Jul 2022, *V.S. Vishnyakov 68088* (IRK) [Fig. 4P]; Russian Federation, Yaroslavl'skaya Oblast', Rybinskii Raion, Rybinsk town, Borodulin Str., in a crack in the house's foundation, 58°02'57.15"N, 38°50'33.56"E, 04 Jul 2022, *V.S. Vishnyakov 68087* (IRK); Russian Federation, Yaroslavl'skaya Oblast', Yaroslavl city, Svyato-Vvedenskii Tolgskii Convent, on the edge of a garden, 52°41'52.82"N, 39°49'41.85"E, 09 Jul 2022, *V.S. Vishnyakov 68079* (IRK).

#### POACEAE (GRAMINEAE)

*Echinochloa colonum* (L.) Link

$2n = 48$ , CHN. Egypt, South Sinai Governorate, S tip of Sinai Peninsula, coast of Red Sea, Sharm El Sheikh city, 27°54'53.53"N, 34°19'31.47"E, 08 Dec 2021, *E.V. Matveeva 66764* (IRK).

#### VIOLACEAE

\*\**Viola × incissecta* Vl.V.Nikitin

$2n = 24$ , CHN. Russian Federation, Republic of Buryatia, Zai-graevskii Raion, vicinity of Zai-graev urban-type settlement, next to the bridge over Bryanka River, 51°50'10.7"N, 108°17'01.2"E, 22 May 2017, *D.G. Chimitov 49517* (IRK).

#### IAPT chromosome data 38/6

Elizaveta Yu. Mitrenina, Eugeny V. Boltentkov, Andrew S. Erst\* & Wei Wang

\*Address for correspondence: [erst\\_andrew@yahoo.com](mailto:erst_andrew@yahoo.com)

The study was carried out within the framework State Assignment of the CSBG SB RAS (project No. AAAA-A21-12101129 0024-5); the institutional research project of the Botanical Garden-Institute, Far Eastern Branch, Russian Academy of Sciences (No. 122040800085-4); and National Natural Science Foundation of China (No. 32011530072).

Mitotic metaphase chromosomes were examined in young root tips. The method followed Smirnov (1968). Chromosome numbers in literature were checked using CCDB v.1.45 (Rice & al., 2015).

\* First chromosome count for Altai Republic and new cytotype for Amur Oblast'.

#### IRIDACEAE

*Iris bloudowii* Ledeb.

$2n = 16$ , CHN. Russian Federation, Altai Republic, Shebalinskii Raion, near Shebalino village, 51°18'58"N, 85°40'47"E, 860 m, meadow, 03 Jun 2020, *E.V. Boltentkov, A.S. Erst & T.V. Erst 7* (VBGI); Russian Federation, Altai Republic, Ust'-Kanskii Raion, Yaboganskii Pass, 50°51'07"N, 85°14'31"E, 1320 m, subalpine meadow, 05 Jun 2020, *E.V. Boltentkov, A.S. Erst & T.V. Erst 15* (VBGI); Russian Federation, Altai Republic, Ongudaiskii Raion, near Khabarovka village, 50°39'50"N, 86°17'35"E, 1000 m, the edge of the larch forest, 06 Jun 2020, *E.V. Boltentkov, A.S. Erst & T.V. Erst 20* (VBGI); Russian Federation, Altai Republic, Ongudaiskii Raion, Chike-Taman Pass, 50°38'38"N, 86°18'39"E, 1280 m, stony scree, 06 Jun 2020, *E.V. Boltentkov, A.S. Erst & T.V. Erst 21* (VBGI); Russian Federation, Altai Republic, Ongudaiskii Raion, ascent to the Seminskii Pass, 50°56'41"N, 85°44'28"E, 1230 m, subalpine meadow, 09 Jun 2020, *E.V. Boltentkov, A.S. Erst & T.V. Erst 40* (VBGI).

\**Iris humilis* Georgi

$2n = 28$ , CHN. Russian Federation, Altai Republic, Ongudaiskii Raion, confluence of Chuya and Katun rivers, 50°23'50"N, 86°40'28"E, 760 m, stony steppe, 06 Jun 2020, *E.V. Boltentkov, A.S. Erst & T.V. Erst 22-1* (VBGI); Russian Federation, Altai Republic, Kosh-Agach Raion, between Kurai and Chagan-Uzun villages, 50°10'10"N, 88°12'31"E, 1680 m, steppe, 07 Jun 2020, *E.V. Boltentkov, A.S. Erst & T.V. Erst 28* (VBGI); Russian Federation, Amur Oblast', Blagoveshchenskii Raion, the road Blagoveshchensk–Svobodny, on the turn to the tourist center Mukhinka, 50°25'44.0"N, 127°32'59.3"E, 204 m, steppe slope, 04 Jul 2020, *T.N. Veklich s.n.* (VBGI) [Fig. 5A].

*Iris kamelinii* Alexeeva

$2n = 22$ , CHN. Russian Federation, Altai Republic, Kosh-Agach Raion, Chikhachova Range, Upper Boguty Lake, 49°42'21"N, 89°

30°48"E, 2480 m, northern gravelly slope, 08 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 34* (VBGI) [Fig. 5B].

*Iris potaninii* Maxim.

$2n = 22$ , CHN. Russian Federation, Altai Republic, Ongudaiskii Raion, confluence of Chuya and Katun rivers, 50°23'50"N, 86°40'28"E, 760 m, stony steppe, 06 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 22-2* (VBGI); Russian Federation, Altai Republic, Kosh-Agach Raion, near Chagan-Uzun village, 50°03'38"N, 88°17'32"E, 1800–1930 m, steppe slope, 07 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 24* (VBGI); Russian Federation, Altai Republic, Kosh-Agach Raion, near Chagan-Uzun spring, 50°05'44"N, 88°23'01"E, 1780 m, steppe slope, 07 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 25* (VBGI); Russian Federation, Altai Republic, Kosh-Agach Raion, near Chagan-Uzun village, 50°04'21"N, 88°24'51"E, 1780 m, steppe slope, 07 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 26* (VBGI); Russian Federation, Altai Republic, Kosh-Agach Raion, near Tashanta village, 49°47'27"N, 89°23'19"E, 2340 m, steppe, 08 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 33* (VBGI).

*Iris ruthenica* Ker Gawl.

$2n = 84$ , CHN. Russian Federation, Altai Republic, Ust'-Kanskii Raion, 3 km west of Tiudrala village, 51°00'36"N, 84°26'29"E, 800 m, steppe slope, 04 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 10-1* (VBGI).

*Iris tigridia* Bunge

$2n = 38$ , CHN. Russian Federation, Altai Republic, Ongudaiskii Raion, 12 km west of Yelo village, 50°47'26"N, 85°21'28"E, 1190 m, steppe slope, 05 Jun 2020, *E.V. Boltenkov, A.S. Erst & T.V. Erst 17* (VBGI).

LITERATURE CITED

- Rice, A., Glick, L., Abadi, S., Einhorn, M., Kopelman, N.M., Salman-Minkov, A., Mayzel, J., Chay, O. & Mayrose, I. 2015. The Chromosome Counts Database (CCDB) – A community resource of plant chromosome numbers. *New Phytol.* 206: 19–26. <https://doi.org/10.1111/nph.13191>
- Smirnov, Yu.A. 1968. Uskorenniy metod issledovaniya somaticheskikh khromosom plodovykh [Accelerated method for studying somatic chromosomes in fruit trees]. *Tsitologia* 10: 1601–1602. [in Russian]

IAPT chromosome data 38/7

Yulia A. Myakoshina, Natalia Yu. Malysheva, Galina I. Pendinen, Violetta V. Kotseruba\* & Eduard M. Machs

\*Address for correspondence: [viola.kotseruba@gmail.com](mailto:viola.kotseruba@gmail.com)

This work was performed within the framework of the VIR budget projects No. 0481-2022-0002 “Identification of the possibilities of legume crop genetic diversity to optimize their breeding and diversify uses in various sectors of the national economy” and No. 0481-2022-0006 “Disclosing the scientific potential of the herbarium collection at VIR as an independent specific unit of worldwide agricultural biodiversity conservation for scientifically justified mobilization, effective studying and preservation of genetic diversity”, the framework of the State Task No. AAAA-A18-11804 0290161-3 and the grant No. 60256916 of St. Petersburg State University.

FABACEAE

*Medicago lupulina* L.

$2n = 16$ , CHN; Italy, vicinity of Rome city, *NYM s.n.* (VIR k-5358; LE 01060193) [Fig. 6A]. Lithuania, vicinity of Dotnuva city, *NYM s.n.* (VIR i-o640309; LE 01060187) [Fig. 6B]; Russian Federation, Pskovskaya oblast', Velikolukskii Raion, vicinity of Mordovichi village, *NYM s.n.* (VIR i-o99537; LE 01060190) [Fig. 6C].

IAPT chromosome data 38/8

Tatyana V. Pankova,\* Elena Yu. Zykova, Dmitry N. Shaulo & Aleksandr L. Ebel

\*Address for correspondence: [ankova\\_tv@mail.ru](mailto:ankova_tv@mail.ru)

The investigation was carried out with the support of the scientific program AAAA-A21-121011290024-5 of the Central Siberian Botanical Garden of the Siberian Branch of the Russian Academy of Sciences. Scientific collections of the Central Siberian Botanical Garden, Siberian Branch of the Russian Academy of Sciences (USU 440537, Herbarium NS) were used in the work. Sample pretreatment with chemical reagents was financially supported by the Ministry of Education and Science of Russia under Agreement No. 075-15-2021-1056 of September 28, 2021 between the BIN RAS

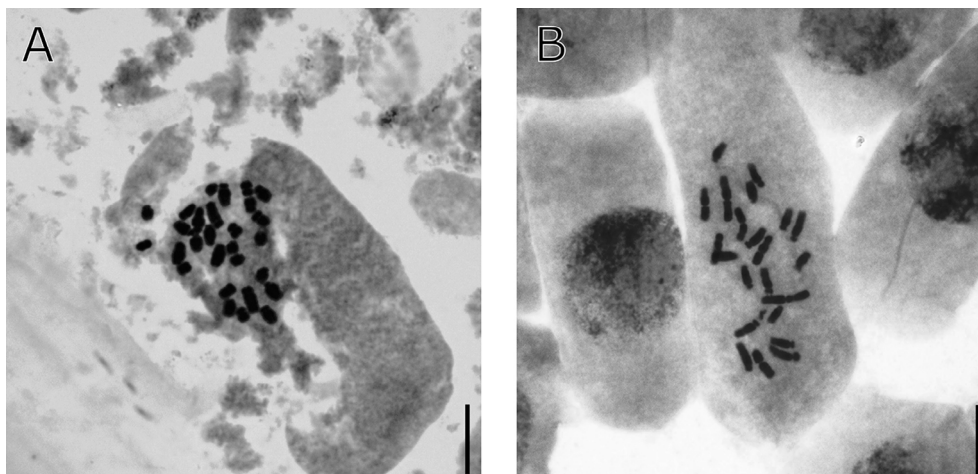


Fig. 5. Mitotic metaphase chromosomes. A, *Iris humilis*,  $2n = 28$ ; B, *I. kamelinii*,  $2n = 22$ . — Scale bars = 10 µm.

and the Ministry of Science and Higher Education of the Russian Federation, also under Agreement No. EP/29-10-21-4 of October 29, 2021 between BIN RAN and CSBG SB RAS.

- \* First chromosome count for the taxon.
- First chromosome count from an unexplored part of the distribution area of the taxon.

#### AMARANTHACEAE

*Amaranthus retroflexus* L.

$2n = 32$ , CHN. Russian Federation, Novosibirskaya Oblast', Berdsk city, Lenin Str., wasteland between the houses, 54°45'47.96"N, 85°05'34.76"E, 11 Aug 2018, *D. Shaulo* EZ7031 (NS).

*Chenopodium album* L.

$2n = 54$ , CHN. Russian Federation, Republic of Altai, Gorno-Altaysk city, central embankment of the Maima River, pebble-strewn riverbank, 51°58'N, 85°55'E, 18 Aug 2017, *E. Zykova* EZ395-6117 (NS).

#### ASTERACEAE

*Arctium lappa* L.

$2n = 36$ . Russian Federation, Novosibirskaya Oblast', Novosibirsk city, Central Siberian Botanical Garden's territory, birch forest, 54°49'14.94"N, 83°06'21.17"E, 04 Oct 2018, *D. Shaulo* EZ698 (NS).

*Artemisia absinthium* L.

$2n = 18$ , CHN. Russian Federation, Novosibirskaya Oblast', Novosibirsk city, Kirova village, Vasilkovaya Str., near the bus stop, 54°48'56.83"N, 83°05'54.01"E, 19 Oct 2018, *D. Shaulo* EZ696 (NS).

*Cichorium intybus* L.

$2n = 18$ , CHN. Russian Federation, Novosibirskaya Oblast', Novosibirsk city, Kirova village Chermushnaya Str., at the exit point to the Berdskoe Highway, roadside ditch, 54°48'49.65"N, 83°05'23.39"E, 07 Sep 2018, *D. Shaulo* EZ697 (NS).

*Lactuca serriola* L.

$\circ 2n = 18$ , CHN. Russian Federation, Republic of Tyva, Chakholsky Kozhuun, Western Sayan, Kurtushibinskii Ridge, SW

slope, steepness 15°, gravelly scree, 51°41'01.8"N, 92°22'11.4"E, 560 m, 16 Jul 2018, *D. Shaulo* EZ 735-77 (NS).

#### BRASSICACEAE

*Dontostemon micranthus* C.A.Mey.

$\circ 2n = 14$ , CHN. Mongolia, Bayan-Ölgii Province, Saksay tract, steppe, roadside, 08 Aug 2012, *Yu. Studenikin* EZ577 (NS).

*Erucastrum gallicum* (Willd.) O.E.Schulz

$\circ 2n = 30$ , CHN. Russian Federation, Kemerovskaya Oblast', Kemerovo city, Rudnichnyi Raion, Kedrovka, Kedrovskii coal mine, dump, 07 Oct 2021, *A. Ebel* EZ919 (NS).

#### CARYOPHYLLACEAE

*Spergula arvensis* L.

$\circ 2n = 18$ , CHN. Russian Federation, Republic of Khakassia, Baiskii Raion, Western Sayan, Joiskii Ridge, Sayano-Shushenskaya Dam, zone of periodic flooding, 52°49'08.8"N, 91°20'40.06"E, 530 m, 10 Jul 2018, *D. Shaulo* EZ705 (NS).

*Silene csereii* Baumg.

$\circ 2n = 24$ , CHN. Russian Federation, Republic of Khakassia, Ust'-Abakanskii Raion, NNE 7 km of Mokhov village, near the exit to Oglahy area of the Khakasski Nature Reserve, fire ditch, 11 Jul 2020, *A. Ebel* EZ849 (NS).

#### FABACEAE

*Caragana pygmaea* (L.) DC.

$\circ 2n = 16$ , CHN. Russian Federation, Republic of Tyva, Dzun-Khemchikskii Kozhuun, Western Sayan, bay of the Malye Ury River, SE slope, gravelly scree, 18 Jul 2018, *D. Shaulo* EZ902 (NS).

*Medicago lupulina* L.

$2n = 16$ , CHN. Russian Federation, Republic of Altai, Chemsalskii Raion, Chermal village, by the roads, 51°25'N, 86°00'E, 25 Jun 2017, *E. Zykova* EZ386-1917 (NS).

*Vicia hirsuta* (L.) Gray,

$\circ 2n = 14$ , CHN. Russian Federation, Krasnoyarskaya Oblast', Ermakovskii Raion, Western Sayan, Sayano-Shushenskii Nature



**Fig. 6.** Mitotic chromosomes of *Medicago lupulina* L. **A**, k-5358,  $2n = 16$ ; **B**, i-0640309,  $2n = 16$ ; **C**, i-099537,  $2n = 16$ . — Scale bars = 10  $\mu$ m.

Reserve, Kerema cordon, the area of periodic flooding of the Sayano-Shushenskaya hydroelectric power station reservoir, 52°06'27.6"N, 92°13'55.8"E, 540 m, 12 Jul 2018, *D. Shaulo EZ 737-46* (NS).

#### ONAGRACEAE

*Oenothera biennis* L. (= *O. rubricaulis* Kleb.)

2n = 14, CHN. Russian Federation, Krasnoyarskaya Oblast', Minusinskii Raion, neighborhood of Shoshino village, young fallow, 19 Aug 2019, *A. Ebel EZ917* (NS).

#### POACEAE

*Panicum miliaceum* L. (= *P. ruderales* (Kitag.) D.M.Chang)

2n = 36, CHN. Russian Federation, Krasnoyarskaya Oblast', Ermakovskii Raion, Western Sayan, the eastern tip of the Sayan Raion, Kerema cordon, the area of periodic flooding of the Sayano-Shushenskaya hydroelectric power station reservoir, 15 Jul 2017, *D. Shaulo EZ828* (NS).

*Setaria viridis* (L.) P.Beauv.

2n = 18, CHN. Russian Federation, Krasnoyarskaya Oblast', Ermakovskii Raion, Western Sayan, Khemchik Raion, Sayano-Shushenskaya reservoir, the area of periodic flooding, 51°51'05.5" N, 92°04'55.7"E, 530 m, 15 Jul 2018, *D. Shaulo EZ736-70* (NS); Russian Federation, Republic of Altai, Choiskii Raion, vicinity of Sugul village, pebble roadside, 52°03'N, 86°15'E, 07 Aug 2015, *E. Zykova EZ460* (NS); Russian Federation, Republic of Altai, Turochakskii Raion, 44 km of the Turochak-Artybash Highway, by the road, 08 Aug 2015, *E. Zykova EZ461* (NS); Russian Federation, Novosibirskaya Oblast', Novosibirsk, Akademgorodok, "Shluz", 54°59'N, 83°00'E, wasteland along a road, 02 Aug 2017, *E. Zykova, T. Shemetova EZ361* (NS).

### IAPT chromosome data 38/9

Nina S. Probatova, Denis A. Krivenko\* & Olga A. Chernyagina

\*Address for correspondence: [krivenko.irk@gmail.com](mailto:krivenko.irk@gmail.com)

The authors are grateful to E.G. Rudyka (Vladivostok) for assistance in chromosome counting and to Dr. M.N. Lomonosova (Novosibirsk) for correcting species names in Amaranthaceae.

\* First cytotype for the species.

#### AMARANTHACEAE

*Atriplex prostrata* Boucher ex DC.

2n = 18, CHN. Russian Federation, Krasnodarskii Krai, Tamanskii Peninsula, Chushka spit, coast of the Azov Sea, near Port Kavkaz, sand dunes, 12 Oct 2008, *N.S. Probatova & V.P. Seledets 11275* (VLA).

Earlier, this plant was misidentified as "*Chenopodium urbicum* L." (Probatova & al., 2009); later, its identification was corrected by M.N. Lomonosova.

*Atriplex verrucifera* M.Bieb.

2n = 18, CHN. Russian Federation, Krasnodarskii Krai, Starotitarovskii Raion, Tamanskii Peninsula, vicinity of Solyonyi village, salt depression on the shore of Akhtanizovskii estuary, *Tamarix-Phragmites-Puccinellia* community, 12 Oct 2008, *N.S. Probatova & V.P. Seledets 11271* (VLA).

Earlier, this plant was misidentified as "*Chenopodium polyspermum* L." (Probatova & al., 2009); later, its identification was corrected by M.N. Lomonosova.

*Chenopodium bryoniifolium* Bunge

2n = 18, CHN. Russian Federation, Khabarovskii Krai, Vaninskii Raion, valley of the Buty River, on rocks, 27 Aug 2010, *L.A. Antonova & al. 12212* (VLA).

Earlier, this plant was misidentified as "*Chenopodium polyspermum* L." (Probatova & al., 2013); later, its identification was corrected by M.N. Lomonosova.

*Chenopodium vachellii* Hook. & Arn. (= *Ch. acuminatum* Willd.)

2n = 36, CHN. Russian Federation, Primorskii Krai, Khassanskii Raion, near Andreyevka village, on seacoast, 29 Aug 2020, *V.T. Lapenko 13627* (VLA).

*Dysphania botrys* (L.) Mosyakin & Clemants

2n = 18, CHN. Russian Federation, Republic of Dagestan, Shamil'skii Raion, Greater Caucasus, foot of Nikuhadimeer Ridge, left riverside of the Avarskoe Koisu River, 2 km WE of Ratlub village, sandy-stony roadside, 1072 m, 42°21'03.9"N, 46°28'16.6"E, 12 Aug 2021, *D.A. Krivenko 13738* (IRK, VLA).

*Hablitzia tamnoides* M.Bieb.

2n = 18, CHN. Russian Federation, Kabardino-Balkarian Republic, Cherekskii Raion, third advanced ridge of the N macro-slope of the Greater Caucasus, Skalistyi range, Cherekskoe gorge, right riverside of the Cherek Balkarskii River, 10 km NNE of Verkh'n'aya Balkaria settlement, forb vegetation under abrupt rocks, 43°13'27.92"N, 43°31'53.26"E, 15 Aug 2021, *D.A. Krivenko 13734* (IRK, VLA).

#### ASTERACEAE

*Crepis rhoeadifolia* M.Bieb. (= *C. foetida* subsp. *rhoeadifolia* (M.Bieb.) Čelak.)

2n = 8, CHN. Russian Federation, Krasnodarskii Krai, Tamanskii Peninsula, Starotitarovskii Raion, between Solyonyi and Starotitarovskaya settlements, salt plots in the grass steppe, 12 Oct 2008, *N.S. Probatova & V.P. Seledets 11272a* (VLA).

*Crepis setosa* Haller f.

2n = 16, CHN. Russian Federation, Krasnodarskii Krai, Tamanskii Peninsula, Starotitarovskii Raion, between Solyonyi and Starotitarovskaya settlements, salt plots in the grass steppe, 12 Oct 2008, *N.S. Probatova & V.P. Seledets 11272b* (VLA).

*Erigeron canadensis* L.

2n = 18, CHN. Russian Federation, Chechenskaya Republic, Itum-Kalinskii Raion, Greater Caucasus, Khacha-Roiduk Ridge, near Veduchi village, gravel roadside, 1150 m, 42°41'52"N, 45°34'25"E, 17 Aug 2021, *D.A. Krivenko 13764* (IRK, VLA); Russian Federation, Republic of Ingushetia, Sunzhenskii Raion, third advanced ridge of the N macro-slope of the Greater Caucasus, Skalistyi Range, Assinskoe gorge, left riverside of the Assa River, 4 km N of abandoned village Egikkhal, gravel riverside, 950 m, 42°52'37"N, 44°55'49"E, 17 Aug 2021, *D.A. Krivenko 13750* (IRK, VLA).

*Lapsana grandiflora* M.Bieb. (≡ *L. communis* subsp. *grandiflora* (M.Bieb.) P.D.Sell)

$2n = 14$ , CHN. Russian Federation, Republic of Dagestan, Tsuntinskii Raion, Greater Caucasus, Bogoskii Range, 8 km WNW of Bezhta village, Guenukhskii Pass, subalpine meadow, 2500 m, 42° 10'01"N, 46°01'09"E, 12 Aug 2021, *D.A. Krivenko 13713* (IRK, VLA).

*Matricaria discoidea* DC.

$2n = 18$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Ossora settlement, on the waste ground, 18 Sep 2021, *O.A. Chernyagina 13745* (VLA).

*Pentanema britannica* (L.) D.Gut.Larr. & al.

$2n = 24$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Vakhitovskii Raion, Nizhnii Kaban Lake, at the pavement, 60 m, 55°46'33"N, 49°07'16"E, 26 Jul 2021, *M.A. Markaryan 13726* (IRK, VLA).

*Saussurea nuda* Ledeb.

$2n = 26$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Tymlat settlement, coastal meadow, 11 Sep 2021, *O.A. Chernyagina 13766* (VLA).

*Tanacetum boreale* Fisch. ex DC.

$2n = 18$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Ossora settlement, waste area, roadside, 18 Sep 2021, *O.A. Chernyagina 13747* (VLA).

#### BRASSICACEAE

*Berteroa incana* (L.) DC.

$2n = 16$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Vakhitovskii Raion, Nizhnii Kaban Lake, on the slope, 60 m, 55°46'35"N, 49°07'17"E, 26 Jul 2021, *M.A. Markaryan 13702* (IRK, VLA).

#### CAMPANULACEAE

*Campanula patula* L.

$2n = 18$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Vakhitovskii Raion, left riverside of the Kazanka River – left affluent of the Volga River, M. Gor'kii Central park, in the herb-  
age, 100 m, 55°47'51"N, 49°08'52"E, 18 Jul 2021, *M.A. Markaryan 13763* (IRK, VLA).

#### CARYOPHYLLACEAE

*Spergula arvensis* L.

$2n = 18$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Tymlat settlement, on way-  
side of the pavement, 09 Sep 2021, *O.A. Chernyagina 13716* (VLA).

#### COMMELINACEAE

*Commelina benghalensis* L.

$2n = 22$ , CHN. Thailand, Chonburi Changvat, Banlamung Amfo, east coast of Siamese Bay of the South China Sea, Pattaya city, in the parkways Na Kluea 16 and 16/1, 12°57'43.4"N, 100°53'31.2"E, 17 Oct 2019, *O.A. Chernysheva 13594* (IRK, VLA).

*Commelina communis* L.

\* $2n = 32$ , CHN. Russian Federation, Amurskaya Oblast', suburbs of Blagoveshchensk city, weed at the road, 15 Jul 2022, *G.F. Darman 13770* (VLA); Russian Federation, Primorskii Krai,

Vladivostok city, Komarova Str., on the way to Pokrovsky church, 28 Aug 2020, *G.G. Probatova 13567* (VLA); Russian Federation, Primorskii Krai, Dal'negorskii Raion, Dal'negorsk town, Uval'naya Str., near the concentration plant, 27 Aug 2020, *G.M. Gulariants 13571* (VLA).

$2n = 36$ , CHN. Russian Federation, Primorskii Krai, Muraviev-Amurskii Peninsula, Vladivostok city, Akademgorodok, ruderal weed among domestic buildings, 8 Aug 2021, *E.B. Volynets 13663* (VLA); Russian Federation, Primorskii Krai, Vladivostok city, railway platform Morskoi Gorodok, at the railway embankment, nearby sea coast, 27 Aug 2020, *G.G. Probatova 13566* (VLA); Russian Federation, Primorskii Krai, Dal'negorskii Raion, Dal'negorsk town, at the building opposite the bus stop Bol'nitsa [Hospital], 27 Aug 2020, *G.M. Gulariants 13569* (VLA).

\* $2n = 40$ , CHN. Russian Federation, Primorskii Krai, Vladivostok city, Pervorechenskii District, Ovchinnikova Str. 28, app. 25, as a weed in the box with *Mirabilis* on the balcony, 26 Aug 2021, *N.S. Probatova 13665* (VLA); Russian Federation, Primorskii Krai, Dal'negorskii Raion, Dal'negorsk town, close to the wall of a building at the outset of Pionerskaya Str., near bus stop Bol'nitsa [Hospital], 27 Aug 2020, *G.M. Gulariants 13570* (VLA); Russian Federation, Primorskii Krai, Dal'negorskii Raion, Dal'negorsk town, Uval'naya Str., near the concentration plant, 27 Aug 2020, *G.M. Gulariants 13571* (VLA).

$2n = 42$ , CHN. Russian Federation, Primorskii Krai, Dal'negorskii Raion, Dal'negorsk town, Uval'naya Str., at the end of the street, among weedy herbs, near the fence, 27 Aug 2020, *G.M. Gulariants 13572* (VLA).

$2n = 48$ , CHN. Russian Federation, Khabarovskii Krai, outskirts of Khabarovsk city, holiday village Sputnik, as a weed near the house, 23 Aug 2020, *G.G. Probatova 13564* (VLA); Russian Federation, Primorskii Krai, Vladivostok city, Vtoraya Rechka, as a weed on the lawn, 20 Sep 2021, *Z.V. Kozhevnikova 13670* (VLA).

\* $2n = 52$ , CHN. Russian Federation, Primorskii Krai, Nadezhdinskii Raion, railway platform 37th km, holiday village Kl'uchevoe, as a weed in vegetable garden, 15 Sep 2021, *Z.V. Kozhevnikova 13669* (VLA).

\* $2n = 54$ , CHN. Russian Federation, Primorskii Krai, Nadezhdinskii Raion, 7 km of the railway station Kiparissovo, 3.5 km of Taezhnoe settlement, holiday village Kiparis, plot 405, as a weed in potato bed, 24 Aug 2020, *E.G. Rudyka 13565* (VLA).

\* $2n = 62$ , CHN. Russian Federation, Primorskii Krai, Nadezhdinskii Raion, 3.5 km of Taezhnoe settlement, holiday village Kiparis, plot 369, as a weed in the vegetable bed, 01 Aug 2020, *N.S. Probatova 13562* (VLA).

\* $2n = 72$ , CHN. Russian Federation, Primorskii Krai, suburb of Artem town, vicinity of Knevichi settlement, 27 Aug 2021, *T. Ignat'eva 13666* (VLA).

\* $2n = 86$ , CHN. Russian Federation, Primorskii Krai, Vladivostok city, Pervorechenskii District, 30 Ovchinnikova Str., weed on the lawn near the domestic building, 26 Aug 2021, *G.G. Probatova 13568* (VLA).

$2n = 96$ , CHN. Russian Federation, Primorskii Krai, Muraviev-Amurskii Peninsula, Vladivostok, Akademgorodok, ruderal weed near the building of the Federal Scientific Center of Biodiversity FEB RAS, 08 Aug 2021, *E.B. Volynets 13573* (VLA).

#### FABACEAE

*Hedysarum hedysaroides* (L.) Schinz & Thell.

$2n = 14$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, vicinity of Tymlat settlement, shrubby tundra, 10 Sep 2021, *O.A. Chernyagina 13754* (VLA).



**GERANIACEAE***Geranium palustre* L.

$2n = 28$ , CHN. Russian Federation, Republic of Ingushetia, Dzheirakhskii Raion, Greater Caucasus, Skalistyi Range, right riverside of the Armkhi River, foot of Mt. Stolovaya Gora, near Beini village, slot of *Betula* forest on the mountain slope, in the shrub layer, 1660 m, 42° 50'23"N, 44°43'29"E, 16 Aug 2021, *D.A. Krivenko 13744* (IRK, VLA).

**LAMIACEAE***Galeopsis bifida* Boenn.

$2n = 32$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Ossora settlement, waste ground, 18 Sep 2021, *O.A. Chernyagina 13749* (VLA).

**ONAGRACEAE***Epilobium pseudorubescens* A.K.Skvortsov

$2n = 36$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Sovetskii District, housing area Malye Klyki, at the crossing of Rabochaya and Zazhora streets, near the housing, 70 m, 55°47'55" N, 49°13'26"E, 28 Jul 2021, *M.A. Markaryan 13755* (IRK, VLA).

*Oenothera villosa* Thunb.

$2n = 14$ , CHN. Russian Federation, Republic of Tatarstan, Zelenodol'skii Raion, dam on the Sviyazhsk Island at the inflow of Sviyaga River to Volga, sandy roadside, 50 m, 55°46'00"N, 48°38' 43"E, 25 Jul 2021, *M.A. Markaryan 13695* (IRK, VLA).

**OXALIDACEAE***Oxalis stricta* L.

$2n = 24$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Sovetskii District, housing area Malye Klyki, at the crossing of Rabochaya and Zazhora streets, near the housing, 70 m, 55°47'55" N, 49°13'26"E, 28 Jul 2021, *M.A. Markaryan 13706* (IRK, VLA).

**PAPAVERACEAE***Papaver fugax* Poir. (= *P. armeniacum* (L.) DC.)

$2n = 14$ , CHN. Russian Federation, Republic of Ingushetia, Sunzhenskii Raion, third advanced ridge of the N macro-slope of the Greater Caucasus, Skalistyi Range, Assinskoe gorge, left riverside of the Assa River, 3 km N of abandoned Egikkhal village, stony riverside, 42°51'36.29"N, 44°55'51.65"E, 17 Aug 2021, *D.A. Krivenko 13733* (IRK, VLA).

*Papaver somniferum* L.

$2n = 22$ , CHN. Russian Federation, Irkutskaya Oblast', Irkutsk city, left riverside of the Angara River, 6th urban settlement of the Hydroelectric power station, ruderal plant communities, 450 m, 52° 13'47"N, 104°17'07"E, 11 Jul 2021, *N.V. Filinova & D.A. Krivenko 13689* (IRK, NSK, VLA).

**POACEAE***Leymus mollis* (Trin.) Pilg.

$2n = 28$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Tymlat settlement, coastal meadow on the spit, 10 Sep 2021, *O.A. Chernyagina 13753* (VLA).

*Phalaris canariensis* L.

$2n = 12$ , CHN. Russian Federation, Novosibirskaya Oblast', wasteland between international airport Novosibirsk (Tolmachevo) and Ob' town, on roadside of country road, 110 m, 55°00'13"N, 82°40'26"E, 20 Aug 2021, *D.A. Krivenko 13685* (IRK, VLA).

*Poa botryoides* (Trin. ex Griseb.) Kom. (= *P. attenuata* Trin.)

$2n = 28$ , CHN. Russian Federation, Kamchatskii Krai, Penzhinskii Raion, Penzhinskii Ridge in upper course of the Kichavayam River, on the broken stone at the gold-miners houses, rare, 17 Aug 2019, *V.V. Yakubov 13636* (VLA).

$2n = 42$ , CHN. Russian Federation, Kamchatskii Krai, Penzhinskii Raion, Penzhinskii Ridge, middle course of the Kichavayam River, stony slide-rocks on the slope, common, ca. 410 m, 21 Aug 2019, *V.V. Yakubov 13639* (VLA).

*Poa pratensis* L.

$2n = 56$ , CHN. Russian Federation, Primorskii Krai, Dal'negorskii Raion, Dal'negorsk town, Inzhenernaya Str. 7, ruderal weed at the building, 21 May 2021, *G.M. Gulariants 13628* (VLA).

*Setaria pumila* (Poir.) Roem. & Schult.

$2n = 18$ , CHN. Russian Federation, Irkutskaya Oblast', Irkutskii Raion, left riverside of the Irkut River, between Mamony and Maksimovshchina villages, weedy-ruderal plant communities along roadside of country road, 52°17'56.4"N, 104°07'12.0"E, 09 Aug 2020, *D.A. Krivenko & O.A. Chernysheva 13584* (IRK, VLA).

$2n = 36$ , CHN. Russian Federation, Republic of Tatarstan, Zelenodol'skii Raion, right riverside of the Volga River, near Mizinovno village, roadside, close to plantation of *Zea mays*, 60 m, 55°44' 59"N, 48°32'32"E, 25 Jul 2021, *M.A. Markaryan 13696* (IRK, VLA).

*Setaria viridis* (L.) P.Beauv.

$2n = 18$ , CHN. Armenia, Erevan city, Mesrop Mashtotz Prospect, roadside, 1000 m, 40°10'56"N, 44°30'33"E, 20 Jul 2019, *D.A. Krivenko & al. 13491* (IRK, VLA).

**POLYGONACEAE***Aconogonon weyrichii* (F.Schmidt) H.Hara (≡ *Koenigia weyrichii* (F.Schmidt) T.M.Schust. & Reveal)

$2n = 20$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Ossora settlement, abandoned vegetable garden (escaped from culture?), 18 Sep 2021, *O.A. Chernyagina 13760* (VLA).

*Fallopia convolvulus* (L.) Á.Löve

$2n = 40$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Ossora settlement, as a weed in an unplanted vegetable garden, 18 Sep 2021, *O.A. Chernyagina 13762* (VLA).

*Rumex patientia* L.

$2n = 40$ , CHN. Russian Federation, Novosibirskaya Oblast', wasteland between international airport Novosibirsk (Tolmachevo) and Ob' town, weedy-ruderal plant communities, 110 m, 55°00'13" N, 82°40'26"E, 20 Aug 2021, *D.A. Krivenko 13691* (IRK, VLA).

*Rumex thyrsoiflorus* Fingerh.

$2n = 14$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Vakhitovskii Raion, Nizhnii Kaban Lake, on the slope, 50 m, 55°46'43"N, 49°07'15"E, 26 Jul 2021, *M.A. Markaryan 13714* (IRK, VLA).

**RANUNCULACEAE***Ranunculus trichophyllus* Chaix ex Vill.

$2n = 48$ , CHN. Russian Federation, Irkutskaya Oblast', Taishetskii Raion, Solyanaya settlement, Solyanaya River – right

affluent of the Biryusa River, 55°32'15.69"N, 97°49'47.87"E, 19 Jul 2020, O.A. Chernyshyeva 13605 (IRK, VLA).

#### ROSACEAE

*Potentilla inclinata* Vill.

$2n = 28$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Sovetskii District, Azino-1, Dzhaudat Faizi Str., at the pavement, 100 m, 55°47'22"N, 49°13'42"E, 21 Jul 2021, M.A. Markaryan 13724 (IRK, VLA); Russian Federation, Republic of Tatarstan, Kazan' city, Vakhitovskii District, Astronomicheskaya Str., roadside, 80 m, 55°47'28"N, 49°07'07"E, 29 Jul 2021, M.A. Markaryan 13729 (IRK, VLA); Russian Federation, Irkutskaya Oblast', Ust'-Ordynskii Buryatskii Okrug, Alarskii Raion, Aleksandrovsk settlement, forest margin, 53°20'49.07"N, 102°39'54.81"E, 29 Aug 2021, O.Yu. Zavgorodnyaia 13739 (VLA).

#### RUBIACEAE

*Galium mollugo* L.

$2n = 22$ , CHN. Russian Federation, Republic of Tatarstan, Kazan' city, Vakhitovskii Raion, Nizhnii Kaban Lake, 60 m, on the slope, 55°46'35"N, 49°07'17"E, 26 Jul 2021, M.A. Markaryan 13705 (IRK, VLA).

#### SCROPHULARIACEAE

*Linaria vulgaris* Mill.

$2n = 12$ , CHN. Russian Federation, Kamchatskii Krai, Kamchatka Peninsula, Karaghinskii Raion, Tymlat settlement, waste ground, 12 Sep 2021, O.A. Chernyagina 13737 (VLA).

#### SOLANACEAE

*Solanum nigrum* L.

$2n = 72$ , CHN. Russian Federation, Primorskii Krai, Nadezhdinskii Raion, 3.5 km of Tazhnoe settlement, holiday village Kiparis, plot 369, a rare weed (with dentate leaves) in vegetable bed, 11 Aug 2020, N.S. Probatova 13563 (VLA).

#### VIOLACEAE

*Viola nemoralis* Kuetz.

$2n = 20$ , CHN. Russian Federation, Republic of Dagestan, Tsuntinskii Raion, Great Caucasus, near Khasharkhota village, right riverside of the Khzvanor River, forested steppe slope, 1600 m, 42°07'32"N, 46°09'18"E, 12 Aug 2021, D.A. Krivenko 13743 (IRK, VLA).

#### LITERATURE CITED

- Probatova, N.S., Seledets, V.P., Rudyka, E.G., Gnufikov, A.A., Kozhevnikova, Z.V. & Barkalov V.Y. 2009. [Reports]. In: Marhold, K. (ed.), IAPT/IOPB chromosome data 8. *Taxon* 58: 1284–1288, E11–E20. <https://doi.org/10.1002/tax.584017>
- Probatova, N.S., Motorykina, T.N., Rudyka, E.G., Kriukova, M.V. & Nechaev, V.A. 2013. [Reports]. In: Marhold, K. (ed.), IAPT/IOPB chromosome data 15. *Taxon* 62: 1081–1082, E26–E28. <https://doi.org/10.12705/625.16>

## IAPT chromosome data 38/10

Anna V. Shatokhina,\* Tatiana A. Poliakova & Evgeniy A. Bondarevich

\*Address for correspondence: [shatokhina78@mail.ru](mailto:shatokhina78@mail.ru)

The work was carried out within the framework of the state assignment of the Ministry of Science and Higher Education of the Russian Federation for the N.I. Vavilov Institute of General Genetics of the Russian Academy of Sciences No. 0112-2019-0001.

Herbarium specimens and seeds are deposited in the Vavilov Institute of General Genetics of the Russian Academy of Sciences (VIGG), Laboratory of Population Genetics, Moscow.

\* First chromosome count for the species.

#### ROSACEAE

\**Spiraea aquilegifolia* Pall.

$2n = 18$ ,  $2n = 36$ , CHN. Russian Federation, Zabaikalskii Krai, Aginskii Raion, the vicinity of the village of Tsokto-Hangil (highway village of Aginskoye–village of Nizhny Tsasutsei), 300 m from the highway and 4 km north of the village of Tsokto-Hangil, 50°55'44" N, 114°34'51"E, wormwood mountain steppe with bush thickets (*Artemisia gmelinii*, *Armeniaca sibirica*, *Ulmus macrocarpa*, *Spiraea aquilegifolia*), 14 Jun 2015, E.A. Bondarevich 10315 (VIGG).

The chromosome number in *Spiraea aquilegifolia* was determined by us for the first time. This specimen is a mixoploid, since both diploid ( $2n = 2x = 18$ ) and tetraploid ( $2n = 4x = 36$ ) cells were found in the somatic tissue.

*Spiraea chamaedryfolia* L.

$2n = 36$ ,  $2n = 27$ ,  $2n = 18$ ,  $2n = 32$ , CHN. Russian Federation, Krasnoyarskii Krai, Berezovskii Raion, north-western spurs of Eastern Sayan Mountains, near Stolby National Park, 55°55'01"N, 92°31'27"E, larch-birch forest, 02 Jul 2016, T.A. Poliakova 10916 (VIGG).

Two levels of ploidy ( $2n = 18$ ,  $2n = 36$ ) were previously identified within this species and the closely related *Spiraea chamaedryfolia* var. *ulmifolia* (Scop.) Maxim. (Matskevich & Lutkov, 1966; Fedorov, 1969; Sun & al., 1997). Recently, we have identified a tetraploid cytotype from Novosibirsk and the Eastern Sayan Mountains (Poliakova & Shatokhina, 2021). Recent research results suggest that *S. chamaedryfolia* is a mixoploid, with a predominance of tetraploid cells in the somatic tissue ( $2n = 36$ ). Cells with a triploid set of chromosomes were quite common ( $2n = 3x = 27$ ), and diploid cells were less common ( $2n = 2x = 18$ ). Mitoses with aneuploid chromosome number ( $2n = 32$ ), along with diploid, tetraploid and triploid cytotypes, were observed in some single cells of *S. chamaedryfolia*. Obviously, this is the phenomenon of aneuploidy, and not the tetraploid number of chromosomes with another basic chromosome number ( $x = 8$ ) well-known in the genus *Spiraea* (Rani & al., 2014). In addition, an aneuploid chromosome number was found in single cells ( $2n = 32$ ), which was probably noted earlier in Central Europe (Austria); however, the author misidentified this number for a diploid ( $2n = 32$ ), with  $n = 16$  (Wetschnig, 1988).

*Spiraea dahurica* (Rupr.) Maxim.

$2n = 18$ ,  $2n = 27$ ,  $2n = 36$ , CHN. Russian Federation, Republic of Sakha (Yakutia), Eastern Verkhoyanie, Tomponskii Raion, Segenekh River, 63°02'57"N, 137°57'03"E, 400–470 m, larch-birch

moss-lichen forest, the southern rocky slope, 08 Jul 2017, *T.A. Poliakov*, *A.P. Efimova 11217* (VIGG).

The number of chromosomes for this species was recently obtained for the first time by us from the “locus classicus” – from Yakutia (southern part) (Poliakova & Shatokhina, 2021). Our study was conducted in the same territory, but in its eastern part. Surprisingly, there is no data from China, where this species is also common. According to the determined numbers of chromosomes, mixoploidy is also present in this species: most of the studied cells were diploid ( $2n = 2x = 18$ ), while the triploid ( $2n = 3x = 27$ ) and the tetraploid ( $2n = 4x = 36$ ) cells were less common.

*Spiraea flexuosa* Fisch. ex Cambess.

$2n = 18$ , CHN. Russian Federation, Republic of Buryatia, Tunkinskii Raion, surroundings of Tunka village, 51°44'05"N, 102°35'12"E, cedar-larch forest, 13 Sep 2017, *T.A. Poliakov* 11517 (VIGG).

Two chromosome numbers are known for this species –  $2n = 18$  and  $2n = 36$ . The tetraploid number ( $2n = 36$ ) was found in Russia: from the collection of the Botanical Garden of Moscow State University (a sample of unknown wild origin) (Oginuma & al., 2004), from Primorskii Krai (Polyakova & Muratova, 2015) and Irkutskaya Oblast' (Probatova & al., 2021). Our determination of the number of diploid chromosomes ( $2n = 2x = 18$ ) from Eastern Siberia corresponds to the number of chromosomes previously established from Japan (Hara, 1952), which confirms the existence of two cytotypes ( $2x$  and  $4x$ ) within the species.

*Spiraea media* Fr. Schmidt.

$2n = 18$ ,  $2n = 27$ , CHN. Russian Federation, Republic of Sakha (Yakutia), near Yakutsk city, near the museum Kingdom of Permafrost, 62°02'41"N, 129°37'08"E, rarefly in coniferous pine-larch forest, 12 Jul 2015, *T.A. Poliakov*, *A.P. Efimova 11915* (VIGG).

From among the species of the genus *Spiraea*, *S. media* seems to be the most karyologically studied. In the old literature – from America and Europe (Sax, 1936; Fedorov, 1969) – and in modern publications, mainly from the Russian Far East and Siberia, other chromosome numbers are given:  $2n = 10, 18, 20, 27, 36$  (Agapova & al., 1993; Probatova & al., 2007, 2009; Polyakova & Muratova, 2015). However, the diploid number of chromosomes is more common, which is also confirmed in our latest report (Poliakova & Shatokhina, 2021). Here, for the first time, we present this species as a mixoploid, where mitoses with diploid ( $2n = 2x = 18$ ) and triploid ( $2n = 3x = 27$ ) sets of chromosomes were marked in the cells of one individual. This specimen has narrow thin leaves. Perhaps this sample is a hybrid of *S. media* × *S. dahurica*.

*Spiraea pubescens* Turcz.

$2n = 18$ ,  $2n = 36$ , CHN. Russian Federation, Zabaikalskii Krai, Akshinskii Raion, vicinity of Kurulga village, 50°07'47"N, 112°45'31"E, mountain-steppe area of south-eastern exposure (*Filifolium sibiricum*, *Stipa capillata*), 11 Aug 2015, *E.A. Bondarevich 12115* (VIGG).

It turned out that *Spiraea pubescens* has hardly been studied karyologically. Information on the chromosome numbers was limited to two reports: from America, where the diploid chromosome number of  $2n = 18$  was reported (Sax, 1936) and from Korea, from where two ploidy levels,  $2n = 2x = 18$  and  $2n = 4x = 36$ , were given (Sun & al., 1997). Our specimen from the Zabaikalskii Krai is a mixoploid, with a predominance of diploid cells in the somatic tissue ( $2n = 2x = 18$ ). This taxon was studied karyologically for the first time in the Russian Federation.

*Spiraea stevenii* (C.K.Schneid.) Rydb.

$2n = 18$ ,  $2n = 27$ , CHN. Russian Federation, Republic of Sakha (Yakutia), Eastern Verkhoyanie, Tomponskii Raion, Segenekh River, 63°02'57"N 137°57'03"E, larch-birch moss-lichen forest, at the foot of the slope, 08 Jul 2017, *T.A. Poliakov* 12517 (VIGG).

This species is considered karyologically very polymorphic. In the Russian Far East, *Spiraea stevenii* (= *S. beauverdiana* C.K. Schneid.) was previously studied in different regions of Chukotka and on Sakhalin, and the diploid number of chromosomes was found everywhere ( $2n = 18$ ); the aneuploid chromosome number  $2n = 14$  was given from Magadan (Agapova & al., 1993; Probatova & al., 2007). Our studies have confirmed the presence of mixoploidy in *S. stevenii* in the eastern part of Yakutia. The diploid ( $2n = 2x = 18$ ) and triploid ( $2n = 3x = 27$ ) cells were found in *S. stevenii*.

#### LITERATURE CITED

- Agapova, N.D., Arkharova, K.B., Vakhtina, L.I., Zemskova, E.A. & Tarvis, L.V.** 1993. *Khromosomnye chisla tsvetkovykh rastenii flory SSSR: Semeystva Moraceae–Zygophyllaceae* [Chromosome numbers of flowering plants in the USSR flora: Moraceae–Zygophyllaceae families]. St. Petersburg: Nauka. [in Russian]
- Fedorov, A.A. (ed.)** 1969. *Khromosomnye chisla tsvetkovykh rastenii* [Chromosome numbers of flowering plants]. Leningrad: Nauka. [in Russian]
- Hara, H.** 1952. Contributions to the study of variations in the Japanese plants closely related to those of Europe or North America. Part 1. *J. Fac. Sci. Tokyo Imp. Univ., Sect. 3, Bot.* 6: 29–96.
- Matskevich, N.V. & Lutkov, A.N.** 1966. *Khromosomnye chisla poliploidnykh vidov lesnykh derev'yev i kustarnikov* [Chromosome numbers of polyploid species of forest trees and shrubs]. Pp. 267–286 in: *Ekspperimental'naya poliploidiya v selektsii rastenii* [Experimental polyploidy in plant breeding]. Novosibirsk: Nauka, Sib. Otdel. [in Russian]
- Oginuma, K., Tatarenko, I.V. & Kondo, K.** 2004. Karyomorphology of eight species of *Spiraea* (Rosaceae) in Russia. *Chromosome Sci.* 8: 23–28.
- Polyakova, T.A. & Muratova, E.N.** 2015. Kariologicheskoe issledovanie nekotorykh vidov roda *Spiraea* (Rosaceae) flory Dal'nego Vostoka i Vostochnoi Sibiri / Karyological study of some species of the genus *Spiraea* (Rosaceae) of the Far Eastern and Eastern Siberian flora. *Rastitel'n. Mir Aziatsk. Rossii* 2: 23–26. [in Russian with English abstract]
- Poliakova, T.A. & Shatokhina, A.V.** 2021. IAPT chromosome data 35/12. In: Marhold, K. & Kučera, J. (eds.) & al., IAPT chromosome data 35. *Taxon* 70: 1410, E35–E36. <https://doi.org/10.1002/tax.12638>
- Probatova, N.S., Barkalov, V.Yu. & Rudyka, E.G.** 2007. *Kariologiya flory Sakhalina i Kuril'skikh ostrovov. Chisla khromosom, taksonomicheskie i fitogeograficheskie komentarii* [Caryology of the flora of Sakhalin and the Kurile Islands. Chromosome numbers, taxonomic and phytogeographical comments]. Vladivostok: Dal'nauka. [in Russian]
- Probatova, N.S., Seledets, V.P., Rudyka, E.G., Gnutikov, A.A., Kozhevnikova, Z.V. & Barkalov, V.Y.** 2009. [Reports]. In: Marhold, K. (ed.), IAPT/IOPB chromosome data 8. *Taxon* 58: 1284–1288, E11–E20.
- Probatova, N.S., Kazanovsky, S.G. & Krivenko D.A.** 2021. Baikal Siberia, Russia. In: Probatova, N.S. (ed.), *Botanica Pacifica plant chromosome data 1. Baikal Siberia. Bot. Pacifica* 10(1): 114–115. <https://doi.org/10.17581/bp.2021.10103>

- Rani, S., Jeelani, S.M., Kumar, S., Kumari, S. & Gupta, R.C.** 2014. An overview of chromosome and basic numbers diversity in cytologically investigated polypetalous genera from the Western Himalayas (India). *Caryologia* 67: 1–24. <https://doi.org/10.1080/00087114.2013.856088>
- Sax, K.** 1936. Polyploidy and geographic distribution in *Spiraea*. *J. Arnold Arbor.* 17: 53–56. <https://doi.org/10.5962/p.185354>
- Sun, B.-Y., Kim, T.-J. & Kim, C.H.** 1997. A biosystematics study on polyploidy populations of the genus *Spiraea* (Rosaceae) in Korea. *J. Pl. Biol.* 40: 291–297. <https://doi.org/10.1007/BF03030463>
- Wetschnig, W.** 1988. Chromosomenzahlen Kärntner Gefäßpflanzen (Teil 1). *Carinthia II* 178: 391–401.

## IAPT chromosome data 38/11

**Julia V. Shner,\* Tatiana V. Alexeeva, Michail G. Pimenov & Tatiana A. Ostroumova**

\*Address for correspondence: [juliashner@gmail.com](mailto:juliashner@gmail.com)

\* First chromosome count for the species.

### APIACEAE / UMBELLIFERAE

*Ammoides pusilla* (Brot.) Breistr.  
 $n = 6$ , CHN. Croatia, Splitsko-Dalmatinska Županija, Makarska, 43.298924°N, 17.029777°E, 17 Jun 2018, *M.G. Pimenov 7-18* (MW).

*Astydamia latifolia* (L.) Baill.  
 $n = 11$ ;  $2n = 22$ , CHN. Spain, Canary Islands (Islas Canarias), Tenerife, between Puerto-de-la-Cruz and Santa Ursula, slopes on sea shore, 28.415178°N, 16.524656°W, 10–30 m, 22 Sep 2017, *M.G. Pimenov 15-17* (MW).

*Bupleurum falcatum* L.  
 $n = 8$ , CHN. Romania, Cluj County, Turda, 46.59°N, 23.78°E, 13 Aug 2016, *T.A. Ostroumova s.n.* (MW).

*Bupleurum glumaceum* Sm.  
 $n = 8$ , CHN. Croatia, Splitsko-dalmatinska Županija, Makarska, 43.298924°N, 17.029777°E, 19 Jun 2018, *M.G. Pimenov 17-18* (MW).

*Bupleurum salicifolium* R.Br.  
 $2n = 32$ , CHN. Spain, Canary Islands (Islas Canarias), Tenerife, vicinity of Las Palmas de Gran Canaria, Jardín Viero y Clavijo, 28.06645°N, 15.460878°W, 150–270 m, 27 Sep 2017, *M.G. Pimenov 17-17* (MW).

*Bupleurum veronense* Turra  
 $2n = 16$ , CHN. Croatia, Dubrovačka-Neretvanska Županija, S of Dubrovnik, Fort Imperial, plateau, 42.65°N, 18.11°E, 02 Sep 2017, *T.A. Ostroumova s.n.* (MW). Italy, reg. Friuli Venezia Giulia, near Trieste, Karst Plateau, between Grotta Gigante and Rupinpiccolo, 45.72°N, 13.77°E, 30 Sep 2018, *T.A. Ostroumova s.n.* (MW).

*Canaria tortuosa* (Webb & Berthel.) Jim.Mejias & P.Vargas  
 $2n = 22$ , CHN. Spain, Canary Islands (Islas Canarias), Tenerife, vicinity of Masca, 28.305686°N, 16.84°W, 630 m, 22 Sep 2017, *M.G. Pimenov 1-17* (MW).

\**Chaerophyllum coloratum* L.

$2n = 22$ , CHN. Bosnia & Hercegovina, Mostar, valley of riv. Neretva, 43.319193°N, 17.028510°E, 20 Jun 2018, *M.G. Pimenov 20-18* (MW). Croatia, Dubrovačka-Neretvanska Županija, between Bosanska and Brgat, 42.64°N, 18.14°E, 08 Sep 2017, *T.A. Ostroumova s.n.* (MW); Croatia, Splitsko-Dalmatinska Županija, Brač Isl., between Selca and Sumartin, 43.29°N, 16.85°E, 09 Sep 2017, *T.A. Ostroumova s.n.* (MW).

*Conopodium majus* (Gouan) Loret

$2n = 22$ , CHN. Norway, Bergen, Troidhausen, Estate (Museum) of Edward Grieg, 60.319627°N, 5.189366°W, 15 Jul 2016, *M.G. Pimenov s.n.* (MW).

*Crithmum maritimum* L.

$2n = 22$ , CHN. Spain, Canary Islands (Islas Canarias), Tenerife, Garachico, 28.372566°N, 16.797664°W, 22 Sep 2018, *M.G. Pimenov s.n.* (MW).

*Daucus carota* L.

$n = 9$ , CHN. Croatia, Dubrovačka-Neretvanska Županija, Brgat, 42.64°N, 18.6°E, 07 Sep 2017, *T.A. Ostroumova s.n.* (MW). Romania, Constanța County, Mangalia, 43.84°N, 28.58°E, 06 Aug 2016, *T.A. Ostroumova s.n.* (MW).

$2n = 18$ , CHN. Croatia, Splitsko-Dalmatinska Županija, Brač Isl., between Selca and Sumartin 43.29°N, 16.85°E, 09 Sep 2017, *T.A. Ostroumova s.n.* (MW).

*Dichoropetalum schottii* (Besser ex DC.) Pimenov & Kljuykov

$2n = 22$ , CHN. Italy, reg. Friuli Venezia Giulia, near Trieste, Karst Plateau, between Repen and Zagrad, 45.72°N, 13.78°E, 30 Sep 2018, *T.A. Ostroumova s.n.* (MW).

*Eryngium amethystinum* L.

$2n = 14$ , CHN. Croatia, Dubrovačka-Neretvanska Županija, S of Dubrovnik, Fort Imperial, plateau, 42.65°N, 18.11°E, 07 Sep 2017, *T.A. Ostroumova s.n.* (MW).

*Eryngium creticum* Lam.

$n = 7$ , CHN. Croatia, Splitsko-Dalmatinska Županija, Makarska, Orejava Forest park, 43.285144°N, 17.024085°E, 22 Jun 2018, *M.G. Pimenov 25-18* (MW).

*Ferulago galbanifera* (Mill.) W.D.J.Koch

$n = 11$ , CHN. Croatia, Splitsko-Dalmatinska Županija, Veliko Brdo, 43.319193°N, 17.028510°E, 17 Jun 2018, *M.G. Pimenov 10-18* (MW).

*Heraclium sphondylium* L.

$n = 11$ , CHN. Croatia, Zagreb, along the river Sava, near Savski most, 45.783786°N, 15.951834°E, 24 Jun 2018, *M.G. Pimenov s.n.* (MW).

*Katapsuxis silaifolia* (Jacq.) Reduron & al.

$2n = 22$ , CHN. Italy, reg. Friuli Venezia Giulia, near Trieste, Karst Plateau, between Grotta Gigante and Rupinpiccolo, 45.72°N, 13.77°E, 30 Sep 2018, *T.A. Ostroumova s.n.* (MW).

*Oreoselinum nigrum* Delarbre

$n = 11$ ;  $2n = 22$ , CHN. Italy, reg. Friuli Venezia Giulia, near Trieste, Karst Plateau, between Repen and Zagrad, 45.72°N, 13.78°E, 30 Sep 2018, *T.A. Ostroumova s.n.* (MW).

*Orlaya grandiflora* (L.) Hoffm.

$2n = 20$ , CHN. Croatia, Dubrovačka-Neretvanska Županija, Brgat, 42.64°N, 18.6°E, 08 Sep 2017, *T.A. Ostroumova s.n.* (MW).

*Pimpinella junionae* Ceballos & Ortuno

$n = 10$ , CHN. Spain, Canary Islands (Islas Canarias), Tenerife, vicinity of Las Palmas de Gran Canaria, Jardín Viero y Clavijo, 28.06645°N, 15.460878°W, 150–270 m, 27 Sep 2017, *M.G. Pimenov 16-17* (MW).

*Pimpinella saxifraga* L.

$n = 10$ , CHN. Romania, Cluj County, Turda, 46.59°N, 23.78°E, 13 Aug 2016, *T.A. Ostroumova s.n.* (MW).

*Portenschlagiella ramosissima* (Port.) Tutin

$n = 11$ , CHN. Croatia, Splitsko-Dalmatinska Županija, Veliko Brdo, Kotišino, 43.319193°N, 17.028510°E, 17 Jun 2018, *M.G. Pimenov 15-18* (MW).

$2n = 22$ , CHN. Croatia, Splitsko-Dalmatinska Županija, between Gornje Tučepi and Podpeč, 43.28°N, 17.07°E, 10 Sep 2017, *T.A. Ostroumova s.n.* (MW).

*Seseli besserianum* Stoyanov & Ostr.

$2n = 22$ , CHN. Bulgaria, Varna District, Razdelna village, Petriča locality, 43.14834°N, 27.64002°E, 09 Nov 2018, *S. Stoyanov s.n.* (SOM 176662); Bulgaria, Plevan District, Nikopolsko plateau, village Muselievo, 09 Oct 2018, *S. Stoyanov s.n.* (SOM 176676); Bulgaria, Varna District, village Asparuhovo, Chudnite Skali Natural Monument, 42.96814°N, 27.29238°E, Oct 2018, *S. Stoyanov s.n.* (SOM 176664).

*Seseli globiferum* Vis.

$n = 11$ , CHN. Montenegro, the monastery Moraća, canyon of riv. Moraća, 42.445330°N, 19.235867°E, 27 Aug 2019, *M.G. Pimenov 15-19* (MW).

*Tordylium apulum* L.

$2n = 20$ , CHN. Croatia, Splitsko-Dalmatinska Županija, Makarska, under rocks, 43.298924°N, 17.029777°E, 15 Jun 2018, *M.G. Pimenov 5-18* (MW).

*Torilis arvensis* (Huds.) Link

$2n = 12$ , CHN. Spain, Canary Islands (Islas Canarias), Tenerife, Puerto-de-la-Cruz, 28.409167°N, 16.565943°W, 20 Sep 2017, *M.G. Pimenov s.n.* (MW).

*Torilis ucranica* Spreng.

$2n = 16$ , CHN. Italy, reg. Friuli Venezia Giulia, near Trieste, Val Rosandra, 45.62°N, 13.88°E, 29 Sep 2018, *T.A. Ostroumova s.n.* (MW).

*Xanthoselinum alsaticum* (L.) Schur

$n = 11$ , CHN. Albania (Republika e Shqipërisë), coast of Adriatic sea, 8 km S of Durrës, 41.279430°N, 19.466301°E, 02 Aug 2018, *M.G. Pimenov s.n.* (MW).

$n = 11$ ;  $2n = 22$ , CHN. Italy, reg. Friuli Venezia Giulia, near Trieste, Karst Plateau, between Repen and Zagrad, 45.72°N, 13.78°E, 30 Sep 2018, *T.A. Ostroumova s.n.* (MW).