

IOPB COLUMN

Edited by Karol Marhold & Ilse Breitwieser

IAPT/IOPB chromosome data 17

Edited by Karol Marhold

DOI: <http://dx.doi.org/10.12705/635.34>Elena A. Andriyanova,^{1*} Maria N. Lomonosova²
& Alexandra N. Berkutenko¹1 *Institute of Biological Problems of the North, Far Eastern
Branch of the Russian Academy of Sciences, Magadan 685000,
Russia*2 *Central Siberian Botanical Garden, Siberian Branch of the
Russian Academy of Sciences, Novosibirsk 630090, Russia** Author for correspondence: andria@ibpn.ruAll material CHN; collectors: AB = Alexandra N. Berkutenko,
AP = Aleksey N. Polezhaev, EA = Elena A. Andriyanova; vouchers
in MAG unless otherwise stated.

ALLIACEAE

Allium strictum Schrad., 2n = 32; Russia, Magadan Oblast', EA A13151.

APIACEAE

Magadania victoris (Schischk.) Pimenov & Lavrova, 2n = 22; Russia,
Magadan Oblast', M. Voroshilova V12001.

ASTERACEAE

Aster alpinus L., 2n = 18; Russia, Magadan Oblast', EA A13155,
M. Khoreva K96001.*Petasites frigidus* (L.) Fr., 2n = 60; Russia, Magadan Oblast', EA
A12004.*Saussurea nuda* Ledeb., 2n = 26; Russia, Magadan Oblast', EA A13089.

CHENOPODIACEAE

Atriplex centralasiatica Iljin, 2n = 18; China, Xinjiang Uyghur Auton-
omous Region, M.V. Olova s.n. (NS).*Halostachys belangeriana* (Moq.) Botsch., 2n = 36; China, Xinjiang
Uyghur Autonomous Region, AB & AP s.n. (NS).*Kali paulsenii* (Litv.) Akhani & Roalson (= *Salsola paulsenii* Litv.),
2n = 36; China, Xinjiang Uyghur Autonomous Region, AB & AP
s.n. (NS).

FABACEAE

Astragalus alpinus L., 2n = 16; Russia, Magadan Oblast', EA A13118.
2n = 32; Russia, Magadan Oblast', EA A13061.*Lathyrus aleuticus* (Greene) Pobed., 2n = 14; Russia, Magadan Oblast',
EA A13112, EA A13060, EA A13167.

POACEAE

Elymus boreochotensis A.P.Khokhr., 2n = 28; Russia, Magadan
Oblast', EA A13153.*Leymus mollis* (Trin.) Pilg., 2n = 28; Russia, Magadan Oblast', EA
A13109, EA A13166.

PORTULACACEAE

Claytonia soczaviana Jurtzev, 2n = 16; Russia, Magadan Oblast',
EA A13046.Tatyana V. An'kova,^{1*} Dmitriy N. Shaulo¹ & Andrey S. Erst^{1,2}1 *Laboratory of Herbarium, Central Siberian Botanical
Garden Siberian, Branch of the Russian Academy of Sciences,
101 Zolotodolinskaya str., Novosibirsk 630090, Russia*2 *Tomsk State University, Laboratory of Ecology and Biodiversity,
Tomsk 634050, Russia** Author for correspondence: ankova_tv@mail.ruAll materials CHN; collectors: AG = A. Grebenyuk, DSh =
D. Shaulo, TA = T. An'kova, TYa = T. Yan'shin; vouchers in NS.The study was financially supported by grants 13-04-00874-a,
14-04-01415-a and 14-44-04021-r-sibir'-a from the Russian Foundation
for Basic Research and by the grant of the President of the Russia
(MK-2722.2014.4).

ASTERACEAE

Scorzonera taurica M.Bieb., 2n = 12, 14; Kazakhstan, Aktobe Oblast',
TA A139.

FABACEAE

Astragalus lasiophyllus Ledeb., 2n = 32 Kazakhstan, Aktobe Oblast',
TA A140.*Hedysarum argyrophyllum* Ledeb., 2n = 16; Kazakhstan, Aktobe
Oblast', TA A121 F.*Hedysarum austrosibiricum* B.Fedtsch., 2n = 14; Russia, Altay Repub-
lic, TA 147.*Hedysarum theinum* Krasnob., 2n = 14; Russia, Altay Republic, TA
A153.*Hedysarum tscherkassovae* Knjaz., 2n = 14; Kazakhstan, Aktobe
Oblast', TA A117.*Oxytropis pilosa* (L.) DC., 2n = 16; Russia, Tuva Republic, DSh &
TYa, A156.*Oxytropis setosa* (Pall.) DC., 2n = 16+2B; Russia, Tuva Republic,
TA&AG A141.*Sophora alopecuroides* L., 2n = 36; Kazakhstan, Aktobe Oblast',
TA A137.*Thermopsis alpina* (Pall.) Ledeb., 2n = 12, 14; Russia, Altay Republic,
TA A146.*Trigonella cancellata* Desf., 2n = 16; Kazakhstan, Aktobe Oblast',
TA A107.All materials for the chromosome column should be submitted electronically to: Karol Marhold, karol.marhold@savba.sk (Institute of Botany,
Slovak Academy of Sciences, SK-845 23 Bratislava, Slovakia, and Department of Botany, Charles University, CZ 128-01 Prague, Czech Republic).
The full version of this contribution is available in the online edition of TAXON appended to this article. The following citation format is rec-
ommended: Baltisberger, M. & Voelger, M. 2006. *Sternbergia sicula*. In: Marhold, K. (ed.), IAPT/IOPB chromosome data 1. *Taxon* 55: 444, E2.

RANUNCULACEAE

Aquilegia glandulosa Fisch. ex Link, $2n = 14$, Russia, Altay Republic, TA A149.

Ranunculus pedatus Waldst., $2n = 16$; Kazakhstan, Aktobe Oblast, TA A95.

SCROPHULARIACEAE

Scrophularia altaica Murray, $2n = 26$; Russia, Altay Republic, TA A145.

Matthias Baltisberger & Babette Baltisberger

ETH Zürich, Plant Ecological Genetics, Institute of Integrative Biology, Universitätsstr. 16, 8092 Zürich, Switzerland; balti@ethz.ch

All material CHN; collectors: BMB = Babette & Matthias Baltisberger; vouchers in Z/ZT.

ASTERACEAE

Bidens alba (L.) DC., $2n = 72$; France, Lesser Antilles, Guadeloupe, BMB 14046, BMB 14188; France, Lesser Antilles, Guadeloupe, BMB 14049, BMB 14189.

Tridax procumbens L., $2n = 36$; France, Lesser Antilles, Guadeloupe, BMB 14047, BMB 14180.

Vernonia cinerea (L.) Less., $2n = 18$; France, Lesser Antilles, Guadeloupe, BMB 14048, BMB 14181; Maldive Islands, Eriyadu, BMB 14554, BMB 14570.

CONVOLVULACEAE

Calystegia soldanella (L.) R.Br., $2n = 22$; Maldive Islands, Eriyadu, BMB 14553.

Regina Berjano,* María Talavera, Francisco Javier Jiménez & Salvador Talavera

Departamento de Biología Vegetal y Ecología, Universidad de Sevilla, Apdo. 1095, 41080 Sevilla, Spain

* Author for correspondence: regina@us.es

All materials CHN; collectors: AT = A. Terrab, CS = C. Sánchez, DC = D. Campos, FJ = F.J. Jiménez, KT = K. Tremetsberger, LN = L. Navarro, MA = M.J. Ariza, ML = M. Lorenzo, MO = M.A. Ortiz, MT = M. Talavera, ST = S. Talavera; vouchers in SEV.

This work was supported by the Spanish Ministerio de Economía y Competitividad and European Regional Development Funds (EFRD) through the project Flora Iberica IX (2) (CGL2012-32914) and by the regional government Junta de Andalucía through “Proyectos de Excelencia” (P08-RNM-03703).

ASTERACEAE

Crepis alpina L., $2n = 10$; Spain, MT, CS, DC & ST 301/13; MT, CS, DC & ST 304/13.

Crepis balliana Babc., $2n = 16$; Morocco, AT, FJ, MT, CS, DC & ST 155/13; AT, FJ, MT, CS, DC & ST 255/13.

Crepis bursifolia L., $2n = 16$; Morocco, AT, FJ, MT, CS, DC & ST 126/13. $2n = 8$; Morocco, AT, FJ, MT, CS, DC & ST 254/13; AT, FJ, MT, CS, DC & ST 256/013.

Crepis erythia Pau, $2n = 8$; Spain, MT, CS, DC & ST 80/13. Morocco, AT, FJ, MT, CS, DC & ST 141/13. $2n = 16$; Morocco, AT, FJ, MT, CS, DC & ST 265/13.

Crepis pulchra L., $2n = 8$; Spain, MT, CS, DC & ST 380/13.

Crepis salzmannii Babc., $2n = 8$, Spain, MT, CS, DC & ST 84/13; MT,

CS, DC & ST 87/13; DC & ST 96/13. $2n = 16$; Morocco, AT, FJ, MT, CS, DC & ST 272/13.

Crepis stellata (Ball) M.Talavera, $2n = 8$; Morocco, AT, FJ & ST 244/13. $2n = 16$; Morocco, AT, FJ & ST 221/13.

Crepis taraxacifolia Thuill., $2n = 16$; Morocco, AT, FJ & ST 218/13. Spain, MT, CS, DC & ST 335/13; MT, CS, DC & ST 401/13; MT, CS, DC & ST 443/13.

Hedypnois arenaria (Schousb.) DC., $2n = 6$; Spain, DC & ST 23/12. Morocco, AT, FJ, MT, CS, DC & ST 110/13; AT, FJ, MT, CS, DC & ST 131/13; AT, FJ, MT, CS, DC & ST 165/13; AT, FJ, MT, CS, DC & ST 264/13.

Hedypnois cretica (L.) Dum.Cours. $2n = 8$; Italy, Sicily, MO 23/08 OT; Italy, Sardinia, MA, ML, LN & MT 217/09; ST 566/12. Spain, DC & ST 47/13.

Hedypnois rhagadioloides (L.) F.W.Schmidt, $2n = 13$; Italy, MO & KT 38/08 OT; Italy, Sardinia, MA, ML, LN & MT 220/09. Spain, MO & ST 122/09; ST 565/12; DC & ST 54/13. Morocco, AT, FJ, MT, CS, DC & ST 120/13.

Picris cupuligera (Durieu) Walp., $2n = 10$; Morocco, AT, FJ, MT, CS, DC & ST 148/13; AT, FJ, MT, CS, DC & ST 154/13.

Scorzoneros oraria (Maire) Greuter & Talavera, $2n = 12$; Morocco, AT, FJ, MT, CS, DC & ST 171/13.

Urospermum picroides (L.) F.W.Schmidt, $2n = 10$; Morocco, AT, FJ, MT, CS, DC & ST 127/13.

Juliana G. Brito,¹ Rodrigo da Silva Santos,² Paulo R.H. Meira,¹ Lânia I.F. Alves,^{1*} Maria J. Gomes de Andrade,³ Alessandro Rapini² & Leonardo P. Felix¹

1 Laboratório de Citogenética Vegetal, Departamento de Ciências Biológicas, Centro de Ciências Agrárias, Universidade Federal da Paraíba, Campus II, 58397-000 Areia, Paraíba, Brazil

2 Departamento de Ciências Biológicas, Universidade Estadual de Feira de Santana, 44036-900 Feira de Santana, Bahia, Brazil

* Author for correspondence: laniais@yahoo.com.br

All materials CHN; collectors LPF = L.P. Felix; vouchers in EAN (Herbário Prof. Jayme Coelho de Moraes).

Financial support of CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico), CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior), INSA (Instituto Nacional do Semiárido).

APOCYNACEAE

Allamanda blanchetii A.DC., $2n = 36$; Brazil, Paraíba, LPF 11.921, LPF 12081, LPF 12543, Pernambuco, LPF 12494, Alagoas, LPF 12161. $2n = 18$; Brazil, Paraíba, LPF 12078.

Allamanda cathartica L., $2n = 22$; Brazil, Paraíba, LPF & L.I.F. Alves 14295.

Allamanda doniana Müll.Arg., $2n = 18$; Brazil, Pará, LPF 12645, LPF 12655, Maranhão, LPF 12644, Paraíba, LPF 12080, LPF 12420, LPF 12262. $2n = 3x = 27$; Brazil, Piauí, LPF 12416.

Allamanda puberula A.DC., $2n = 22$; Brazil, Bahia, LPF 12009.

Asclepias curassavica L., $2n = 22$; Brazil, Paraíba, LPF 12264.

Aspidosperma pyriforme Mart., $2n = 34$; Brazil, Paraíba, LPF 11314.

Gomphocarpus physocarpus E.Mey., $2n = 22$; Brazil, Bahia, A. Rapini 1802.

Himatanthus bracteatus (A.DC.) Woodson, $2n = 18$; Brazil, Paraíba, J.G. Brito 23.

Mandevilla bahiensis (Woodson) M.F.Sales & Kin.-Gouv, $2n = 20$; Brazil, Bahia, R.S. Santos 01.

Mandevilla dardanoi M.F.Sales, Kin.-Gouv. & A.O.Simões, $2n = 20$; Brazil, Pernambuco, LPF 11789.

- Mandevilla hatschbachii* M.F.Sales, Kin.-Gouv. & A.O.Simões, $2n = 22$; Brazil, Bahia, *A. Rapini 1405*.
- Mandevilla moricandiana* (A.DC.) Woodson, $2n = 20$; Brazil, Paraíba, *S. Pitrez & A. Trajano 426*.
- Mandevilla sancta* (Stadelm.) Woodson, $2n = 20$; Brazil, Bahia, *R.S. Santos & A. Rapini 17*.
- Mandevilla tenuifolia* (J.C.Mikan) Woodson, $2n = 20$; Brazil, Bahia, *R.S. Santos 07*.
- Marsdenia altissima* (Jacq.) Dugand, $2n = 22$; Brazil, Pernambuco, *LPF 12583*.
- Marsdenia caatingae* Morillo, $2n = 22$; Brazil, Rio Grande do Norte, *LPF & D.J.G. Brito 12034*.
- Matelea ganglinosa* (Vell.) Rapini, $2n = 22$; Brazil, Paraíba, *LPF 14271*.
- Odontadenia hypoglauca* Müll.Arg., $2n = 18$; Brazil, Pernambuco, *LPF 12004*.
- Peltastes peltatus* (Vell.) Woodson, $2n = 20$; Brazil, Paraíba, *LPF 12635*.
- Rauvolfia ligustrina* Willd. ex Roem. & Schult., $2n = 44$; Brazil, São Paulo, *LPF 12838*.
- Stipecoma peltigera* (Stadelm.) Müll.Arg., $2n = 18$; Brazil, Bahia, *R.S. Santos 10*.
- Tabernaemontana catharinensis* A.DC., $2n = 18$; Brazil, Paraíba, *U.S. Gomes 06*.
- Tabernaemontana solanifolia* A.DC., $2n = 22$; Brazil, Piauí, *M.F.O. Pires & LPF 83*.
- Temnadenia violacea* (Vell.) Miers, $2n = 18$; Brazil, Bahia, *R.S. Santos & A. Rapini 13*.

Marina Grabiele,^{1,2*} Julio R. Daviña¹ & Ana I. Honfi¹

- 1 Programa de Estudios Florísticos y Genética Vegetal (PEFyGV), Instituto de Biología Subtropical (IBS UNaM – CONICET), Universidad Nacional de Misiones, Rivadavia 2370, 3300 Posadas, Argentina
 - 2 Instituto de Botánica del Nordeste (IBONE – CONICET), Universidad Nacional del Nordeste, C.C. 209, 3400 Corrientes, Argentina
- * Author for correspondence: marinagrabiele@gmail.com

All materials CHN; collectors: *D* = J.R. Daviña, *H* = A.I. Honfi, *MarG* = Marina Grabiele, *MG* = Mauro Grabiele.

This work was supported by Agencia Nacional de Promoción Científica y Técnica (ANPCyT – SECyT, Argentina) grant no. PICT-O 36907, Comité Ejecutivo de Desarrollo e Innovación Tecnológica (CEDIT), and Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina.

COMMELINACEAE

- Callisia monandra* (Sw.) Schultes & Schultes f., $n = 6$, $2n = 12$; Argentina, Misiones, *MarG 46* (MNES); Argentina, Misiones, *MarG, MG, D & H 68* (MNES).
- Callisia repens* L., $n = 6$, $2n = 12$; Argentina, Misiones, *MarG 12* (CTES, MNES); Argentina, Misiones, *MarG 19* (CTES, MNES); Argentina, Misiones, *MarG 21* (MNES); Argentina, Misiones, *MG 12* (MNES); Argentina, Misiones, *MG 30* (MNES); Argentina, Misiones, *MG 39* (MNES); Argentina, Misiones, *MG 40* (MNES); Argentina, Corrientes, *MG 66* (MNES).
- Dichorisandra hexandra* (Aubl.) Standley, $n = 38$, $2n = 76$; Argentina, Misiones *MarG 26* (MNES, SI); Argentina, Misiones, *MarG 41* (CTES, MNES); Argentina, Misiones, *MarG 43* (MNES, SI); Argentina, Misiones, *MG 62* (CTES, MNES); Argentina, Misiones, *MG 63* (CTES, MNES); Argentina, Misiones, *MG 64* (MNES, SI).
- Gibasis geniculata* (Jacq.) Rohweder, $n = 24$, $2n = 48$; Argentina, Chaco, *MarG 23* (CTES, MNES).

- Tradescantia anagallidea* Seub., $n = 30$, $2n = 60$; Argentina, Misiones, *MarG 1* (CTES, MNES); Argentina, Misiones, *MarG 13* (MNES); Argentina, Misiones, *MG 68* (MNES).
- Tradescantia fluminensis* Vell., $n = 20$, $2n = 40$; Argentina, Misiones, *MarG 3* (MNES); Argentina, Misiones, *MarG 11* (MNES); Argentina, Misiones, *MarG 24* (MNES); Argentina, Misiones, *MG 5* (MNES); Argentina, Chaco, *MarG 25* (MNES); Argentina, Misiones, *MarG, MG, D & H 30* (MNES); Argentina, Misiones, *MarG, MG, D & H 31* (MNES); Argentina, Misiones, *MarG 42* (MNES); Argentina, Misiones, *MarG 44* (MNES); Argentina, Misiones, *MarG 57* (MNES); Argentina, Misiones, *MarG 60* (MNES); Argentina, Misiones, *MarG 61* (MNES); Argentina, Misiones, *MarG 63* (MNES); Argentina, Misiones, *MarG 64* (MNES); Argentina, Misiones, *MarG 65* (MNES); Argentina, Misiones, *MarG 66* (MNES). $2n = 60$; Argentina, Córdoba, *MarG 2* (MNES); Argentina, Córdoba, *MarG 36* (MNES); Argentina, Córdoba, *MarG 37* (MNES); Argentina, Córdoba, *MarG 38* (MNES).

Marlykynti Hynniewta,¹ Surendra Kumar Malik² & Satyawada Rama Rao^{1*}

- 1 Plant Biotechnology Laboratory, Department of Biotechnology and Bioinformatics, North Eastern Hill University, Permanent Campus, Mawkynroh, Umshing, Shillong 793 022, Meghalaya, India
 - 2 Tissue Culture & Cryopreservation Unit, National Bureau of Plant Genetic Resources, Pusa, New Delhi 110 012, India
- * Author for correspondence: srrao22@yahoo.com

All materials CHN; vouchers in NHCP.

This study was supported by University Grants Commission through Rajiv Gandhi National Fellowship to MH.

RUTACEAE

- Citrus assamensis* S.Dutta & S.C.Bhattacharya, $2n = 18$; India, Meghalaya state, *S.K. Malik & O.P. Dhariwal 20742*.
- Citrus ichangensis* Swingle, $2n = 18$; India, Nagaland state, *S.K. Malik & O.P. Dhariwal 20741*.

Amanda A. Jesus,¹ Flávia A. Ortolani² & Evandro M. Moraes^{1*}

- 1 Departamento de Biologia, Centro de Ciências Humanas e Biológicas, Universidade Federal de São Carlos, 18052-780, Sorocaba, SP, Brazil
 - 2 Faculdade de Ciências Agrárias e Veterinárias, Universidade Estadual Paulista, 14884-900, Jaboticabal, SP, Brazil
- * Author for correspondence: emarsola@ufscar.br

All materials CHN.

Financial support of the São Paulo Research Foundation (FAPESP, 2005/55200-8 to EMM).

CACTACEAE

- Pilosocereus aureispinus* (Buining & Brederoo) F.Ritter, $2n = 22$; Brazil, Bahia, *E.M. Moraes & M.F.Perez s.n.* (CCTS 642).
- Pilosocereus aurisetus* subsp. *aurilanatus* (Ritter) Zappi, $2n = 22$; Brazil, Minas Gerais, *E.M. Moraes & L.T.P. Ono s.n.* (CCTS 639).
- Pilosocereus aurisetus* (Werderm.) Byles & G.D.Rowley subsp. *aurisetus*, $2n = 22$; Brazil, Minas Gerais, *E.M. Moraes & L.T.P. Ono s.n.* (CCTS 646).
- Pilosocereus bohlei* Hofacker, $2n = 22$; Brazil, Bahia, *E.M. Moraes, M.F. Perez, M.C. Machado & F.F. Franco s.n.* (CCTS 3000).

Pilosocereus machrisii (E.Y.Dawson) Backeb., $2n = 22$; Brazil, São Paulo, E.M. Moraes, L.P.T. Ono & M.F. Perez s.n. (CCTS 644).
Pilosocereus vilaboensis (Diers & Esteves) P.J.Braun, $2n = 22$; Brazil, Goiás, E.M. Moraes, F.P. Molena & M.F. Perez s.n. (CCTS 3001).

Aleksandr A. Korobkov,¹ Violetta V. Kotseruba¹ & Victor V. Chepinoga^{2,3*}

1 Komarov Botanical Institute RAS, Prof. Popov Str. 2, 197376 St.-Petersburg, Russia

2 V.B. Sochava Institute of Geography SB RAS, Ulan-Batorskaya Str. 1, 664033 Irkutsk, Russia

3 Department of Botany, Irkutsk State University, Karl Marks Str. 1, 664003 Irkutsk, Russia

* Author for correspondence: Victor.Chepinoga@gmail.com

All materials CHN; collectors: AAK = A.A. Korobkov, AB = A. Budantsev, AYK = A.Y. Korolyuk, IM = I. Mokhova, NM = N. Medvedeva.

The study was financially supported by grants 13-04-01468 and 14-04-00771 from the Russian Fund for Basic Research (RFBR).

ASTERACEAE

Artemisia absinthium L., $2n = 18$; Russia, Irkutskaya Oblast', S. Kazanovsky 2012-45 (LE).

Artemisia adamsii Besser, $2n = 18$; Russia, Republic of Buryatia, AAK 06-141 (LE), AAK 08-24 (LE).

Artemisia anethifolia Weber ex Stechm., $2n = 16$; Russia, Republic of Buryatia, AAK 08-56 (LE), AAK 08-54 (LE), AAK 08-57 (LE), AAK 06-156, 06-23 (LE), M. Lomonosova 04-03 (LE), AAK 06-157, 06-158, 06-22 (LE); Russia, Zabaikalskii Krai, M. Lomonosova 04-02 (LE), AYK 2013-12 (LE). $2n = 16-18$; Russia, Republic of Buryatia, B. Naidanov 08-55 (LE).

Artemisia annua L., $2n = 18$; Russia, Republic of Buryatia, AAK 08-22 (LE).

Artemisia bargusinensis Spreng., $2n = 36$; Russia, Republic of Buryatia, S. Budatsyrenova 02-04 (LE), AB, AAK, IM & NM 95-08 (LE).

Artemisia commutata Besser, $2n = 18$; Russia, Irkutskaya Oblast', AAK 95-19 (LE); Russia, Republic of Buryatia, AAK 08-83 (LE), AAK 08-80 (LE), AAK 08-82 (LE), AYK 2013-07 (LE), AB, AAK, IM & NM 95-02 (LE), AAK 08-81 (LE), AB, AAK, IM & NM 95-04, 95-05 (LE), AAK, IM & NM 95-56 (LE); Russia, Zabaikalskii Krai, AB, NM, AAK & IM 95-52 (LE), AYK 2013-06 (LE), AAK 06-01 (LE), AAK 06-160, 161 (LE), AAK 06-162 (LE), AAK 06-163 (LE), AAK 06-165 (LE), AAK 06-170 (LE), O. Afonina 2012-35 (LE), O. Afonina 2012-37 (LE), AYK 2013-04 (LE), AYK 2013-05 (LE), AB, AAK, IM & NM 95-03 (LE), AB, AAK, IM & NM 95-07 (LE). $2n = ca. 29, 36$; Russia, Republic of Buryatia, AAK 08-93 (LE). $2n = 36$; Russia, Republic of Buryatia, S. Budatsyrenova 02-24 (LE); Russia, Zabaikalskii Krai, AYK 2013-08 (LE), O. Afonina 2013-16 (LE).

Artemisia cuspidata Krasch., $2n = 36$; Russia, Irkutskaya Oblast', AB, AAK & IM 95-53 (LE). $2n = 44-54$; Russia, Irkutskaya Oblast', AB, AAK & IM 95-59 (LE).

Artemisia desertorum Spreng., $2n = 18$; Russia, Zabaikalskii Krai, AB, AAK, IM & NM 95-57 (LE). $2n = 36$; Russia, Irkutskaya Oblast', S. Kazanovsky 2012-43 (LE), O. Afonina 2012-53 (LE); Russia, Republic of Buryatia, AYK 2012-29 (LE); Russia, Zabaikalskii Krai, AAK 06-181 (LE), AAK 06-183 (LE). $2n = 18, 27, 36$; Russia, Irkutskaya Oblast', O. Afonina 2012-52 (LE).

Artemisia dracunculus L., $2n = 18$; Russia, Republic of Buryatia, AAK 08-72 (LE), AAK 08-71 (LE); Russia, Zabaikalskii Krai, AAK 06-203 (LE), AAK 06-204 (LE). $2n = 36$; Russia, Zabaikalskii Krai, AAK 06-202 (LE).

Artemisia freyniana (Pamp.) Krasch., $2n = 18$; Russia, Zabaikalskii Krai, O. Afonina 2012-50 (LE).

Artemisia frigida Willd., $2n = 18$; Russia, Republic of Buryatia, AAK 08-65 (LE), AAK 08-63 (LE), D. Tubanova 08-60 (LE), D. Chimitov 02-01 (LE), S. Budatsyrenova 02-03 (LE), AAK 06-148 (LE); Russia, Zabaikalskii Krai, AAK 06-147 (LE), AAK 06-214 (LE), O. Afonina 2010-41 (LE), O. Afonina 2012-68 (LE), AAK 06-145 (LE). $2n = 36$; Russia, Irkutskaya Oblast', AAK 95-37 (LE); Russia, Republic of Buryatia, I. Safronova 04-108 (LE), AAK 08-62 (LE); Russia, Zabaikalskii Krai, AAK 06-143 (LE), AAK 06-146 (LE). $2n = 36$, ca. 54; Russia, Republic of Buryatia, S. Budatsyrenova 02-02 (LE).
Artemisia gmelinii Weber ex Stechm., $2n = 18$; Russia, Irkutskaya Oblast', AB, AAK & IM 95-21 (LE); Russia, Republic of Buryatia, G. Ubanavichus 97-123 (LE). $2n = 54$; Russia, Republic of Buryatia, AB, AAK, IM & NM 95-22 (LE); Russia, Zabaikalskii Krai, AAK 06-139 (LE).

Artemisia integrifolia L., $2n = 18$; Russia, Zabaikalskii Krai, AB, AAK, IM & NM 95-47, 95-48 (LE). $2n = 27, 36$; Russia, Zabaikalskii Krai, O. Afonina 2012-40 (LE). $2n = 32-36$; Russia, Zabaikalskii Krai, AAK 06-106 (LE). $2n = 36$; Russia, Zabaikalskii Krai, AAK 06-12 (LE), AAK 06-105 (LE), AAK 06-107 (LE), AAK 06-108 (LE).
Artemisia jacutica Drobow, $2n = 18$; Russia, Republic of Buryatia, AAK 08-66 (LE).

Artemisia laciniata Willd., $2n = 18$; Russia, Republic of Buryatia, AAK 06-121 (LE), K. Osipov 06-219 (LE); Russia, Zabaikalskii Krai, AAK 06-122 (LE), AAK 06-118, 06-119 (LE), AAK 06-120 (LE), AAK 06-123, 06-124 (LE), AB, AAK, IM & NM 95-25 (LE). $2n = 18+2B$; Russia, Republic of Buryatia, AAK 08-23 (LE).

Artemisia ledebouriana Besser, $2n = 36$; Russia, Republic of Buryatia, AAK 08-100, 08-101, 08-103, 08-104 (LE), AAK 08-97, 08-98, 08-99 (LE), AYK 2012-02 (LE), AYK 2012-03, 2012-04, 2012-05 (LE), AYK 2012-01 (LE), AAK 06-11, 06-193, 06-194, 06-195, 06-196 (LE); Russia, Zabaikalskii Krai, O. Afonina 2013-17 (LE).

Artemisia leucophylla Turcz. ex C.B. Clarke, $2n = 18$; Russia, Republic of Buryatia, AB, AAK, IM & NM 95-38 (LE).

Artemisia macilentia (Maxim.) Krasch., $2n = 18$; Russia, Zabaikalskii Krai, AB, AAK, IM & NM 95-55, 95-58 (LE). $2n = 36$; Russia, Zabaikalskii Krai, AYK 2013-13 (LE), AAK 06-172a (LE), AAK 06-175 (LE), AAK 06-184 (LE), O. Afonina 2012-36, 2012-39 (LE), AB, AAK, IM & NM 95-09 (LE).

Artemisia messerschmidtiana Besser, $2n = 54$; Russia, Republic of Buryatia, AAK 08-19, 08-20 (LE), AAK 06-133, 06-134, 06-135 (LE).

Artemisia mongolica Fisch. ex Besser, $2n = 16$; Russia, Irkutskaya Oblast', S. Kazanovsky 2012-42, 2012-47, 2012-48 (LE), S. Kazanovsky 2012-44 (LE); Russia, Republic of Buryatia, AAK 08-38 (LE), AAK 08-39 (LE), AAK 08-40 (LE), AB, AAK, IM & NM 95-45 (LE); Russia, Zabaikalskii Krai, O. Afonina 2012-54 (LE), AAK 06-101 (LE), AAK 06-103 (LE), AB, AAK, IM & NM 95-40 (LE), AB, AAK, IM & NM 95-44 (LE). $2n = 18, 54$; Russia, Zabaikalskii Krai, AAK 06-102 (LE).

Artemisia monostachya Bunge ex Maxim., $2n = 18$; Russia, Republic of Buryatia, AYK 2013-14 (LE), AYK 2013-15 (LE). $2n = 36$; Russia, Republic of Buryatia, AAK 08-76, 08-77 (LE), AYK 2011-20 (LE), AYK 2012-28 (LE), I. Safronova 04-104, 04-106 (LE); Russia, Zabaikalskii Krai, AAK, 06-187 (LE), AAK 06-188 (LE), AAK 06-189, 06-190 (LE), AAK 06-191 (LE), AAK 06-192 (LE), E. Malkov 04-98 (LE), AAK 06-08 (LE).

Artemisia palustris L., $2n = 18$; Russia, Republic of Buryatia, AAK 06-20 (LE), D. Tubanova 08-21 (LE); Russia, Zabaikalskii Krai, AAK 06-113 (LE).

Artemisia pubescens Ledeb., $2n = 36$; Russia, Irkutskaya Oblast', AB, AAK & IM 95-10, 95-11, 95-13 (LE).

Artemisia rubripes Nakai, $2n = 16$; Russia, Republic of Buryatia, AAK 08-41 (LE).

Artemisia rupestris L., $2n = 18$; Russia, Zabaikalskii Krai, AAK 06-152 (LE), AB, AAK, IM & NM 95-60 (LE).

Artemisia rutifolia Steph. ex Spreng., $2n = 18$; Russia, Republic of

Buryatia, *AAK 08-58, 08-59* (LE); Russia, Zabaikalskii Krai, *AAK 06-25, 06-154* (LE).

Artemisia sacrorum Ledeb., $2n = 54$; Russia, Republic of Buryatia, *AAK 08-26* (LE), *AAK 08-27* (LE), *AAK 08-28, 08-29* (LE), *AAK 08-30* (LE), *AAK 06-130* (LE), *AAK 06-132* (LE), *AAK 08-25* (LE), *AAK 08-31* (LE); Russia, Zabaikalskii Krai, *AAK 06-136* (LE), *AAK 06-138* (LE), *AAK 06-15, 06-140* (LE).

Artemisia scoparia Waldst. & Kit., $2n = 16$; Russia, Irkutskaya Oblast', *S. Kazanovsky 2012-49* (LE); Russia, Republic of Buryatia, *AAK 06-05, 06-198* (LE), *AAK 06-200* (LE); Russia, Zabaikalskii Krai, *AAK 06-197* (LE), *O. Afonina 2012-55* (LE). $2n = 18$; Russia, Republic of Buryatia, *AAK 08-73* (LE), *D. Tubanova 08-75* (LE), *AAK 08-74* (LE).

Artemisia sericea Weber ex Stechm., $2n = 72$; Russia, Republic of Buryatia, *AAK 08-70* (LE). $2n = 90$; Russia, Zabaikalskii Krai, *AAK 06-150* (LE).

Artemisia sieversiana Ehrh. ex Willd., $2n = 18$; Russia, Irkutskaya Oblast', *S. Kazanovsky 2012-46* (LE), *O. Afonina 2012-51* (LE); Russia, Republic of Buryatia, *AAK 08-67* (LE), *S. Budatsyrenova 02-06* (LE), *D. Tubanova 08-68* (LE), *I. Safronova 04-107* (LE); Russia, Zabaikalskii Krai, *AAK 06-155* (LE), *AAK 06-24* (LE).

Artemisia subviscosa Besser, $2n = 54$; Russia, Republic of Buryatia, *S. Budatsyrenova 02-05* (LE), *T. Boikov 08-06* (LE).

Artemisia tanacetifolia L., $2n = 36$; Russia, Irkutskaya Oblast', *AB, AAK, IM & NM 95-30* (LE); Russia, Republic of Buryatia, *AAK & al. 95-25* (LE); Russia, Zabaikalskii Krai, *AAK 06-114* (LE), *AB, AAK, IM & NM 95-27, 95-28, 95-29* (LE). $2n = 54$; Russia, Republic of Buryatia, *AAK 08-07* (LE), *AB, AAK, IM & NM 95-61* (LE), *AB, AAK, IM & NM 95-62* (LE); Russia, Zabaikalskii Krai, *O. Afonina 2012-38* (LE), *AAK 06-115* (LE), *AAK 06-116* (LE), *AAK 06-117* (LE).

Artemisia vulgaris L., $2n = 16$; Russia, Republic of Buryatia, *AAK 08-37* (LE). $2n = 18$; Russia, Zabaikalskii Krai, *AAK 06-21* (LE).

Artemisia xanthochroa Krasch., $2n = 36$; Russia, Republic of Buryatia, *AYK 2013-01* (LE), *AYK 2012-08* (LE); Russia, Zabaikalskii Krai, *AYK 2013-02* (LE), *AYK 2013-03* (LE).

Artemisia xylorhiza Krasch. ex Filatova, $2n = 27, 36$; Russia, Republic of Buryatia, *N. Dulepova 2012-10* (LE). $2n = 36$; Russia, Republic of Buryatia, *AYK 2013-10* (LE), *AAK 06-210* (LE), *AAK 06-10* (LE), *AYK 2013-11* (LE), *D. Tubanova 08-87* (LE), *AYK 2013-09* (LE).

Zoya V. Kozhevnikova* & Andrey E. Kozhevnikov

Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, 159 Stoletya Prospect, 690022, Vladivostok, Russia

* Author for correspondence: kozhevnikova@ibss.dvo.ru

All material CHN; collectors: *AK* = A.E. Kozhevnikov; *ZK* = Z.V. Kozhevnikova; vouchers in VLA.

ALLIACEAE

Allium senescens L., $2n = 16$; Russia, Primorskii Krai, *AK & ZK 043*.

APIACEAE

Angelica anomala Avé-Lall., $2n = 22$; Russia, Primorskii Krai, *AK & ZK 040*.

ARACEAE

Calla palustris L., $2n = 36$; Russia, Primorskii Krai, *AK & ZK 042*.

ASTERACEAE

Attractylodes ovata DC., $2n = 24$; Russia, Primorskii Krai, *AK & ZK 045*.

Syneilesis aconitifolia (Bunge) Maxim., $2n = 52$; Russia, Primorskii Krai, *AK & ZK 053*.

BERBERIDACEAE

Epimedium koreanum Nakai, $2n = 12$; Russia, Primorskii Krai, *AK & ZK 037*.

CAMPANULACEAE

Platycodon grandiflorus A.DC., $2n = 18$; Russia, Primorskii Krai, *AK & ZK 047*.

GENTIANACEAE

Ophelia chinensis Bunge ex Griseb., $2n = 24$; Russia, Primorskii Krai, *AK & ZK 052*.

LAMIACEAE

Phlomidoides maximowiczii (Regel) Kamelin & Makhm., $2n = 22$; Russia, Primorskii Krai, *AK & ZK 039*.

Scutellaria baicalensis Georgi, $2n = 16$; Russia, Primorskii Krai, *AK & ZK 048, AK & ZK 049*.

LINACEAE

Linum amurense Alef., $2n = 18$; Russia, Primorskii Krai, *AK & ZK 036*.

LYTHRACEAE

Lythrum salicaria L. $2n = 30$; Russia, Primorskii Krai, *AK & ZK 051*.

PLANTAGINACEAE

Plantago lanceolata L., $2n = 12$; Russia, Primorskii Krai, *AK & ZK 041*.

POACEAE

Chloris virgata Sw., $2n = 20$; Russia, Primorskii Krai, *AK & ZK 050*.

RANUNCULACEAE

Clematis hexapetala Pall., $2n = 20$; Russia, Primorskii Krai, *AK & ZK 046*.

ROSACEAE

Filipendula palmata Maxim., $2n = 28$; Russia, Primorskii Krai, *AK & ZK 044*.

SCROPHULARIACEAE

Rhinanthus aestivalis (N.W.Zinger) Schischk. & Serg., $2n = 22$; Russia, Primorskii Krai, *AK & ZK 038*.

Anna Krahulcová

Institute of Botany, Academy of Sciences of the Czech Republic, 25243 Průhonice, Czech Republic; anna.krahulcova@ibot.cas.cz

All numbers CHN; collectors: *AK* = A. Krahulcová, *AKL* = A. Klaudivsová, *DB* = D. Blažková, *FK* = F. Krahulec, *HS* = H. Skálová, *ISB* = Index Seminum Fac. Sci. UK Bratislava, *ISK* = Index Seminum Bot. Gard. Kraków, *JS* = J. Sádlo, *JŠ* = J. Štěpánková, *MS* = M. Sedláčková, *PS* = P. Sekerka, *PT* = P. Tomšovic, *VJ* = V. Jarolímová, *VS* = V. Samek, *ZS* = Z. Skála; vouchers in PRA (Průhonice).

ASTERACEAE

Aster amelloides Besser, $2n = 54$; Slovakia, *ISB s.n.* (PRA 8551, 8552). *Colymbada scabiosa* (L.) Holub, $2n = 20$; Czech Republic, *JŠ, AKL & AK s.n.* (PRA 8549). $2n = 20+1B$; Czech Republic, *JŠ, AKL & AK s.n.* (PRA 8550).

Crinittina linosyris (L.) Soják, $2n = 18$; Czech Republic, *JŠ, AKL & AK s.n.* (PRA 8545).

Hieracium schmidtii Tausch, $2n = 27$; Italy, *PS s.n.* (PRA 8566).

Inula salicina L., $2n = 16$; Poland, *ISK s.n.* (PRA 8553, 8554).

Leontodon hispidus L., $2n = 14$; Slovakia, *FK s.n.* (PRA 8546, 8547).

Sonchus arvensis L., $2n = 54$; Czech Republic, *FK* & *AK* s.n. (PRA 8555, 8556).
Verbesina angulata Urb., $2n = 34$; Cuba, *VS* s.n. (PRA 8548).

BRASSICACEAE

Camelina microcarpa Andr. ex DC., $2n = 38$; Czech Republic, *JŠ*, *AKL* & *AK* s.n. (PRA 8562, 8563, 8564, 8565).
Cardamine pratensis L., $2n = 30$; Czech Republic, *JŠ* & *AK* s.n. (PRA 8574, 8575, 8576, 8577, 8578, 8579, 8580, 8581), *JŠ*, *AKL* & *AK* s.n. (PRA 8582). $n = 15$; Czech Republic, *ZS* & *AKL* s.n. (PRA 8591, 8592). $2n = 32$, $n = 16$; Czech Republic, *ZS* & *AKL* s.n. (PRA 8584, 8585, 8586, 8587, 8588, 8589). $2n = 47$; Czech Republic, *ZS* & *AKL* s.n. (PRA 8590).
Cardaminopsis arenosa (L.) Hayek, $2n = 32$; Czech Republic, *JŠ* & *AK* s.n. (PRA 8540, 8541).

CYPERACEAE

Eleocharis palustris (L.) Roem. & Schult. subsp. *palustris*, $2n = 16$; Czech Republic, *FK* & *AK* s.n. (PRA 8571).

EUPHORBIACEAE

Tithymalus epithymoides (L.) Klotzsch & Garcke, $2n = 14$; Czech Republic, *JŠ*, *AKL* & *AK* s.n. (PRA 8557).

LAMIACEAE

Thymus praecox Opiz, $2n = 54$; Czech Republic, *FK* & *AK* s.n. (PRA 8567); Czech Republic, *JŠ*, *AKL* & *AK* (PRA 8568).

POACEAE

Anthoxanthum alpinum Á.Löve & D.Löve, $2n = 10$; Slovakia, *DB* s.n. (PRA 8542).
Festuca ovina L., $2n = 28$; Czech Republic, *FK* & *AK* s.n. (PRA 8543, 8544).

ROSACEAE

Aphanes arvensis L., $2n = 48$; Czech Republic, *MS* s.n. (PRA 8558).

RUBIACEAE

Galium glaucum L., $2n = 44$; Czech Republic, *PT*, *VJ* & *AK* s.n. (PRA 8570); Czech Republic, *ZS* & *HS* s.n. (PRA 8569).

SCROPHULARIACEAE

Kickxia elatine (L.) Dumort., $2n = 36$; Czech Republic, *JS* s.n. (PRA 8559, 8560).

VALERIANACEAE

Valerianella locusta (L.) Laterr., $2n = 16$; Czech Republic, *JŠ* & *AK* s.n. (PRA 8561).

VIOLACEAE

Viola arvensis Murray, $2n = 34$; Czech Republic, *JŠ* & *AK* s.n. (PRA 8572, 8573).

Alejandra Ortiz,^{1*} Guillermo Seijo^{1,2} & Graciela I. Lavia^{1,2}

- 1 Instituto de Botánica del Nordeste (CONICET – UNNE, Facultad de Ciencias Agrarias), C.C. 209, Corrientes, Argentina
 - 2 Facultad de Ciencias Exactas y Naturales y Agrimensura, Universidad Nacional del Nordeste (FaCENA – UNNE), Av. Libertad 5460, Corrientes, Argentina
- * Author for correspondence: ortizalejandr@gmail.com

All numbers CHN; collectors: *Ab* = M.M. Arbo, *An* = M. Angulo, *Be* = R. Berón, *Cll* = M. Collavino, *D* = M. Dematteis, *G* = W.C. Gregory, *Hn* = R. Heyn, *K* = A. Krapovickas, *La* = G. Lavia, *Or* =

A. Ortiz, *P* = J.R. Pietrarelli, *Pl* = M.G. Pellegrini, *Pz* = E. Pizarro, *Rb* = G. Robledo, *Sc* = A. Schinini, *Se* = G. Seijo, *So* = V. Solís Neffa, *Sv* = G. da Silva, *Vg* = A. Vega.

This work was supported by Consejo Nacional de Investigaciones Científicas y Tecnológicas, CONICET, PIP 6265; Agencia Nacional de Promoción Científica y Tecnológica, PICTO-UNNE 2007-00099 and Secretaría General de Ciencia y Técnica, PI 038-2008. A. Ortiz is a fellow of Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina.

FABACEAE

Arachis burkartii Handro, $2n = 20$; Argentina, Misiones, *Se*, *La* & *So* 2839 (CTES, CESJ, HUEFS, SP, ESA, CANB, ASU); Argentina, Corrientes, *Se* & *So* 2868 (CTES, BAB, LIL), *Se* & *So* 2870 (CTES), *Se* & *So* 2871 (CTES, LIL), *Se* & *So* 2872 (CTES, K), *Se* & *So* 2873 (CTES), *Se* & *So* 2875 (CTES); Uruguay, Salto, *Se* & *So* 3925 (CTES); Uruguay, Artigas, *Se* & *So* 3929 (CTES, CEN); Uruguay, Rivera, *Se* & *So* 3958 (CTES, MO, NY); Uruguay, Tacuarembó, *Se* & *So* 3960 (CTES).
Arachis glabrata Benth. var. *glabrata*, $2n = 40$; Argentina, Corrientes, *Se*, *La* & *So* 2829 (CTES, HUEFS, ESA), *Se*, *La* & *So* 2830 (CTES, CANB), *Se*, *La* & *So* 2831 (CTES), *Se*, *La* & *So* 2834 (CTES), *Se*, *La* & *So* 2835 (CTES); *Se*, *La* & *So* 2837 (CTES), *La*, *Or*, *Cll* & *Vg* 113 (CTES, CEN, SI), *La*, *Or*, *Cll* & *Vg* 118 (CTES, SI), *La*, *Or*, *Cll* & *Vg* 121 (CTES, SI), *Se* & *So* 2878 (CTES, HUEFS), *Se* & *So* 2881 (CTES), *Se* & *So* 2884 (CTES); *D*, *An* & *Or* 1917 (CTES); Argentina, Misiones, *Se*, *La* & *So* 2838 (CTES), *Se*, *La* & *So* 2841 (CTES), *La*, *Cll* & *Rb* 110 (CTES, K), *La* 92 (CTES, SI); Paraguay, Misiones, *Ab*, *La*, *Pl* & *Be* 6146 (CTES); Paraguay, Amambay, *Sc* 21352 (CTES).
Arachis glabrata var. *hagenbeckii* (Harms ex Kuntze) F.J.Herm., $2n = 40$; Paraguay, Paraguari, *K*, *G*, *P* & *Sc* 30107 (CTES).
Arachis nitida Valls, Krapov. & C.E.Simpson, $2n = 40$; Paraguay, Amambay, *Sv*, *Pz* & *Hn* 3785 (CEN).
Arachis pseudovillosa (Chodat & Hassl.) Krapov. & W.C.Greg., $2n = 40$; Paraguay, Amambay, *G* & *K* 10559 (CTES, LIL, US).

Nina S. Probatova,^{1*} Sergey G. Kazanovsky² & Elvira G. Rudyka¹

- 1 Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, 159 Stolya Prospect, 690022, Vladivostok, Russia
- 2 Siberian Institute of Plant Physiology & Biochemistry, Siberian Branch of the Russian Academy of Sciences, 132 Lermontov Str., 664033, Irkutsk, Russia

* Author for correspondence: probatova@ibss.dvo.ru

All materials CHN; collector: *SGK* = S.G. Kazanovsky.

This study was supported by Grants nos. 11-04-00240 (to N.S. Probatova) and 12-04-01586 (to A.V. Verkhovina) from the Russian Fund for Basic Research (RFBR), and by Interdisciplinary integration project Nr. 17, from the Siberian Branch of the Russian Academy of Sciences.

ALLIACEAE

Allium senescens L., $2n = 32$; Russia, Primorskii Krai, *E.G. Rudyka* 7293 (VLA).

ASTERACEAE

Artemisia anethifolia Weber ex Stechm., $2n = 16$; Russia, Zabaikal'skii Krai, *SGK* 12469 (VLA, IRK).
Artemisia feddei H.Lev. & Vaniot, $2n = 16$; Russia, Primorskii Krai, *N.S. Pavlova* 7690 (VLA).
Cichorium intybus L., $2n = 18$; Russia, Republic of Altai, *SGK* 12493 (VLA, IRK).

Cirsium vlassovianum Fisch., $2n = 28$; Russia, Zabaikal'skii Krai, SGK 12472 (VLA, IRK).

Picris hieracioides L., $2n = 10$; Russia, Irkutskaya Oblast', A.V. Verkhovina, SGK & al. 12389 (VLA, IRK).

BORAGINACEAE

Pulmonaria mollis Wulfen ex Hornem., $2n = 18$; Russia, Altaiskii Krai, SGK 12492 (VLA, IRK).

EUPHORBIACEAE

Securinega suffruticosa (Pall.) Rehd., $2n = 26$; Russia, Zabaikal'skii Krai, SGK 12473 (VLA, IRK).

FABACEAE

Glycine soja Siebold & Zucc., $2n = 39-40$; Russia, Primorskii Krai, S.A. Shatalova 8069 (VLA). $2n = 40$; Russia, Amurskaya Oblast', S.G. Kudrin 8123 (VLA).

Lathyrus humilis (Ser.) Spreng., $2n = 14$; Russia, Primorskii Krai, V.T. Lapenko 10958 (VLA).

HYDROCHARITACEAE

Hydrilla verticillata (L.f.) Royle, $2n = 16$; Russia, Primorskii Krai, I.A. Nesterova 8513 (VLA).

IRIDACEAE

Pardanthopsis dichotoma (Pall.) Lenz, $2n = 28$; Russia, Zabaikal'skii Krai, SGK 12482 (VLA, IRK).

LAMIACEAE

Dracocephalum argunense Fisch. ex Link, $2n = 14$; Russia, Zabaikal'skii Krai, SGK 12488 (VLA, IRK).

Lycopus lucidus Turcz. ex Benth., $2n = 22$; Russia, Zabaikal'skii Krai, SGK 12483 (VLA, IRK).

Scutellaria baicalensis Georgi, $2n = 16$; Russia, Zabaikal'skii Krai, SGK 12471 (VLA, IRK).

Scutellaria galericulata L., $2n = 32$; Russia, Irkutskaya Oblast', SGK 12400 (VLA, IRK).

MALVACEAE

Malva mohileviensis Downar, $2n = 42$; Russia, Irkutskaya Oblast', SGK 11908 (VLA, IRK).

ONAGRACEAE

Oenothera biennis L., $2n = 14$; Russia, Primorskii Krai, N.M. Voronkova 8938 (VLA).

Oenothera rubricaulis Kleb., $2n = 14$; Russia, Primorskii Krai, S.A. Shatalova 7481 (VLA).

POACEAE

Agrostis clavata Trin., $2n = 42$; Russia, Irkutskaya Oblast', SGK 12405 (VLA, IRK).

Cleistogenes kasanovskii Tzvelev & Prob., $2n = 40$; Russia, Zabaikal'skii Krai, SGK 12474 (VLA, IRK).

Elymus fibrosus (Schrenk) Tzvelev, $2n = 28$; Russia, Irkutskaya Oblast', SGK & V.V. Domrachev 12468 (VLA, IRK).

Enneapogon borealis (Griseb.) Honda, $2n = 20$; Russia, Republic of Buryatia, G.P. Semenova 12394 (VLA, IRK).

Koeleria tokiensis Domin, $2n = 14$; Russia, Primorskii Krai, T.N. Tolmacheva 10469 (VLA); Russia, Primorskii Krai, O.L. Burundukova 9530 (VLA).

Neomolinia mandshurica (Maxim.) Honda, $2n = 38$; Russia, Primorskii Krai, E.G. Rudyka 12275 (VLA)

Poa botryoides (Trin. ex Griseb.) Kom., $2n = 28$; Russia, Zabaikal'skii Krai, SGK 12353 (VLA, IRK).

Setaria faberi R.A.W.Herrm., $2n = 36$; Russia, Primorskii Krai, V.T. Lapenko 12342 (VLA).

Tripogon chinensis (Franch.) Hack., $2n = 20$; Russia, Zabaikal'skii Krai, SGK 12476 (VLA, IRK).

POLYGONACEAE

Aconogonon angustifolium (Pall.) Hara, $2n = 20$; Russia, Irkutskaya Oblast', SGK 12467 (VLA, IRK).

ROSACEAE

Potentilla fragarioides L., $2n = 14$; Russia, Primorskii Krai, V.T. Lapenko 11432 (VLA).

Potentilla norvegica L., $2n = 56$; Russia, Khabarovskii Krai, T.N. Tolmacheva 10074 (VLA); Russia, Primorskii Krai, V.N. Kapustina 10618 (VLA).

Potentilla paradoxa Nutt. ex Torr. & A.Gray, $2n = 28$; Russia, Amurskaya Oblast', T.N. Tolmacheva 10458 (VLA); Russia, Primorskii Krai, V.T. Lapenko 10659 (VLA).

RUBIACEAE

Rubia cordifolia L., $2n = 22$; Russia, Zabaikal'skii Krai, SGK 12491 (VLA, IRK).

SCROPHULARIACEAE

Pedicularis striata Pall., $2n = 16$; Russia, Zabaikal'skii Krai, SGK 12478 (VLA, IRK).

Scrophularia incisa Weinm., $2n = 48$; Russia, Irkutskaya Oblast', D.A. Krivenko & E.S. Prelovskaya 12479 (VLA, IRK).

Veronica biloba Schreb., $2n = 14$; Russia, Altaiskii Krai, SGK 12484 (VLA, IRK).

SOLANACEAE

Hyoscyamus niger L., $2n = 34$; Russia, Primorskii Krai, V.T. Lapenko 11581 (VLA).

VALERIANACEAE

Patrinia rupestris (Pall.) Dufur., $2n = 22$; Russia, Zabaikal'skii Krai, SGK 12481 (VLA, IRK).

Nina S. Probatova,^{1*} Dulmajab Yu. Tzyrenova,²
Elvira G. Rudyka,¹ Vyacheslav Yu. Barkalov¹ &
Vitaly A. Nechaev¹

1 Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, 159 Stoletya Prospect, 690022, Vladivostok, Russia

2 Far East State Humanitarian University, Karl Marx Str. 68, 680000, Khabarovsk, Russia

* Author for correspondence: probatova@ibss.dvo.ru

All materials CHN; collectors: VAN = V.A. Nechaev, VB = V.Yu. Barkalov; vouchers in VLA.

This study was supported by grants nos. 11-04-00240 (to N.S. Probatova) and 12-04-01586 (to A.V. Verkhovina) from the Russian Fund for Basic Research (RFBR).

APIACEAE

Ostericum maximowiczii (F. Schmidt) Kitag., $2n = 44$; Russia, Primorskii Krai, VB 10076.

ARACEAE

Arisaema amurense Maxim., $2n = 56$; Russia, Primorskii Krai, VB 7786.

ASTERACEAE

- Atractylodes ovata* DC., $2n = 24$; Russia, Khabarovskii Krai, *D.Yu. Tzyrenova* 12454.
Bidens maximowicziana Oett., $2n = 48$; Russia, Primorskii Krai, *VB* 8837.
Ptarmica alpina DC., $2n = 36$; Russia, Khabarovskii Krai, *D.Yu. Tzyrenova* 9933.
Saussurea kamschatkica Barkalov, $2n = 26$; Russia, Kamchatka Peninsula, *V.V. Yakubov* 8429.
Saussurea manshurica Kom., $2n = 26$; Russia, Amurskaya Oblast', *S.G. Kudrin* 12321.
Senecio viscosus L., $2n = 20$; Russia, Primorskii Krai, *VB* 9823, *VAN* 9324.

BUTOMACEAE

- Butomus umbellatus* L., $2n = 26$; Russia, Primorskii Krai, *VAN* 11435.

CAMPANULACEAE

- Campanula punctata* Lam., $2n = 34$; Russia, Primorskii Krai, *VAN* 11019.

CHENOPODIACEAE

- Salicornia perennans* Willd., $2n = 18$; Russia, Primorskii Krai, *E.V. Neupokoeva* 7641, *VAN* 8437, *VAN* 8779, *N.S. Pavlova* 9688, *E.V. Burkovskaya* 9748.

FABACEAE

- Kummerowia striata* (Thunb.) Schindl., $2n = 22$; Russia, Khabarovskii Krai, *D.Yu. Tzyrenova* 9926.

GERANIACEAE

- Geranium pissjaukovaevae* Tzyren., $2n = 28$; Russia, Amurskaya Oblast', *D.Yu. Tzyrenova* 9939.
Geranium sieboldii Maxim., $2n = 28$; Russia, Primorskii Krai, *R.I. Korkishko* 9947, 9948.
Geranium wilfordii Maxim., $2n = 28$; Russia, Primorskii Krai, *D.Yu. Tzyrenova* 9824.

IRIDACEAE

- Iris mandshurica* Maxim., $2n = 24$; Russia, Primorskii Krai, *VAN* 11400.

LAMIACEAE

- Lycopus maackianus* Makino, $2n = 22$; Russia, Primorskii Krai, *VAN* 12433.
Rabdosia serra (Maxim.) Hara, $2n = 24$; Russia, Primorskii Krai, *VAN* 12458.

ONAGRACEAE

- Circaea alpina* L., $2n = 22$; Russia, Primorskii Krai, *VAN* 10665.

PLANTAGINACEAE

- Plantago asiatica* L., $2n = 24$; Russia, Primorskii Krai, *VAN* 11565.

POACEAE

- Calamagrostis angustifolia* Kom., $2n = 28$; Russia, Primorskii Krai, *VAN* 12443.

- Danthonia riabuschinskii* (Kom.) Kom., $2n = 36$; Russia, Magadanskaya Oblast', *O.A. Mochalova* 7241.
Elymus excelsus Turcz., $2n = 42$; Russia, Primorskii Krai, *VAN* 11421.
Elymus franchetii Kitag., $2n = 42$; Russia, Primorskii Krai, *VAN* 11580.
Hierochloë glabra Trin., $2n = 28$; Russia, Primorskii Krai, *VAN* 11426.
Melica turczaninowiana Ohwi, $2n = 18$; Russia, Primorskii Krai, *VAN* 12442.
Poa kolymensis Tzvelev, $2n = 14$; Russia, Magadanskaya Oblast', *VB* 12322.
Setaria pumila (Poir.) Roem. & Schult., $2n = 36$; Russia, Primorskii Krai, *VAN* 9797.

RANUNCULACEAE

- Thalictrum petaloideum* L., $2n = 14$; Russia, Zabaikal'skii Krai, *D.Yu. Tzyrenova* 11910.

ROSACEAE

- Potentilla paradoxa* Nutt. ex Torr. & A.Gray, $2n = 28$; Russia, Evreiskaya Avtonomnaya Oblast', *D.Yu. Tzyrenova* 10989.
Potentilla vulcanicola Juz., $2n = 14$; Russia, Kamchatka Peninsula, *V.V. Yakubov* 8421.

SALICACEAE

- Salix kangensis* Nakai, $2n = 38$; Russia, Primorskii Krai, *V.Yu. Barkalov* 12465.

SCROPHULARIACEAE

- Veronica anagalloides* Guss., $2n = 18$; Russia, Primorskii Krai, *VB* 7515, *VB* & *S.V. Prokopenko* 7768.
Veronica heureka Tzvelev, $2n = 36$; Russia, Primorskii Krai, *VB* 7533.

Anna Scoppola,^{1*} Carla Ceoloni,¹ Andrea Gennaro¹ & Sara Magrini²

1 Department of Agriculture, Forests, Nature and Energy (DAFNE), University of Tuscia, via S. Camillo De Lellis, 01100 Viterbo, Italy

2 Herbarium UTV, University of Tuscia, via S. Camillo De Lellis, 01100 Viterbo, Italy

* Author for correspondence: scoppola@unitus.it

All materials CHN; collected in Italy; collectors: *AS* = A. Scoppola, *EL* = E. Lattanzi, *GT* = G. Trompetto, *MB* = M. Bovio, *MBR* = M. Broglio, *SB* = S. Buono, *SM* = S. Moroni; vouchers in UTV unless otherwise stated.

VIOLACEAE

- Viola arvensis* Murray, $2n = 34$; *MB*, *MBR* & *GT s.n.* (AO N.SFV-2939), *AS* 30445, *AS* 30451, *AS* 30371, *AS* 30441, *AS* 29497.
Viola hymettia Boiss. & Heldr., $2n = 16$; *AS* 30151, *AS* 29470, *AS* 30455, *AS* 30454, *AS* 30450.
Viola kitaibeliana Schultes, $2n = 16$; *AS* 30448, *AS* 30449, *AS* & *EL* 30152, *AS* 29512, *EL* 30150, *EL* 30155, *AS* 30537.
Viola tricolor L. subsp. *tricolor*, $2n = 26$; *SB* 30444, *SM* 30443, *AS* 30440.

Vol. 63 (5) • October 2014

TAXON

International Journal of Taxonomy, Phylogeny and Evolution

Extended online version of

IAPT/IOPB chromosome data 17

edited by Karol Marhold

Elena A. Andriyanova,^{1*} Maria N. Lomonosova²
& Alexandra N. Berkutenko¹

1 Institute of Biological Problems of the North, Far Eastern
Branch of the Russian Academy of Sciences, Magadan 685000,
Russia

2 Central Siberian Botanical Garden, Siberian Branch of the
Russian Academy of Sciences, Novosibirsk 630090, Russia

* Author for correspondence: andria@ibpn.ru

All cytological investigations have been carried out on root tips of seedlings, pretreated in 0.2% colchicine, fixed in methanol-acetic acid (3:1) and stained in 1% acetic hematoxylin (Smirnov, 1968). Chromosome numbers in literature were checked using IPCN (Goldblatt & Jonson, 1979+). The authors are grateful to A. Krasnikov for technical assistance and to collectors of the herbarium samples.

* First chromosome count for the species.

** First chromosome count from China.

*** New chromosome number (cytotype) for the species.

ALLIACEAE

Allium strictum Schrad.

$2n = 32$, CHN. Russia, North of Far East, Magadanskaya Oblast', 8 km SSW of Magadan, Staritskii Peninsula, Svetlaya Bay, meadow on the steep slope, 62 m, 59°29'N, 150°41'E, 6 Sep 2013, *E. Andriyanova A13151* (MAG).

APIACEAE

*** *Magadania victoris* (Schischk.) Pimenov & Lavrova

$2n = 22$, CHN. Russia, North of Far East, Magadanskaya Oblast', Magadanskii Raion, Armanskii pass, nival tundra, 59°40'N, 150°36'E, 22 Jul 2012, *M. Voroshilova V12001* (MAG).

Chromosome count $2n = 14$ was recorded for this species (Gursenkov & Gorovoy, 1971; as *Conioselinum victoris* Schischk.). However, for *Magadania olaensis* (Gorovoi & N.S.Pavlova) Pimenov & Lavrova (Volkova & Gorovoy, 2011; as *Cnidium olaense* Gorovoi & N.S.Pavlova) chromosome number $2n = 22$ is known.

ASTERACEAE

Aster alpinus L.

$2n = 18$, CHN. Russia, North of Far East, Magadanskaya Oblast', 8 km SSW of Magadan, Staritskii Peninsula, Svetlaya Bay, meadow on the steep slope, 70 m, 59°29'N, 150°41'E, 6 Sep 2013, *E. Andriyanova A13155* (MAG); Russia, North of Far East, Magadan Region, Zavayalova Island, north part of island, steep slope a southern exposure, dry forb meadow, 25 Aug 1996, *M. Khoreva K96001* (MAG).

Petasites frigidus (L.) Fr.

$2n = 60$, CHN. Russia, North of Far East, Magadanskaya Oblast', Khasynskii Raion, the upper course of the Yama River, on river bank, 795 m, 60°41'N, 152°02'E, 28 Jul 2012, *E. Andriyanova A12004* (MAG).

Saussurea nuda Ledeb.

$2n = 26$, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, near Atargan Spit, on the damp meadow, 59°33'N, 151°28'E, 8 Aug 2013, *E. Andriyanova A13089* (MAG).

CHENOPODIACEAE

** *Atriplex centralasiatica* Iljin

$2n = 18$, CHN. China, Xinjiang Uyghur Autonomous Region, near entrance in National Park Sjan-Shi, Urumqui area, near road, 955 m, 43°49'N, 87°36'E, 22 Aug 2009, *M. Olonova s.n.* (NS).

* *Halostachys belangeriana* (Moq.) Botsch.

$2n = 36$, CHN. China, Xinjiang Uyghur Autonomous Region, foothills of Eastern Tianshan, near Korla, clay slope, 985 m, 41°42'N, 86°10'E, 9 Aug 2008, *A. Berkutenko, A. Polezhaev s.n.* (NS).

** *Kali paulsenii* (Litv.) Akhani & Roalson

(≡ *Salsola paulsenii* Litv.)

$2n = 36$, CHN. China, Xinjiang Uyghur Autonomous Region, Taklamakan Desert, Hotan, shrub thickets, 1655 m, 37°08'N, 79°54'E, 5 Jul 2008, *A. Berkutenko, A. Polezhaev s.n.* (NS).

FABACEAE

Astragalus alpinus L.

$2n = 16$, CHN. Russia, North of Far East, Magadanskaya Oblast', Tenkinskii Raion, in vicinities of Omchak village, on neglected road, 846 m, 25 Aug 2013, 61°39'N, 147°49'E, *E. Andriyanova A13118* (MAG).

$2n = 32$, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, in vicinity of Ola settlement, near the road, 32 m, 59°35'N, 151°18'E, 31 Jul 2013, *E. Andriyanova A13061* (MAG).

Lathyrus aleuticus (Greene) Pobed.

$2n = 14$, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, bank of Olskii estuary, on the pebble, 59°34'N, 151°20'E, 22 Aug 2013, *E. Andriyanova A13112* (MAG); Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, Spafareva Island, on the pebble, 59°09'N, 149°01'E, 25 Jul 2013, *E. Andriyanova A13060* (MAG); Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, between Arman village and mouth of Yana River, on seaside meadow, 59°45'N, 149°32'E, 19 Sep 2013, *E. Andriyanova A13167* (MAG).

POACEAE

* *Elymus boreochochotensis* A.P.Khokhr.

$2n = 28$, CHN. Russia, North of Far East, Magadanskaya Oblast', 8 km SSW of Magadan, Staritskii Peninsula, Svetlaya Bay, meadow on the steep slope, 55 m, 59°29'N, 150°41'E, 6 Sep 2013, *E. Andriyanova A13153* (MAG).

Leymus mollis (Trin.) Pilg.

$2n = 28$, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, Olskii estuary, Sikulun Island, on the pebble, 59°33'N, 151°20'E, 22 Aug 2013, *E. Andriyanova A13109* (MAG); Russia, North of Far East, Magadan Region, Olskii Raion, between Arman village and mouth of Yana River, on seaside meadow, 59°45'N, 149°32'E, 19 Sep 2013, *E. Andriyanova A13166* (MAG).

PORTULACACEAE

Claytonia soczaviana Jurtzev

$2n = 16$, CHN. Russia, North of Far East, Magadanskaya Oblast', Olskii Raion, Spafareva Island, on the slope, dwarf shrub-forb tundra, 46 m, 59°08'N, 148°57'E, 20 Jul 2013, *E. Andriyanova A13046* (MAG).

Literature cited

Goldblatt, P. & Johnson, D.E. (eds.) 1979+. *Index to plant chromosome numbers (IPCN)*. St. Louis: Missouri Botanical Garden. <http://www.tropicos.org/Project/IPCN> (accessed Mar 2014).

Gursenkov, N.N. & Gorovoy, P.G. 1971. Chisla khromosom vidov Umbelliferae Dalnego Vostoka [Chromosome numbers of Umbelliferae of the Russian Far East]. *Bot. Zhurn. (Moscow & Leningrad)* 12: 1805–1815.

Smirnov, Yu.A. 1968. Uskorennyi metod issledovania somaticheskikh khromosom plodovykh [Accelerated method for studying somatic chromosomes in fruit trees]. *Tsitologia* 10: 1132–1134.

Volkova, S.A. & Gorovoy, P.G. 2011. Chromosome numbers of *Cnidium* (Apiaceae) species from the Russian Far-East and Alaska. *Turczaninovia* 2: 145–147.

Tatyana V. An'kova,^{1*} Dmitriy N. Shaulo¹ & Andrey S. Erst^{1,2}

1 *Laboratory of Herbarium, Central Siberian Botanical Garden Siberian, Branch of the Russian Academy of Sciences, 101 Zolotodolinskaya str., Novosibirsk 630090, Russia*

2 *Tomsk State University, Laboratory of Ecology and Biodiversity, Tomsk 634050, Russia*

* Author for correspondence: ankova_tv@mail.ru

* First chromosome count for the species.

** New chromosome number (cytotype) for the species.

The study was financially supported by grants 13-04-00874-a, 14-04-01415-a and 14-44-04021-r-sibir'-a from the Russian Foundation for Basic Research and by the grant of the President of the Russian Federation (MK-2722.2014.4).

ASTERACEAE

Scorzonera taurica M.Bieb.

$2n = 12, 14$, CHN. Kazakhstan, Aktobe Oblast', Chobninskii raion, Ishkargantau Mountains, 50°24'58.0"N, 54°54'54.4"E, 213 m, S exposition, cretaceous slope, 3 Jun 2012, *T. An'kova A139* (NS). [Fig. 1D]

FABACEAE

Astragalus lasiophyllus Ledeb.

$*2n = 32$, CHN. Kazakhstan, Aktobe Oblast', Shalkarskii raion, 30 km N-W of Bozoi village, N escarpment Usturt Plateau, 46°30'32.6"N, 58°20'12.6"E, 156 m, gypsum desert, 21 May 2012, *T. An'kova A140* (NS).

Hedysarum argyrophyllum Ledeb.

$*2n = 16$, CHN. Kazakhstan, Aktobe Oblast', Chobninskii raion, Ishkargantau Mountains 50°24'58.0"N, 54°54'54.4"E, 213 m, meadow, 4 Jun 2012 *T. An'kova A121* (NS). [Fig. 1B]

Hedysarum austrosibiricum B.Fedtsch.

$2n = 14$, CHN. Russia, Altay Republic, Ust-Koksinskii Raion, E slopes of the Ridge Holzun, 50°11'N, 85°15'E, 1500 m, dryad tundra, 29 Aug 2013, *T. An'kova A147* (NS).

Hedysarum theinum Krasnob.

$2n = 14$, CHN. Russia, Altay Republic, Ust-Koksinskii Raion, E slopes of the Ridge Holzun, the upper part of the Katun River, Krasnaya Biryuksa River, 50°02'N, 85°06'E, 1600 m, waterlogged area, 26 Aug 2013, *T. An'kova A 153* (NS).

Hedysarum tscherkassovae Knjaz.

$*2n = 14$, CHN. Kazakhstan, Aktobe Oblast', Chobninskii raion, Ishkargantau Mountains 50°24'58.0"N, 54°54'54.4"E, 213 m, meadow, 3 Jun 2012, *T. An'kova A117* (NS)

Oxytropis pilosa (L.) DC.

$2n = 16$, CHN. Russia, Tuva Republic, Pii-Chemskii raion, Western Sayan, Uyukskii Ridge, Begreda natural boundary, 52°00'N, 94°21'E, 711 m, fallow land, 1 Aug 2013, *D. Shaulo & T. Yan'shin A156* (NS).

Oxytropis setosa (Pall.) DC.

$*2n = 16+2B$, CHN. Russia, Tuva Republic, Tandinskii Raion, Chagyta Lake, 51°02'36.7"N, 94°42'41.0"E, 998 m, steppe, 13 Jul 2012, *T. An'kova & A. Grebenyuk A141* (NS).

Sophora alopecuroides L.

$2n = 36$, CHN. Kazakhstan, Aktobe Oblast', Mugalzharskii raion, W of Podural'skoe Plateau, Koldener-Temyr River, Zhuryn village, 49°12'17.0"N, 57°38'32.8"E, 233 m, coast, 15 May 2012, *T. An'kova A137* (NS).

Thermopsis alpina (Pall.) Ledeb.

$*2n = 12, 14$, CHN. Russia, Altay Republic, Ust-Koksinskii raion, E slopes of the Ridge Holzun, 50°11'N, 85°15'E, 1500 m, dryad tundra, 29 Aug 2013, *T. An'kova A146* (NS).

Trigonella cancellata Desf.

$*2n = 16$, CHN. Kazakhstan, Aktobe Oblast', Shalkarskii raion, Kurgan-Tuz Lake, Bolshie Barsuki Sands, 47°26'01.7"N, 59°14'15.5"E, 162 m, *Carex physodes*–*Artemisia semiarida* association, 20 May 2012, *T. An'kova A107* (NS). [Fig. 1C]

RANUNCULACEAE

Aquilegia glandulosa Fisch. ex Link

$2n = 14$, CHN. Russia, Altay Republic, Ust-Koksinskii raion, N slopes of the Listvyaga Ridge, the upper of the Bystrucha River, Bystruchinskii Shpil Mountain, 49°54'N, 85°05'E, 1841 m, subalpine meadow, 27 Aug 2013, *T. An'kova, A150* (NS).

Ranunculus pedatus Waldst.

$2n = 16$, CHN. Kazakhstan, Aktobe Oblast', Mugalzharskii raion, S of Mugodzhari Mountains, 8 km NW Berchogur village, Boktybai Mountain, 48°28'38.9"N, 58°26'52.9"E, 418 m, 16 May 2012, *T. An'kova A95* (NS). [Fig. 1A]

SCROPHULARIACEAE

Scrophularia altaica Murray

$*2n = 26$, CHN. Russia, Altay Republic, Ust-Koksinskii raion, N slopes of the Listvyaga Ridge, the upper of the Bystrucha River, Bystruchinskii Shpil Mountain, 49°54'N, 85°05'E, 1841 m, rocks, 27 Aug 2013, *T. An'kova A145* (NS).

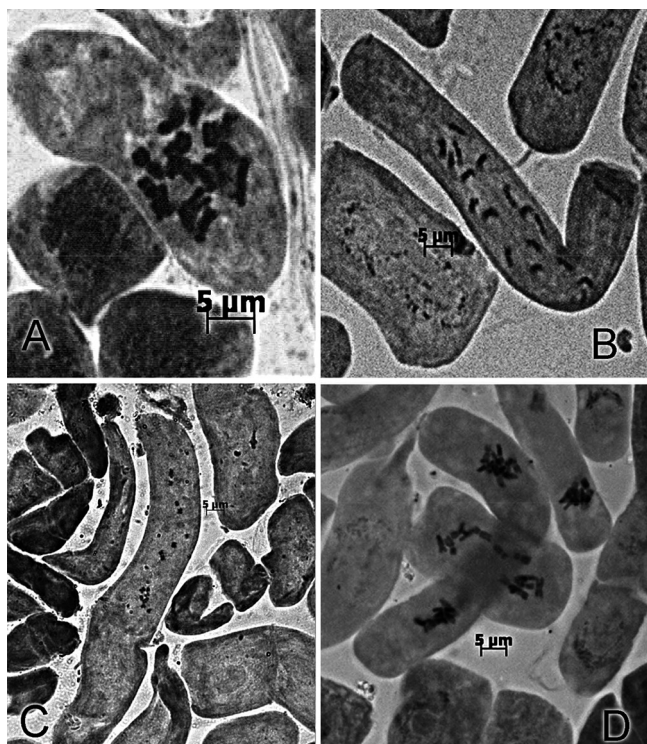


Fig. 1. Mitotic metaphases of: **A**, *Ranunculus pedatus*, $2n = 16$; **B**, *Hedysarum argyrophyllum*, $2n = 16$; **C**, *Trigonella cancellata*, $2n = 16$; **D**, *Scorzonera taurica*, $2n = 14$.

Matthias Baltisberger & Babette Baltisberger

ETH Zürich, Plant Ecological Genetics, Institute of Integrative Biology, Universitätstr. 16, 8092 Zürich, Switzerland; balti@ethz.ch

The seedborne plants (except for *Calystegia* growing from short pieces of stems with roots) were cultivated in the greenhouse. All investigations have been carried out on root tips (method see Baltisberger & Widmer, 2009). Indications of chromosome numbers in literature were checked with Goldblatt & Johnson (1979+).

ASTERACEAE

Bidens alba (L.) DC.

$2n = 72$, CHN. France, Lesser Antilles, Guadeloupe, S of Deshaies, ruderal place near Botanical Garden, 50 m, 30 Dec 2008, B. & M. Baltisberger 14046, 14188 (Z/ZT); France, Lesser Antilles, Guadeloupe, port of Sainte-Rose, ruderal place, 5 m, 31 Dec 2008, B. & M. Baltisberger 14049, 14189 (Z/ZT).

The rather difficult complex of *Bidens pilosa* L. originates in Central and South America and occurs now worldwide in tropical and temperate regions. It is characterized by annual habit, attenuate achenes and ray-florets (if present) with white ligules. However, most of the characters are rather variable which makes it difficult to separate taxa within the complex. *Bidens alba* belongs to this complex. *Bidens alba* is tetraploid with 48 chromosomes and characterized by heads with 5–8 ray-florets with ligules 5–16 mm long (about 2 times as long as broad) and by achenes with 2 awns (Ballard, 1986). In contrast the hexaploid *B. pilosa* with 72 chromosomes shows mostly no ray-florets or only those with small ligules (up to 3 mm) and achenes with 3(–5) awns (Ballard, 1986). The investigated plants from both sites show the characters typical for *B. alba*: Heads with mostly more than 5 ray-florets (with ligules up to 13 mm) and achenes with 2 awns. But with a chromosome number of 72 (Fig. 2) all plants proved to be hexaploid which is mostly considered as a typical character for *B. pilosa*. As morphology seems to be more coherent than the ploidy levels thus the plants represent a new ploidy level for *Bidens alba*.

Tridax procumbens L.

$2n = 36$, CHN. France, Lesser Antilles, Guadeloupe, N of Deshaies, ruderal place, 20 m, 31 Dec 2008, B. & M. Baltisberger 14047, 14180 (Z/ZT).

Tridax procumbens is a perennial native to tropical parts of America and has been introduced to many parts of the world from tropical to warm temperate regions showing now a worldwide distribution. It mostly grows on disturbed places. Many chromosome counts have been performed on plants from all over the world all showing $2n = 36$ chromosomes (often indicated as $n = 18$). The plants from Guadeloupe showed the same chromosome number.

Vernonia cinerea (L.) Less.

$2n = 18$, CHN. France, Lesser Antilles, Guadeloupe, N of Deshaies, ruderal place, 20 m, 31 Dec 2008, B. & M. Baltisberger 14048, 14181 (Z/ZT); Maldives Islands, Eriyadu, weed within the hotel complex, 0–2 m, 10 Oct 2010, B. & M. Baltisberger 14554, 14570 (Z/ZT).



Fig. 2. Somatic metaphase of *Bidens alba* (B. & M. Baltisberger 14046), $2n = 72$.

The mostly annual *Vernonia cinerea* grows on disturbed sites. It probably has a palaeotropical origin but now it is distributed in tropical and subtropical areas all over the world. The numerous counts on plants from different countries all indicate the chromosome number $n = 9$ resp. $2n = 18$. The plants from both sites (Caribbean as well as Maldives Islands) showed the same chromosome number.

CONVOLVULACEAE

Calystegia soldanella (L.) R.Br.

$2n = 22$, CHN. Maldives Islands, Eriyadu, coast near the reception of the hotel complex, maritime sand, 0–1 m, 10 Oct 2010, B. & M. Baltisberger 14553 (Z/ZT).

Calystegia soldanella is a perennial creeping plant growing in coastal habitats (mostly in sandy beaches). It has a worldwide distribution mostly in temperate regions. On the Maldives island Eriyadu it only grows on the beach in the region of the landing stage but it also occurs on other islands covering huge parts of the coasts. The chromosome number counted on plants from various countries all over the world is uniformly $2n = 22$ (once indicated as $n = 11$) which is confirmed by the plants from Eriyadu.

Literature cited

- Ballard R. 1986. *Bidens pilosa* complex (Asteraceae) in North and Central America. *Amer. J. Bot.* 73: 1452–1465. <http://dx.doi.org/10.2307/2443850>
- Baltisberger, M. & Widmer, A. 2009. Karyological data of angiosperms from Romania. *Willdenowia* 39: 353–363. <http://dx.doi.org/10.3372/wi.39.39213>
- Goldblatt, P. & Johnson, D.E. (eds.) 1979+. Index to plant chromosome numbers (IPCN). St. Louis: Missouri Botanical Garden. <http://www.tropicos.org/Project/IPCN> (accessed 6 Nov 2013)

Regina Berjano,* María Talavera, Francisco Javier Jiménez & Salvador Talavera

Departamento de Biología Vegetal y Ecología, Universidad de Sevilla, Apdo. 1095, 41080 Sevilla, Spain

* Author for correspondence: regina@us.es

- * First chromosome count for the species.
- First chromosome count for an accession of the species from the referenced country.
- ▼ Endemic to North Africa.

This work was supported by the Spanish Ministerio de Economía y Competitividad and European Regional Development Funds (EFRD) through the project Flora Iberica IX (2) (CGL2012–32914) and by the regional government Junta de Andalucía through “Proyectos de Excelencia” (P08-RNM-03703).

ASTERACEAE

Crepis alpina L.

■ $2n = 10$, CHN, one individual examined. Spain, Cuenca, between Villamayor de Santiago and Saelices, route CM310, 39°48'18" N, 2°52'53" W, 769 m, limestones, 23 Jun 2013, M. Talavera, C. Sánchez, D. Campos & S. Talavera 301/13 (SEV 283494).

■ $2n = 10$, CHN, one individual examined. Spain, Cuenca, Saelices, 39°55'25" N, 2°49'09" W, 963 m, limestones, 23 Jun 2013, M. Talavera, C. Sánchez, D. Campos & S. Talavera 304/13 (SEV 283499). [Fig. 3A]

▼ *Crepis balliana* Babc.

* $2n = 16$, CHN, four individuals examined. Morocco, El Jadida, Oualidia, 32°43'52" N, 9°02'26" W, 50 m, limestone cliffs near the sea, 7 Jun 2013, A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 155/13 (SEV 283657). [Fig. 3B]

* $2n = 16$, CHN, one individual examined. Morocco, Ben Slimane, highway Casablanca-Rabat, gas station near Bouznika, 33°46'37"N, 7°13'57"W, 40 m, slopes, 11 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 255/13* (SEV 283746).

Crepis bursifolia L.

■ $2n = 16$, CHN, one individual examined. Morocco, Tangier, Cap Spartel, 35°45'56"N, 5°56'03"W, 30 m, calcarenites, 4 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 126/13* (SEV 283623). [Fig. 3C]

■ $2n = 8$, CHN, one individual examined. Morocco, Casablanca, 33°33'37"N, 7°35'24"W, 73 m, slopes and gardens in the city, 10 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 254/13* (SEV 283745). [Fig. 3D]

■ $2n = 8$, CHN, two individuals examined. Morocco, Rabat, 33°58'10"N, 6°52'53"W, 41 m, slopes, 11 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 256/013* (SEV 283747).

Crepis erythia Pau

$2n = 8$, CHN, two individuals examined. Spain, Cádiz, Tarifa, Punta Paloma, 36°03'47"N, 5°42'39"W, 37 m, coastal sands, 25 Apr 2013, *M. Talavera, C. Sánchez, D. Campos & S. Talavera 80/13* (SEV 282712).

$2n = 8$, CHN, three individuals examined. Morocco, Larache, 35°12'42"N, 6°08'18"W, 6 m, coastal sands, 5 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 141/13* (SEV 283643). [Fig. 3E]

$2n = 16$, CHN, three individuals examined. Morocco, Tetouan, between Tangier and Ceuta, Eddalya, 35°54'18"N, 5°28'46"W, 30 m, coastal sands, 11 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 265/13* (SEV 283756). [Fig. 3F]

Crepis pulchra L.

$2n = 8$, CHN, one individual examined. Spain, Albacete, Riopar, nearby the village of Riopar 38°30'07"N, 2°24'59"W, 1035 m, humid grasslands near a stream, 25 Jun 2013, *M. Talavera, C. Sánchez, D. Campos & S. Talavera 380/13* (SEV 283537). [Fig. 3G]

Crepis salzmannii Babc.

■ $2n = 8$, CHN, one individual examined. Spain, Cádiz, between Tarifa and Algeciras, "Mirador del Estrecho" lookout, 36°03'15"N, 5°33'03"W, 200 m, undergrowth of *Quercus suber* and *Q. canariensis* forest, sandstones, 1 May 2013, *M. Talavera, C. Sánchez, D. Campos & S. Talavera 84/13* (SEV 282716).

■ $2n = 8$, CHN, one individual examined. Spain, Cádiz, between Los Barrios and Facinas, Sierra de Ojén, Ojén bog, 36°08'44"N, 5°36'25"W, 250 m, undergrowth of *Quercus suber* and *Q. canariensis* forest, sandstones, 1 May 2013, *M. Talavera, C. Sánchez, D. Campos & S. Talavera 87/13* (SEV 282719). [Fig. 3H]

■ $2n = 8$, CHN, one individual examined. Spain, Málaga, Casares, 36°22'42"N, 5°13'07"W, 5 m, coastal sands, 2 May 2013, *D. Campos & S. Talavera 96/13* (SEV 282731).

$2n = 16$, CHN, four individuals examined. Morocco, Tetouan, Belyounech, near the border with Ceuta (Spain), 35°54'34"N, 5°23'14"W, 30 m, undergrowth of *Q. suber* forest, sandstones, 12 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 272/13* (SEV 283763). [Fig. 3I]

Crepis stellata (Ball) M.Talavera

$2n = 8$, CHN, one individual examined. Morocco, Marrakech, Oukaimeden, Ski resort, 31°12'11"N, 7°51'45"W, 2681 m, alpine grasslands, 9 Jun 2013, *A. Terrab, F.J. Jiménez & S. Talavera 244/13* (SEV 283734).

$2n = 16$, CHN, one individual examined. Morocco, Marrakech,

between Marrakech and Oukaimeden, Toubkal National Park, 31°17'32.6"N, 7°46'16"W, 1194 m, slopes in *Tetraclinis articulata* forest, 8 Jun 2013, *A. Terrab, F.J. Jiménez & S. Talavera 221/13* (SEV 283711).

Crepis taraxacifolia Thuill.

$2n = 16$, CHN, one individual examined. Morocco, Marrakech, between Marrakech and Oukaimeden, Toubkal National Park, 31°17'32.6"N, 7°46'16"W, 1194 m, crop margins, 8 Jun 2013, *A. Terrab, F.J. Jiménez & S. Talavera 218/13* (SEV 283708).

$2n = 16$, CHN, one individual examined. Spain, Albacete, Almansa, Altos de Jódar, 38°46'31"N, 1°09'27"W, 900 m, nitrophilous slopes, 25 Jun 2013, *M. Talavera, C. Sánchez, D. Campos & S. Talavera 335/13* (SEV 283531).

$2n = 16$, CHN, one individual examined. Spain, Albacete, Riopar, Río Mundo, 38°27'05"N, 2°26'13"W, 1110 m, slopes in a pine forest, 26 Jun 2013, *M. Talavera, C. Sánchez, D. Campos & S. Talavera 401/13* (SEV 283558).

$2n = 16$, CHN, one individual examined. Spain, Jaén, Poyotello, Cueva del agua, 38°08'44"N, 2°37'53"W, 1213 m, 27 Jun 2013, *M. Talavera, C. Sánchez, D. Campos & S. Talavera 443/13* (SEV 283600). [Fig. 3J]

Hedypnois arenaria (Schousb.) DC.

$2n = 6$, CHN, Spain, 35 individuals examined. Cádiz, San Roque, Palmones, 36°10'24"N, 5°25'50"W, 10 m, coastal sands, 1 Jun 2012, *D. Campos & S. Talavera 23/12* (SEV 284468). [Fig. 3K]

$2n = 6$, CHN, one individual examined. Morocco, Tetouan, between Tetouan and Oued Lau, Azla, 35°33'11"N, 5°14'36"W, 6 m, coastal sands 4 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 110/13* (SEV 283607).

$2n = 6$, CHN, one individual examined. Morocco, Tangier, Cap Spartel, Achakkar, 35°45'56"N, 5°56'03"W, 6 m, coastal sands, 4 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 131/13* (SEV 283631).

$2n = 6$, CHN, three individuals examined. Morocco, Essaouira, between Essaouira and Safi, 10 km N of Essaouira, 31°37'53"N, 9°40'20"W, 10 m, coastal sands, 7 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 165/13* (SEV 283667).

$2n = 6$, CHN, four individuals examined. Morocco, Tetouan, between Tangier and Ceuta, Eddalya, 35°54'18"N, 5°28'46"W, coastal sands, 11 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera 264/13* (SEV 283755).

Hedypnois cretica (L.) Dum.Cours.

$2n = 8$, CHN, 11 individuals examined. Italy, Sicily, Monte Cofano, 38°05'53"N, 12°39'43"E, 10 m, grasslands with *Chamaerops humilis*, 8 Aug 2008, *M.A. Ortiz 23/08 OT* (SEV 284469).

$2n = 8$, CHN, 12 individuals examined. Italy, Sardinia, Calgiari, Poetto, 39°13'27"N, 9°11'56"E, 1 m, coastal sands, 23 Jun 2009, *M.J. Ariza, M. Lorenzo, L. Navarro & M. Talavera 217/09* (SEV 248643). [Fig. 3L]

$2n = 8$, CHN, 14 individuals examined. Spain, Cádiz, Vejer de la Frontera, 36°15'12"N, 5°58'51"W, 29 m, slopes next to the road, 1 Dec 2012, *D. Campos & S. Talavera 566/12* (SEV 284471).

$2n = 8$, CHN, one individual examined. Spain, Granada, Salobreña, La Caleta, 36°44'47"N, 3°36'09"W, coastal sands 19 Apr 2013, *D. Campos & S. Talavera 47/13* (SEV 282670).

Hedypnois rhagadioloides (L.) F.W.Schmidt

$2n = 13$, CHN, eight individuals examined. Italy, Cosenza, Paola, road to Paso Crocetta, 39°20'28"N, 16°03'27"E, 405 m, grasslands along the road, 11 Jun 2008, *M.A. Ortiz & K. Tremetsberger 38/08 OT* (SEV 248035).

$2n = 13$, CHN, eight individuals examined. Italy, Sardinia, Muravera, Capo Ferrato, 39°17'33"N, 9°36'15"E, 1 m, coastal sands, 23 Jun

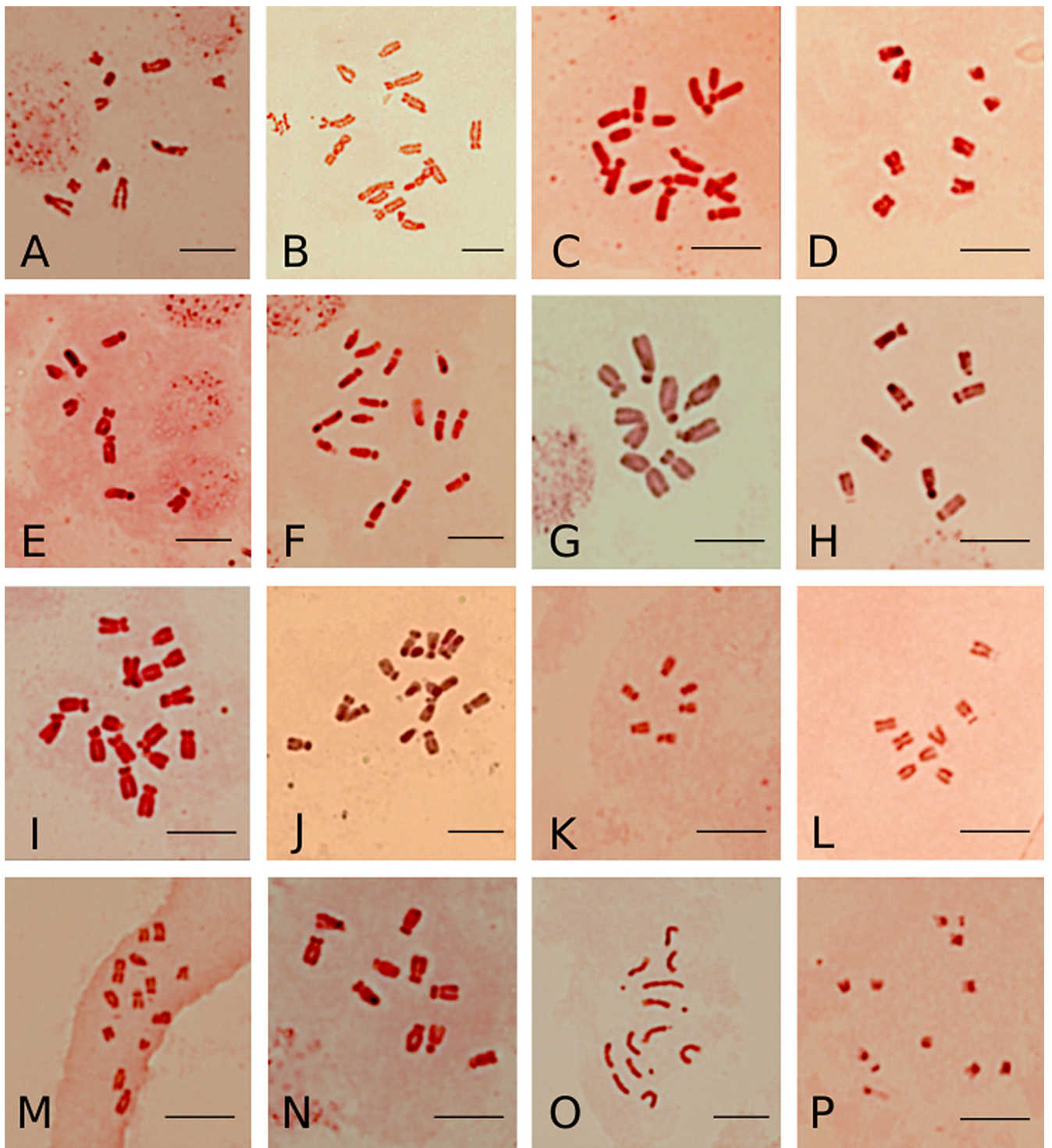


Fig. 3. Mitotic metaphases of Asteraceae species stained with alcoholic hydrochloric-acid carmine. **A**, *Crepis alpina* (MT, CS, DC & ST 304/13), $2n = 10$; **B**, *Crepis balliana* (AT, FJ, MT, CS, DC & ST 155/13), $2n = 16$; **C**, *Crepis bursifolia* (AT, FJ, MT, CS, DC & ST 126/13), $2n = 16$; **D**, *Crepis bursifolia* (AT, FJ, MT, CS, DC & ST 254/13), $2n = 8$; **E**, *Crepis erythia* (AT, FJ, MT, CS, DC & ST 141/13), $2n = 8$; **F**, *Crepis erythia* (AT, FJ, MT, CS, DC & ST 265/13), $2n = 16$; **G**, *Crepis pulchra* (MT, CS, DC & ST 380/13), $2n = 8$; **H**, *Crepis salzmannii* (MT, CS, DC & ST 87/13), $2n = 8$; **I**, *Crepis salzmannii* (AT, FJ, MT, CS, DC & ST 272/13), $2n = 16$; **J**, *Crepis taraxacifolia* (MT, CS, DC & ST 443/13), $2n = 16$; **K**, *Hedypnois arenaria* (DC & ST 23/12), $2n = 6$; **L**, *Hedypnois cretica* (MA, ML, LN & MT 217/09), $2n = 8$; **M**, *Hedypnois rhagadioloides* (MA, ML, LN & MT 220/09), $2n = 13$; **N**, *Picris cupuligera* (AT, FJ, MT, CS, DC & ST 154/13), $2n = 10$; **O**, *Scorzoneroides oraria* (AT, FJ, MT, CS, DC & ST 171/13), $2n = 12$; **P**, *Urospermum picroides* (AT, FJ, MT, CS, DC & ST 127/13), $2n = 10$. — Scale bars = 10 μm .

2009, *M.J. Ariza, M.T. Lorenzo, L. Navarro & M. Talavera* 220/09 (SEV 248648). [Fig. 3M]

$2n = 13$, CHN, 31 individuals examined. Spain, Cádiz, San Roque, Palmones, 36°10'31"N, 5°25'50"W, 10 m, Coastal sands, 12 May 2009, *M.A. Ortiz & S. Talavera* 122/09 (SEV 284470).

$2n = 13$, CHN, 6 individuals examined. Spain, Cádiz, Vejer de la Frontera, 36°15'12"N, 5°58'51"W, 29 m, slopes next to the road, 1 Dec 2012, *D. Campos & S. Talavera* 565/12 (SEV 284472).

$2n = 13$, CHN, two individuals examined. Spain, Málaga, Torre del Mar, 36°43'36"N, 4°06'51"W, coastal grasslands, 19 Apr 2013, *D. Campos & S. Talavera* 54/13 (SEV 282684).

$2n = 13$, CHN, three individuals examined. Morocco, Tetouan, between Azla and Oued Lau, 35°29'36"N, 5°08'39"W, coastal sands 4 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera* 120/13 (SEV 283617).

Picris cupuligera (Durieu) Walp.

$2n = 10$, CHN, four individuals examined. Morocco, El Jadida, 33°14'38"N, 8°28'03"W, 10 m, nitrophilous grasslands near the coast, 6 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera* 148/13 (SEV 283650).

$2n = 10$, CHN, five individuals examined. Morocco, El Jadida, between El Jadida and Safi, Oualidia, 32°43'52"N, 9°02'26"W, 50 m, coastal limestone cliffs, 7 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera* 154/13 (SEV 283656). [Fig. 3N]

▼ *Scorzonerooides oraria* (Maire) Greuter & Talavera

* $2n = 12$, CHN, one individual examined. Morocco, Agadir, between Agadir and Essaouira, Tamri National Park, 30°40'22"N, 9°52'52"W, coastal sands, 7 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera* 171/13 (SEV 283672). [Fig. 3O]

Urospermum picroides (L.) F.W.Schmidt

$2n = 10$, CHN, one individual examined. Morocco, Tangier, Cap Spartel, Plage Achakkar, 35°45'56"N, 5°56'03"W, 30 m, calcarenites, 4 Jun 2013, *A. Terrab, F.J. Jiménez, M. Talavera, C. Sánchez, D. Campos & S. Talavera* 127/13 (SEV 283625). [Fig. 3P]

Juliana G. Brito,¹ Rodrigo da Silva Santos,² Paulo R.H. Meira,¹ Lânia I.F. Alves,^{1*} Maria J. Gomes de Andrade,³ Alessandro Rapini² & Leonardo P. Felix¹

1 *Laboratório de Citogenética Vegetal, Departamento de Ciências Biológicas, Centro de Ciências Agrárias, Universidade Federal da Paraíba, Campus II, 58397-000 Areia, Paraíba, Brazil*

2 *Departamento de Ciências Biológicas, Universidade Estadual de Feira de Santana, 44036-900 Feira de Santana, Bahia, Brazil*

* Author for correspondence: laniaisis@yahoo.com.br

Methods for chromosome counts follow Guerra & Souza (2002).

* First chromosome count for the genus.

** First chromosome count for the species.

*** New chromosome number for the species.

Financial support of CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico), CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior), INSA (Instituto Nacional do Semiárido).

APOCYNACEAE

Allamanda blanchetii A.DC.

$2n = 18$, CHN. Brazil, Paraíba, Riachão do Poço, 7°09'08"S, 35°15'50"W, 18 Nov 2007, *L.P. Felix* 12078 (EAN). [Fig. 1B]

*** $2n = 36$, CHN. Brazil, Paraíba, Picuí, 6°32'50"S, 36°21'44"W, 5 Jun 2007, *L.P. Felix* 11.921 (EAN); Brazil, Paraíba, São João do Cariri, Fazenda Experimental 7°23'27"S, 36°32'02"W, 28 Dec 2007, *L.P. Felix* 12081 (EAN); Brazil, Paraíba, Queimadas, 7°21'30"S, 35°53'54"W, 8 Sep 2008, *L.P. Felix* 12543 (EAN); Brazil, Pernambuco, Buíque, Aldeia Baixa da Palmeira, 8°36'38"S, 37°12'53"W, 21 Aug 2008, *L.P. Felix* 12494 (EAN); Brazil, Alagoas, Pariconha, 9°14'29"S, 28°01'43"W, 25 Mar 2008, *L.P. Felix* 12161 (EAN). [Fig. 4A]

Allamanda cathartica L.

$2n = 18$, CHN. Brazil, Paraíba, Areia, 6°57'42"S, 35°41'43"W, 13 Aug 2013, *L.P. Felix & L.I.F. Alves* 14295 (EAN). [Fig. 4C]

Allamanda doniana Müll.Arg.

** $2n = 18$, CHN. Brazil, Pará, Santa Luzia, BR316, 1°29'52"S, 46°55'27"W, 5 Jan 2009, *L.P. Felix* 12645 (EAN); Brazil, Pará, Barcarena, Ilha de Trambioca, 1°25'43"S, 48°37'24"W, 10 Jan 2009, *L.P. Felix* 12655 (EAN); Brazil, Maranhão, Junco do Maranhão, 1°50'27"S, 46°05'17"W, 5 Jan 2009, *L.P. Felix* 12644 (EAN); Brazil, Paraíba, Areia, Chã de Jardim, 6°57'48"S, 35°41'30"W, 28 Dec 2007, *L.P. Felix* 12080 (EAN); Brazil, Paraíba, Mamanguape, 6°54'36"S, 35°16'02"W, 23 Jun 2008, *L.P. Felix* 12420 (EAN); Brazil, Paraíba, Santa Rita, 7°08'19.8"S, 34°58'20.1"W, 7 Apr 2008, *L.P. Felix* 12262 (EAN). [Fig. 4E]

Allamanda doniana Müll.Arg.

*** $2n = 3x = 27$, CHN. Brazil, Piauí, Altos, 5°02'24"S, 42°27'41"W, 18 May 2008, *L.P. Felix* 12416 (EAN). [Fig. 4D]

Allamanda puberula A.DC.

** $2n = 22$, CHN. Brazil, Bahia, Morro do Chapéu, 11°33'09"S, 41°09'27"W, 28 Feb 2011, *L.P. Felix* 12009 (EAN). [Fig. 4F]

Asclepias curassavica L.

$2n = 22$, CHN. Brazil, Paraíba, Bayeux, 7°08'18.7"S, 34°55'27.9"W, 1 Apr 2008, *L.P. Felix* 12264 (EAN). [Fig. 4G]

Aspidosperma pyriforme Mart.

** $2n = 34$, CHN. Brazil, Paraíba, Campina Grande, 7°13'50"S, 35°52'52"W, 20 Nov 2006, *L.P. Felix* 11314 (EAN). [Fig. 4H]

Gomphocarpus physocarpus E.Mey.

** $2n = 22$, CHN. Brazil, Bahia, Feira de Santana, 12°16'24"S, 38°57'20"W, 4 Dec 2008, *A. Rapini* 1802 (HUEFS). [Fig. 4I]

Himatanthus bracteatus (A.DC.) Woodson

$2n = 18$, CHN. Brazil, Paraíba, Areia, 6°57'48"S, 35°41'30"W, 4 Feb 2008, *J.G. Brito* 23 (EAN). [Fig. 4J]

Mandevilla bahiensis (Woodson) M.F.Sales & Kin.-Gouv.

** $2n = 20$, CHN. Brazil, Bahia, Palmeiras, Povoado de Conceição dos Gados, subida para Mocó Brabo, 12°31'22"S, 41°30'01"W, 11 Oct 2008, *R.S. Santos* 01 (HUEFS). [Fig. 4K]

Mandevilla dardanoi M.F.Sales, Kin.-Gouv. & A.O.Simões

** $2n = 20$; Brazil, Pernambuco, Panelas, 8°39'50"S, 36°01'00"W, 22 Aug 2008, *L.P. Felix* 11789 (EAN). [Fig. 4M]

Mandevilla hatschbachii M.F.Sales, Kin.-Gouv. & A.O.Simões

** $2n = 22$, CHN. Brazil, Bahia, Seabra, BR-242, ca. 3 km antes da entrada para Iraquara, 12°28'30"S, 41°40'43"W, 2 Jul 2007, *A. Rapini* 1405 (HUEFS). [Fig. 4L]

Mandevilla moricandiana (A.DC.) Woodson

** $2n = 20$, CHN. Brazil, Paraíba, Serraria, 6°49'02"S, 35°37'55"W, 20 Sep 2003, *S. Pitrez & A. Trajano* 426 (EAN). [Fig. 4N]

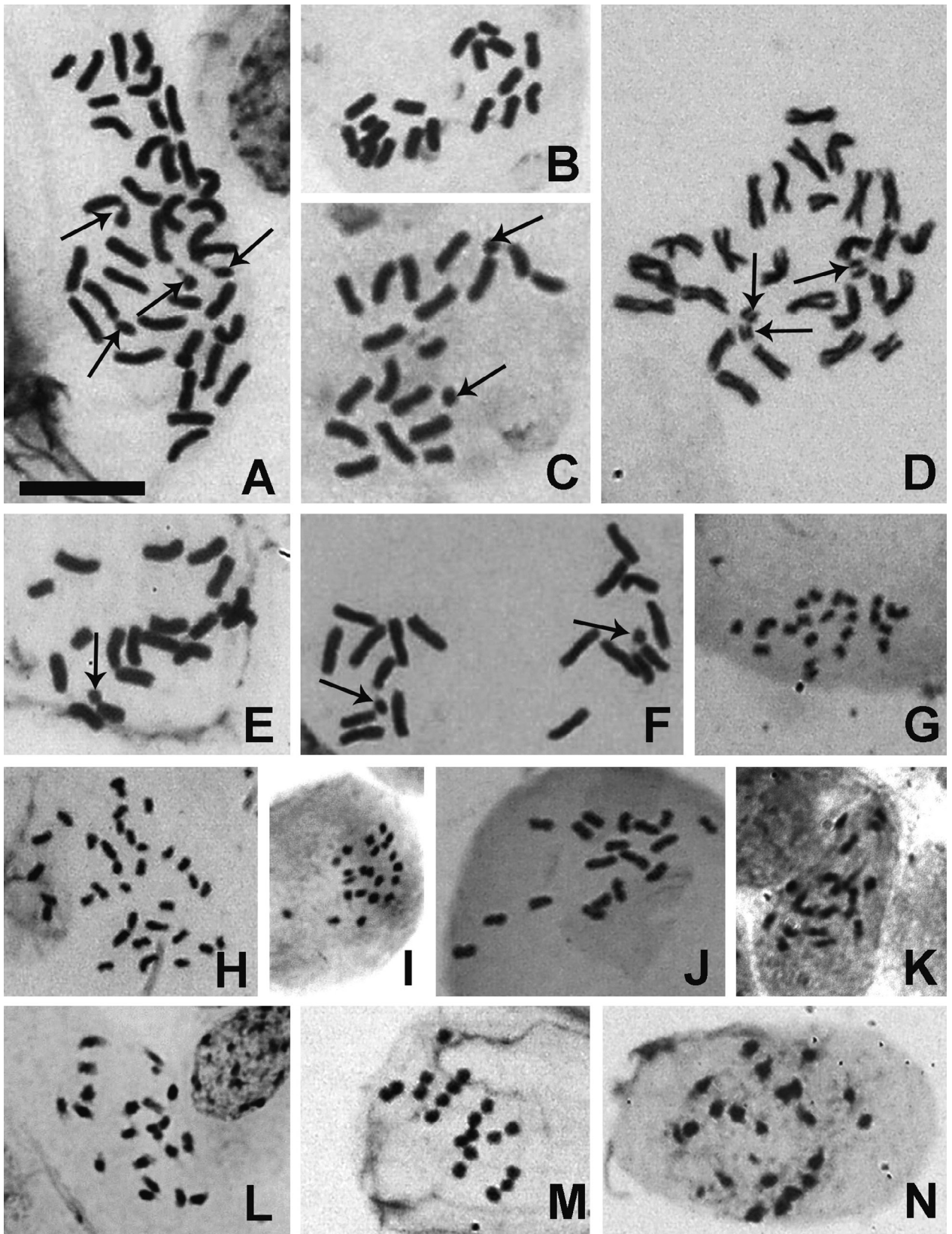


Fig. 4. **A**, *Allamanda blanchetii*, $2n = 36$; **B**, *Allamanda blanchetii*, $2n = 18$; **C**, *Allamanda cathartica*, $2n = 18$; **D**, *Allamanda doniana*, $2n = 3x = 27$; **E**, *Allamanda doniana*, $2n = 18$; **F**, *Allamanda puberula*, $2n = 22$; **G**, *Asclepias curassavica*, $2n = 22$; **H**, *Aspidosperma pyriformium*, $2n = 34$; **I**, *Gomphocarpus physocarpus*, $2n = 22$; **J**, *Himatanthus bracteatus*, $2n = 18$; **K**, *Mandevilla bahiensis*, $2n = 20$; **L**, *Mandevilla hatschbachii*, $2n = 22$; **M**, *Mandevilla dardanoi*, $2n = 20$; **N**, *Mandevilla moricandiana*, $2n = 20$. — Scale bar = 10 μm . Arrows indicate satellites

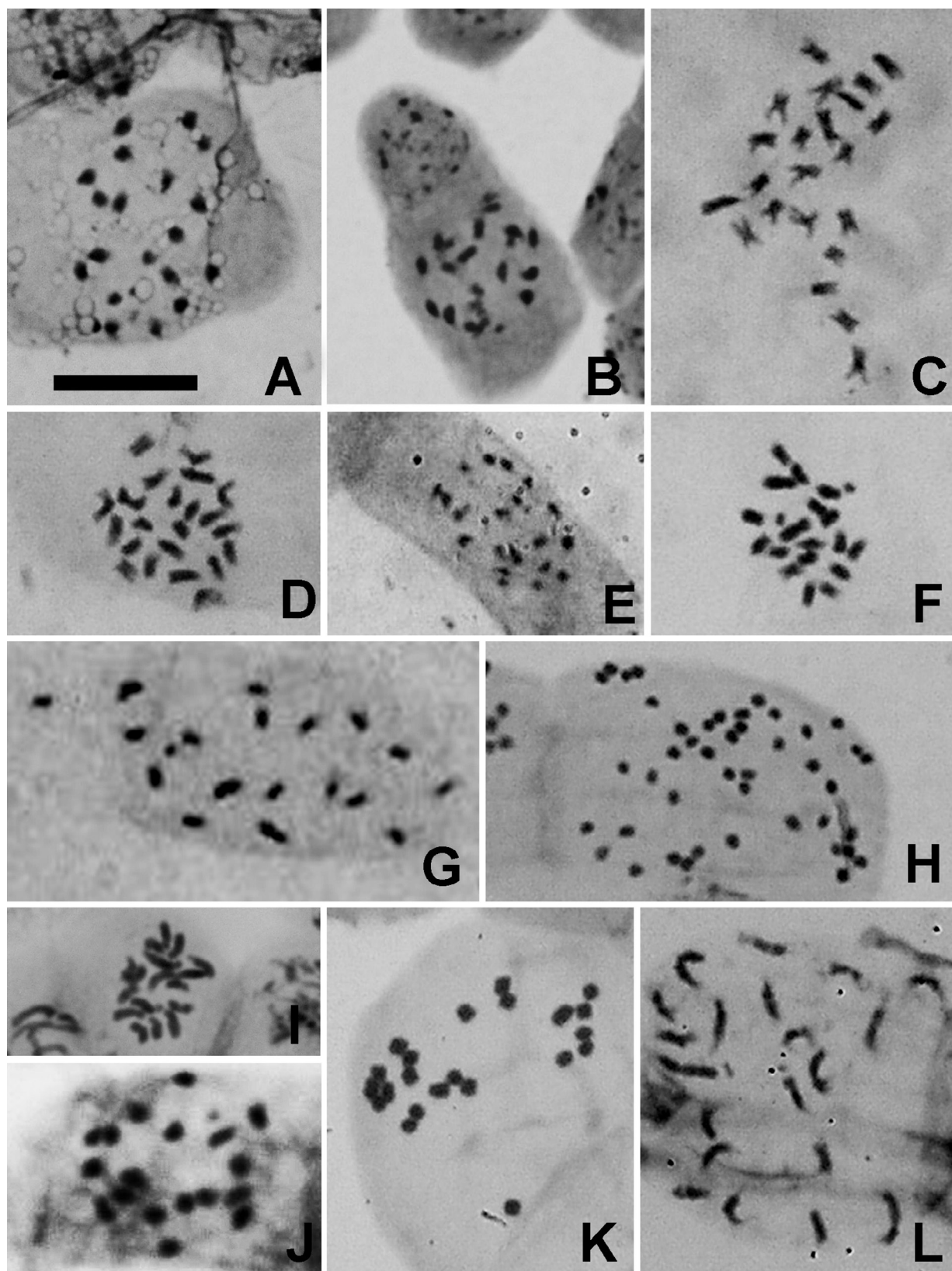


Fig. 5. **A**, *Mandevilla sancta*, $2n = 20$; **B**, *Mandevilla tenuifolia*, $2n = 20$; **C**, *Marsdenia altissima*, $2n = 22$; **D**, *Marsdenia caatingae*, $2n = 22$; **E**, *Matelea ganglinosa*, $2n = 20$; **F**, *Odontadenia hypoglauca*, $2n = 18$; **G**, *Peltastes peltatus*, $2n = 20$; **H**, *Rauvolfia sellowii*, $2n = 44$; **I**, *Stipecoma peltigera*, $2n = 18$; **J**, *Temnadenia violacea*, $2n = 18$; **K**, *Tabernaemontana catharinensis*, $2n = 22$; **L**, *Tabernaemontana solanifolia*, $2n = 22$. — Scale bar = 10 μm .

Mandevilla sancta (Stadelm.) Woodson

** $2n = 20$, CHN. Brazil, Bahia, Abaíra, Povoado de Catolés de Cima, 13°17'14" S, 41°54'14" W, 19 Nov 2008, R.S. Santos & A. Rapini 17 (HUEFS). [Fig. 5A]

Mandevilla tenuifolia (J.C. Mikan) Woodson

** $2n = 20$, CHN. Brazil, Bahia, Mucugê, Projeto Sempre-vivas, 12°59'30" S, 41°20'29" W, 13 Oct 2008, R.S. Santos 07 (HEFS). [Fig. 5B]

Marsdenia altissima (Jacq.) Dugand

** $2n = 22$, CHN. Brazil, Pernambuco, Taquaritinga do Norte, Sítio Cafundós, subida para a torre de televisão, 7°54'28.3" N, 36°01'11.2" S, 22 Oct 2008, L.P. Felix 12583 (EAN). [Fig. 5C]

Marsdenia caatingae Morillo

** $2n = 22$, CHN. Brazil, Rio Grande do Norte, Acari, 6°27'36" S, 36°38'28" W, 5 Jun 2007, L.P. Felix & D.J.G. Brito 12034 (EAN) [Fig. 5D].

Matelea ganglinosa (Vell.) Rapini

** $2n = 20$, CHN. Brazil, Paraíba, Itapororoca, 6°49'51" S, 35°14'49" W, 13 Jul 2003, L.P. Felix 14271 (EAN) [Fig. 5E].

Odontadenia hypoglauca Müll. Arg.

** $2n = 18$, CHN. Brazil, Pernambuco, Brejo da Madre de Deus, 8°08'45" S, 36°22'16" W, 14 Oct 2007, L.P. Felix 12004 (EAN). [Fig. 5F]

Peltastes peltatus (Vell.) Woodson

** $2n = 20$, CHN. Brazil, Paraíba, Areia, 6°57'48" S, 35°41'30" W, 19 Nov. 2008, L.P. Felix 12635 (EAN). [Fig. 5G]

Rauvolfia sellowii Müll. Arg.

** $2n = 44$, CHN. Brazil, São Paulo, Santana do Parnaíba, 23°29'26" S, 46°57'27" W, 7 Apr 2009, L.P. Felix 12838 (EAN). [Fig. 5H]

Stipecoma peltigera (Stadelm.) Müll. Arg.

* $2n = 18$, CHN. Brazil, Bahia, Mucugê, Unidade de Manejo Sustentável, Museu Casa dos Diamantes, 13°00'19" S, 41°22'15" W, 13 Oct 2008, R.S. Santos 10 (HUEFS). [Fig. 5I]

Tabernaemontana catharinensis A. DC.

** $2n = 22$, CHN. Brazil, Paraíba, Areia, 6°57'48" S, 35°41'30" W, 21 Nov 2007, U.S. Gomes 06 (EAN). [Fig. 5K]

Tabernaemontana solanifolia A. DC.

** $2n = 22$, CHN. Brazil, Piauí, Campo Maior, 4°49'42" S, 42°10'10" W, 26 Aug 2004, M.F.O. Pires & L.P. Felix 83 (EAN). [Fig. 5L]

Temnadenia violacea (Vell.) Miers

* $2n = 18$, CHN. Brazil, Bahia, Abaíra, em direção a Catolés, 13°16'37" S, 41°45'10" W, 19 Nov. 2008, R.S. Santos & A. Rapini 13 (HUEFS). [Fig. 5J]

The Apocynaceae constitute a family of mostly tropical and subtropical plants, with about 415 genera and 4555 species (Stevens, 2013). Their basic number is variable, but $x = 11$ is considered the likely base number (Van der Laan & Arends, 1985; Albers & Meve, 2001). As far as we know, there is no publication dedicated exclusively to the Brazilian species of Apocynaceae, and only three records are reported for species from Northeast Brazil thus far: $2n = 22$ for *Hancornia speciosa* (Pedrosa & al., 1999) and the unpublished $2n = 20$ for *Mandevilla tenuifolia* and $2n = 22$ for *Rauvolfia ligustrina* (Pitrez, 2006).

In this work, we present chromosome counts of 26 species in 14 genera of Apocynaceae, with emphasis on species from the Northeast Brazil. For the genus *Allamanda*, the counts revealed the occurrence of diploid, triploid and tetraploid: $2n = 18$ and 36 for *A. blanchetii*, $2n = 18$ and $2n = 27$ for *A. doniana* and $2n = 18$ for the remaining species. Polyploid cytotypes in *Aspidosperma pyriformis* and *Rauvolfia sellowii* were also observed. The counts of $2n = 18$ for *Stipecoma peltigera* and *Temnadenia violacea* are the first record for the genera, while the remaining species had their first chromosome counts in this work, except *Allamanda blanchetii*, *A. cathartica*, *Asclepias curassavica* and *Himatanthus bracteatus*, which had their counts partially confirmed, with $2n = 36$ for *A. blanchetii* being the first record of polyploidy for the species. Our counts of $2n = 18$ and $2n = 22$ confirm the basic numbers $x = 9$ and $x = 11$. However, counts of $2n = 20$ for most species of *Mandevilla* suggest the occurrence of dysploidy in this genus. The remaining species are chromosomally stable, except *Aspidosperma pyriformis* with descending dysploidy, an occurrence apparently rare in Apocynaceae (Van der Laan & Arends, 1985; Albers & Meve, 2001).

Literature cited

- Albers, F. & Meve, U. 2001. A karyological survey of Asclepiadoideae, Periplocoideae, and Secamonoideae, and evolutionary considerations within Apocynaceae s.l. *Ann. Missouri Bot. Gard.* 88: 624–656.
- Guerra, M. & Souza, M.J. 2002. *Como observar cromossomos: Um guia de técnicas em citogenética vegetal, animal e humana*, 1st ed. Ribeirão Preto: FUNPEC.
- Pedrosa, A., Gitaí, J., Silva, A.E.B., Felix, L.P. & Guerra, M. 1999. Citogenética de angiospermas coletadas em Pernambuco. *Acta Bot. Brasil.* 13: 49–60.
- Pitrez, R.S. 2006. *Florística, fitossociologia e citogenética de Angiospermas ocorrentes em inselbergues*. Tese de doutorado, Universidade Federal da Paraíba, Paraíba, Brazil.
- Stevens, P.F. 2001+. Angiosperm Phylogeny Website, version 12, July 2012 [and more or less continuously updated since]. <http://www.mobot.org/MOBOT/research/APweb/> (accessed Jul 2013).
- Van der Laan, F.M. & Arends, J.C. 1985. Cytotaxonomy of the Apocynaceae. *Genetica* 68: 3–35.

Marina Grabiele,^{1,2*} Julio R. Daviña¹ & Ana I. Honfi¹

- 1 Programa de Estudios Florísticos y Genética Vegetal (PEFyGV), Instituto de Biología Subtropical (IBS UNaM – CONICET), Universidad Nacional de Misiones, Rivadavia 2370, 3300 Posadas, Argentina
 - 2 Instituto de Botánica del Nordeste (IBONE – CONICET), Universidad Nacional del Nordeste, C.C. 209, 3400 Corrientes, Argentina
- * Author for correspondence: marinagrabiele@gmail.com

This work was supported by Agencia Nacional de Promoción Científica y Técnica (ANPCyT – SECyT, Argentina) grant no. PICT-O 36907, Comité Ejecutivo de Desarrollo e Innovación Tecnológica (CEDIT), and Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina.

* First chromosome count from Argentinean accessions.

COMMELINACEAE

Callisia monandra (Sw.) Schultes & Schultes f.

* $n = 7$, $2n = 2x = 14$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, 25°40'46" S, 54°27'20" W, 20 Nov 2004, Mar. Grabiele 46 (MNES). [Fig. 6A, G]

* $n = 7$, $2n = 2x = 14$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, 25°42'29" S, 54°26'25" W, 6 Jan 2006, Mar. Grabiele, Mau. Grabiele, J.R. Daviña & A.I. Honfi 68 (MNES).

Callisia repens L.

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Misiones Province, Capital Department, Posadas, 27°24'20" S, 55°53'15" W, 10 Nov 2003, *Mar. Grabiele 12* (CTES, MNES). [Fig. 6B, H]

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Misiones Province, Candelaria Department, Teyú Cuaré, 27°16'55" S, 55°35'43" W, 15 Jan 2003, *Mar. Grabiele 19* (CTES, MNES).

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, 25°41'43" S, 54°27'20" W, 19 Apr 2005, *Mar. Grabiele 21* (MNES).

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Misiones Province, Capital Department, Posadas, 27°25'25" S, 55°54'24" W, 15 Nov 2001 *Mau. Grabiele 12* (MNES).

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Misiones Province, Capital Department, Posadas, 27°23'43" S, 55°57'10" W, 15 Jan 2003, *Mau. Grabiele 30* (MNES).

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Misiones Province, Candelaria Department, Teyú Cuaré, 27°16'47" S, 55°35'37" W, 10 Feb 2003 *Mau. Grabiele 39* (MNES).

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Misiones Province, Candelaria Department, Osununu, 27°16'50" S, 55°34'58" W, 10 Feb 2003 *Mau. Grabiele 40* (MNES).

* $n = 6$, $2n = 2x = 12$, CHN. Argentina, Corrientes Province, Ituzaingó Department, Garapé, 27°35'37" S; 56°18'25" W, 1 Sep 2003, *Mau. Grabiele 66* (MNES).

Dichorisandra hexandra (Aubl.) Standley

$n = 38$, $2n = 4x = 76$, CHN. Argentina, Misiones Province, Capital Department, Garupá, 27°26'29" S, 55°52'46" W, 3 Apr 2004, *Mar. Grabiele 26* (MNES, SI).

$n = 38$, $2n = 4x = 76$, CHN. Argentina, Misiones Province, San Ignacio Department, Teyú Cuaré, 27°16'55" S, 55°35'43" W, 10 Oct 2004, *Mar. Grabiele 41* (CTES, MNES). [Fig. 6C, I]

$n = 38$, $2n = 4x = 76$, CHN. Argentina, Misiones Province, San Ignacio Department, Teyú Cuaré, 27°16'47" S, 55°35'37" W, 10 Oct 2004, *Mar. Grabiele 43* (MNES, SI).

$n = 38$, $2n = 4x = 76$, CHN. Argentina, Misiones Province, Capital Department, Garupá, 27°27'11" S, 55°52'21" W, 27 Aug 2003, *Mau. Grabiele 62* (CTES, MNES).

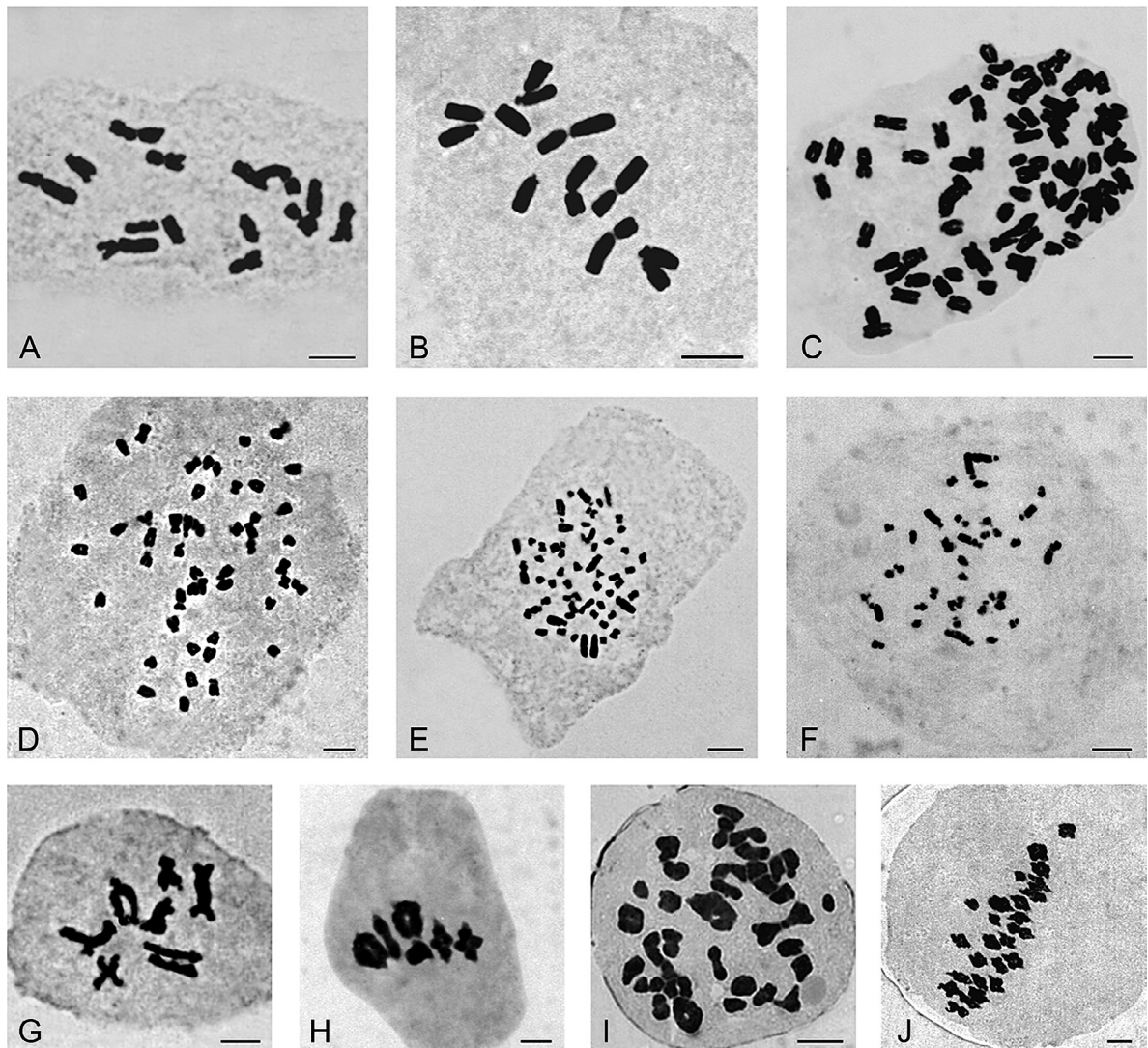


Fig. 6. A–F, mitotic metaphase: **A**, *Callisia monandra*, $2n = 14$; **B**, *Callisia repens*, $2n = 12$; **C**, *Dichorisandra hexandra*, $2n = 76$; **D**, *Gibasis geniculata*, $2n = 48$; **E**, *Tradescantia anagallidea*, $2n = 60$; **F**, *Tradescantia fluminensis*, $2n = 40$. G–J, diakinesis/metaphase I: **G**, *C. monandra*, $n = 7$; **H**, *C. repens*, $n = 6$; **I**, *D. hexandra*, $n = 38$; **J**, *G. geniculata*, $n = 24$. — Scale bars = 5 μ m.

$n = 38$, $2n = 4x = 76$, CHN. Argentina, Misiones Province, San Ignacio Department, Santo Pipó, 27°14'54" S, 55°31'16" W, 27 Aug 2003, *Mau. Grabiele 63* (CTES, MNES).

$n = 38$, $2n = 4x = 76$, CHN. Argentina, Misiones Province, San Ignacio Department, Yabebiry, 27°18'04" S, 55°30'39" W, 27 Aug 2003, *Mau. Grabiele 64* (MNES, SI).

Gibasis geniculata (Jacq.) Rohweder

$n = 24$, $2n = 8x = 48$, CHN. Argentina, Chaco Province, Primero de Mayo Department, Colonia Benítez, 27°19'49" S, 58°56'23" W, 30 Mar 2004, *Mar. Grabiele 23* (CTES, MNES). [Fig. 6D, J]

Tradescantia anagallidea Seub.

$n = 30$, $2n = 60$, CHN. Argentina, Misiones Province, Capital Department, Posadas, 27°22'52" S, 55°58'20" W, 3 Nov 2003, *Mar. Grabiele 1* (CTES, MNES). [Fig. 6E]

$n = 30$, $2n = 60$, CHN. Argentina, Misiones Province, Capital Department, Posadas, 27°23'45" S, 55°57'12" W, 10 Nov 2003, *Mar. Grabiele 13* (MNES).

$n = 30$, $2n = 60$, CHN. Argentina, Misiones Province, Capital Department, Garupá, 27°27'15" S, 55°52'25" W, 27 Aug 2003, *Mau. Grabiele 68* (MNES).

Tradescantia fluminensis Vell.

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Capital Department, Posadas, Jardín Botánico, 27°24'39" S, 55°53'47" W, 10 Nov 2003, *Mar. Grabiele 3* (MNES). [Fig. 6F]

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Capital Department, Posadas, Jardín Botánico, 27°24'32" S, 55°53'49" W, 10 Nov 2003, *Mar. Grabiele 11* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Capital Department, Santa Inés, 27°30'12" S, 55°51'04" W, 30 Mar 2004, *Mar. Grabiele 24* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Capital Department, Posadas, Jardín Botánico, 27°24'35" S, 55°53'40" W, 17 Jul 2001, *Mau. Grabiele 5* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Chaco Province, Primero de Mayo Department, Colonia Benítez, 27°19'49" S, 58°56'23" W, 30 Mar 2004, *Mar. Grabiele 25* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Guaraní Department, El Soberbio, 27°17'57" S, 54°12'08" W, 6 Jan 2006, *Mar. Grabiele, Mau. Grabiele, J.R. Daviña & A.I. Honfi 30* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Guaraní Department, El Soberbio Route 2, 27°17'31" S, 54°11'56" W, 6 Jan 2006, *Mar. Grabiele, Mau. Grabiele, J.R. Daviña & A.I. Honfi 31* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, San Ignacio Department, Teyú Cuaré, 27°16'42" S, 55°35'35" W, 10 Oct 2004, *Mar. Grabiele 42* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, San Ignacio Department, Teyú Cuaré, 27°16'50" S, 55°35'40" W, 10 Oct 2004, *Mar. Grabiele 44* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, 25°41'43" S, 54°27'20" W, 25 Nov 2004, *Mar. Grabiele 57* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, San Martín Island, 25°41'21" S, 54°26'41" W, 25 Nov 2004, *Mar. Grabiele 60* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, San Martín Island, 25°41'21" S, 54°26'41" W, 25 Nov 2004, *Mar. Grabiele 61* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, San Martín Island, 25°41'21" S, 54°26'45" W, 25 Nov 2004, *Mar. Grabiele 63* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, 25°41'15" S, 54°26'41" W, 25 Nov 2004, *Mar. Grabiele 64* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, 25°41'18" S, 54°26'42" W, 25 Nov 2004, *Mar. Grabiele 65* (MNES).

$n = 20$, $2n = 40$, CHN. Argentina, Misiones Province, Iguazú Department, Iguazú Falls, 25°41'16" S, 54°26'25" W, 25 Nov 2004, *Mar. Grabiele 66* (MNES).

$2n = 60$, CHN. Argentina, Córdoba Province, Capital Department, Córdoba, 27°44'32" S, 64°18'18" W, 5 Nov 2003, *Mar. Grabiele 2* (MNES).

$2n = 60$, CHN. Argentina, Córdoba Province, Capital Department, Córdoba, Jardín Zoológico, 27°47'34" S, 64°16'04" W, 15 Aug 2004, *Mar. Grabiele 36* (MNES).

$2n = 60$, CHN. Argentina, Córdoba Province, Calamuchita Department, Villa Gral. Belgrano, 31°58'57" S, 64°34'09" W, 17 Aug 2004, *Mar. Grabiele 37* (MNES).

$2n = 60$, CHN. Argentina, Córdoba Province, Calamuchita Department, Villa Gral. Belgrano, Pozo Verde, 31°58'03" S, 64°32'17" W, 17 Aug 2004, *Mar. Grabiele 38* (MNES).

Marlyktynti Hynniewta,¹ Surendra Kumar Malik² & Satyawada Rama Rao^{1*}

1 *Plant Biotechnology Laboratory, Department of Biotechnology and Bioinformatics, North Eastern Hill University, Permanent Campus, Mawkynroh, Umshing, Shillong 793 022, Meghalaya, India*

2 *Tissue Culture & Cryopreservation Unit, National Bureau of Plant Genetic Resources, Pusa, New Delhi 110 012, India*

* Author for correspondence: sr Rao22@yahoo.com

Methods for chromosome counts follow Hynniewta & al. (2011).

This study was supported by University Grants Commission through Rajiv Gandhi National Fellowship to MH.

RUTACEAE

Citrus assamensis S.Dutta & S.C.Bhattacharya, $2n = 18$, CHN. India, Meghalaya state, Jaintia Hills district, 25.33°N, 92.67°E, 12 Nov 2007, S.K. Malik & O.P. Dhariwal 20742 (NHCP IC-285355). [Fig. 7A]

Citrus ichangensis Swingle, $2n = 18$, CHN. India, Nagaland state, Kohima district, 25.37°N, 94.1°E, 16 Dec 2011, S.K. Malik & O.P. Dhariwal 20741 (NHCP IC-591460). [Fig. 7B]

Both chromosome counts represent first records.

Literature cited

Hynniewta, M., Malik, S.K. & Rao, S.R. 2011. Karyological studies in ten species of *Citrus* (Linnaeus, 1753) (Rutaceae) of North-East India. *Comp. Cytogen.* 5: 277–287. <http://dx.doi.org/10.3897/CompCytogen.v5i4.1796>.

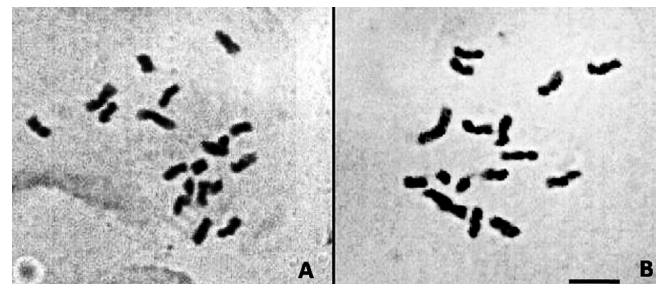


Fig. 7. Mitotic metaphases of: **A**, *Citrus assamensis*, $2n = 18$ (IC-285355); **B**, *C. ichangensis*, $2n = 18$ (IC-591460). — Scale bar = 5 μ m

Amanda A. Jesus,¹ Flávia A. Ortolani² & Evandro M. Moraes^{1*}

1 Departamento de Biologia, Centro de Ciências Humanas e Biológicas, Universidade Federal de São Carlos, 18052-780, Sorocaba, SP, Brazil

2 Faculdade de Ciências Agrárias e Veterinárias, Universidade Estadual Paulista, 14884-900, Jaboticabal, SP, Brazil

* Author for correspondence: emarsola@ufscar.br

* First chromosome count for the species.

Financial support of the São Paulo Research Foundation (FAPESP, 2005/55200-8 to EMM).

CACTACEAE

Pilosocereus aureispinus (Buining & Brederoo) F.Ritter

* $2n = 22$, CHN. Brazil, Bahia, Ibotirama, 12°05'S, 43°09'W, 30 Jan 2009, E.M. Moraes & M.F. Perez s.n. (CCTS 642). [Fig. 8D]

Pilosocereus aurisetus subsp. *aurilanus* (Ritter) Zappi

* $2n = 22$, CHN. Brazil, Minas Gerais, Joaquim Felício, Serra do Cabral, 17°41'S, 44°11'W, 18 Jan 2008, E.M. Moraes & L.T.P. Ono s.n. (CCTS 639). [Fig. 8B]

Pilosocereus aurisetus (Werderm.) Byles & G.D.Rowley subsp. *aurisetus*

* $2n = 22$, CHN. Brazil, Minas Gerais, Cardeal Mota, Serra do Cipó, 19°16'S, 43°30'W, 23 Jan 2008, E.M. Moraes & L.T.P. Ono s.n. (CCTS 646). [Fig. 8A]

Pilosocereus bohlei Hofacker

* $2n = 22$, CHN. Brazil, Bahia, Umburanas, 10°21'S, 41°11'W, 1 Jan 2011, E.M. Moraes, M.F. Perez, M.C. Machado & F.F. Franco s.n. (CCTS 3000). [Fig. 8F]

Pilosocereus machrisii (E.Y.Dawson) Backeb.

* $2n = 22$, CHN. Brazil, São Paulo, Altinópolis, Morro do Forno, 21°05'S, 47°20'W, 30 Aug 2008, E.M. Moraes, L.P.T. Ono & M.F. Perez s.n. (CCTS 644). [Fig. 8C]

Pilosocereus vilaboensis (Diers & Esteves) P.J.Braun

* $2n = 22$, CHN. Brazil, Goiás, Goiás Velho, Serra Dourada, 16°00'S, 50°03'W, 11 Jan 2009, E.M. Moraes, F.P. Molena & M.F. Perez s.n. (CCTS 3001). [Fig. 8E]

All taxa analyzed had a diploid chromosome number of $2n = 22$, matching the basic chromosome number of $x = 11$ for Cactaceae (Ross, 1981).

Literature cited

Ross, R. 1981. Chromosome counts and cytology in the Cactaceae. *Amer. J. Bot.* 68: 463–470. <http://dx.doi.org/10.2307/2443022>

Aleksandr A. Korobkov,¹ Violetta V. Kotseruba¹ & Victor V. Chepinoga^{2,3*}

1 Komarov Botanical Institute RAS, Prof. Popov Str. 2, 197376 St.-Petersburg, Russia

2 V.B. Sochava Institute of Geography SB RAS, Ulan-Batorskaya Str. 1, 664033 Irkutsk, Russia

3 Department of Botany, Irkutsk State University, Karl Marks Str. 1, 664003 Irkutsk, Russia

* Author for correspondence: Victor.Chepinoga@gmail.com

* First chromosome count for the species.

** First chromosome count from East Siberian accession.

The study was financially supported by grants 13-04-01468 (to A.A. Korobkov) and 14-04-00771 (to V.V. Chepinoga), from the Russian Fund for Basic Research (RFBR).

ASTERACEAE

***Artemisia absinthium* L.

$2n = 18$, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutsk city, Akademgorodok, on wasteland near an abandoned building site, 8 Aug 2012, S. Kazanovsky 2012-45 (LE).

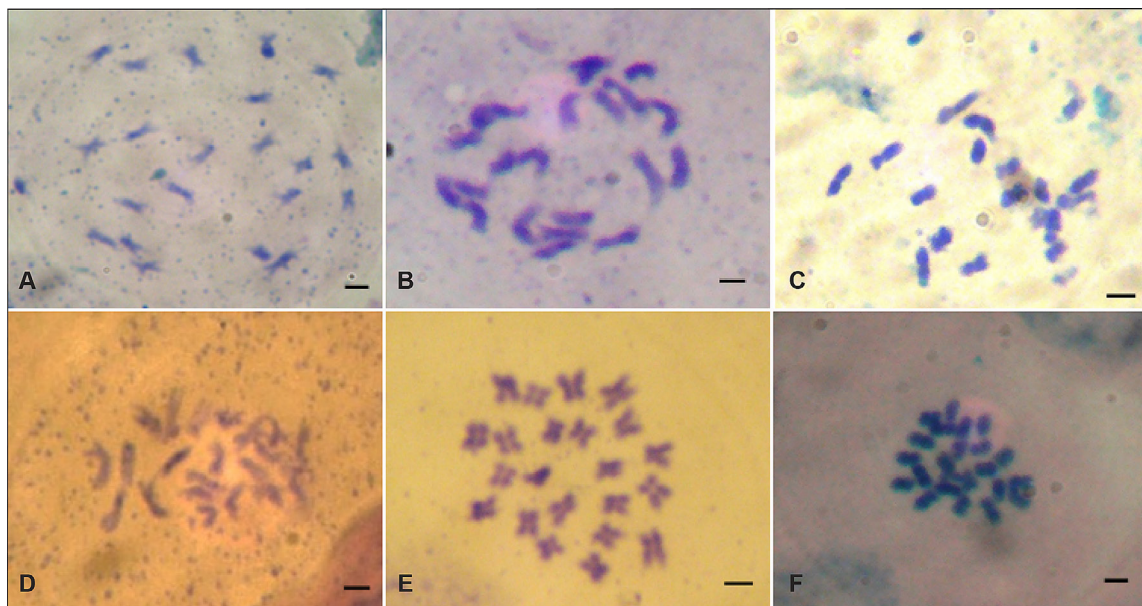


Fig. 8. Mitotic metaphases of *Pilosocereus* stained with Giemsa. **A**, *Pilosocereus aurisetus* subsp. *aurisetus*, $2n = 22$; **B**, *Pilosocereus aurisetus* subsp. *aurilanus*, $2n = 22$; **C**, *Pilosocereus machrisii*, $2n = 22$; **D**, *Pilosocereus aureispinus*, $2n = 22$; **E**, *Pilosocereus vilaboensis*, $2n = 22$; **F**, *Pilosocereus bohlei*, $2n = 22$. — Scale bars = 2.8 μ m.

*****Artemisia adamssii* Besser**

$2n = 18$, CHN. Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, Orongaika River, gravelly southern gentle slope of the hill, grass-forb steppe dwarf shrubs, 14 Oct 2005, *A. Korobkov 06-141* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, vicinity of the Ivolginsk village, sandy terrace, saline microdepression, sagebrush community, 2 Oct 2007, *A. Korobkov 08-24* (LE).

***Artemisia anethifolia* Weber ex Stechm.**

$2n = 16$, CHN. Russia, East Siberia, Republic of Buryatia, right riverside of Uda River, near highway from Ulan-Ude city to Sosnovo-Ozerskoe village, saline depression in floodplain, margin part of solonets, 4 Oct 2007, *A. Korobkov 08-56* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, terrace above the floodplain of Selenga River, near Ivolginsk village, saline depression, on sand, 2 Oct 2007, *A. Korobkov 08-54* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, vicinity of Ivolginsk village, floodplain of Selenga River, saline depression, sagebrush community, 2 Oct 2007, *A. Korobkov 08-57* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, vicinity of Tokhoi village, shore of the Lake Sulfatnoe, salt-marsh, plant community with *Suaeda*, *Caragana* and forbs, 14 Sep 2005, *A. Korobkov 06-156, 06-23* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, vicinity of Tokhoi village, shore of the Lake Sulfatnoe, plant community with *Suaeda*, grasses, forbs and shrubs of *Caragana*, 3 Sep 2003, *M. Lomonosova 04-03* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, vicinity of Bilutai village, sandy plain, saline sand on shore of drying lake, 50°53'N 16°12'E, 18 Sep 2005, *A. Korobkov 06-157, 06-158, 06-22* (LE); Russia, East Siberia, Zabaikalskii Krai, Krasnokamenskii Raion, salt-marsh on the shore of Lake Khara-Nur, 13 Sep 2003, *M. Lomonosova 04-02* (LE); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, eastern shore of the Lake Ganga-Nur, salt-marsh, 3 Sep 2012, *A. Korolyuk 2013-12* (LE).

$2n = 16-18$, CHN. Russia, East Siberia, Republic of Buryatia, Dzidinskii Raion, vicinity of Beloozersk village, northern shore of the Lake Verkhnee Beloe, 3 Oct 2007, *B. Naidanov 08-55* (LE).

*****Artemisia annua* L.**

$2n = 18$, CHN. Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, right riverside of Selenga River, vicinity of Kardon village, sandy terrace, grass-sagebrush community, 20 Sep 2007, *A. Korobkov 08-22* (LE).

***Artemisia bargusinensis* Spreng.**

$2n = 36$, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, Barguzinskii Ridge, vicinity of Ulyun village, 29 Sep 2001, *S. Budatsyrenova 02-04* (LE); Russia, East Siberia, Republic of Buryatia, Pribaikalskii Raion, 20 km north of the Ulan-Ude city, valley of Selenga River, 52°N 17°30'E, 29 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-08* (LE).

***Artemisia commutata* Besser**

$2n = 18$, CHN. Russia, East Siberia, Irkutskaya Oblast', Olkhon-skii Raion, western coast of Lake Baikal, near ferry to Olkhon Island, sagebrush-grass-forb community in small depression, 4 Sep 1995, *A. Korobkov 95-19* (LE); Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern shore of Lake Baikal, neck of the Svyatoi Nos peninsula, sand hillocks on shore of the lake, 30 Oct 2007, *A. Korobkov 08-83* (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, Sosnovo-Ozerskoe village, experimental station of soil scientists, grass-forb meadow, 4 Oct 2007, *A. Korobkov 08-80* (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, small hill near Sosnovo-Ozerskoe village, larch-birch forest, 3 Oct 2007, *A. Korobkov 08-82* (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, 14 km north-east of Isinga village, forest steppe with patches of Larch forests, 11 Aug 2012, *A. Korolyuk*

2013-07 (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, Eravninskii lakes, agricultural set-aside near the Lake Isinga, 52°45'N 111°45'E, 26 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-02* (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, southern shore of Lake Bolshoe Eravnoe, sandy terrace, sagebrush-forb community, 4 Oct 2007, *A. Korobkov 08-81* (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, western shore of Lake Bolshoe Eravnoe, 52°40'N 111°30'E, 27 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-04, 95-05* (LE); Russia, East Siberia, Republic of Buryatia, Khorinskii Raion, valley of Uda River, vicinity of the Ona River mouth, pebbly riverside, among the willow thickets, 28 Aug 1995, *A. Korobkov, I. Mokhova & N. Medvedeva 95-56* (LE); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, saline Lake Borzinskoe, solonchak steppe on the shore, 50°20'N 116°20'E, 10 Aug 1995, *A. Budantsev, N. Medvedeva, A. Korobkov & I. Mokhova 95-52* (LE); Russia, East Siberia, Zabaikalskii Krai, Krasnokamenskii Raion, 20 km north-east of Krasnokamensk town, valley of the Uru-lugui River, solonchak meadow, 31 Aug 2012, *A. Korolyuk 2013-06* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, left riverside of Kyra River, high pebbly floodplain, on dry hillocks, 1 Sep 2005, *A. Korobkov 06-01* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, foot of the hill south of the settlement, grass-forb degraded steppe, 28 Aug 2005, *A. Korobkov 06-160, 161* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, quarry on the watershed of Kyra River and Efimovskaya River, gravel dumps, 4 Sep 2005, *A. Korobkov 06-162* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, cordon Nizhnii Bukukun, terrace above the floodplain, grass-forb steppe, 6 Sep 2005, *A. Korobkov 06-163* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", pebbly bank of a brook, grass-forb meadow, 8 Sep 2005, *A. Korobkov 06-165* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, pebbly bank of Kyra River, dry pebbly hillocks, 1 Sep 2005, *A. Korobkov 06-170* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, cordon Ende, pebbly shore of Ende river, 29 Aug 2011, *O. Afonina 2012-35* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, winter cabin Verkhni Bukukun, gravelly placer, forb plant community, 22 Aug 2011, *O. Afonina 2012-37* (LE); Russia, East Siberia, Zabaikalskii Krai, Mogoituiskii Raion, 3 km south-east of Kurilzha village, Low Hill Land, steppe, 25 Aug 2012, *A. Korolyuk 2013-04* (LE); Russia, East Siberia, Zabaikalskii Krai, Priargunskii Raion, low mountainous massif Byrkinskie skaly, stony steppe, 30 Aug 2012, *A. Korolyuk 2013-05* (LE); Russia, East Siberia, Zabaikalskii Krai, Gazimuro-Zavodskii Raion, southern macroslope of Gazimurskii Ridge, forest edge in vicinity of Shirokaya village, 51°30'N 118°40'E, 19 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-03* (LE); Russia, East Siberia, Zabaikalskii Krai, Priargunskii Raion, Argun' River basin, valley of Tasurikai River, stony steppe slope north of the Verkhni Tasurkai village, 50°30'N 116°20'E, 11 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-07* (LE).

$2n = ca. 29, 36$, CHN. Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, western spurs of Tsagan-Daban Ridge, gravelly crest of the ridge, 20 Sep 2007, *A. Korobkov 08-93* (LE).

$2n = 36$, CHN. Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, vicinity of Nur-Tukhum village, on sand, 25 Aug 2001, *S. Budatsyrenova 02-24* (LE); Russia, East Siberia, Zabaikalskii Krai, Borzinskii Raion, 15 km SSE of Perednaya Byrka village, low mountainous massif between Borzia River and Biliktui River, steppe, 28 Aug 2012, *A. Korolyuk 2013-08* (LE); Russia, East Siberia, Zabaikalskii Krai, Kalarskii Raion, Stanovoye highland, railway station Nalednyi, pebbles, 13 Sep 2012, *O. Afonina 2013-16* (LE).

**Artemisia cuspidata* Krasch.

$2n = 36$, CHN. Russia, East Siberia, Irkutskaya Oblast', Olkhon-skii Raion, western coast of Lake Baikal, near ferry to Olkhon Island, terraces on stony hillocks, 1 Sep 1995, *A. Budantsev, A. Korobkov & I. Mokhova 95-53* (LE);

$2n = 44-54$, CHN. Russia, East Siberia, Irkutskaya Oblast', Olkhon-skii Raion, western coast of Lake Baikal, near ferry to Olkhon Island, terraces on stony hillocks, 1 Sep 1995, *A. Budantsev, A. Korobkov & I. Mokhova 95-59* (LE).

Artemisia desertorum Spreng.

$2n = 18$, CHN. Russia, East Siberia, Zabaikalskii Krai, Priargunskii Raion, Argun' River basin, valley of Tasurkai River, stony steppe slope north of the Verkhniy Tasurikai village, birch forest, 50°30'N 118°20'E, 14 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-57* (LE).

$2n = 36$, CHN. Russia, East Siberia, Irkutskaya Oblast', Shelkhovskii Raion, Bolshoi Lug village, roadside, 477 m, 52°04'37"N 14°05'35"E, 5 Sep 2011, *S. Kazanovsky 2012-43* (LE); Russia, East Siberia, Irkutskaya Oblast', Irkutskii Raion, coast of Lake Baikal, vicinity of Listvyanka village, steep southern slope, 9 Sep 2011, *O. Afonina 2012-53* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhinskii Raion, 12 km east of Khilgantui village, pine forest, 6 Sep 2011, *A. Korolyuk 2012-29* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, northern slope of the hill, grass-forb meadow with shrubs, 1 Sep 2005, *A. Korobkov 06-181* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, cordon Ende, foot of the stony southern slope, 29 Aug 2005, *A. Korobkov 06-183* (LE).

$2n = 18, 27, 36$, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutskii Raion, vicinity of Listvyanka village, steep southern slope, 452 m, 10 Sep 2011, *O. Afonina 2012-52* (LE).

Artemisia dracunculus L.

$2n = 18$, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern coast of Lake Baikal, Svyatoi Nos peninsula, cape Monakh in northern part of Chivyrkuiskii bay, herb community on steep slope, 27 Sep 2007, *A. Korobkov 08-72* (LE); Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, right riverside of Selenga River, vicinity of Kardon village, sandy terrace, sagebrush community, 20 Sep 2007, *A. Korobkov 08-71* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", roadside gully, sagebrush community on sand, 8 Sep 2005, *A. Korobkov 06-203* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, southern outskirts of Kyra village, northern slope of the hill, shallow hollow, rich grass-forb steppe with shrubs, 1 Sep 2005, *A. Korobkov 06-204* (LE).

$2n = 36$, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", southern stony slope of the hill, grass-forb community, 7 Sep 2005, *A. Korobkov 06-202* (LE).

Artemisia freyniana (Pamp.) Krasch.

$2n = 18$, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, in park, 31 Aug 2011, *O. Afonina 2012-50* (LE).

Artemisia frigida Willd.

$2n = 18$, CHN. Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, sandy terrace between Lake Bolshoe Eravnoe and Lake Maloe Eravnoe, grass-forb steppe, 4 Oct 2007, *A. Korobkov 08-65* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, vicinity of Khuramsha village, gentle slope of the hill, dry grass-forb steppe, 21 Sep 2007, *A. Korobkov 08-63* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhinskii Raion,

vicinity of Ust'-Kiran village, sand dunes along roadside, 30 Sep 2007, *D. Tubanova 08-60* (LE); Russia, East Siberia, Republic of Buryatia, Mukhorshibirskii Raion, vicinity of Khoshun-Uzur village, Zun-Khada mountain, 3 Nov 2001, *D. Chimitov 02-01* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, vicinity of Novoselenginsk village, slope of south-eastern exposition, 28 Oct 2001, *S. Budatsyrenova 02-03* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, Bargoiskii Ridge, vicinity of Bilyutai village, foot of the ridge, grass-forb steppe, 18 Sep 2005, *A. Korobkov 06-148* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", on dry sand in roadside gully, 8 Sep 2005, *A. Korobkov 06-147* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, high sandy-gravel terrace in park, small hillocks, grass-forb community, 12 Sep 2005, *A. Korobkov 06-214* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, Ende River basin, brook Dyurda, steep stony slope of southern exposition, sagebrush community, 26 Aug 2011, *O. Afonina 2010-41* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, near Kyra village, in park, 31 Aug 2011, *O. Afonina 2012-68* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, terrace on right riverside of Kyra River, vicinity of Kyra village, Buyunda valley, disturbed sand, 8 Sep 2005, *A. Korobkov 06-145* (LE).

$2n = 36$, CHN. Russia, East Siberia, Irkutskaya Oblast', Olkhon-skii Raion, Lake Baikal, Olkhon island, cape Khoboi, top of the hill, edge of larch forest, forb meadow, 3 Sep 1995, *A. Korobkov 95-37* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, 80 km south-west of Ulan-Ude city, 27 Aug 2004, *I. Safronova 04-108* (LE); Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, western spurs of Tsagan-Daban Ridge, southern gravel slope, steppe among thickets of Siberian apricot, 20 Sep 2007, *A. Korobkov 08-62* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, left riverside of Tyra River, near the bridge north of Khapcheranga village, southern steep stony slope of the hill, thickets of Siberian apricot, 9 Sep 2005, *A. Korobkov 06-143* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, stony slope of the hill, mountainous forb steppe with dwarf shrubs, 7 Sep 2005, *A. Korobkov 06-146* (LE).

$2n = 36$, ca. 54, CHN. Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, left riverside of Selenga River, 1 km south-west of Sotnikovo village, spurs of Khamar-Daban ridge, rarefied pine forest with grasses and forbs, Sep 2000, *S. Budatsyrenova 02-02* (LE).

Artemisia gmelinii Weber ex Stechm.

$2n = 18$, CHN. Russia, East Siberia, Irkutskaya Oblast', Olkhon-skii Raion, Olkhon island, 4 km north of Khuzhir village, top of the hill, roadside, 4 Oct 1995, *A. Budantsev, A. Korobkov & I. Mokhova 95-21* (LE); Russia, East Siberia, Republic of Buryatia, Kabanskii Raion, Baikalskii Natural Reserve, Aug 1996, *G. Ubanavichus 97-123* (LE).

$2n = 54$, CHN. Russia, East Siberia, Republic of Buryatia, Pribaikalskii Raion, 20 km north of the Ulan-Ude city, valley of Selenga River, 52°N 17°30'E, 29 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-22* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", foot of the hill, forb meadow with shrubs, 8 Sep 2005, *A. Korobkov 06-139* (LE).

Artemisia integrifolia L.

$2n = 18$, CHN. Russia, East Siberia, Zabaikalskii Krai, Chitinskii Raion, Cherskii ridge, near Nikishikha village, meadow in valley of the Nikishikha river, 52°20'N 113°40'E, 23 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-47, 95-48* (LE).

$2n = 27, 36$, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, mouth of Sokhondinka

River, slope of southern exposition, rarefied steppe community, 22 Aug 2011, *O. Afonina 2012-40* (LE).

$2n = 32-36$, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, cordon Verkhonii Bukukun, meadow within Siberian pine-larch forest, grass-forb community with dwarf shrubs, 5 Sep 2005, *A. Korobkov 06-106* (LE).

$2n = 36$, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, left tributary of Kyra River, river valley, sedge-grass-forb wet meadow, 28 Aug 2005, *A. Korobkov 06-12* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, way to the cordon Ende, top of the pass from Agutsa River, birch-larch forest with shrubs, 29 Aug 2005, *A. Korobkov 06-105* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, cordon Ende, low terrace, sedge-grass-forb wet meadow, 29 Aug 2005, *A. Korobkov 06-107* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, left riverside of Kyra River, floodplain thickets of willow and other shrubs, sandy hillocks and gullies, 27 Aug 2005, *A. Korobkov 06-108* (LE).

Artemisia jacutica Drobow

$2n = 18$, CHN. Russia, East Siberia, Republic of Buryatia, Eravinskii Raion, sandy terrace, free of vegetation sandy bank on southern shore of Lake Bolshoe Eravnoe, 4 Oct 2007, *A. Korobkov 08-66* (LE).

Artemisia laciniata Willd.

$2n = 18$, CHN. Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, saline Lake Sulfatnoe, salt-marsh on the shore, herb community among patches of *Nitraria* and shrubs of *Caragana*, 14 Sep 2005, *A. Korobkov 06-121* (LE); Russia, East Siberia, Republic of Buryatia, Ulan-Ude city, island Bogorodskii on the Selenga River, 12 Sep 2004, *K. Osipov 06-219* (LE); Russia, East Siberia, Zabaikalskii Krai, Duldurginskii Raion, highway from Chita city to Kyra village, near Mari-Rose kafe, small depression in river valley, grass-forb meadow, 23 Aug 2005, *A. Korobkov 06-122* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", roadside gully, grass-forb steppe on sand, 8 Sep 2005, *A. Korobkov 06-118, 06-119* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, high terrace, hollow of the drying lake, grass-forb meadow on pebbles, 1 Sep 2005, *A. Korobkov 06-120* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, vicinity of cordon Ende, low terrace, grass-forb wet meadow, 29 Aug 2005, *A. Korobkov 06-123, 06-124* (LE); Russia, East Siberia, Zabaikalskii Krai, Nerchinsko-Zavodskii Raion, Argun' River basin, north-west of Argunsk village, left riverside of Urov River, slope of the hill, grass-forb meadow with rare trees of *Betula davurica*, 18 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-25* (LE).

$2n = 18+2B$, CHN. Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, vicinity of Ivolginsk village, sandy terrace, saline hollows, forb meadow with scattered plants of *Achnatherum splendens*, 2 Oct 2007, *A. Korobkov 08-23* (LE).

Artemisia ledebouriana Besser

$2n = 36$, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern coast of Lake Baikal, neck of the Svyatoi Nos peninsula, low sandy dunes, on sand free of vegetation, 30 Sep 2007, *A. Korobkov 08-100, 08-101, 08-103, 08-104* (LE); Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern coast of Lake Baikal, Svyatoi Nos peninsula, cape Monakh in northern part of Chivyrkuiskii bay, steep slope of southern exposition, 28 Sep 2007, *A. Korobkov 08-97, 08-98, 08-99* (LE); Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, 9 km east of Borogol village, sand dunes on left riverside of Ulan-Burga River, psammophytic

plant community, 9 Aug 2011, *A. Korolyuk 2012-02* (LE); Russia, East Siberia, Republic of Buryatia, Kurumkanskii Raion, 18 km south-west of Argada village, valley board of Argada River, psammophytic plant community, 11 Sep 2011, *A. Korolyuk 2012-03, 2012-04, 2012-05* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhtinskii Raion, 12 km east of Khilgantui village, sand dunes Mankhan-Elets, 6 Sep 2011, *A. Korolyuk 2012-01* (LE); Russia, East Siberia, Republic of Buryatia, Pribaikalskii Raion, eastern coast of Lake Baikal on 159th–160th km of highway to Turka village, sand dune free of vegetation, 52°54'N 16°09'E, 16 Sep 2005, *A. Korobkov 06-11, 06-193, 06-194, 06-195, 06-196* (LE); Russia, East Siberia, Zabaikalskii Krai, Kalarskii Raion, Charskaya hollow, near to Kodar Ridge, 9 km of Chara village, locality Charskie peski, 13 Aug 2012, *O. Afonina 2013-17* (LE).

Artemisia leucophylla Turcz. ex C.B. Clarke

$2n = 18$, CHN. Russia, East Siberia, Republic of Buryatia, Eravinskii Raion, north-west part of Sosново-Ozerskaya hollow, birch-larch forest, 53°10'N 113°30'E, 25 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-38* (LE).

Artemisia macilenta (Maxim.) Krasch.

$2n = 18$, CHN. Russia, East Siberia, Zabaikalskii Krai, Gazimuro-Zavodskii Raion, southern macroslope of Gazimurskii Ridge, forest edge in vicinity of Shirokaya village, 51°30'N 118°40'E, 19 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-55, 95-58* (LE).

$2n = 36$, CHN. Russia, East Siberia, Zabaikalskii Krai, Aleksandrovo-Zavodskoi Raion, 11 km SSE of Aleksandrovskii Zavod, low mountainous massif on the right riverside of Borzia river, stony steppe, 29 Aug 2012, *A. Korolyuk 2013-13* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, sandy terrace on right riverside of Kyra River, Buyunda valley, disturbed sand, 8 Sep 2005, *A. Korobkov 06-172a* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, foot of the hill, grass-forb steppe on western slope, 28 Aug 2005, *A. Korobkov 06-175* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, left riverside of Tyra River, near the bridge, rocky southern slope of the hill north of Khapcheranga village, on ledges, 9 Sep 2005, *A. Korobkov 06-184* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, mouth of Sokhondinka River, slope of the southern exposition, steppe, 22 Aug 2011, *O. Afonina 2012-36, 2012-39* (LE); Russia, East Siberia, Zabaikalskii Krai, Priargunskii Raion, valley of Tasurkai River, stony steppe slope north of the Verkhonii Tasurkai village, 50°30'N 118°20'E, 15 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-09* (LE).

Artemisia messerschmidtiana Besser

$2n = 54$, CHN. Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, broad hollow in 10 km west of Ivolginsk village, hillocks and gullies, sagebrush community, 2 Oct 2007, *A. Korobkov 08-19, 08-20* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, Borgoiskii Ridge, vicinity of Bilutai village, stony crest on SE slope of the ridge, grass-forb steppe with shrubs of almond, 50°53'N 16°12'E, 18 Sep 2005, *A. Korobkov 06-133, 06-134, 06-135* (LE).

Artemisia mongolica Fisch. ex Besser

$2n = 16$, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutsk city, Akademgorodok, on wasteland near abandoned building site, 8 Aug 2011, *S. Kazanovsky 2012-42, 2012-47, 2012-48* (LE); Russia, East Siberia, Irkutskaya Oblast', Shelekhovskii Raion, Bolshoi Lug village, roadside, 477 m, 52°04'37"N 14°05'35"E, 5 Sep 2011, *S. Kazanovsky 2012-44* (LE); Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern coast of Lake Baikal, Svyatoi Nos peninsula, cape Monakh in northern part of Chivyrkuiskii bay, grass-forb meadow, 27 Sep 2007, *A. Korobkov 08-38* (LE); Russia,

East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern coast of Lake Baikal, neck of the Svyatoi Nos peninsula, sandy site on shore of the small lake, 30 Sep 2007, *A. Korobkov 08-39* (LE); Russia, East Siberia, Republic of Buryatia, Ulan-Ude city, territory of the biological institute, sand hillocks in courtyard, 25 Sep 2007, *A. Korobkov 08-40* (LE); Russia, East Siberia, Republic of Buryatia, Pribaikalskii Raion, 20 km north of Ulan-Ude city, valley of the Selenga River, 52°N 17°30'E, 29 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-45* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, in park, 31 Aug 2011, *O. Afonina 2012-54* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", small hollow, grass-forb steppe, 8 Sep 2005, *A. Korobkov 06-101* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", roadside in vicinity of the cordon, 8 Sep 2005, *A. Korobkov 06-103* (LE); Russia, East Siberia, Zabaikalskii Krai, Gazimuro-Zavodskii Raion, southern macroslope of Gazimurskii Ridge, forest edge in vicinity of Shirokaya village, 51°30'N 118°40'E, 19 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-40* (LE); Russia, East Siberia, Zabaikalskii Krai, Priargunskii Raion, Argun' River basin, valley of Tasurkai River, stony steppe slope north of the Verkhni Tasurikai village, 50°30'N 118°20'E, 15 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-44* (LE).

2n = 18, 54, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", valley of the dried brook, sandy hillocks, 24 Aug 2005, *A. Korobkov 06-102* (LE).

Artemisia monostachya Bunge ex Maxim.

2n = 18, CHN. Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, 5–7 km WNW of Egita village, low mountainous massif, steppe, 12 Aug 2012, *A. Korolyuk 2013-14* (LE); Russia, East Siberia, Republic of Buryatia, Khorinskii Raion, north of Alan village, low mountainous forest steppe massif, in steppe, 15 Aug 2012, *A. Korolyuk 2013-15* (LE).

2n = 36, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, vicinity of Maksimikha village, roadside, herb community on gravel, 30 Sep 2007, *A. Korobkov 08-76, 08-77* (LE); Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, 2.8 km SW of Ulyun village, convex slope of Ulyunskii ridge, stony steppe, 30 Jul 2010, *A. Korolyuk 2011-20* (LE); Russia, East Siberia, Republic of Buryatia, Pribaikalskii Raion, vicinity of Katkovo village, shore of Lake Baikal, sand dunes, 7 Sep 2011, *A. Korolyuk 2012-28* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, 80 km south-west of Ulan-Ude city, watershed between Lake Schyuche and Lake Yagodnoe, sagebrush-grass-forb steppe, 51°24'06"N 16°31'56"E, 27 Aug 2004, *I. Safronova 04-104, 04-106* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, stony south-west slope of the hill south of the settlement, rarefied dwarf shrub-forb mountainous steppe, 28 Aug 2005, *A. Korobkov, 06-187* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, stony southern slope of the ridge, rarefied dwarf shrub-forb steppe, 28 Aug 2005, *A. Korobkov 06-188* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", southern stony slope of the hill, mountainous steppe, 7 Sep 2005, *A. Korobkov 06-189, 06-190* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, vicinity of cordon Bukukun, foot of the southern slope, on gravel, 5 Sep 2005, *A. Korobkov 06-191* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, vicinity of cordon Bukukun, southern slope of low terrace, rarefied grass-forb community on fine gravel, 6 Sep 2005, *A. Korobkov 06-192* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion,

Sokhondinskii Natural Reserve, Ende River opposite cordon Ende, riverside, steppe-meadow on southern slope, 21 Aug 2003, *E. Malkov 04-98* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, rocks on left riverside of Tyra river, near the bridge upstream from Khapcheranga village, 9 Sep 2005, *A. Korobkov 06-08* (LE).

Artemisia palustris L.

2n = 18, CHN. Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, Borgoiskii Ridge, vicinity of Bilutai village, south-east stony slope of the ridge, rarefied grass-forb steppe among shrubs of almond, 50°53'N 16°12'E, 18 Sep 2005, *A. Korobkov 06-20* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhtinskii Raion, vicinity of Kiran village, on sandy slightly turf-covered dunes, 30 Sep 2007, *D. Tubanova 08-21* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, terrace of the left riverside of Kyra River south of the settlement, dry steppe crest, thickets of *Artemisia palustris*, 1 Sep 2005, *A. Korobkov 06-113* (LE).

Artemisia pubescens Ledeb.

2n = 36, CHN. Russia, East Siberia, Irkutskaya Oblast', Olkhonskii Raion, Lake Baikal, Olkhon island, cape Khoboi, stony steppe slopes, on rocks, 53°30'N 17°40'E, 3 Sep 1995, *A. Budantsev, A. Korobkov & I. Mokhova 95-10, 95-11, 95-13* (LE).

***Artemisia rubripes* Nakai

2n = 16, CHN. Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, right riverside of the Selenga River, vicinity of Kardon village, sandy terrace, ruderal grass-sagebrush community near the road, 20 Sep 2007, *A. Korobkov 08-41* (LE).

**Artemisia rupestris* L.

2n = 18, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, high sandy-gravel terrace, rarefied herb community on gravel, 27 Aug 2005, *A. Korobkov 06-152* (LE); Russia, East Siberia, Zabaikalskii Krai, Chitinskii Raion, southern macroslope of Yablonovii Ridge, vicinity of Domno-Kluchi village, forest steppe on slope, 52°N 112°40'E, 24 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-60* (LE).

***Artemisia rutifolia* Steph. ex Spreng.

2n = 18, CHN. Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, 10 km west of Ivolginsk village, foothill small ridges, on rocky slope of southern exposition, 2 Oct 2007, *A. Korobkov 08-58, 08-59* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, left riverside of Tyra river, north of Khapcheranga village, near the bridge, southern stony slope, on ledges of rocks, 9 Sep 2005, *A. Korobkov 06-25, 06-154* (LE).

***Artemisia sacrorum* Ledeb.

2n = 54, CHN. Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, foothill of the stony slope west of Ivolginsk village, stony rarefied grass-forb steppe, 2 Oct 2007, *A. Korobkov 08-26* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, vicinity of Sotnikovo village, stony crest of the hill, steppe with scattered pines, 1 Oct 2007, *A. Korobkov 08-27* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, small hollow in 10 km west of Ivolginsk village, on gravelly slope of deep ditch, 2 Oct 2007, *A. Korobkov 08-28, 08-29* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, vicinity of Oshurkovo village, foothill of rocky riverside, on rock, 1 Oct 2007, *A. Korobkov 08-30* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, Borgoiskii Ridge, vicinity of Bilutai village, stony slope of the ridge, dwarf shrubby steppe among shrubs of almond, 50°53'N 16°12'E, 18 Sep 2005, *A. Korobkov 06-130* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, Borgoiskii Ridge, vicinity of Bilutai village, stony crest of the ridge, dwarf shrubby grass-forb steppe

among shrubs of almond, 50°53'N 16°12'E, 18 Sep 2005, *A. Korobkov 06-132* (LE); Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, western spurs of Tsagan-Daban Ridge, stony slope of the ridge, steppe with grasses and forbs, 20 Sep 2007, *A. Korobkov 08-25* (LE); Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, western spurs of Tsagan-Daban Ridge, stony slopes with scattered pines, 20 Sep 2007, *A. Korobkov 08-31* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondkinskii Natural Reserve, vicinity of cordon Ende, southern stony slope, fine gravel foot of the slope, 29 Aug 2005, *A. Korobkov 06-136* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, steep stony slope to the Kyra River, dwarf shrubby grass-forb steppe among Siberian apricot, 1 Sep 2005, *A. Korobkov 06-138* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, left riverside of Tyra River, near the bridge north of Khapcheranga village, southern steep stony slope of the hill, thickets of Siberian apricot, 9 Sep 2005, *A. Korobkov 06-15, 06-140* (LE).

Artemisia scoparia Waldst. & Kit.

2n = 16, CHN. Russia, East Siberia, Irkutskaya Oblast', Shelekhovskii Raion, Bolshoi Lug village, roadside, 5 Sep 2011, *S. Kazanovsky 2012-49* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, vicinity of Tokhoi village, shore of the Lake Sulfatnoe, salt-marsh, plant community with *Suaeda*, *Caragana* and forbs, 14 Sep 2005, *A. Korobkov 06-05, 06-198* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, Borgoiskii Ridge, vicinity of Bilutai village, stony southern slope of the hill, on fine gravel among shrubs of almond, 18 Sep 2005, *A. Korobkov 06-200* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", valley of dried brook, on sand, 8 Sep 2005, *A. Korobkov 06-197* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Kyra village, in garden by the office of Sokhondinskii Natural Reserve, 31 Aug 2011, *O. Afonina 2012-55* (LE).

2n = 18, CHN. Russia, East Siberia, Republic of Buryatia, Ulan-Ude city, territory of the biological institute, sand hillocks in courtyard, 24 Sep 2007, *A. Korobkov 08-73* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhtinskii Raion, vicinity of Ust'-Kiran village, sand dunes along roadside, 30 Sep 2007, *D. Tubanova 08-75* (LE); Russia, East Siberia, Republic of Buryatia, Tarbagataiskii Raion, western spurs of Tsagan-Daban Ridge, gravel southern slope, in thickets of Siberian apricot, 20 Sep 2007, *A. Korobkov 08-74* (LE).

Artemisia sericea Weber ex Stechm.

2n = 72, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, vicinity of Maksimikha village, steep gravel slope of southern exposition, sagebrush community, 30 Sep 2007, *A. Korobkov 08-70* (LE).

2n = 90, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, basin of Kerkun River, vicinity of codon Ende, foot of the stony slope, gravel place, 29 Aug 2005, *A. Korobkov 06-150* (LE).

Artemisia sieversiana Ehrh. ex Willd.

2n = 18, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutsk city, Akademgorodok, on wasteland near abandoned building site, 8 Sep 2012, *S. Kazanovsky 2012-46* (LE); Russia, East Siberia, Irkutskaya Oblast', Irkutskii Raion, shore of Lake Baikal, vicinity of Listvyanka village, steep slope of southern exposition, 452 m, 10 Sep 2011, *O. Afonina 2012-51* (LE); Russia, East Siberia, Republic of Buryatia, Ulan-Ude city, territory of the biological institute, sand hillocks in courtyard, 24 Sep 2007, *A. Korobkov 08-67* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhtinskii Raion, vicinity of Kiakhta town, hills west of the town, 8 Oct 2001, *S. Budatsyrenova 02-06* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhtinskii Raion, vicinity of Ust'-Kiran village, sand dunes along roadside, 30 Sep 2007,

D. Tubanova 08-68 (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, 70 km SW of Ulan-Ude city, 51°24'22"N 16°41'57"E, 28 Aug 2004, *I. Safronova 04-107* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, floodplain of Kyra River, on pebbles, 1 Sep 2005, *A. Korobkov 06-155* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, eastern part of Onon-Baldzhinskii Ridge, southern macroslope, reserve "Gornaya steppe", bank of a brook, on sand, grass-forb-sagebrush community, 24 Aug 2005, *A. Korobkov 06-24* (LE).

**Artemisia subviscosa* Besser

2n = 54, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, Barguzinskii Ridge, vicinity of Ulyun village, locality "Garden of Baikal endemics", 29 Sep 2001, *S. Budatsyrenova 02-05* (LE); Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, floodplain of Ina River, sedge-sagebrush community, 11 Sep 2007, *T. Boikov 08-06* (LE).

Artemisia tanacetifolia L.

2n = 36, CHN. Russia, East Siberia, Irkutskaya Oblast', Olkhon-skii Raion, shore of Lake Baikal, Olkhon island, vicinity of Peschanka village, small depression in pine-larch forest, forb dry meadow, 2 Sep 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-30* (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, agricultural set-aside near to Isinga lake, 26 Aug 1995, *A. Korobkov & al. 95-25* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, way to cordon Ende, top of the pass from Agutsa River, birch-larch forest with shrubs, 29 Aug 2005, *A. Korobkov 06-114* (LE); Russia, East Siberia, Zabaikalskii Krai, Chitinskii Raion, Cherskii ridge, valley of Nikishikha River, birch-larch forest, grass-forb meadow by forest edge, 52°10'N 113°40'E, 24 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-27, 95-28, 95-29* (LE).

2n = 54, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern coast of Lake Baikal, Svyatoi Nos peninsula, brook valley in 10 km north of Chivyrkuiskii bay, birch-larch forest, 30 Sep 2007, *A. Korobkov 08-07* (LE); Russia, East Siberia, Republic of Buryatia, Pribaikalskii Raion, 20 km north of Ulan-Ude city, valley of Selenga River, steep stony slope of the hill, pine forest, 52°N 13°30'E, 29 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-61* (LE); Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, north-west part of Sosnovo-Ozerskaya hollow, birch-larch forest, 53°N 13°30'E, 25 Aug 1995, *A. Budantsev, A. Korobkov, I. Mokhova & N. Medvedeva 95-62* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, mouth of Sokhondinka River, slope of southern exposition, steppe, 22 Aug 2011, *O. Afonina 2012-38* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, vicinity of cordon Bukukun, terrace on left riverside of the Bukukun River, birch-larch forest, 5 Sep 2005, *A. Korobkov 06-115* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, vicinity of Kyra village, northern slope of the hill south of the settlement, edge of the larch-birch forest, 28 Aug 2005, *A. Korobkov 06-116* (LE); Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, right riverside of Kyra River, top of the hill, edge of the burnt birch forest, 24 Aug 2005, *A. Korobkov 06-117* (LE).

Artemisia vulgaris L.

2n = 16, CHN. Russia, East Siberia, Republic of Buryatia, Barguzinskii Raion, eastern coast of Lake Baikal, Svyatoi Nos peninsula, cape Monakh in northern part of Chivyrkuiskii bay, sagebrush community near buildings, 27 Sep 2007, *A. Korobkov 08-37* (LE).

2n = 18, CHN. Russia, East Siberia, Zabaikalskii Krai, Kyrinskii Raion, Sokhondinskii Natural Reserve, valley of the Bukukun River, upstream from cordon Bukukun, gravel roadside, 5 Sep 2005, *A. Korobkov 06-21* (LE).

Artemisia xanthochroa Krasch.

$2n = 36$, CHN. Russia, East Siberia, Republic of Buryatia, Kizhingskii Raion, sand dunes downstream from Innokentievka village, psammophytic plant community, 17 Aug 2007, *A. Korolyuk 2013-01* (LE); Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, 7 km WSW of Enkhor village, sand dunes on the right riverside of Selenga river, psammophytic plant community, 4 Sep 2011, *A. Korolyuk 2012-08* (LE); Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, west of the Lake Nozhii, steppe, 23 Aug 2012, *A. Korolyuk 2013-02* (LE); Russia, East Siberia, Zabaikalskii Krai, Aginskii Raion, 3–4 km west of Kunkur village, sand hillocks on the shore of Onon River, steppe, 26 Aug 2012, *A. Korolyuk 2013-03* (LE).

Artemisia xylorhiza Krasch. ex Filatova

$2n = 27, 36$, CHN. Russia, East Siberia, Republic of Buryatia, Selenginskii Raion, 7 km WSW of Enkhor village, sand dunes on the right riverside of Selenga river, psammophytic plant community, 5 Sep 2011, *N. Dulepova 2012-10* (LE).

$2n = 36$, CHN. Russia, East Siberia, Republic of Buryatia, Eravninskii Raion, 5–7 km WNW of Egita village, low mountainous massif, steppe, 12 Aug 2012, *A. Korolyuk 2013-10* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, low hill on the left riverside of Orongaika River, lower part of the slope of the eastern exposition, a sparse grass-forb mountain steppe, 14 Sep 2005, *A. Korobkov 06-210* (LE); Russia, East Siberia, Republic of Buryatia, Ivolginskii Raion, low hill on the left riverside of Orongaika River, lower part of the eastern slope, disturbed mountain steppe on terrace, 14 Oct 2005, *A. Korobkov 06-10* (LE); Russia, East Siberia, Republic of Buryatia, Kizhingskii Raion, south of Ulsyte village, sand dunes, psammophytic steppe, 16 Aug 2012, *A. Korolyuk 2013-11* (LE); Russia, East Siberia, Republic of Buryatia, Kiakhtinskii Raion, vicinity of Kiran village, sand dunes, 30 Oct 2007, *D. Tubanova 08-87* (LE); Russia, East Siberia, Republic of Buryatia, Khorinskii Raion, north of Alan village, low mountainous forest steppe massif, in steppe, 15 Aug 2012, *A. Korolyuk 2013-09* (LE).

Zoya V. Kozhevnikova* & Andrey E. Kozhevnikov

Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, 159 Stoletya Prospect, 690022, Vladivostok, Russia

* Author for correspondence: kozhevnikova@ibss.dvo.ru

ALLIACEAE*Allium senescens* L.

$2n = 16$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, 10 km NE of the Khassan settlement, apical part of the Mt. Priozer'naya (283 m), on the SE exposed slopes with rocky outcrops, 12 Sep 2013, *Kozhevnikova & Kozhevnikov 043* (VLA).

APIACEAE*Angelica anomala* Avé-Lall.

$2n = 22$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, 1.5 km W of the Kravtsovka settlement, nearside pebbled bank of the Gryaznaya river, 21 Aug 2013, *Kozhevnikova & Kozhevnikov 040* (VLA).

ARACEAE*Calla palustris* L.

$2n = 36$, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, peninsula De-Friz near Vladivostok city, wetland in the central part of the peninsula, 20 Apr 2013, *Kozhevnikova & Kozhevnikov 042* (VLA).

ASTERACEAE*Atractylodes ovata* DC.

$2n = 24$, CHN. Russia, Far East, Primorskii Krai, Ussuriiskii Raion, ca. 4 km NW of Ulitovka village, near the bridge across the Suglinka river, herbal-shrub thickets on the hill slope, 25 Sep 2013, *Kozhevnikova & Kozhevnikov 045* (VLA).

Syneilesis aconitifolia (Bunge) Maxim.

$2n = 52$, Russia, Far East, Primorskii Krai, Ussuriiskii Raion, ca. 4 km NW of Ulitovka village, near the bridge across the Suglinka river, herbal-shrub thickets on the hill slope, 25 Sep 2013, *Kozhevnikova & Kozhevnikov 053* (VLA).

BERBERIDACEAE*Epimedium koreanum* Nakai

$2n = 12$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, ca. 8 km E of the Kravtsovka settlement, near railway bridge across the Gryaznaya river, oak-birch forest with *Osmundastrum*, the SE gently slope of the hills, 21 Aug 2013, *Kozhevnikova & Kozhevnikov 037* (VLA).

CAMPANULACEAE*Platycodon grandiflorus* A.DC.

$2n = 18$, CHN. Russia, Far East, Primorskii Krai, Ussuriiskii Raion, ca. 4 km NW of Ulitovka village, near the bridge across the Suglinka river, herbal-shrub thickets on the hill slope, 25 Sep 2013, *Kozhevnikova & Kozhevnikov 047* (VLA).

GENTIANACEAE*Ophelia chinensis* Bunge ex Griseb.

$2n = 24$, CHN. Russia, Far East, Primorskii Krai, Oktyabr'skii Raion, ca. 3 km W of Sinel'nikovo-I village, SE slope of Mt. Sinelovka, tall grassy meadow, 25 Sep 2013, *Kozhevnikov & Kozhevnikova 052* (VLA).

LAMIACEAE*Phlomis maximowiczii* (Regel) Kamelin & Makhm.

$2n = 22$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, 1.5 km W of the Kravtsovka settlement, on the nearside of the Gryaznaya river, in lowland forest, 21 Aug 2013, *Kozhevnikova & Kozhevnikov 039* (VLA).

Scutellaria baicalensis Georgi

$2n = 16$, CHN. Russia, Far East, Primorskii Krai, Oktyabr'skii Raion, ca. 3 km W of Sinel'nikovo-I village, SE slope of Mt. Sinelovka, tall grassy meadow, 25 Sep 2013, *Kozhevnikov & Kozhevnikova 048* (VLA); Russia, Far East, Primorskii Krai, Ussuriiskii Raion, ca. 4 km NW of Ulitovka village, near the bridge across the Suglinka river, herbal-shrub thickets on the hill slope, 25 Sep 2013, *Kozhevnikova & Kozhevnikov 049* (VLA).

LINACEAE*Linum amurense* Alef.

$2n = 18$, CHN. Russia, Far East, Primorskii Krai, Lazovskii Raion, 3–4 km NW of Zapovednoe settlement, near the mouth of the Kievka River, sandy coastal terrace, 27 Oct 2011, *Kozhevnikov & Kozhevnikova 036* (VLA).

LYTHRACEAE

Lythrum salicaria L. $2n = 30$, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, ca. 2 km S of Olenevod settlement, wet forb meadow, 12 Oct 2013, *Kozhevnikov & Kozhevnikova 051* (VLA).

PLANTAGINACEAE*Plantago lanceolata* L.

$2n = 12$, CHN. Russia, Far East, Primorskii Krai, Vladivostok city, motorway M-60, near Magnitogorskaya street, sward slope, 27 Sep 2013, *Kozhevnikov & Kozhevnikova 041* (VLA).

POACEAE*Chloris virgata* Sw.

$2n = 20$, CHN. Russia, Far East, Primorskii Krai, Oktyabr'skii Raion, ca. 3 km W of Sinel'nikovo-I village, SE slope of Mt. Sinelovka, tall grassy meadow, 25 Sep 2013, *Kozhevnikov & Kozhevnikova 050* (VLA).

RANUNCULACEAE*Clematis hexapetala* Pall.

$2n = 20$, CHN. Russia, Far East, Primorskii Krai, Oktyabr'skii Raion, ca. 3 km W of Sinel'nikovo-I village, SE slope of Mt. Sinelovka, tall grassy meadow, 25 Sep 2013, *Kozhevnikov & Kozhevnikova 046* (VLA).

ROSACEAE*Filipendula palmata* Maxim.

$2n = 28$, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, 7–8 km N from Mnogoudobnoe settlement, Pad' Nikolaevskaya, lower course of the creek, near its confluence with the Haritonovka River, in lowland forest, 28 May 2013, *Kozhevnikova & Kozhevnikov 044* (VLA).

SCROPHULARIACEAE*Rhinanthus aestivalis* (N.W.Zinger) Schischk. & Serg.

$2n = 22$, CHN. Russia, Far East, Primorskii Krai, Lazovskii Raion, 2–3 km NW of Zapovednoe settlement, near the mouth of the Kievka River, coastal sandy terrace, 26 Oct 2011, *Kozhevnikova & Kozhevnikov 038* (VLA).

Anna Krahulcová

Institute of Botany, Academy of Sciences of the Czech Republic, 25243 Průhonice, Czech Republic; anna.krahulcova@ibot.cas.cz

- First chromosome count for the species.
- ▼ First chromosome count for a given country.

ASTERACEAE*Aster amelloides* Besser

$2n = 54$, CHN. Slovakia, Turčianska kotlina basin, Sučany - Skala, 1988, *Index Seminum Faculty of Sciences Comenius University Bratislava s.n.* (PRA 8551, 8552). [Fig. 9A]

Colymbada scabiosa (L.) Holub

▼ $2n = 20$, CHN. Czech Republic, distr. Brno-venkov, the nature reserve Nad řekami near the village Biskoupky, serpentine, ca. 250 m, 14 May 1990, *J. Štěpánková, A. Klaudivsová & A. Krahulcová s.n.* (PRA 8549). [Fig. 9B]

▼ $2n = 20+1B$, CHN. Czech Republic, distr. Třebíč, the nature reserve Mohelenská hadcová step near Mohelno village, serpentine, 360–370 m, 14 May 1990, *J. Štěpánková, A. Klaudivsová & A. Krahulcová s.n.* (PRA 8550).

Crinitina linosyris (L.) Soják

$2n = 18$, CHN. Czech Republic, distr. Třebíč, the nature reserve Mohelenská hadcová step near Mohelno village, serpentine, 360–370 m, 14 May 1990, *J. Štěpánková, A. Klaudivsová & A. Krahulcová s.n.* (PRA 8545).

Hieracium schmidtii Tausch

▼ $2n = 27$, CHN. Italy, Sardinia, the national park Parco Nazionale del Gennargentu, ca. 1400 m, 40°01'13.9" N, 9°18'28.7" E, Aug 2011, *P. Sekerka s.n.* (PRA 8566). [Fig. 9C]

Inula salicina L.

$2n = 16$, CHN. Poland, distr. Kraków, Będkowice, 1988, *Index Seminum Botanical Garden of the University Kraków s.n.* (PRA 8553, 8554). [Fig. 9D]

Leontodon hispidus L.

$2n = 14$, CHN. Slovakia, Nízke Tatry Mts., Kozi chrbát Mt. above the saddle Hadľanky, 15 Aug 1988, *F. Krahulec s.n.* (PRA 8546, 8547).

Sonchus arvensis L.

▼ $2n = 54$, CHN. Czech Republic, distr. Benešov, the nature reserve Dolnokralovické hadce, between the villages Bernartice and Borovsko, pine forest on serpentine bedrock, 20 Apr 1989, *F. Krahulec & A. Krahulcová s.n.* (PRA 8555, 8556).

Verbesina angulata Urb.

• $2n = 34$, CHN. Cuba, Cojimar near Havana, 1986, *V. Samek s.n.* (PRA 8548). [Fig. 9E]

BRASSICACEAE*Camelina microcarpa* Andr. ex DC.

$2n = 38$, CHN. Czech Republic, distr. Břeclav, Pavlovské vrchy Hills, Děvín Hill, ca. 450 m, 15 May 1990, *J. Štěpánková, A. Klaudivsová & A. Krahulcová s.n.* (PRA 8562, 8563, 8564, 8565).

Cardamine pratensis L.

$2n = 30$, CHN. Czech Republic, distr. Benešov, nature reserve Dolnokralovické hadce, three localities in surroundings of the villages Bernartice, Borovsko and Sedlice, within the pine forest as well as at its margin covered with scattered vegetation on serpentine bedrock, 14 May 1991, *J. Štěpánková & A. Krahulcová s.n.* (PRA 8574, 8575, 8576, 8577, 8578, 8579, 8580, 8581); Czech Republic, distr. Benešov, margin of the nature reserve Dolnokralovické hadce, near the bridge across the reservoir Želivka ca. 0.5 km NE of the village Sedlice, 390 m, 16 May 1990, *J. Štěpánková, A. Klaudivsová & A. Krahulcová s.n.* (PRA 8582). [Fig. 9F]

$n = 15$, CHN. Czech Republic, distr. Prachatice, slope above the brook Zlatý potok near the settlement Miletínky, pine forest on serpentine bedrock, 19 Aug 1993, *Z. Skála & A. Klaudivsová s.n.* (PRA 8591, 8592).

▼ $n = 16$, CHN. Czech Republic, distr. Cheb, landscape protected area Slavkovský les, nature reserve Křížky near the village Prameny, serpentine, 7 Jun 1994, *Z. Skála & A. Klaudivsová s.n.* (PRA 8587, 8588, 8589).

▼ $2n = 32$, $n = 16$, CHN. Czech Republic, distr. Cheb, landscape protected area Slavkovský les, nature reserve Planý vrch near the village Mnichov, serpentine, 8 Jun 1994, *Z. Skála & A. Klaudivsová s.n.* (PRA 8584, 8585, 8586).

▼ $2n = 47$, CHN. Czech Republic, distr. Cheb, landscape protected area Slavkovský les, nature reserve Vlček, below the top of the Vlčí vrch Hill S of the village Prameny, serpentine, 2 Jun 1992, *Z. Skála & A. Klaudivsová s.n.* (PRA 8590).

Cardaminopsis arenosa (L.) Hayek

$2n = 32$, CHN. Czech Republic, distr. Benešov, nature reserve Dolnokralovické hadce, serpentine rocks in former valley of the brook Sedlický potok E of the village Sedlice, 14 May 1991, *J. Štěpánková & A. Krahulcová s.n.* (PRA 8540, 8541).

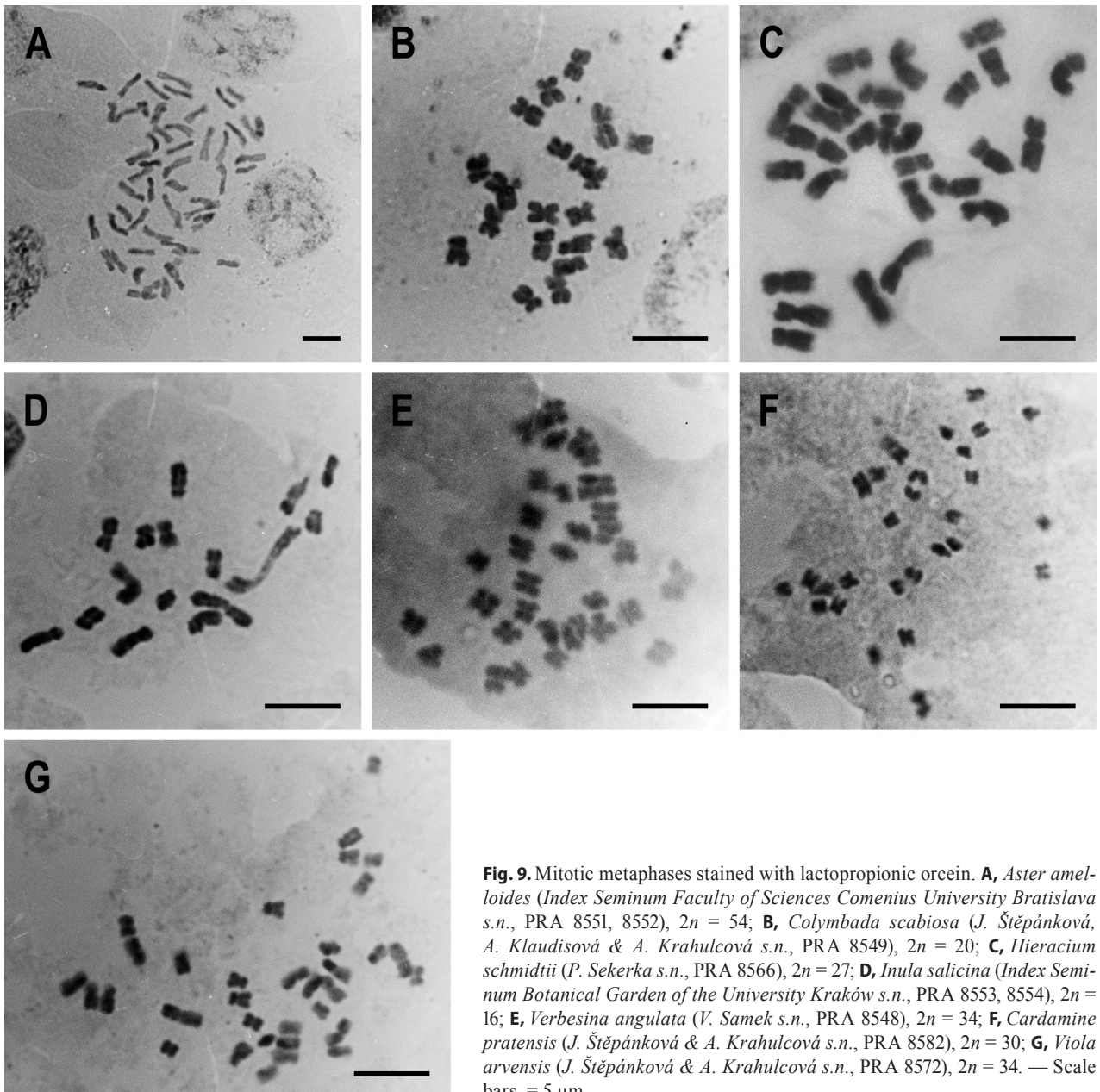
CYPERACEAE*Eleocharis palustris* (L.) Roem. & Schult. subsp. *palustris* $2n = 16$, CHN. Czech Republic, distr. Náchod, shore of the reservoir Rozkoš near the village Lhota-Doubravice, 11 Aug 1989, *F. Krahulec & A. Krahulcová s.n.* (PRA 8571).**EUPHORBIACEAE***Tithymalus epithymoides* (L.) Klotzsch & Garcke $\nabla 2n = 14$, CHN. Czech Republic, distr. Třebíč, nature reserve Mohelenská hadcová step, serpentine rocks S of the village Mohelno, 14 May 1990, *J. Štěpánková, A. Klaudivová & A. Krahulcová s.n.* (PRA 8557).**LAMIACEAE***Thymus praecox* Opiz $2n = 54$, CHN. Czech Republic, distr. Benešov, nature reserve Dolnokralovické hadce, serpentine rocks in pine forest betweenthe villages Bernartice and Borovsko, 24 Aug 1989, *F. Krahulec & A. Krahulcová s.n.* (PRA 8567); Czech Republic, distr. Brno-venkov, nature reserve Biskupská hadcová step, serpentine rock 0.5 km SE of the village Biskoupky, ca. 250 m, 14 May 1990, *J. Štěpánková, A. Klaudivová & A. Krahulcová s.n.* (PRA 8568).**POACEAE***Anthoxanthum alpinum* Á.Löve & D.Löve $2n = 10$, CHN. Slovakia, distr. Snina, national park Poloniny, Bukovské vrchy Mts., Kremenec Mt., Aug 1988, *D. Blažková s.n.* (PRA 8542).*Festuca ovina* L. $2n = 28$, CHN. Czech Republic, distr. Benešov, nature reserve Dolnokralovické hadce, pine forest on serpentine bedrock between the villages Bernartice and Borovsko, 20 Apr 1989, *F. Krahulec & A. Krahulcová s.n.* (PRA 8543, 8544).

Fig. 9. Mitotic metaphases stained with lactopropionic orcein. **A**, *Aster ameloides* (*Index Seminum Faculty of Sciences Comenius University Bratislava s.n.*, PRA 8551, 8552), $2n = 54$; **B**, *Colymbada scabiosa* (*J. Štěpánková, A. Klaudivová & A. Krahulcová s.n.*, PRA 8549), $2n = 20$; **C**, *Hieracium schmidtii* (*P. Sekerka s.n.*, PRA 8566), $2n = 27$; **D**, *Inula salicina* (*Index Seminum Botanical Garden of the University Kraków s.n.*, PRA 8553, 8554), $2n = 16$; **E**, *Verbesina angulata* (*V. Samek s.n.*, PRA 8548), $2n = 34$; **F**, *Cardamine pratensis* (*J. Štěpánková & A. Krahulcová s.n.*, PRA 8582), $2n = 30$; **G**, *Viola arvensis* (*J. Štěpánková & A. Krahulcová s.n.*, PRA 8572), $2n = 34$. — Scale bars = 5 μ m.

ROSACEAE*Aphanes arvensis* L.

▼ $2n = 48$, CHN. Czech Republic, distr. Přerov, field margin at south foothill of the hill Maleník NE of the village Dolní Nětčice, 320 m, 30 Jul 1991, *M. Sedláčková s.n.* (PRA 8558).

RUBIACEAE*Galium glaucum* L.

▼ $2n = 44$, CHN. Czech Republic, distr. Vyškov, nature reserve Šěvy near the village Bučovice-Marefy, ca. 270 m, 26 Apr 1989, *P. Tomšovic, A. Krahulcová & V. Jarolímová s.n.* (PRA 8570); Czech Republic, distr. Český Krumlov, nature reserve Holubovské hadce near the village Holubov, pine forest on serpentine bedrock, 6 Jul 1991, *Z. Skála & H. Skálová s.n.* (PRA 8569).

SCROPHULARIACEAE*Kickxia elatine* (L.) Dumort.

▼ $2n = 36$, CHN. Czech Republic, distr. Mělník, at the village Kly near Mělník, 24 Sep 1991, *J. Sádlo s.n.* (PRA 8559, 8560).

VALERIANACEAE*Valerianella locusta* (L.) Laterr.

$2n = 16$, CHN. Czech Republic, distr. Benešov, nature reserve Dolnokralovické hadce, margin of the pine forest on serpentine bedrock, close to the highway corridor south of the village Borovsko, 14 May 1991, *J. Štěpánková & A. Krahulcová s.n.* (PRA 8561).

VIOLACEAE*Viola arvensis* Murray

$2n = 34$, CHN. Czech Republic, distr. Benešov, nature reserve Dolnokralovické hadce, serpentine spur and serpentine brash in the former valley of the brook Sedlický potok east of the village Sedlice, 14 May 1991, *J. Štěpánková & A. Krahulcová s.n.* (PRA 8572, 8573). [Fig. 9G]

Alejandra Ortiz,^{1*} Guillermo Seijo^{1,2} & Graciela I. Lavia^{1,2}

- 1 Instituto de Botánica del Nordeste (CONICET – UNNE, Facultad de Ciencias Agrarias), C.C. 209, Corrientes, Argentina
- 2 Facultad de Ciencias Exactas y Naturales y Agrimensura, Universidad Nacional del Nordeste (FaCENA – UNNE), Av. Libertad 5460, Corrientes, Argentina

* Author for correspondence: ortizalejandr@gmail.com

This work was supported by Consejo Nacional de Investigaciones Científicas y Tecnológicas, CONICET, PIP 6265; Agencia Nacional de Promoción Científica y Tecnológica, PICTO-UNNE 2007-00099 and Secretaría General de Ciencia y Técnica, PI 038-2008. A. Ortiz is a fellow of Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina.

Methods are described in Ortiz & al. (2013). Abbreviations: KF, karyotype formula; *m*, metacentric; *sm*, submetacentric.

- * First chromosome count for Uruguay.
- ▼ First chromosome count for Paraguay.
- First report of karyotype formula for the species or variety.

FABACEAE*Arachis burkartii* Handro

* $2n = 20$, CHN. Uruguay, Salto, Constitución, 31°05'56" S, 57°51'27" W, 14 Nov 2007, *G. Seijo & V. Solís Neffa 3925* (CTES); Uruguay, Artigas, route 30, km 6, 30°28'24" S, 57°35'49" W, 14 Nov 2007, *G. Seijo & V. Solís Neffa 3929* (CTES, CEN); Uruguay, Rivera, route 29, 31°32'13" S, 55°38'58" W, 16 Nov 2007, *G. Seijo & V. Solís Neffa*

3958 (CTES, MO, NY); Uruguay, Tacuarembó, route 5, 31°39'19" S, 55°54'03" W, 16 Nov 2007, *G. Seijo & V. Solís Neffa 3960* (CTES); Argentina, Misiones, Apóstoles, Azara, 28°05'26.6" S, 55°41'25.4" W, 5 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2839* (CTES, CESJ, HUEFS, SP, ESA, CANB, ASU); Argentina, Corrientes, Paso de Los Libres, Parada Pucheta, 29°54'20" S, 57°34'24" W, 14 Jun 2002, *G. Seijo & V. Solís Neffa 2868* (CTES, BAB, LIL); Argentina, Corrientes, Monte Caseros city, 14 Jun 2002, *G. Seijo & V. Solís Neffa 2870* (CTES); Argentina, Corrientes, Monte Caseros, northern end of the waterfront on Uruguay River, 30°15'1.37" S, 57°37'19" W, 14 Jun 2002, *G. Seijo & V. Solís Neffa 2871* (CTES, LIL); Argentina, Corrientes, Monte Caseros, 30°11'31.5" S, 57°41'47" W, 14 Jun 2002, *G. Seijo & V. Solís Neffa 2872* (CTES, K); Argentina, Corrientes, Monte Caseros, route 25 to Paso Acuña, 14 Jun 2002, *G. Seijo & V. Solís Neffa 2873* (CTES); Argentina, Corrientes, route 119, km 98, 15 Jun 2002, *G. Seijo & V. Solís Neffa 2875* (CTES). [Fig. 10A].

Our observations agree with the chromosome number reported by Ortiz & al. (2013) from one Argentinean accession and by Gregory & al. (1973) from an unspecified source.

Arachis glabrata Benth. var. *glabrata*

● $2n = 40$, CHN. Argentina, Corrientes, San Miguel, route 12, km 1220.5, 4 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2829* (CTES, HUEFS, ESA); Argentina, Corrientes, Ituzaingó, route 12, km 1231.5, 4 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2830* (CTES, CANB); Argentina, Corrientes, Ituzaingó, route 12, km 1278.5, 4 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2831* (CTES); Argentina, Corrientes, Ituzaingó, route 34, km 35, 4 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2834* (CTES); Argentina, Corrientes, Ituzaingó, route 34, km 14, 4 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2835* (CTES); Argentina, Corrientes, Ituzaingó, route 40 and Chimiray stream, 5 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2837* (CTES); Argentina, Corrientes, Concepción, route 118, 5 km W of Tabay, 28°20'52.4" S, 58°19'47.6" W, 26 Feb 2009, *G. Lavia, A. Ortiz, M. Collavino & A. Vega 113* (CTES, CEN, SI); Argentina, Corrientes, General Paz, route 5, 2 km S of General Paz, 27°46'41.8" S, 57°38'06.1" W, 26 Feb 2009, *G. Lavia, A. Ortiz, M. Collavino & A. Vega 118* (CTES, SI); Argentina, Corrientes, Ituzaingó, route 34, 27°31'11.4" S, 56°04'09" W, 26 Feb 2009, *G. Lavia, A. Ortiz, M. Collavino & A. Vega 121* (CTES, SI); Argentina, Corrientes, Concepción, route 117, 5 km N of Tabay, 15 Jun 2002, *G. Seijo & V. Solís Neffa 2878* (CTES, HUEFS); Argentina, Corrientes, Concepción, route 117, km 73.3, 9 km NE of Santa Rosa, 15 Jun 2002, *G. Seijo & V. Solís Neffa 2881* (CTES); Argentina, Corrientes, Concepción, road to Concepción-Mburucuyá, 2 km W of route 117, 15 Jun 2002, *G. Seijo & V. Solís Neffa 2884* (CTES); Argentina, Corrientes, Mburucuyá National Park, approx. 27°58' S, 57°59' W, 14 Dec 2005, *M. Dematties, M. Angulo & A. Ortiz 1917* (CTES); Argentina, Misiones, Apóstoles, route 40, 2 km E of Chimiray stream, 5 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2838* (CTES); Argentina, Misiones, Capital, route 105, km 14, 5 May 2002, *G. Seijo, G. Lavia & V. Solís Neffa 2841* (CTES); Argentina, Misiones, San Ignacio, route 12, km 1401, 27°14'22" S, 55°31'06" W, 22 Nov 2008, *G. Lavia, M. Collavino & G. Robledo 110* (CTES, K); Argentina, Misiones, Alem, route 4, Dos Arroyos, 9 Apr 2004, *G. Lavia 92* (CTES, SI); Paraguay, Misiones, 17 km S of Santa Rosa, 24 Nov 1993, *M.M. Arbo, G. Lavia, M.G. Pellegrini & R. Beron 6138, 6146* (CTES); Paraguay, Amambay, Bella Vista, 19 Oct 1981, *A. Schinini 21352* (CTES). [Fig. 10B].

The karyotype features of this tetraploid species (KF = 38*m* + 2*sm*, SAT chromosomes type 3A) are here provided for the first time. The chromosome number agrees with those reported by Gregory & al. (1973) from an unspecified source and by Fernández & Krapovickas (1994) from one accession of *A. glabrata* var. *hagenbeckii* from Paraguay. SAT chromosome morphology agrees with that reported for *A. glabrata* var. *hagenbeckii* (Fernández & Krapovickas 1994).

Arachis glabrata var. *hagenbeckii* (Harms ex Kuntze) F.J.Herm.
 • $2n = 40$; Paraguay, Paraguari, A. Krapovickas, W.C. Gregory, J.R. Pietrarelli & A. Schinini 30107 (CTES). [Fig. 10C].

The karyotype formula of this variety (KF = $38m + 2sm$) is here provided for the first time. This tetraploid taxon shows one pair of SAT chromosomes type 3A. The chromosome number and the SAT chromosome morphology agree with those previously reported by Fernández & Krapovickas (1994).

Arachis nitida Valls, Krapov. & C.E.Simpson

• $2n = 40$, CHN. Paraguay, Amambay, 21 km on the road Bella Vista–Puentesíño, 22°18'36" S, 56°31'28" W, 27 Jan 1997, G. da Silva, E. Pizarro & R. Heyn 3785 (CEN). [Fig. 10E].

The karyotype features of this tetraploid species (KF = $38m + 2sm$, SAT chromosomes type 3A) are here provided for the first time. The chromosome number and the SAT chromosome morphology agree with those reported by Peñaloza & Valls (2005) from a Brazilian accession.

Arachis pseudovillosa (Chodat & Hassl.) Krapov. & W.C.Greg.

• $2n = 40$, CHN. Paraguay, Amambay, Finca Elvira, 20 km NW of Pedro Juan Caballero, approx. 22°45' S, 55°85' W, 11 May 1961, W.C. Gregory & A. Krapovickas 10559 (CTES, LIL, US). [Fig. 10D].

The karyotype features of this tetraploid species (KF = $40m$, SAT chromosomes type 3A) are here provided for the first time. The chromosome number agrees with that previously reported by Fernández & Krapovickas (1994).

Literature cited

- Fernández, A. & Krapovickas, A. 1994. Cromosomas y evolución en *Arachis* (Leguminosae). *Bonplandia* 8: 187–220.
- Gregory, M.P., Krapovickas, A., Smith, B.W. & Yarbrough, J.A. 1973. Structures and genetic resources of Peanuts. Pp. 47–134 in: Wilson, C.T. (ed.), *Peanuts: Culture and uses*. Stillwater: American Peanut Research and Education Association.
- Ortiz, A., Silvestri, M.C. & Lavía, G.I. 2013. Karyotypic studies in wild species of *Arachis* (Leguminosae) belonging to sections *Erectoides*, *Procumbentes* and *Rhizomatosae*. *Bol. Soc. Argent. Bot.* 48: 183–191.
- Peñaloza, A.P.S. & Valls, J.F.M. 2005. Chromosome number and satellited chromosome morphology of eleven species of *Arachis* (Leguminosae). *Bonplandia* 15: 65–72.

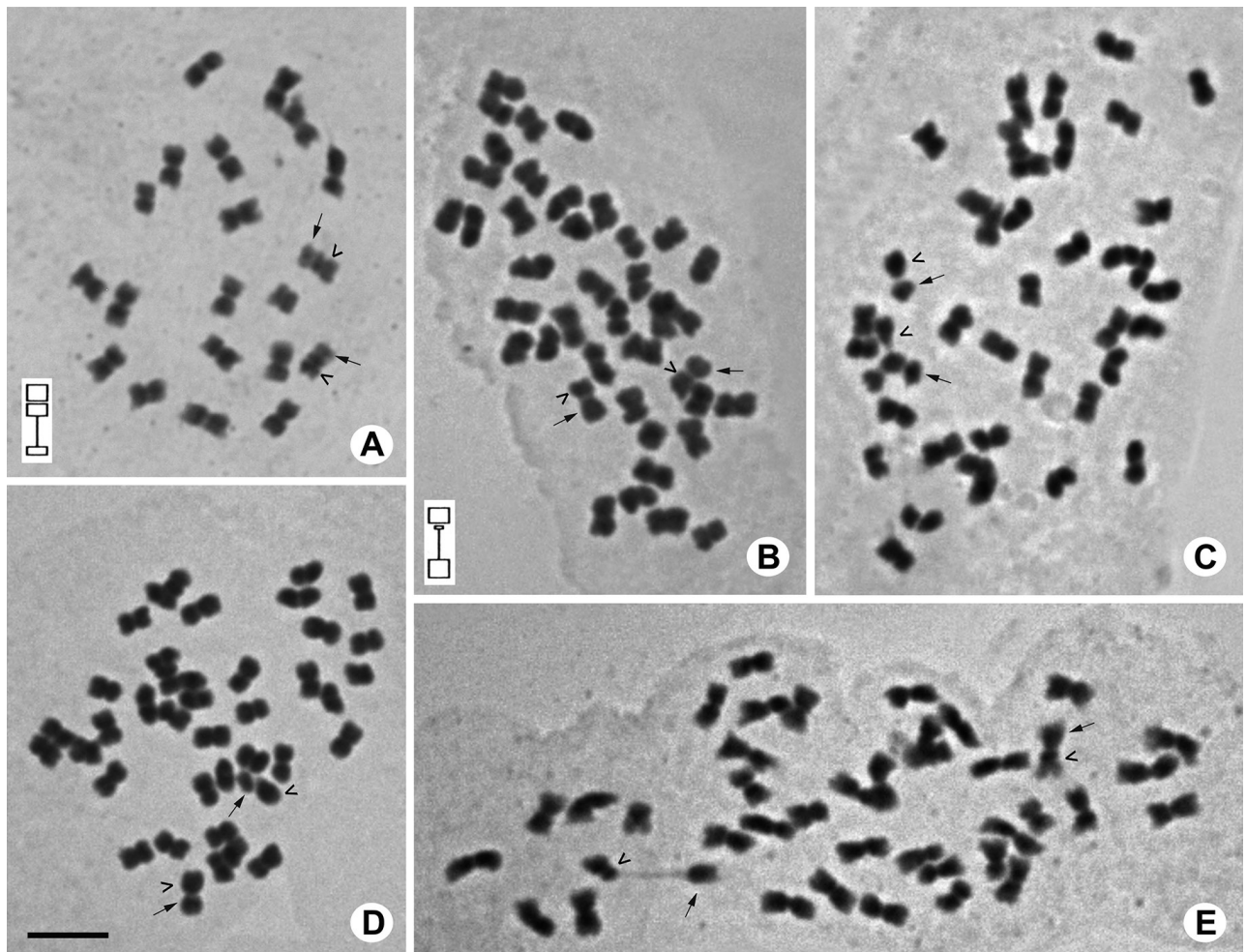


Fig. 10. Mitotic metaphases of *Arachis* species. **A**, *A. burkartii*, $2n = 20$ (G. Seijo, G. Lavía & V. Solís Neffa 2839); **B**, *A. glabrata* var. *glabrata*, $2n = 40$ (G. Seijo, G. Lavía & V. Solís Neffa 2841); **C**, *A. glabrata* var. *hagenbeckii*, $2n = 40$ (A. Krapovickas, W.C. Gregory, J.R. Pietrarelli & A. Schinini 30107); **D**, *A. pseudovillosa*, $2n = 40$ (W.C. Gregory & A. Krapovickas 10559); **E**, *A. nitida*, $2n = 40$ (G. da Silva, E. Pizarro & R. Heyn 3785). Diagrams of SAT chromosomes type 8 and 3A (adapted from Fernández & Krapovickas, 1994) are represented in A and B, respectively. Arrowheads show the arms 1 + the proximal segments and arrows show the satellites of the chromosomes SAT. — Scale bar = 5 μ m.

Nina S. Probatova,^{1*} Sergey G. Kazanovsky² & Elvira G. Rudyka¹

1 *Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, 159 Stoletya Prospekt, 690022, Vladivostok, Russia*

2 *Siberian Institute of Plant Physiology & Biochemistry, Siberian Branch of the Russian Academy of Sciences, 132 Lermontov Str., 664033, Irkutsk, Russia*

* Author for correspondence: *probatova@ibss.dvo.ru*

* First chromosome count for the species marked.

** New chromosome number (cytotype) for the species.

This study was supported by Grants nos. 11-04-00240 (to N.S. Probatova) and 12-04-01586 (to A.V. Verkhovina) from the Russian Fund for Basic Research (RFBR), and by Interdisciplinary integration project Nr. 17, from the Siberian Branch of the Russian Academy of Sciences.

ALLIACEAE

Allium senescens L.

2n = 32, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, 140 km of Vladivostok, 15 km of Ossinovka village, forb meadow, 20 Aug 1996, *E.G. Rudyka 7293* (VLA).

ASTERACEAE

Artemisia anethifolia Weber ex Stechm.

2n = 16, CHN. Russia, East Siberia, Zabaikal'skii Krai, Borzinskii Raion, in vicinity of Borzya town, 668 m, the lakeside of saline lake, 30 Aug 2013, *S.G. Kazanovsky 12469* (VLA, IRK).

Artemisia feddei H.Lev. & Vaniot

2n = 16, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, near Lebedinoe village, SE slope, forb meadow, 27 May 1998, *N.S. Pavlova 7690* (VLA).

Cichorium intybus L.

2n = 18, CHN. Russia, West Siberia, Republic of Altai, Maiminskii Raion, near Maima settlement, along the highway, 31 Aug 2012, *S.G. Kazanovsky 12493* (VLA, IRK).

Cirsium vlassovianum Fisch.

2n = 28, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Nerchinskii Zavod town, 534 m, S steep stony slope, covered with steppe vegetation, 29 Aug 2013, *S.G. Kazanovsky 12472* (VLA, IRK).

Picris hieracioides L.

2n = 10, CHN. Russia, East Siberia, Irkutskaya Oblast', Cherkhovskii Raion, Uzkii Lug village, ruderal plant communities, 26 Aug 2008, *A.V. Verkhovina, S.G. Kazanovsky & al. 12389* (VLA, IRK).

BORAGINACEAE

Pulmonaria mollis Wulfen ex Hornem.

2n = 18; Russia, West Siberia, Altaiskii Krai, Krasnogorskii Raion, 5–6 km E of Tayna village, right riverside of the Isha River, 235 m, the edge of the light *Betula* and *Abies* forest with ferns and forbs, at the forest road, 18 Jun 2013, *S.G. Kazanovsky 12492* (VLA, IRK).

EUPHORBIACEAE

Securinega suffruticosa (Pall.) Rehd.

2n = 26, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Nerchinskii Zavod town, 534 m, S steep stony slope, *Armeniaca sibirica* community, 29 Aug 2013, *S.G. Kazanovsky 12473* (VLA, IRK).

FABACEAE

Glycine soja Siebold & Zucc.

2n = 39–40, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, near the railway station Baranovskii, 1998, *S.A. Shatalova 8069* (VLA).

2n = 40, CHN. Russia, Far East, Amurskaya Oblast', Arkharinskii Raion, the Khinganskii nature reserve, 1995, *S.G. Kudrin 8123* (VLA).

Lathyrus humilis (Ser.) Spreng.

2n = 14, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, 2 km E of Nekruglovo village, forest gully, 13 May 2008, *V.T. Lapenko 10958* (VLA).

HYDROCHARITACEAE

Hydrilla verticillata (L.f.) Royle

2n = 16, CHN. Russia, Far East, Primorskii Krai, Terneiskii Raion, the Sikhote-Alinskii biosphere reserve, Jun 2001, *I.A. Nesterova 8513* (VLA).

IRIDACEAE

Pardanthopsis dichotoma (Pall.) Lenz

2n = 28, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Gornyi Zerentui village, 563 m, grassy-forb steppe at the bottom of a hill, 29 Aug 2013, *S.K. Kazanovsky 12482* (VLA, IRK).

LAMIACEAE

Dracocephalum argunense Fisch. ex Link

2n = 14, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Voznessenka village, 731 m, the grassy-forb meadow steppe, 29 Aug 2013, *S.G. Kazanovsky 12488* (VLA, IRK).

Lycopus lucidus Turcz. ex Benth.

2n = 22, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Nerchinskii Zavod town, the Serebrnyanka River, 500 m, the riverbank, at the bridge, forb community with *Carex*, 29 Aug 2013, *S.G. Kazanovsky 12483* (VLA, IRK).

Scutellaria baicalensis Georgi

** 2n = 16, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Voznessenka village, 731 m, the grassy-forb meadow steppe, 29 Aug 2013, *S.K. Kazanovsky 12471* (VLA, IRK).

Scutellaria galericulata L.

2n = 32, CHN. Russia, East Siberia, Irkutskaya Oblast', Ust'-Kutskii Raion, 8.5 km WNW of the settlement Yarakta, left riverside of the Yarakta River, 442 m, roadside near the bridge, 9 Aug 2012, *S.G. Kazanovsky 12400* (VLA, IRK).

MALVACEAE

Malva mohileviensis Downar

2n = 42, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutsk city, Akademgorodok, on the waste ground near the building site, 19 Oct 2010, *S.G. Kazanovsky 11908* (VLA, IRK).

ONAGRACEAE

Oenothera biennis L.

2n = 14, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, the Far Eastern marine biosphere reserve, Spasseniya Bay, Sep 1997, *N.M. Voronkova 8938* (VLA).

Oenothera rubricaulis Kleb.

2n = 14, CHN. Russia, Far East, Primorskii Krai, in vicinity of Artëm town, the bank of the Knevichanka River, 8 Oct 1997, *S.A. Shatalova 7481* (VLA).

POACEAE*Agrostis clavata* Trin.

$2n = 42$, CHN. Russia, East Siberia, Irkutskaya Oblast', Katangskii Raion, 16.5 km S of Bur village, 460 m, *Larix* and *Picea* forest with *Vaccinium uliginosum* and green mosses, on damp sabulous soil near the waterlogged plot, 10 Aug 2012, S.G. Kazanovsky 12405 (VLA, IRK).

Cleistogenes kazanovskiy Tzvelev & Prob.

* $2n = 40$, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Nerchinskii Zavod town, 582 m, the grassy-forb steppe with *Bromopsis* and legumes, 29 Aug 2013, S.G. Kazanovsky 12474 (VLA, IRK). Type collection.

Elymus fibrosus (Schrenk) Tzvelev

$2n = 28$, CHN. Russia, East Siberia, Irkutskaya Oblast', Irkutsk city, near Akademgorodok, left riverside of the Angara River, 423 m, sandy-pebbly bank, 15 Sep 2013, S.G. Kazanovsky & V.V. Domrachev 12468 (VLA, IRK).

Enneapogon borealis (Griseb.) Honda

$2n = 20$, CHN. Russia, East Siberia, Republic of Buryatia, Kiakhtinskii Raion, Ust'-Kiakhta village, the Selenga River, 2 km downstream from the petroleum storage depot, right stony slope, 588 m, 15 Sep 1982, G.P. Semenova 12394 (VLA, IRK).

Koeleria tokiensis Domin

$2n = 14$, CHN. Russia, Far East, Primorskii Krai, Peter the Great Bay, Rikorda Island, 2005, T.N. Tolmacheva 10469 (VLA); Russia, Far East, Primorskii Krai, Peter the Great Bay, Gerassimova Island (near Slavyanka), 20 Sep 2004, O.L. Burundukova 9530 (VLA).

Neomolinia mandshurica (Maxim.) Honda

$2n = 38$, CHN. Russia, Far East, Primorskii Krai, Peter the Great Bay, Russkii Island, Shigino, forest slope, 22 Sep 2012, E.G. Rudyka 12275 (VLA)

Poa botryoides (Trin. ex Griseb.) Kom.

$2n = 28$, CHN. Russia, East Siberia, Zabaikal'skii Krai, Dul'durginskii Raion, in vicinity of Ara-Ilya village, kordon of the national park "Alkhanai", locality Dybyksa, riverside *Salix* forest, 21 Jul 2010, S.G. Kazanovsky 12353 (VLA, IRK).

Setaria faberi R.A.W.Herrm.

$2n = 36$, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, W outskirts of Novoshakhtinskii town, as a weed in vegetable garden, 24 Sep 2012, V.T. Lapenko 12342 (VLA).

Tripogon chinensis (Franch.) Hack.

$2n = 20$, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Gornyi Zerentui village, 613 m, rocky slope near the top of a hill, on tiff crest, 29 Aug 2013, S.G. Kazanovsky 12476 (VLA, IRK).

POLYGONACEAE*Aconogonon angustifolium* (Pall.) Hara

$2n = 20$, CHN. Russia, East Siberia, Irkutskaya Oblast', Ol'khonskii Raion, Baikal Lake, Malomorskoe lakeside, Mukhor Bay, the Ulan-Khada Peninsula, 569 m, stony steppe with solitary *Larix* trees, 30 Jul 2010, S.G. Kazanovsky 12467 (VLA, IRK).

ROSACEAE*Potentilla fragarioides* L.

$2n = 14$, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, near Novoshakhtinskii town, on the railway embankment, 25 Sep 2011, V.T. Lapenko 11432 (VLA).

Potentilla norvegica L.

$2n = 56$, CHN. Russia, Far East, Khabarovskii Krai, Nanaiskii Raion, Slavyanka village, roadside, 15 Aug 2005, T.N. Tolmacheva 10074 (VLA); Russia, Far East, Primorskii Krai, Vladivostok city, Kariernaya Street, ruderal vegetation on the slope, 21 Jun 2007, V.N. Kapustina 10618 (VLA).

Potentilla paradoxa Nutt. ex Torr. & A.Gray

$2n = 28$, CHN. Russia, Far East, Amurskaya Oblast', Arkharinskii Raion, Leninskoe village, 27 Jul 2005, T.N. Tolmacheva 10458 (VLA); Russia, Far East, Primorskii Krai, Mikhailovskii Raion, W outskirts of Novoshakhtinskii town, ruderal vegetation, 22 Jul 2007, V.T. Lapenko 10659 (VLA).

RUBIACEAE*Rubia cordifolia* L.

$2n = 22$, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Nerchinskii Zavod town, 582 m, the forb steppe with *Bromopsis* and legumes, 29 Aug 2013, S.G. Kazanovsky 12491 (VLA, IRK).

SCROPHULARIACEAE*Pedicularis striata* Pall.

$2n = 16$, CHN. Russia, Far East, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Voznessenka village, 731 m, grassy-forb meadow steppe, 29 Aug 2013, S.G. Kazanovsky 12478 (VLA, IRK).

Scrophularia incisa Weinm.

$2n = 48$, CHN. Russia, East Siberia, Irkutskaya Oblast', Ol'khonskii Raion, the Baikal Lake, Malomorskoe lakeside, Cape Uyuga, on pebble spit, 4 Sep 2010, D.A. Krivenko & E.S. Prelovskaya 12479 (VLA, IRK).

Veronica biloba Schreb.

** $2n = 14$, CHN. Russia, West Siberia, Altaiskii Krai, Biisk town, 185 m, public park, the edge of *Pinus* forest, 16 Jun 2013, S.G. Kazanovsky 12484 (VLA, IRK).

SOLANACEAE*Hyoscyamus niger* L.

$2n = 34$, CHN. Russia, Far East, Primorskii Krai, Mikhailovskii Raion, E outskirts of Pavlovka village, on the waste area, 27 Sep 2004, V.T. Lapenko 11581 (VLA).

VALERIANACEAE*Patrinia rupestris* (Pall.) Dufur

$2n = 22$, CHN. Russia, East Siberia, Zabaikal'skii Krai, Nerchinsko-Zavodskii Raion, near Voznessenka village, 731 m, the grassy-forb meadow steppe, 29 Aug 2013, S.G. Kazanovsky 12481 (VLA, IRK).

Nina S. Probatova,^{1*} Dulmajab Yu. Tzyrenova,²
Elvira G. Rudyka,¹ Vyacheslav Yu. Barkalov¹ &
Vitaly A. Nechaev¹

1 Institute of Biology & Soil Science, Far East Branch of the Russian Academy of Sciences, 159 Stoletya Prospekt, 690022, Vladivostok, Russia

2 Far East State Humanitarian University, Karl Marx Str. 68, 680000, Khabarovsk, Russia

* Author for correspondence: probatova@ibss.dvo.ru

This study was supported by grants nos. 11-04-00240 (to N.S. Probatova) and 12-04-01586 (to A.V. Verkhovozina) from the Russian Fund for Basic Research (RFBR).

- * First chromosome count for the species marked.
 ** New chromosome number (cytotype) for the species.

APIACEAE

Ostericum maximowiczii (F.Schmidt) Kitag.

$2n = 44$, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, near Yasnoe settlement, 9 Sep 2005, *V.Yu. Barkalov 10076* (VLA).

ARACEAE

Arisaema amurense Maxim.

$2n = 56$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, near Possiet settlement, oak forest on the slope, 20 May 1999, *V.Yu. Barkalov 7786* (VLA).

ASTERACEAE

Atractylodes ovata DC.

$2n = 24$, CHN. Russia, Far East, Khabarovskii Krai, in vicinity of Khabarovsk city, near the village Voronezh-1, Voronezhskie highlands, the slope of a hill, oak forest, 7 Jul 2005, *D.Yu. Tzyrenova 12454* (VLA).

Bidens maximowicziana Oett.

$2n = 48$, CHN. Russia, Far East, Primorskii Krai, Khankaiskii Raion, W lakeside of the Khanka Lake, nature reserve "Khankaiskii", part Sosnovyi, Przheval'skogo Peninsula, 21 Jun 2002, *V.Yu. Barkalov 8837* (VLA).

Ptarmica alpina DC.

$2n = 36$, CHN. Russia, Far East, Khabarovskii Krai, in vicinity of Khabarovsk city, near the village Voronezh-1, among shrubs, along the path, 23 Aug 2005, *D.Yu. Tzyrenova 9933* (VLA).

Saussurea kamschatcica Barkalov

* $2n = 26$, CHN. Russia, Far East, Kamchatka Peninsula, central part, S slope of Tolbachik Volcano, ca. 1300 m, the mountain tundra belt, on moist scoria of temporary stream along lava-flow, 28 Aug 2000, *V.V. Yakubov 8429* (VLA).

Saussurea manshurica Kom.

$2n = 26$, CHN. Russia, Far East, Amurskaya Oblast, Arkharinskii Raion, the Khingano-Arkharinskii zakaznik (nature protected area), 43 km E of Arkhara railway station, rocks along the riverside of the Arkhara River, 31 Aug 2012, *S.G. Kudrin 12321* (VLA).

Senecio viscosus L.

** $2n = 20$, CHN. Russia, Far East, Primorskii Krai, W lakeside of the Khanka Lake, the nature reserve "Khankaiskii", Przheval'skogo Peninsula, part Sosnovyi, sandy bank, 2 Jul 2005, *V.Yu. Barkalov 9823* (VLA); Russia, Far East, Primorskii Krai, Peter the Great Bay, Lissii Island (opposite Nakhodka city), 11 Sep 2002, *V.A. Nechaev 9324* (VLA). The CHN was counted from seedlings, in both specimens.

BUTOMACEAE

Butomus umbellatus L.

$2n = 26$, CHN. Russia, Far East, Primorskii Krai, Ussuriiskii Raion, nearby Ussuriisk city, the former river-bed of the Razdol'naya River, 27 Jul 2009, *V.A. Nechaev 11435* (VLA).

CAMPANULACEAE

Campanula punctata Lam.

$2n = 34$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, near Lotosovoe Lake, rocky slope, nearby the bog, 10 Jun 2008, *V.A. Nechaev 11019* (VLA). Corona wide, white without spots inside.

CHENOPODIACEAE

Salicornia perennans Willd.

$2n = 18$, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, not far from the railway station Sovkhoznaya, seashore, 1997, *E.V. Neupokoeva 7641* (VLA); Russia, Far East, Primorskii Krai, Partizanskii Raion, Vostok Bay, 1998, *V.A. Nechaev 8437* (VLA); Russia, Far East, Primorskii Krai, Shkotovskii Raion, not far from Shkotovo, seashore, 2001, *V.A. Nechaev 8779* (VLA); Russia, Far East, Primorskii Krai, Shkotovskii Raion, Sukhodol Bay (between Rechitsa and Tsarevka villages), marine terrace, damp coastal meadow on the sandy-silt deposits with sparse vegetation, 24 Sep 2004, *N.S. Pavlova 9688* (VLA); Russia, Far East, Primorskii Krai, Amurskii Gulf, the coast of Uglovoi Bay, near Prokhladnoe settlement, a peatbog in 10 m of shoreline, 3 Nov 2004, *E.V. Burkovskaya 9748* (VLA).

FABACEAE

Kummerowia striata (Thunb.) Schindl.

$2n = 22$, CHN. Russia, Far East, Khabarovskii Krai, in vicinity of Khabarovsk city, near the village Voronezh-1, among shrubs, along the path, 23 Aug 2005, *D.Yu. Tzyrenova 9926* (VLA).

GERANIACEAE

Geranium pissjaukovaevae Tzyren.

* $2n = 28$, CHN. Russia, Far East, Amurskaya Oblast', Arkharinskii Raion, 10 km NE of Kundur settlement, oak forest with *Lespedeza* and sedges, among tall herbs, 12 Aug 2005, *D.Yu. Tzyrenova 9939* (VLA).

Geranium sieboldii Maxim.

$2n = 28$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, the Lotos (Doritseni) Lake, dry slope, forb meadow, 31 Aug 2005, *R.I. Korkishko 9947* (VLA); Russia, Far East, Primorskii Krai, Khassanskii Raion, near Kraskino settlement, dry slope covered by forb meadow vegetation, nearby the road, 31 Aug 2005, *R.I. Korkishko 9948* (VLA).

Geranium wilfordii Maxim.

$2n = 28$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, the Kedrovaya Pad' nature reserve, 2005, *D.Yu. Tzyrenova 9824* (VLA).

IRIDACEAE

Iris mandshurica Maxim.

$2n = 24$, CHN. Russia, Far East, Primorskii Krai, Oktyabr'skii Raion, near Novogeorgievka village, the valley of Razdol'naya River, on pebbles, 8 Jul 2009, *V.A. Nechaev 11400* (VLA).

LAMIACEAE

Lycopus maackianus Makino

$2n = 22$, CHN. Russia, Far East, Primorskii Krai, Partizanskii Raion, the area of Vostok Bay and Dushkino village, coastal plain, grassy bog, 31 Aug 2013, *V.A. Nechaev 12433* (VLA).

Rabdosia serra (Maxim.) Hara

$2n = 24$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, 5–6 km E of Kraskino town, the valley of Tsukanovka River near Tsukanovo village, at the foot of a hill, 22 Sep 2013, *V.A. Nechaev 12458* (VLA).

ONAGRACEAE

Circaea alpina L.

$2n = 22$, CHN. Russia, Far East, Primorskii Krai, Nadezhdinskii Raion, near Razdol'noe railway station, on the rocks, Aug 2007, *V.A. Nechaev 10665* (VLA).

PLANTAGINACEAE*Plantago asiatica* L.

$2n = 24$, CHN. Russia, Far East, Primorskii Krai, Khassanskii Raion, the lakeside of the Ptichie (Tal'mi) Lake, terraced slope, covered by trees and shrubs, 12 Jun 2010, *V.A. Nechaev 11565* (VLA).

POACEAE*Calamagrostis angustifolia* Kom.

$2n = 28$, CHN. Russia, Far East, Primorskii Krai, Partizanskii Raion, Vostok Bay, near Dushkino village, coastal plain, grassy bog, 18 Aug 2013, *V.A. Nechaev 12443* (VLA).

Danthonia riabuschinskii (Kom.) Kom.

$2n = 36$, CHN. Russia, Far East, Magadanskaya Oblast', Ol'skii Raion, Koni Peninsula, the middle course of the Bogurchan River, the *Chosenia* flood-plain forest, the dry grassy-forb meadow, 25 Jun 1995, *O.A. Mochalova 7241* (VLA).

Elymus excelsus Turcz.

$2n = 42$, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, near Shkotovo, seacoast, by the rocks, 19 Jul 2009, *V.A. Nechaev 11421* (VLA).

Elymus franchetii Kitag.

$2n = 42$, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, near Fokino town, the slope of Bol'shoi Iosif Mt. (530 m), stony place, 7 Aug 2010, *V.A. Nechaev 11580* (VLA).

Hierochloë glabra Trin.

$2n = 28$, CHN. Russia, Far East, Primorskii Krai, Shkotovskii Raion, outskirts of Bol'shoi Kamen' town, 2009, *V.A. Nechaev 11426* (VLA).

Melica turczaninowiana Ohwi

$2n = 18$, CHN. Russia, Far East, Primorskii Krai, near Nakhodka city, Brat Mt., rocky slope, Sep 2012, *V.A. Nechaev 12442* (VLA).

Poa kolymensis Tzvelev

$2n = 14$, CHN. Russia, Far East, Magadanskaya Oblast', Khasynskii Raion, Ol'skoe plateau, near Skif Mt. (1662 m), the watershed of the Ola and Maltan Rivers in upper part, on the rubbly-melkozem slope of a spur, along the temporary stream, 8 Aug 2011, *V.Yu. Barkalov 12322* (VLA).

Setaria pumila (Poir.) Roem. & Schult.

$2n = 36$, CHN. Russia, Far East, Primorskii Krai, Partizanskii Raion, Vostok Bay, 2004, *V.A. Nechaev 9797* (VLA).

RANUNCULACEAE*Thalictrum petaloideum* L.

$2n = 14$, CHN. Russia, East Siberia, Zabaikal'skii Krai, Aginskii Buryatskii Avtonomnyi Okrug, Aginskii Raion, Khangilaiskii mountain ridge, the Aginskii Daban Pass (on the way from Aginskoe to Nizhnii Tsassuichei), the light *Betula* forest, 9 Jul 2011, *D.Yu. Tzyrenova 11910* (VLA).

ROSACEAE*Potentilla paradoxa* Nutt. ex Torr. & A.Gray

$2n = 28$, CHN. Russia, Far East, Evreiskaya Avtonomnaya Oblast', the railway station Obluchie, as a weed along the railroad embankment, 18 Jun 2007, *D.Yu. Tzyrenova 10989* (VLA).

Potentilla vulcanicola Juz.

$2n = 14$, CHN. Russia, Far East, Kamchatka Peninsula, central part, S foothills of the Ostryi Tolbachik Volcano, nearby S break, in

small crater, the *Larix* forests belt, at the bottom of lava wall, 25 Aug 2000, *V.V. Yakubov 8421* (VLA).

SALICACEAE*Salix kangensis* Nakai

* $2n = 38$, CHN. Russia, Far East, Primorskii Krai, outskirts of Ussuriisk city, the district "Voskhod", moist place on the slope, in upper part of a ravine, 15 Dec 2013, *V.Yu. Barkalov 12465* (VLA).

SCROPHULARIACEAE*Veronica anagalloides* Guss.

$2n = 18$, CHN. Russia, Far East, Primorskii Krai, Pogranichnyi Raion, the mouth of the Mramornaya River (tributary of Komissarovka River), 22 Oct 1997, *V.Yu. Barkalov 7515* (VLA); Russia, Far East, Primorskii Krai, Shkotovskii Raion, in vicinity of Anissimovka village, the watershed of Berëzovyi and Smol'nyi springs, along the forest road, 14 Apr 1999, *V.Yu. Barkalov & S.V. Prokopenko 7768* (VLA).

Veronica heureka Tzvelev

$2n = 36$, CHN. Russia, Far East, Primorskii Krai, Oktyabr'skii Raion, near Novogeorgievka village, the riverside of the Razdol'naya River, silt plot, 15 Sep 1997, *V.Yu. Barkalov 7533* (VLA).

Anna Scoppola,^{1*} Carla Ceoloni,¹ Andrea Gennaro¹ & Sara Magrini²

1 Department of Agriculture, Forests, Nature and Energy (DAFNE), University of Tuscia, via S. Camillo De Lellis, 01100 Viterbo, Italy

2 Herbarium UTV, University of Tuscia, via S. Camillo De Lellis, 01100 Viterbo, Italy

* Author for correspondence: scoppola@unitus.it

▼ First chromosome count from Italian accessions.

▼▼ First chromosome count from Central Italian accessions.

VIOLACEAE*Viola arvensis* Murray

▼▼ $2n = 34$, CHN. Italy, Siena, Sarteano, Mt. Cetona, screes and open grassland near an unpaved road (calcareous soil), about 1100 m, 42°55'52" N, 11°52'32" E, 29 Apr 2012, *A. Scoppola 30445* (UTV); Italy, Roma, Tivoli, Acque Albule, open grasslands and uncultivated land (calcareous soil), 66 m, 41°57'47" N, 12°42'53" E, 8 Apr 2012, *A. Scoppola 30451* (UTV); Italy, Viterbo, Bomarzo, Colonna, fields (calcareous soil), 229 m, 42°29'57" N, 12°12'55" E, 20 Apr 2011, *A. Scoppola 30371* (UTV); Italy, Viterbo, Riello, uncultivated fields, 303 m, 42°25'36" N, 12°04'43" E, 17 May 2011, *A. Scoppola 30441* (UTV); Italy, Viterbo, S. Martino al Cimino, in synanthropic habitat near pine trees, 514 m, 42°21'57" N, 12°07'09" E, 27 Jun 2010, *A. Scoppola 29497* (UTV).

$2n = 34$, CHN. Italy, Aosta, Saint Denis, Del, edge of stony path between fields, 1200 m, 7 Jun 2012, *M. Bovio, M. Broglio & G. Trompetto s.n.* (AO N.SFV-2939). [Fig. 11A]

Viola hymettia Boiss. & Heldr.

▼ $2n = 16$, CHN. Italy, Viterbo, Palanzanella, dry open habitats and shrub fringes (volcanic soil), 518 m, 42°24'50" N, 12°08'57" E, 20 Mar 2010, *A. Scoppola 30151* (UTV); Italy, Viterbo, Asinello, open grassland and uncultivated lands (volcanic soil), 266 m, 42°24'05" N, 12°04'11" E, 14 Mar 2009, *A. Scoppola 29470* (UTV); Italy, Viterbo, Vetralla, S. Barbara, dry open habitats and shrubs fringes (volcanic soil), 158 m, 42°21'36" N, 11°59'16" E, 6 Feb 2011, *A. Scoppola 30455* (UTV); Italy, L'Aquila, Ofena, Le Vigne, grasslands and uncultivated lands (calcareous soil), 42°18'10" N, 13°44'20" E, 10 Mar 2012, *A. Scoppola 30454* (UTV); Italy, Taranto,

Palagianello, Gravine, grasslands and uncultivated lands (calcareous soil), 115 m, 40°36'41" N, 16°58'22" E, 25 Feb 2012, *A. Scoppola* 30450 (UTV). [Fig. 11B]

Viola kitaibeliana Schultes

▼ $2n = 16$, CHN. Italy, Macerata, Serravalle di Chienti, Gelagna Bassa, La Valle, open shrubland with stony grasslands (calcareous soil), 735 m, 43°05'11" N, 13°00'31" E, 30 Apr 2012, *A. Scoppola* 30448 (UTV); Italy, Perugia, Norcia, Forca d'Anکارano, stony meadows between fields (calcareous soil), 1000–1010 m, 42°49'12" N,

13°07'03" E, 30 Apr 2012, *A. Scoppola* 30449 (UTV); Italy, Viterbo, Bassano in Teverina, Bassano Scalo, arid and stony meadows (calcareous soil), 70 m, 42°29'12" N, 12°19'28" E, 17 Mar 2011, *A. Scoppola*, *E. Lattanzi* 30152 (UTV); Italy, Rieti, Nespolo, Cerreta, open grasslands and stony slopes (calcareous soil), about 1000 m, 42°09'46" N, 13°04'48" E, 23 May 2010, *A. Scoppola* 29512 (UTV); Italy, Frosinone, Ferentino, Mt. Trave, open grasslands and stony slopes (calcareous soil), 30 Apr 2011, *E. Lattanzi* 30150 (UTV); Italy, L'Aquila, Barisciano, S. Colombo, stony meadows in open woodlands (calcareous soil), 1108 m 42°20'11" N, 13°35'19" E, 2 Apr 2011, *E. Lattanzi* 30155 (UTV); Italy, L'Aquila, Ofena, Le Vigne, arid and stony grasslands (calcareous soil), 481 m, 42°18'03" N, 13°44'05" E, 4 Mar 2013, *A. Scoppola* 30537 (UTV). [Fig. 11C]

Viola tricolor L. subsp. *tricolor*

▼ $2n = 26$, CHN. Italy, Viterbo, Oriolo Romano, Mola di Oriolo, open woodland (volcanic soil), 317 m, 42°10'16" N, 12°05'45" E, 9 Jun 2011, *S. Buono* 30444 (UTV); Italy, Viterbo, Mt. Palanzana, shrub fringe in semi-natural lands (volcanic soil), 654 m, 42°23'56" N, 12°09'32" E, 24 May 2011, *S. Moroni* 30443 (UTV); Italy, Viterbo, Vejano, Acquaforte, stony meadow in open woodland (volcanic soil), 370 m, 42°13'11" N, 12°07'00" E, 7 May 2011, *A. Scoppola* 30440 (UTV). [Fig. 11D]

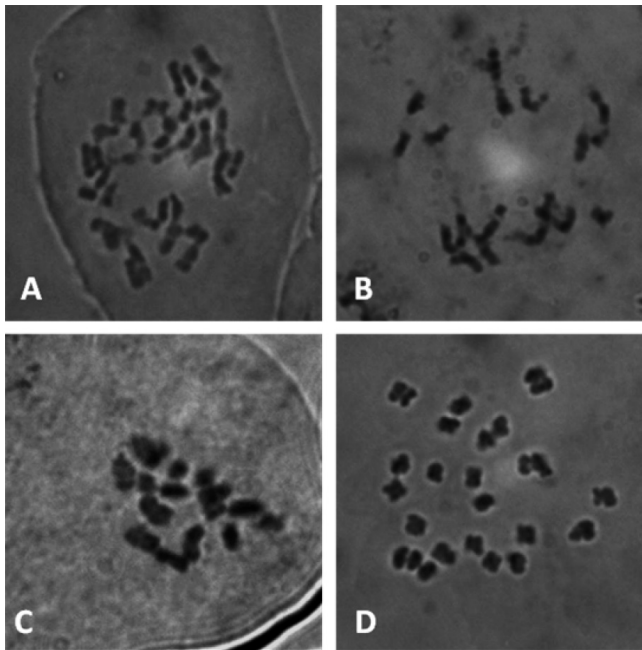


Fig. 11. Mitotic metaphases of: **A**, *Viola arvensis*, $2n = 34$; **B**, *Viola hymettia*, $2n = 16$; **C**, *Viola kitaibeliana*, $2n = 16$; **D**, *Viola tricolor* subsp. *tricolor*, $2n = 26$.

This study was carried out as part of research on annual pansies (*Viola* sect. *Melanium* DC.) focused to compare palynological, morphological, and cytological characters, to highlight their systematic implications (Scoppola & Lattanzi, 2012; Scoppola & al., unpub. data), and to update the distribution areas of the Italian species (Magrini & Scoppola, 2013).

Literature cited

- Magrini, S. & Scoppola, A.** 2013. Is it possible to define the real Italian distribution area of the annual pansy, *Viola kitaibeliana*? Pp. 53–54 in: Peccenini, S. & Domina, G. (eds.), *Contributi alla ricerca floristica in Italia*. Palermo: Società Botanica Italiana.
- Scoppola, A. & Lattanzi, E.** 2012. *Viola* section *Melanium* (Violaceae) in Italy: New data on morphology of *Viola tricolor*-Group. *Webbia* 67: 47–64.